



WinSLAMM v 9.4

User's Guide

Output



Start-Up Hints

Press F1 on any screen within the program to see the corresponding Help File Topic

Throughout this User's Guide, the text in red walks you through the program

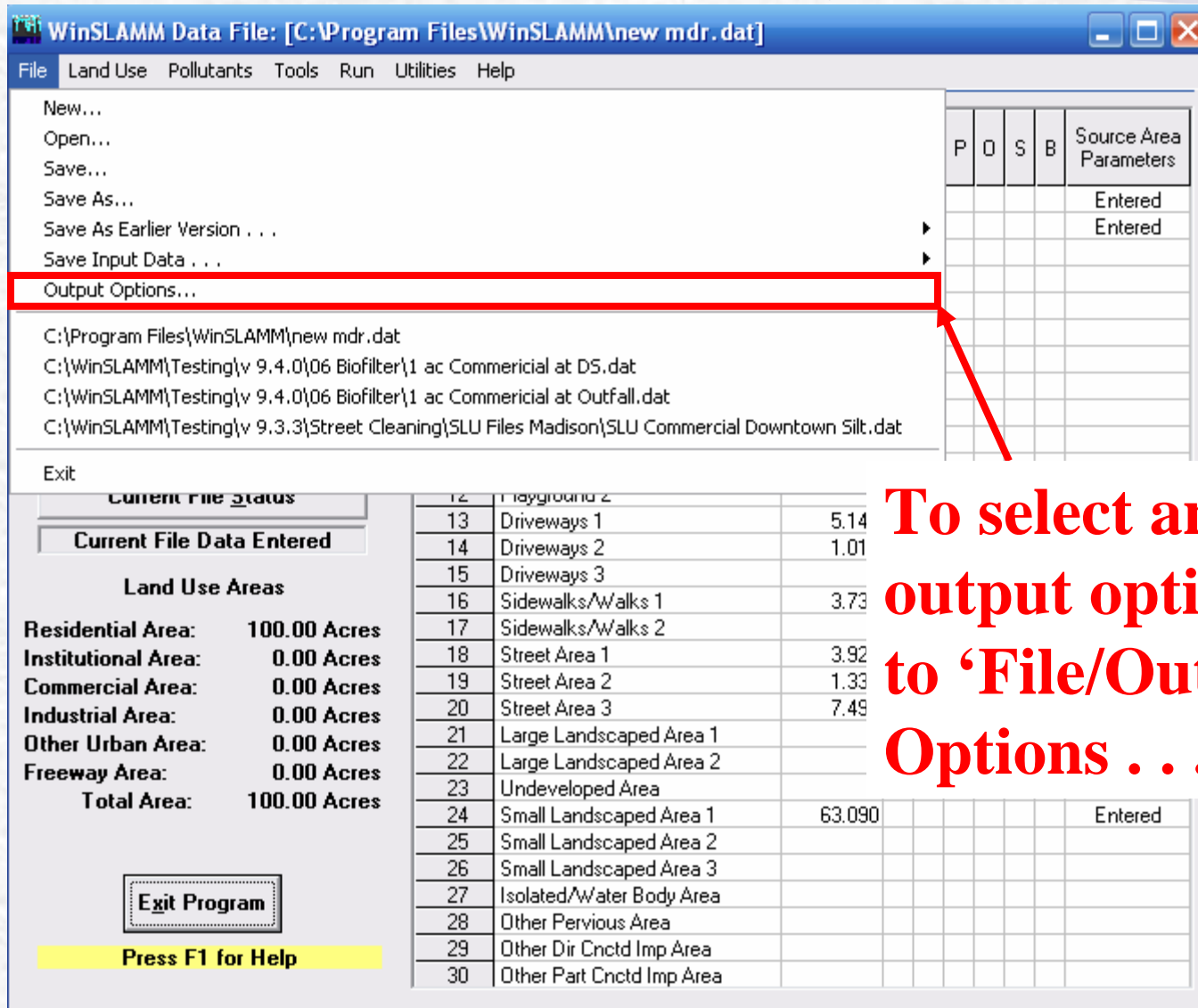
The User may need to press Enter in various input screens to activate the next data input



Reading the Output



File/Output Options



To select an output option, go to ‘File/Output Options ...’

Output Format Options

Output Format Options

- ☐ 1. Source Areas by Land Use for Each Rain - Complete Printout
- ☐ 2. Source Area Totals and Outfall Summaries
- ☐ 3. Outfall Data Only for Each Rain
- ☒ 4. Outfall Summaries Only
- ☐ 5. One Line per Event Runoff and Flow Summary
- ☐ 6. Continuous Hydrograph With 6 Minute Time Increments
- ☐ 7. Continuous Hydrograph With 15 Minute Time Increments
- ☐ 8. Continuous Hydrograph With 60 Minute Time Increments

☐ Water Balance Summary of All Detention Ponds

☐ Save Outfall Runoff and Particulate Loading for WinDETPOND Analysis

☐ Save Model Output for Input into CE-QUAL-RIV1

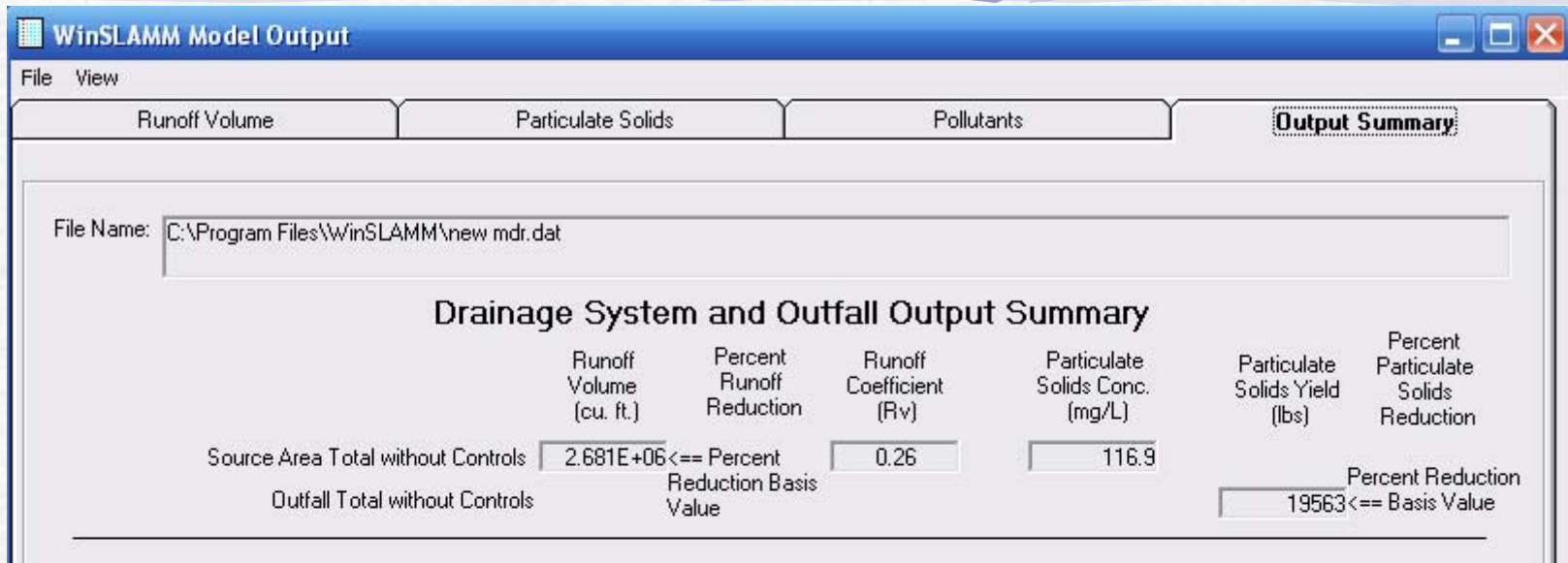
File Name

Continue

There are Eight Output Options, as well as:

- **Additional information about wet detention pond performance,**
- **An option to create input data for a WinDETPOND analysis, and**
- **An option to save the model output for input into the CE-QUAL-RIV1 model.**

Output Summary



WinSLAMM Model Output

File View

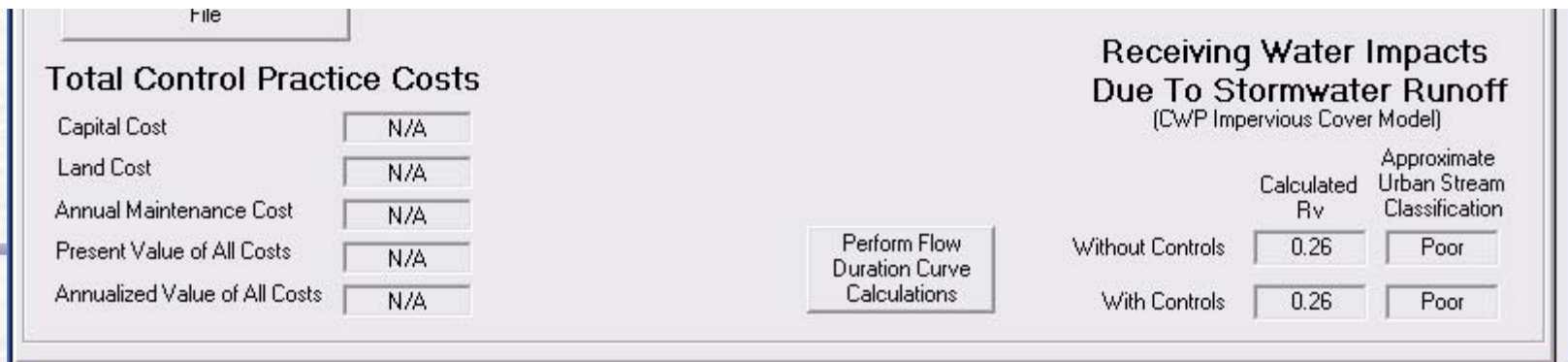
Runoff Volume Particulate Solids Pollutants **Output Summary**

File Name: C:\Program Files\WinSLAMM\new mdr.dat

Drainage System and Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls	2.681E+06	Percent Reduction Basis Value	0.26	116.9		
Outfall Total without Controls					19563	Percent Reduction Basis Value

If Output Options 1 – 4 are selection, the **Output Summary** tab will be the first output screen to appear. This screen summarizes the drainage system and outfall output for runoff and particulate solids.



File

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Flow Duration Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff (CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.26	Poor
With Controls	0.26	Poor

Output Summary

File Name: C:\Program Files\WinSLAMM\new mdr.dat

Drainage System and Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls	2.681E+06	Percent Reduction Basis Value	0.26	116.9		
Outfall Total without Controls					19563	Percent Reduction Basis Value
Current File Output: Total Before Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Outfall Controls	2.681E+06	0.01 %	0.26	116.9	19564	0.00 %
Current File Output: Annualized Total After Outfall Controls	3.693E+06				26947	

After reviewing the Output Summary, select the desired tab to review the detailed output for Runoff Volume, Particulate Solids, or Pollutants.

Land Cost	N/A	Perform Flow Duration Curve Calculations	Without Controls	Calculated Rv	Approximate Urban Stream Classification	
Annual Maintenance Cost	N/A			0.26	Poor	
Present Value of All Costs	N/A			With Controls	0.26	Poor
Annualized Value of All Costs	N/A					

Output Summary

WinSLAMM Model Output

File View

Runoff Volume Particulate Solids Pollutants **Output Summary**

File Name: C:\Program Files\WinSLAMM\new mdr.dat

Drainage System and Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls	2.681E+06	Percent Reduction Basis Value	0.26	116.9		
Outfall Total without Controls					19563	Percent Reduction Basis Value
Current File Output: Total Before Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Outfall Controls	2.681E+06	0.01 %	0.26	116.9	19564	0.00 %
Current File Output: Annualized Total After Outfall Controls	3.693E+06				26947	
Total Area Modeled (ac)	100.00	Years in Model Run:	0.73			

Print Output Summary to Text File

Total Control Practice Costs

Receiving Water Impacts Due To Stormwater Runoff

Note: To exit the Output Screens, select the “X” in the upper right hand corner.

Annualized Value of All Costs: N/A

Calculations: With Controls: 0.26, Poor

Output Summary

WinSLAMM Model Output

File View

Runoff Volume Particulate Solids Pollutants **Output Summary**

File Name: C:\Program Files\WinSLAMM\new mdr.dat

Drainage System and Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls	2.681E+06	Percent Reduction Basis Value	0.26	116.9		
Outfall Total without Controls					19563	Percent Reduction Basis Value
Current File Output: Total Before Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Outfall Controls	2.681E+06	0.01 %	0.26	116.9	19564	0.00 %
Current File Output: Annualized						

The first line of summary data is source area totals without any controls. The output from this line assumes that the *.dat file you ran has no controls in it because this is the base condition.

Annual Maintenance Cost	N/A	Perform Flow Duration Curve Calculations	Calculated Rv	Urban Stream Classification	
Present Value of All Costs	N/A		Without Controls	0.26	Poor
Annualized Value of All Costs	N/A		With Controls	0.26	Poor

Output Summary

WinSLAMM Model Output

File View

Runoff Volume Particulate Solids Pollutants **Output Summary**

File Name: C:\Program Files\WinSLAMM\new mdr.dat

Drainage System and Outfall Output Summary

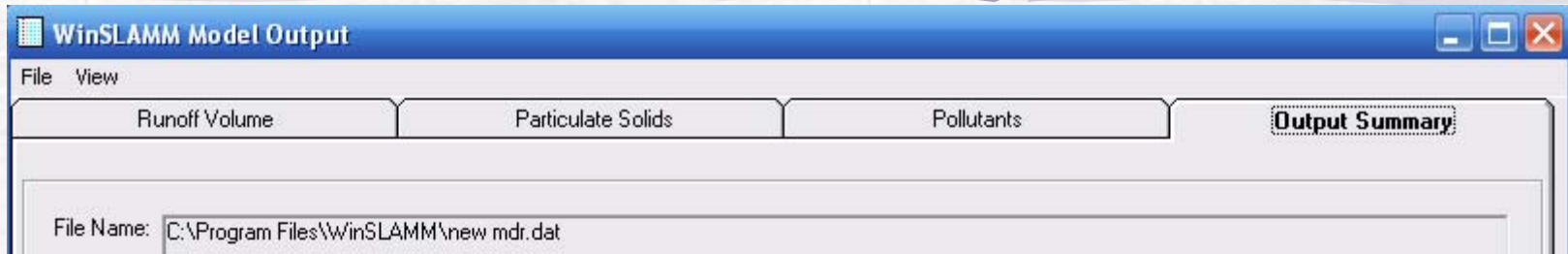
	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls	2.681E+06	<== Percent Reduction Basis Value	0.26	116.9	19563	<== Basis Value
Outfall Total without Controls						
Current File Output: Total Before Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Drainage System	2.681E+06	0.01 %	0.26	116.9	19564	
Current File Output: Total After Outfall Controls	2.681E+06	0.01 %	0.26	116.9	19564	0.00 %
Current File Output: Annualized Total After Outfall Controls	3.693E+06				26947	
Total Area Modeled (ac)	100.00	Years in Model Run:	0.73			

Print Output Summary to Text

The next three lines show the model output before and after the drainage system, and at the outfall, with all controls that you entered in the .dat file.

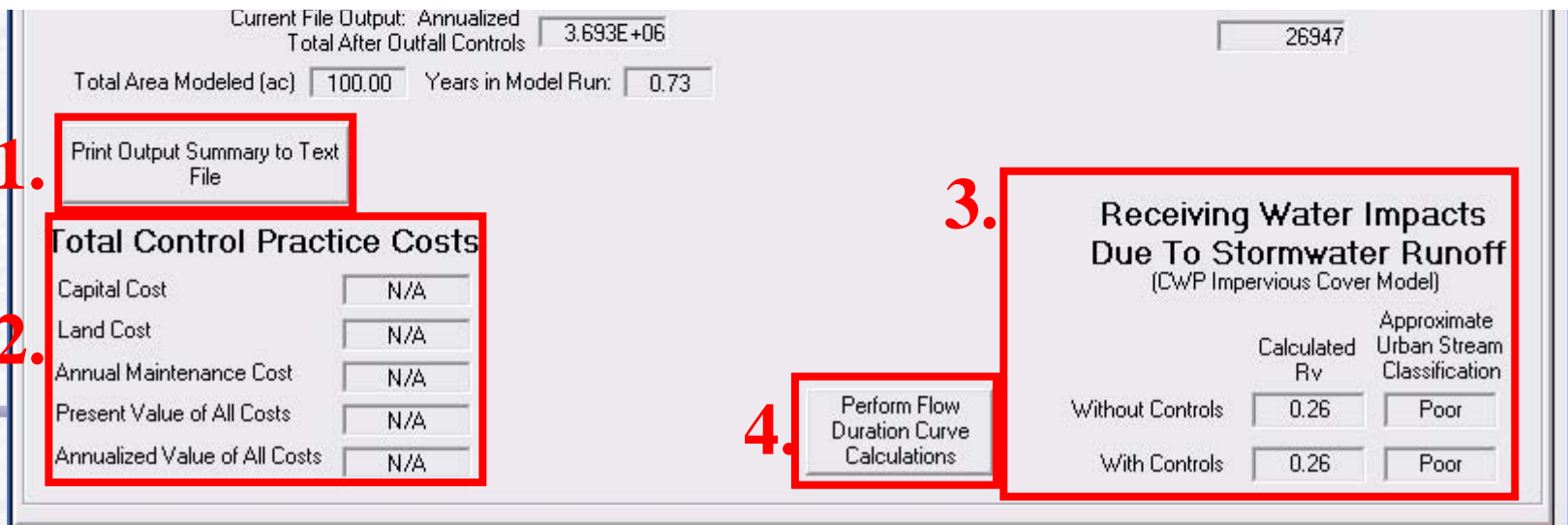
Present Value of All Costs	N/A	Perform Flow Duration Curve Calculations	Without Controls	0.26	Poor
Annualized Value of All Costs	N/A		With Controls	0.26	Poor

Output Summary



The Output Summary also includes:

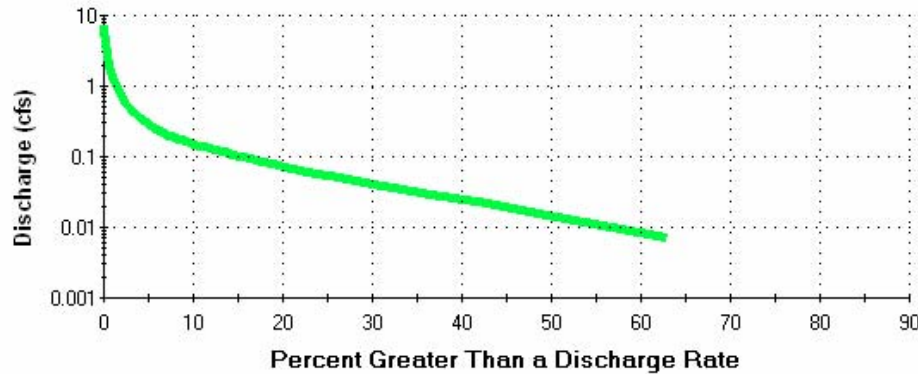
- 1. The ability to print the summary data directly or to a file,**
- 2. Control practice cost summary - if you entered cost data for your model run**
- 3. The site's impact on receiving waters, and**
- 4. Flow Duration Curves with and without Control Practices**



Flow Duration Curves

Flow Duration Curves

Flow Duration Curve for Current Model Run

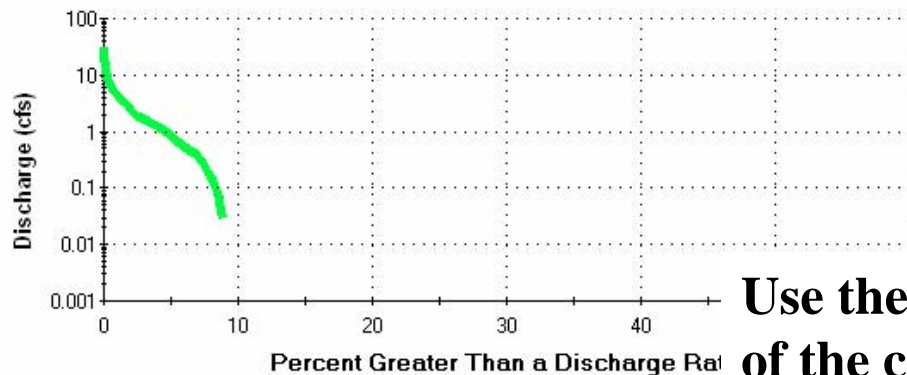


This shows a flow duration curve for a wet detention pond.

Flow Duration Data

Discharge Greater Than Percent	Flow Rate (cfs) for Current Model Run	Flow Rate (cfs) Without Controls
0	7.196	29.54
0.1	5.045	14.89
1	1.317	4.284
3	0.4678	1.654
5	0.2878	0.8568
10	0.1511	0
20	0.07196	0
30	0.03598	0
40	0.02159	0
50	0.01439	0
60	0.007196	0
70	0	0
80	0	0

Flow Duration Curve for Current Model Run Without Controls



This shows a flow duration curve For the same .dat file without the wet detention pond.

Use these curves to compare the attenuation of the control practices at the outfall to a no controls condition. See the Flow Duration Curves Help File Topic for more information.

Saving/Printing the Output

WinSLAMM Model Output

File View

Copy Output to File ...

Close

File Name: C:\Program Files\WinSLAMM\new.mdr.dat

Drainage System and Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total w/						
Outfall Total w/						

Current File Output: Total Before Drainage System

Current File Output: Total After Drainage System

Current File Output: Total After Outfall Controls

Current File Output: Annualized Total After Outfall Controls

Total Area Modeled (ac) 100.00 Years in Model Run: 0.73

Print Output Summary to Text File

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Flow Duration Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff
(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.26	Poor
With Controls	0.26	Poor

To save or print the output, select 'Copy Output to File ...' from the menu.

Saving/Printing the Output

Select 'Send to File' and check the items that you would like to save or print.

The image shows the WinSLAMM Model Output window with the Printing Options dialog box open. The dialog box has three sections: 'Send To', 'Select Item(s) to Print', and 'Pollutants'. The 'Send To' section has two radio buttons: 'Printer' and 'File'. The 'File' radio button is selected. The 'Select Item(s) to Print' section has three sub-sections: 'Runoff Volume', 'Particulate Solids', and 'Pollutants'. Each sub-section has three checkboxes. The 'Runoff Volume' section has 'Runoff Volume (cu ft)' and 'SA Runoff Vol. Contribution'. The 'Particulate Solids' section has 'Concentration', 'Yield', and 'SA Yield Contribution'. The 'Pollutants' section has 'Concentration', 'Yield (lbs)', and 'Percent SA Contribution'. The 'File' radio button is selected, and a red arrow points to it. The 'Runoff Volume' section has 'Runoff Volume (cu ft)' and 'SA Runoff Vol. Contribution' checked. The 'Particulate Solids' section has 'Concentration', 'Yield', and 'SA Yield Contribution' checked. The 'Pollutants' section has 'Concentration', 'Yield (lbs)', and 'Percent SA Contribution' checked. The 'Print Output Summary to Text File' button is visible in the background window. The 'Total Control Practice Costs' section is also visible in the background window.

Printing Options

Send To

- ☐ Printer
- ☒ File

Select Item(s) to Print

Runoff Volume

- ☒ Runoff Volume (cu ft)
- ☒ SA Runoff Vol. Contribution

Particulate Solids

- ☒ Concentration
- ☒ Yield
- ☒ SA Yield Contribution

Pollutants

- ☒ Concentration
- ☒ Yield (lbs)
- ☒ Percent SA Contribution

Buttons: Cancel, OK

Background Window: WinSLAMM Model Output

File View

Copy Output to File ...

Close

Courses\Editor

Drainage System

without Controls

without Controls

Current File Output: Total After Drainage System

Current File Output: Total After Outfall Controls

Current File Output: Annualized Total After Outfall Controls

Total Area Modeled (ac) 105.00 Years in Model

Print Output Summary to Text File

Total Control Practice Costs

Cost Type	Value
Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Flow Duration Curve Calculations

Output Summary

Summary

Percent

Receiving Water Impacts Due To Stormwater Runoff (CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.58	Poor
With Controls	0.58	Poor

Output Option 1

Runoff Volume Tab - Source Areas

Runoff Volume					Particulate Solids					Pollutants					Output Summary				
Runoff Volume (cu ft)					Source Area Runoff Volume Contribution														
Data File: LIwb Output Demo.DAT																			
Rain File: MSN1981.RAN																			
Date: 03-04-04 Time: 9:42:11 PM																			
Site Description: SLU/CLAY-LIwb-Light Industrial wet detention biofilter																			
Industrial Areas - Runoff Volume (cu. ft)																			
Start Date	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals	Rv	Total Losses (in.)	Calculated CN*						
07/04/81	0.05	151	0	0	0	130	482	0	0	762.2	0.06	0.05	98.6						
07/11/81	0.50	29066	128	34911	358	2243	9793	198	12	76709	0.55	0.22	97.4						
07/12/81	0.14	5241	0	2267	0	518	2235	0	0	10261	0.26	0.10	98.2						
07/12/81	0.86	53379	440	72809	1228	4220	18455	680	41	151252	0.63	0.31	96.6						
07/13/81	1.32	85211	861	115294	2405	7209	31389	1332	80	243780	0.67	0.44	95.4						
07/14/81	0.12	4061	0	1771	0	434	1858	0	0	8124	0.24	0.09	98.3						
07/15/81	0.07	608	0	0	0	215	865	0	0	1688	0.09	0.06	98.3						
07/18/81	0.12	4061	0	0	0	434	1858	0	0	6353	0.19	0.10	98.0						
07/20/81	0.54	31554	152	39223	424	2452	10715	235	14	84769	0.57	0.23	97.3						
07/20/81	0.10	2323	0	3075	0	345	1457	0	0	7200	0.26	0.07	98.7						
Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals	Rv	Total Losses (in.)	Calculated CN*							
						130.0	482.0	0	0	762.2	0.06	0.05	95.4						
						7209	31389	1332	80.00	243780	0.67	0.44	98.7						
						2022	8790	271.7	16.33	65655	0.56	0.17	98.4						

The runoff volume is listed for each event, for each source area.

The model also calculates the land use runoff coefficient (Rv), the total losses, and the SCS Curve Number for each event.

Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Rv
07/04/81	0.05	762.2	762.2	0	0.00
07/11/81	0.50	76709	76709	0	0.00
07/12/81	0.14	10261	10261	0	0.00
07/12/81	0.86	151252	151252	41654	0.17
07/13/81	1.32	243780	243780	281625	0.77
07/14/81	0.12	8124	8124	14001	0.43
07/15/81	0.07	1688	1688	0	0.00
07/18/81	0.12	6353	6353	0	0.00
07/20/81	0.54	84769	84769	0	0.00
07/20/81	0.10	7200	7200	0	0.00

Output Option 1

Runoff Volume Tab - Source Areas

Runoff Volume						Particulate Solids				Pollutants				Output Summary					
Runoff Volume (cu ft)						Source Area Runoff Volume Contribution													
Data File: Llwbb Output Demo.DAT																			
Rain File: MSN1981.RAN																			
Date: 03-04-04 Time: 9:42:11 PM																			
Site Description: SLU/CLAY-Llwbb-Light Industrial wet detention biofilter																			
Industrial Areas - Runoff Volume (cu. ft)																			
Start Date	Rain Total	Roofs 1	Roofs 2	Paved Parking/ Storage 1	Unpaved Parking/ Storage 1														
07/04/81	0.05	151	0	0	0														
07/11/81	0.50	29066	128	34911	358														
07/12/81	0.14	5241	0	2267	0														
07/12/81	0.86	53379	440	72809	1228														
07/13/81	1.32	85211	861	115294	2405														
07/14/81	0.12	4061	0	1771	0	434	1858	0	0	8124	0.24	0.09	98.3						
07/15/81	0.07	608	0	0	0	215	865	0	0	1688	0.09	0.06	98.3						
07/18/81	0.12	4061	0	0	0	434	1858	0	0	6333	0.19	0.10	98.0						
07/20/81	0.54	31554	152	39223	424	2452	10715	235	14	34769	0.57	0.23	97.3						
07/20/81	0.10	2323	0	3075	0	345	1457	0	0	7200	0.26	0.07	98.7						
	Rain Total	Roofs 1	Roofs 2	Paved Parking/ Storage 1	Unpaved Parking/ Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals	Rv	Total Losses (in.)	Calculated CN*						
Summary for All Events																			
Minimum:	0.05	151.0	0	0	0	130.0	482.0	0	0	762.2	0.06	0.05	95.4						
Maximum:	1.32	85211	861.0	115294	2405	7209	31389	1332	80.00	243780	0.67	0.44	98.7						
Average:	0.38	23962	175.7	29928	490.6	2022	8790	271.7	16.33	65655	0.56	0.17	98.4						
Total:	3.82	215655	1581	269350	4415	18200	79107	2445	147.0	590898		1.67							
Total Area, with Drainage and Outfall Controls - Runoff Volume (cu. ft)																			
Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Rv	Total Losses (in)	Calculated CN*	Peak Reduction Factor	Flushing Ratio	Det. Basin Out. Struct. Failed (I.u. #-src. area #)	Pre-Dev. Runoff Volume (cf)								
07/04/81	0.05	762.2	762.2	0	0.00	0.05	N/A	1.00	0.01										
07/11/81	0.50	76709	76709	0	0.00	0.50	N/A	1.00	0.79										
07/12/81	0.14	10261	10261	0	0.00	0.14	N/A	1.00	0.11										
07/12/81	0.86	151252	151252	41654	0.17	0.71	86.9	0.99	1.41										
07/13/81	1.32	243780	243780	281625	0.77	0.30	97.1	0.83	2.52	Outfall									
07/14/81	0.12	8124	8124	14001	0.42	0.07	88.0	0.88	0.00										

The runoff statistics - minimum, maximum, average, and total - are summarized for each source area below the event-by-event list.

The runoff statistics - minimum, maximum, average, and total - are summarized for each source area below the event-by-event list.

Output Option 1

Runoff Volume Tab - Outfall

Runoff Volume				Particulate Solids		Pollutants		Output Summary					
Runoff Volume (cu ft)				Source Area Runoff Volume Contribution									
Data File: Llwb Output Demo.DAT													
07/20/81	0.54	31554	152	39223	424	2452	10715	235	14	84769	0.57	0.23	97.3
07/20/81	0.10	2323	0	3075	0	345	1457	0	0	7200	0.26	0.07	98.7
	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals	Rv	Total Losses (in.)	Calculated CN*
Summary for All Events													
Minimum:	0.05	151.0	0	0	0	130.0	482.0	0	0	762.2	0.06	0.05	95.4
Maximum:	1.32	85211	861.0	115294	2405								
Average:	0.38	23962	175.7	29928	490.6								
Total:	3.82	215655	1581	269350	4415	1							

Total Area, with Drainage and Outfall Controls - Runoff Volume (cu. ft)

Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Rv	Total Losses (in)				
07/04/81	0.05	762.2	762.2	0	0.00					
07/11/81	0.50	76709	76709	0	0.00					
07/12/81	0.14	10261	10261	0	0.00					
07/12/81	0.86	151252	151252	41654	0.17					
07/13/81	1.32	243780	243780	281625	0.77					
07/14/81	0.12	8124	8124	14001	0.42					
07/15/81	0.07	1688	1688	27341	1.41					
07/18/81	0.12	6353	6353	6515	0.20					
07/20/81	0.54	84769	84769	31546	0.21					
07/20/81	0.10	7200	7200	11108	0.40					
Summary for All Events *Note: NRCS does not recommend using CN method for rains < (
	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Rv	Total Losses (in)	Calculated CN*	Peak Reduction Factor	Flushing Ratio	Pre-Dev. Runoff Volume (cf)
Number of Rains:		9	9	9						
Minimum:	0.05	762.2	762.2	0	0.00	-0.03	N/A	0.35	0.01	
Maximum:	1.32	243780	243780	281625	1.41	0.71	100.2	1.00	2.52	
Average:	0.42	65655	65655	45977	0.39	0.23	96.7	0.88	0.60	
Total:	3.82	590898	590898	413790		2.33				

Below the land use output, the model summarizes the output for the total area, before and after the drainage system, and at the outfall. This output also includes a summary of the basic statistics for the total area.

Below the land use output, the model summarizes the output for the total area, before and after the drainage system, and at the outfall. This output also includes a summary of the basic statistics for the total area.

Output Option 1

Runoff Volume Tab - Outfall

The output also includes the

1. Land Use Runoff Coefficient (Rv),
2. Total Losses, and
3. SCS Curve Number for each event.

If there was a detention pond in the outfall, the output will also include:

1. Event data and summary statistics for the Peak Reduction Factor,
2. The pond Flushing Ratio, and
3. Note if the outlet structure has failed for each event.

Total Area, with Drainage and Outfall Controls - Runoff Volume (cf, in)												
Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Rv	Total Losses (in)	Calculated CN*	Peak Reduction Factor	Flushing Ratio	Det. Basin Out. Struct. Failed (Lu. #-src. area #)	Pre-Dev. Runoff Volume (cf)	
07/04/81	0.05	762.2	762.2	0	0.00	0.05	N/A	1.00	0.01			
07/11/81	0.50	76709	76709	0	0.00	0.50	N/A	1.00	0.79			
07/12/81	0.14	10261	10261	0	0.00	0.14	N/A	1.00	0.11			
07/12/81	0.86	151252	151252	41654	0.17	0.71	86.9	0.99	1.41			
07/13/81	1.32	243780	243780	281625	0.77	0.30	97.1	0.83	2.52	Outfall		
07/14/81	0.12	8124	8124	14001	0.42	0.07	99.0	0.89	0.08			
07/15/81	0.07	1688	1688	27341	1.41	-0.03	100.2	0.35	0.02			
07/18/81	0.12	6353	6353	6515	0.20	0.10	98.1	0.98	0.07			
07/20/81	0.54	84769	84769	31546	0.21	0.43	92.2	0.97	0.87			
07/20/81	0.10	7200	7200	11108	0.40	0.06	99.1	0.77	0.07			
Summary for All Events *Note: NRCS does not recommend using CN method for rains < 0.5 in. See 'PreDevelopment Areas and CN' Help for more info.												
	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Rv	Total Losses (in)	Calculated CN*	Peak Reduction Factor	Flushing Ratio		Pre-Dev. Runoff Volume (cf)	
Number of Rains:		9	9	9								
Minimum:	0.05	762.2	762.2	0	0.00	-0.03	N/A	0.35	0.01			
Maximum:	1.32	243780	243780	281625	1.41	0.71	100.2	1.00	2.52			
Average:	0.42	65655	65655	45977	0.39	0.23	96.7	0.88	0.60			
Total:	3.82	590898	590898	413790		2.33						

Output Option 1

Runoff Volume Source Area Percent Contribution Summary

Runoff Volume		Particulate Solids		Pollutants		Output Summary				
Runoff Volume (cu ft)		Source Area Runoff Volume Contribution								
Data File: LIwb Output Demo.DAT										
Rain File: MSN1981.RAN										
Date: 03-04-04 Time: 9:42:11 PM										
Site Description: SLU/CLAY-LIwb-Light Industrial wet detention biofilter										
Industrial - Source Area Percentage Contribution of Runoff Volume										
Start Date	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals
07/04/81	0.05	19.8	0.0	0.0	0.0	17.0	63.2	0.0	0.0	100.0
07/11/81	0.50	37.9	0.2	45.5	0.5	2.9	12.8	0.3	0.0	100.0
07/12/81	0.14	51.1	0.0	22.1	0.0	5.0	21.8	0.0	0.0	100.0
07/12/81	0.86	35.3	0.3	48.1	0.8	2.8	12.2	0.4	0.0	100.0
07/13/81	1.32	35.0	0.4	47.3	1.0	3.0	12.9	0.5	0.0	100.0
07/14/81	0.12	50.0	0.0	21.8	0.0	5.3	22.9	0.0	0.0	100.0
07/15/81	0.07	36.0	0.0	0.0	0.0	12.7	51.3	0.0	0.0	100.0
07/18/81	0.12	63.9	0.0	0.0	0.0	6.8	29.2	0.0	0.0	100.0
07/20/81	0.54	37.2	0.2	46.3	0.5	2.9	12.6	0.3	0.0	100.0
07/20/81	0.10	32.3	0.0	42.7	0.0	4.8	20.2	0.0	0.0	100.0
Summary for Runoff Producing Events										
	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals
Minimum:	0.05	19.8	0.2	21.8	0.5	2.8	12.2	0.3	0.0	100.0
Maximum:	1.32	63.9	0.4	48.1	1.0	17.0	63.2	0.5	0.0	100.0
Fl Wt Ave:	0.38	36.5								

The model also calculates the percentage contribution of runoff volume from each source area, for each land use.

The model also calculates the percentage contribution of runoff volume from each source area, for each land use.

Output Option 1

Particulate Solids Concentration Tab

Runoff Volume		Particulate Solids				Pollutants		Output Summary	
Concentration		Field				SA Yield Contribution			
Data File: Llwb Output Demo.DAT									
Rain File: MSN1981.RAN									
Date: 03-04-04 Time: 9:42:11 PM									
Site Description: SLU/CLAY-Llwb-Light Industrial wet detention biofilter									
Industrial Areas - Concentration of PARTICULATE SOLIDS (mg/L)									
Start Date	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Land Area	
07/04/81	0.05	30.00	-	-	-	404.2	512.5		
07/11/81	0.50	30.00	30.00	250.0	154.0	1667	1801		
07/12/81	0.14	30.00	-	250.0	-	999.0	1092		
07/12/81	0.86	30.00	30.00	250.0	154.0	976.5	1054		
07/13/81	1.32	30.00	30.00	250.0	154.0	553.1	599.3		
07/14/81	0.12	30.00	-	250.0	-	747.7	823.4		
07/15/81	0.07	30.00	-	-	-	391.4	458.0		
07/18/81	0.12	30.00	-	-	-	964.6	1062		
07/20/81	0.54	30.00	30.00	250.0	154.0	1563	1687		
07/20/81	0.10	30.00	-	250.0	-	744.3	832.2		
	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Land Area	
Summary for Runoff Producing Events									
Minimum:	0.05	30.00	30.00	250.0	154.0	391.4	458.0		
Maximum:	1.32	30.00	30.00	250.0	154.0	1667	1801		
FlWt Ave:	0.00	30.00	30.00	250.0	154.0	952.5	1034		
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)									
Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Catch basin Volume % Full	Total After Outfall Controls	Flow-wtd Min. Part. Size Controlled			
07/04/81	0.05	398.7	354.9	0	0	0			
07/11/81	0.50	405.2	378.9	10	0	0			
07/12/81	0.14	358.9	333.0	12	0	0			
07/12/81	0.86	289.1	270.3	26	19.10	2.267			
07/13/81	1.32	225.2	210.5	44	29.79	4.134			
07/14/81	0.12	297.8	276.8	44	8.203	1.393			
07/15/81	0.07	305.2	282.4	45	2.704	0.0042			

By selecting the Particulate Solids tab, you can view:

The Particulate Solids Concentration of each source area, by rainfall event, as well as,

The concentration of the drainage system and at the outfall, by rainfall event.

Output Option 1

Particulate Solids Yield Tab

Runoff Volume				Particulate Solids			Pollutants		Output Summary			
Concentration				Yield							SA Yield Contribution	
Data File: Llwb Output Demo.DAT												
Rain File: MSN1981.RAN												
Date: 03-04-04 Time: 9:42:11 PM												
Site Description: SLU/CLAY-Llwb-Light Industrial wet detention biofilter												
Industrial Areas - Yield of PARTICULATE SOLIDS (lbs)												
Start Date	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals		
07/04/81	0.05	0.2821	-	-	-	3.266	15.41	-	-	18.95		
07/11/81	0.50	54.39	0.2398	544.4	3.438							
07/12/81	0.14	9.808	-	35.35	-							
07/12/81	0.86	99.89	0.8230	1135	11.80							
07/13/81	1.32	159.5	1.612	1798	23.11							
07/14/81	0.12	7.600	-	27.61	-							
07/15/81	0.07	1.138	-	-	-							
07/18/81	0.12	7.600	-	-	-							
07/20/81	0.54	59.05	0.2843	611.7	4.077							
07/20/81	0.10	4.347	-	47.96	-							
	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals		
Summary for Runoff Producing Events												
Minimum:	0.05	0.2821	0.2398	27.61	3.438	3.266	15.41	2.805	0.1139	18.95		
Maximum:	1.32	159.5	1.612	1798	23.11	257.1	1213	18.86	0.7653	3424		
Fl Wt Ave:	0.00	104.3	1.153	1237	16.54	221.5	1049	13.50	0.5478	2666		
Total:	3.82	403.6	2.959	4200	42.42	1081	5101	34.62	1.405	10867		
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE SOLIDS (lbs)												
Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Catch basin Volume % Full	Total After Outfall Controls	Flow-wtd Min. Part. Size Controlled (microns)						
07/04/81	0.05	18.95	16.87	0	0	0						
07/11/81	0.50	1939	1813	10	0	0						
07/12/81	0.14	229.7	213.1	12	0	0						
07/12/81	0.86	2728	2551	26	49.64	2.267						
07/13/81	1.32	3424	3201	44	523.4	4.134						
07/14/81	0.12	159.5	140.2	44	3.164	1.200						

Select the “Yield” tab to view the Particulate Solids load in pounds.

Select the "Yield" tab to view the Particulate Solids load in pounds.

Output Option 1

Particulate Solids Yield Tab - Outfall

Runoff Volume			Particulate Solids				Pollutants		Output Summary			
Concentration				Yield					SA Yield Contribution			
Data File: Llwb Output Demo.DAT												
07/20/81	0.54	59.05	0.2843	611.7	4.077	239.1	1128	3.327	0.1350	2045		
07/20/81	0.10	4.347	-	47.96	-	16.03	75.64	-	-	144.0		
	Rain Total	Roofs 1	Roofs 2	Paved Parking/ Storage 1	Unpaved Parking/ Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals		
Summary for Runoff Producing Events												
Minimum:	0.05	0.2821	0.2398	27.61	3.438	3.266	15.41	2.805	0.1139	18.95		
Maximum:	1.32	159.5	1.612	1798	23.11	257.1	1213	18.86	0.7653	3424		
FlWt Ave:	0.00	104.3	1.153	1237	16.54	221.5	1049	13.50	0.5478	2666		
Total:	3.82	403.6	2.959	4200	42.42	1081	5101	34.62	1.405	10867		
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE SOLIDS (lbs)												
Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Catch basin Volume % Full	Total After Outfall Controls	Flow-wtd Min. Part. Size Controlled (microns)						
07/04/81	0.05	18.95	16.87	0	0	0						
07/11/81	0.50	1939	1813	10	0	0						
07/12/81	0.14	229.7	213.1	12	0	0						
07/12/81	0.86	2728	2551	26	49.64	2.267						
07/13/81	1.32	3424	3201	44	523.4	4.134						
07/14/81	0.12	150.9	140.3	44	7.164	1.393						
07/15/81	0.07	31.09	27.73	45	4.765	0.8842						
07/18/81	0.12	156.8	144.6	46	0.8732	0.5886						
07/20/81	0.54	2045	1912	56	45.03	2.085						
07/20/81	0.10	144.0	133.3	57	11.79	1.947						
Summary for Runoff Producing Events												
	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Catch basin Volume % Full	Total After Outfall Controls	Flow-wtd Min. Part. Size Controlled (microns)						
Minimum:	0.05	18.95	16.87	10.00	0.87	0.59						
Maximum:	1.32	3424	3201	57.00	523.40	4.13						
FlWt Ave:		2666	2492		365.5	3.368						
Total:	3.82	10867	10153		642.66							

Note: The Particulate Solids Yield summary at the outfall also includes the Flow-Weighted Minimum Particle Size (in microns) controlled by the outfall pond, if there was one.

Note: The Particulate Solids Yield summary at the outfall also includes the Flow-Weighted Minimum Particle Size (in microns) controlled by the outfall pond, if there was one.

Output Option 1

Particulate Solids Yield Source Area

Percent Contribution Summary

Runoff Volume		Particulate Solids				Pollutants		Output Summary			
Concentration				Yield				SA Yield Contribution			
Data File: LIwb Output Demo.DAT											
Rain File: MSN1981.RAN											
Date: 03-04-04 Time: 9:42:11 PM											
Site Description: SLU/CLAY-LIwb-Light Industrial wet detention biofilter											
Industrial - Source Area Percentage Contribution of Particulate Solids Yield											
Start Date	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals	
07/04/81	0.05	1.5	0.0	0.0	0.0	17.2	81.3	0.0	0.0	100.0	
07/11/81	0.50	2.8	0.0	28.1	0.2	12.0	56.7	0.1	0.0	100.0	
07/12/81	0.14	4.3	0.0	15.4	0.0	14.1	66.3	0.0	0.0	100.0	
07/12/81	0.86	3.7	0.0	41.6	0.4	9.4	44.5	0.4	0.0	100.0	
07/13/81	1.32	4.7	0.0	52.5	0.7	7.3	34.3	0.6	0.0	100.0	
07/14/81	0.12	5.0	0.0	18.3	0.0	13.4	63.3	0.0	0.0	100.0	
07/15/81	0.07	3.7	0.0	0.0	0.0	16.8	79.5	0.0	0.0	100.0	
07/18/81	0.12	4.8	0.0	0.0	0.0	16.6	78.5	0.0	0.0	100.0	
07/20/81	0.54	2.9	0.0	29.9	0.2	11.7	55.1	0.2	0.0	100.0	
07/20/81	0.10	3.0	0.0	33.3	0.0	11.1	52.5	0.0	0.0	100.0	
Summary for Runoff Producing Events											
	Rain Total	Roofs 1	Roofs 2	Paved Parking/Storage 1	Unpaved Parking/Storage 1	Street Area 1	Street Area 2	Large Landscaped Area 1	Other Part Cnctd Imp Area	Land Use Totals	
Minimum:	0.05	1.5	0.0	15.4	0.2	7.3	34.3	0.1	0.0	100.0	
Maximum:	1.32	5.0	0.0	52.5	0.7	17.2	81.3	0.6	0.0	100.0	
Fl Wt Ave:	0.38	3.7	0.0	38.7	0.4	9.9	46.9	0.3	0.0	100.0	

The model also calculates the percentage contribution of particulate solids from each source area, for each land use.

The model also calculates the percentage contribution of particulate solids from each source area, for each land use.

Output Options 2-4

WinSLAMM Model Output

File View

- 1. Source Areas by Land Use for Each Rain - Complete Printout (Default: Option)
- 2. Source Area Totals and Outfall Summaries
- ✓ 3. Outfall Data Only for Each Rain
- 4. Outfall Summaries Only

Date: 12-18-06 Time: 8:11:20 PM
Site Description: 2 acre roof. biofilter test

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (r

Start Date	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Catch basin Volume % Full	Upflow Filter Volume % Full	Total After Outfall Controls
01/01/81	0.03	28.19	28.19	0	0	28.19
01/06/81	0.06	37.00	37.00	0	0	37.00
01/06/81	0.01	9.398	9.398	0	0	9.398
01/15/81	0.01	9.398	9.398	0	0	9.398
01/31/81	0.11	37.00	37.00	0	0	37.00
02/05/81	0.05	37.00	37.00	0	0	37.00
02/06/81	0.06	37.00	37.00	0	0	37.00
02/08/81	0.01	9.398	9.398	0	0	9.398
02/09/81	0.01	9.398	9.398	0	0	9.398
02/10/81	0.38	37.00	37.00	0	0	37.00
02/21/81	1.58	37.00	37.00	0	0	37.00
02/23/81	0.06	37.00	37.00	0	0	37.00
02/27/81	0.24	37.00	37.00	0	0	37.00
03/10/81	0.08	37.00	37.00	0	0	37.00
03/25/81	0.07	37.00	37.00	0	0	37.00
03/29/81	0.05	37.00	37.00	0	0	37.00
03/29/81	0.06	37.00	37.00	0	0	37.00
03/29/81	0.07	37.00	37.00	0	0	37.00
04/03/81	0.02	18.80	18.80	0	0	18.80
04/03/81	0.26	37.00	37.00	0	0	37.00
04/07/81	0.71	37.00	37.00	0	0	37.00
04/08/81	0.41	37.00	37.00	0	0	37.00

Output Options 2, 3, and 4 provide the same information as Output Option 1, however it is summarized by the category selected.

Output Options 1, 2, 3, or 4 can be selected at any time while viewing the output by selecting "View/Output Option".

Output Option 5

One Line per Event Summary

Event Number	Rain Start Date	Rain Start Time	Julian Start Date & Time	Rain Duration (hrs)	Rain Interevent Period(days)	Runoff Duration (hrs)	Rain Depth (in)	Runoff Volume (cf)	R sub v
52	07/04/81	13:00	10,777.54	1.99	6.92	2.39	0.05	0	0.00
53	07/11/81	13:00	10,784.54	1.99	0.42	2.39	0.50	0	0.00
54	07/12/81	01:00	10,785.04	2.99	0.50	3.59	0.14	0	0.00
55	07/12/81	16:00	10,785.67	0.99	0.33	1.19	0.86	41,654	0.17
56	07/13/81	01:00	10,786.04	1.99	1.46	2.39	1.32	281,625	0.77
57	07/14/81	14:00	10,787.58	2.01	0.46	2.41	0.12	14,001	0.42
58	07/15/81	03:00	10,788.12	4.00	3.25	4.80	0.07	27,341	1.41
59	07/18/81	13:00	10,791.54	1.99	1.50	2.39	0.12	6,515	0.20
60	07/20/81	03:00	10,793.12	2.00	0.37	2.40	0.54	31,546	0.21
61	07/20/81	14:00	10,793.58	2.01	0.00	2.41	0.10	11,108	0.40
Summary Statistics				Rain Duration (hrs)	Rain Interevent Period(days)	Runoff Duration (hrs)	Rain Depth (in)	Runoff Volume (cf)	R sub v
Number of Events				9	9	7	9	7	7
Total				21.97	15.21	17.99	3.820	413791	n/a
Equivalent Annual Total				499.9	346.1	409.4	86.92	9.415E+06	n/a
Minimum				0.9922	0	1.191	1.000E+07	6515	0.1749
Maximum				4.000	6.917	4.800	1.320	281625	1.410
Average of All Events				2.197	1.521	2.570	0.3820	59113	0.5121
Median				1.992	0.4583	2.400	0.1200	27341	0.4010
Std. Deviation				0.7897	2.122	1.082	0.4256	98904	0.4469
COV				0.3595	1.395	0.4209	1.114	1.673	0.8727
First Rain Date: 07/04/81									
Last Rain Date: 07/20/81									
Total :									


Output Option 5 provides a summary of the outfall results. The results are summarized based on the output option selected.

Scroll to the right to see the balance of the output.


Output Option 5

One Line per Event Summary - Continued

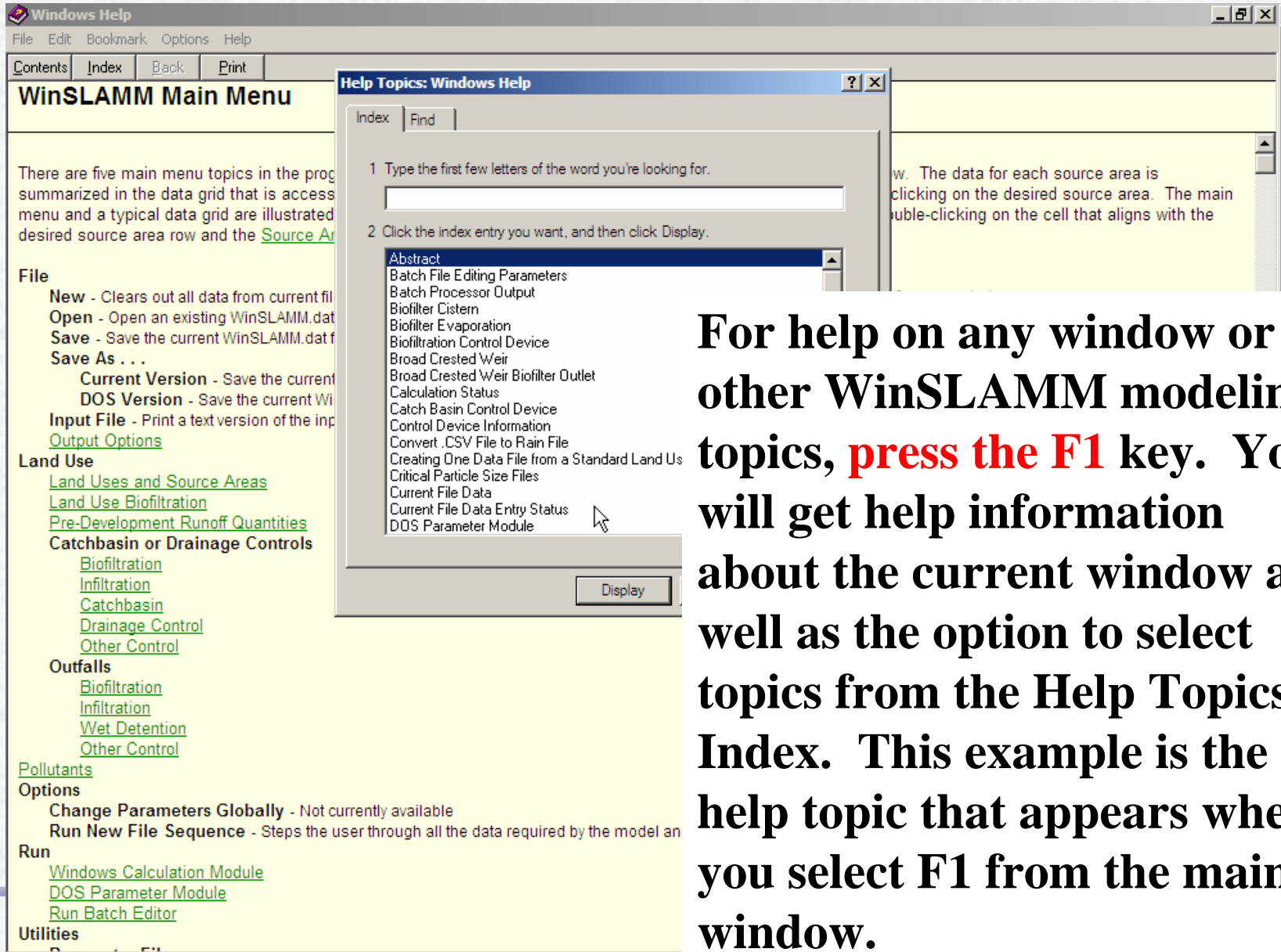
Runoff Duration (hrs)	Rain Depth (in)	Runoff Volume (cf)	R sub v	Average Flow (cfs)	Peak Flow (cfs)	Suspended Solids Conc(mg/L)	Suspended Solids Mass(lbs)	Pre-Develop. Runoff Volume (cf)
2.39	0.05	0	0.00	0.00	0.00	0	0	
2.39	0.50	0	0.00	0.00	0.00	0	0	
3.59	0.14	0	0.00	0.00	0.00	0	0	
1.19	0.86	41,654	0.17	368.30	1.68	19	50	
2.39	1.32	281,625	0.77	9.91	18.60	30	523	
2.41	0.12	14,001	0.42	0.31	0.39	8	7	
4.80	0.07	27,341	1.41	0.10	0.24	3	5	
2.39	0.12	6,515	0.20	0.05	0.07	2	1	
2.40	0.54	31,546	0.21	0.83	1.19	23	45	
2.41	0.10	11,108	0.40	0.67	0.72	17	12	
Runoff Duration (hrs)	Rain Depth (in)	Runoff Volume (cf)	R sub v	Average Flow (cfs)	Peak Flow (cfs)	Suspended Solids Conc(mg/L)	Suspended Solids Mass(lbs)	Pre-Develop. Runoff Volume (cf)
7	9	7	7	7	7	7	7	Number of Events
17.99	3.820	413791	n/a	n/a	n/a	n/a	642.6	Total
409.4	86.92	9.415E+06	n/a	n/a	n/a	n/a	14623	Equivalent Annual Total
1.191	1.000E+07	6515	0.1749	0.04983	0.06632	2.149	0.8732	Minimum
4.800	1.320	281625	1.410	368.3	18.60	29.79	523.4	Maximum
2.570	0.3820	59113	0.5121	54.31	3.268	14.56	91.81	Average of All Events
2.400	0.1200	27341	0.4010	0.6691	0.7176	17.02	11.79	Median
1.082	0.4256	98904	0.4469	138.5	6.782	10.50	191.3	Std. Deviation
0.4209	1.114	1.673	0.8727	2.550	2.075	0.7207	2.084	COV



For Additional
Information See . . .



The Context-Sensitive Help in the Program



For help on any window or on other WinSLAMM modeling topics, **press the F1 key. You will get help information about the current window as well as the option to select topics from the Help Topics Index. This example is the help topic that appears when you select F1 from the main window.**

Model Documentation Included on the CD

- WinSLAMM Introduction and Basics
- Integration of Water Quality and Design Objectives
- Sources of Stormwater Pollutants
- Stormwater Quality Controls in WinSLAMM
- Using SLAMM
- Biofiltration Example
- Detention Pond Design
- National Stormwater Quality Database (NSQD, version 1.1)