



# WinSLAMM v 10.2

## User's Guide

Input/Output

# Printing the Input

# Printing the Input

WinSLAMM v 10 Data File: [C:\WinSLAMM Files\Example Files\No Management Condition.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

- New Project File...
- Open Project File...
- Save Project File
- Save Project File As...
- Import DAT File
- Print Input Data**
- Output Options
- C:\WinSLAMM Files\Example Files\No Management Condition.mdb
- C:\Twin Falls\WinSLAMM\Twin Falls Entire Site.mdb
- L:\work\projects\60274417\400\_Technical\WinSLAMM\Twin Falls Entire Site.mdb
- L:\group\WaterResources\Presentations and Papers\WinSLAMM\2012 StormCon Denver\Model Files\Retrofit Example With Management Test.mdb
- Close Project File
- Exit

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Commercial	Commercial 1	7.290

CP# Control Practice Type Control Practice Name or Location

Current File Data Entered Total Area = 7.290 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/01/55 End Date: 12/30/55

Outfall

OUT

To Print the Input data, select "File", then "Print Input Data"

# Printing the Input

WinSLAMM v10 Data File: [C:\Users\cburger\Documents\Projects\Janesville\SWMP Update\Proposed SCMs\Rockport Pond.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

RES INS COM IND CU FRE GS CB WP BF PP HD OD FS

**Control**  
Rockport Pond

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Other Urban	GB0567GRNBLT	7.535
2	Residential	GB0567HDRNA	0.634
3	Residential	GB0567LDR	7.916
4	Residential	GB0567MDRNA	181.557
5	Commercial	GB0567OFFPARK	1.335
6	Other Urban	GB0567OPEN	10.146
7	Residential	DUPLEX	48.292
8	Other Urban	GRNBLT	0.782
9	Residential	HDRNA	23.158
10	Residential	HDRWA	11.832

CP #	Control Practice Type	Control Practice Name or Location
1	Wet Detention Pond	Rockport Pond
2	Wet Detention Pond	WP28
3	Other Device	DS Other Device # 1
4	Grass Swales	DS Grass Swales # 1
5	Street Cleaning	SA Device, LU# 1, SA# 37
6	Street Cleaning	SA Device, LU# 1, SA# 38
7	Street Cleaning	SA Device, LU# 2, SA# 37
8	Street Cleaning	SA Device, LU# 2, SA# 38
9	Street Cleaning	SA Device, LU# 3, SA# 37
10	Street Cleaning	SA Device, LU# 3, SA# 38

Print Input Data

☒ Print Input Data to File

☐ Print Input Data to Printer

Default Printer: Bluebeam PDF

☐ Print Drainage System Image

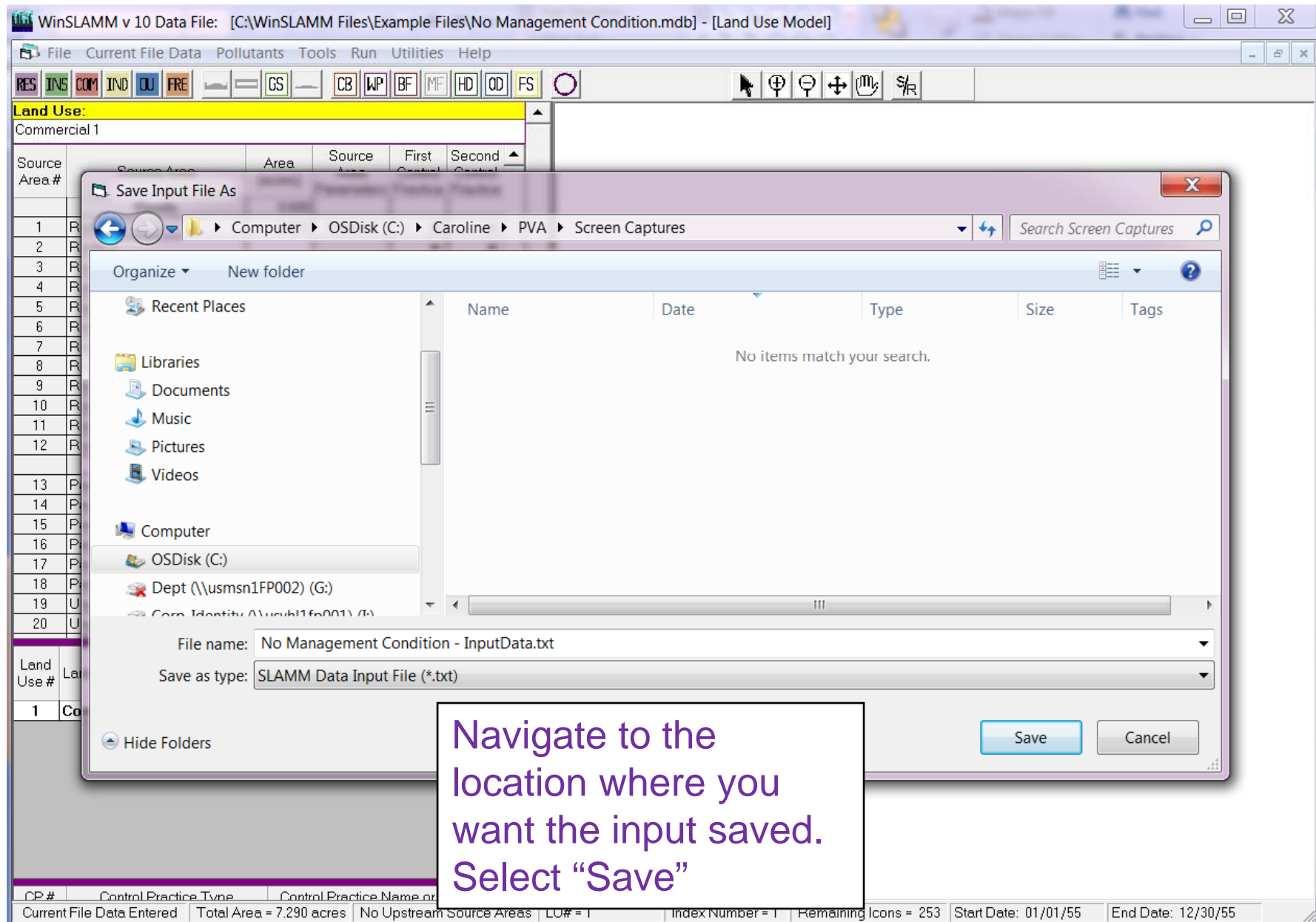
Cancel Print

Current File Data Entered: Total Area = 1179.299 acres | Unstream Drainage Area = 1179.300 acres | CP# = 1 | Index Number = 1 | Remaining Icons = 250 | Start Date = 01/02/80 | End Date = 01/01/85 | X = 180 | Y = 6060

Select the desired options and then select "Print"

At this time the Drainage System Image cannot be printed directly from the program. To print the Drainage System image, use a separate program that can create screen captures.

# Printing the Input



# Printing the Input

WinSLAMM v 10 Data File: [C:\WinSLAMM Files\Example Files\No Management Condition.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Commercial 1

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	-	-
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	-	-
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				
18	Paved Parking 6				
19	Unpaved Parking 1				
20	Unpaved Parking 2				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1	Commercial	Commercial 1	
---	------------	--------------	--

CP# Control Practice Type Control Practice Name or Location

Current File Data Entered Total Area = 7,290 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/01/55 End Date: 12/30/55

Print Input Data

Print Input Data to File

Input File Printed

Printed Data Input File C:\Caroline\PVA\Screen Captures\No Management Condition - InputData.txt

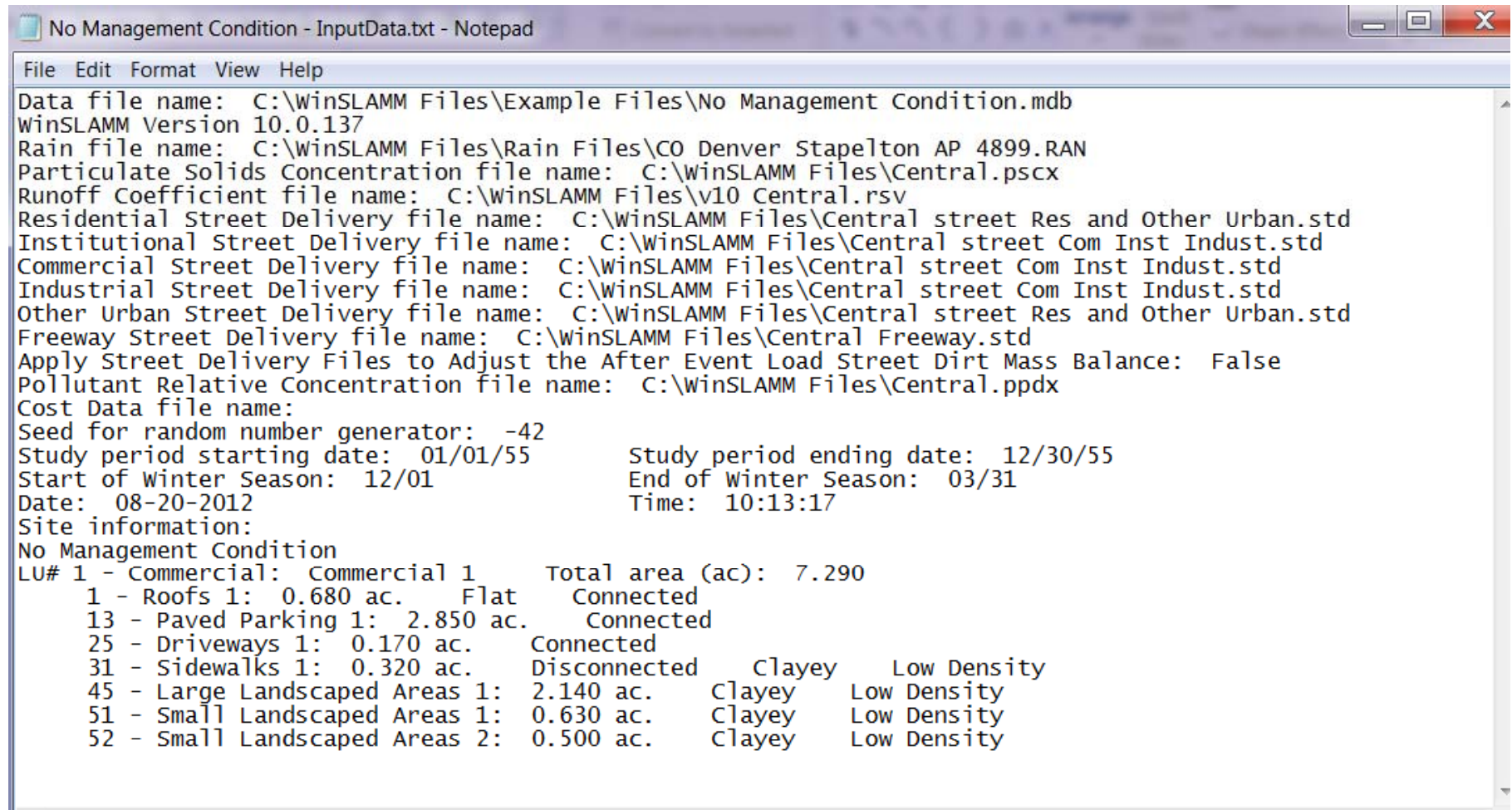
OK

Commercial 1

Outfall

A message will pop up saying where the file was saved.

# Printing the Input



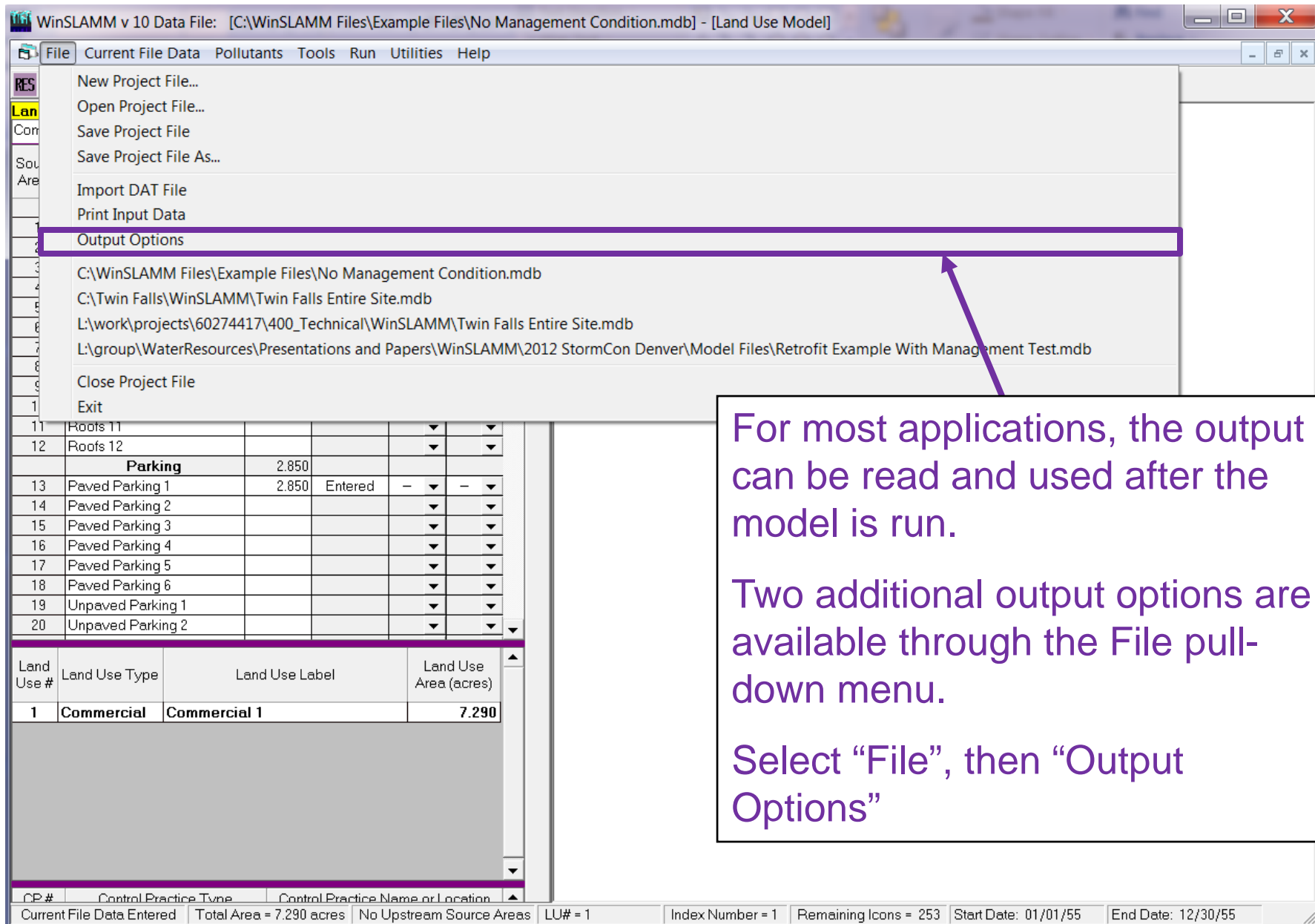
```
File Edit Format View Help
Data file name: C:\WinSLAMM Files\Example Files\No Management Condition.mdb
WinSLAMM Version 10.0.137
Rain file name: C:\WinSLAMM Files\Rain Files\CO Denver Stapelton AP 4899.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\Central.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\v10 Central.rsv
Residential Street Delivery file name: C:\WinSLAMM Files\Central street Res and Other Urban.std
Institutional Street Delivery file name: C:\WinSLAMM Files\Central street Com Inst Indust.std
Commercial Street Delivery file name: C:\WinSLAMM Files\Central street Com Inst Indust.std
Industrial Street Delivery file name: C:\WinSLAMM Files\Central street Com Inst Indust.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\Central street Res and Other Urban.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Central Freeway.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\Central.ppdex
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/55 Study period ending date: 12/30/55
Start of Winter Season: 12/01 End of Winter Season: 03/31
Date: 08-20-2012 Time: 10:13:17
Site information:
No Management Condition
LU# 1 - Commercial: Commercial 1 Total area (ac): 7.290
1 - Roofs 1: 0.680 ac. Flat Connected
13 - Paved Parking 1: 2.850 ac. Connected
25 - Driveways 1: 0.170 ac. Connected
31 - Sidewalks 1: 0.320 ac. Disconnected Clayey Low Density
45 - Large Landscaped Areas 1: 2.140 ac. Clayey Low Density
51 - Small Landscaped Areas 1: 0.630 ac. Clayey Low Density
52 - Small Landscaped Areas 2: 0.500 ac. Clayey Low Density
```

The input file will have "...InputData.txt" in the file name. It is a text file and can be opened in any text file editor. It is easiest to view using 'Courier' or another fixed length font. It can then be printed or saved as a \*.pdf for inclusion in reports.

# Printing and Reading the Output Summary



# File/Output Options



WinSLAMM v 10 Data File: [C:\WinSLAMM Files\Example Files\No Management Condition.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

New Project File...  
Open Project File...  
Save Project File  
Save Project File As...  
Import DAT File  
Print Input Data  
**Output Options**  
C:\WinSLAMM Files\Example Files\No Management Condition.mdb  
C:\Twin Falls\WinSLAMM\Twin Falls Entire Site.mdb  
L:\work\projects\60274417\400\_Technical\WinSLAMM\Twin Falls Entire Site.mdb  
L:\group\WaterResources\Presentations and Papers\WinSLAMM\2012 StormCon Denver\Model Files\Retrofit Example With Management Test.mdb  
Close Project File  
Exit

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Commercial	Commercial 1	7.290

CP # Control Practice Type Control Practice Name or Location

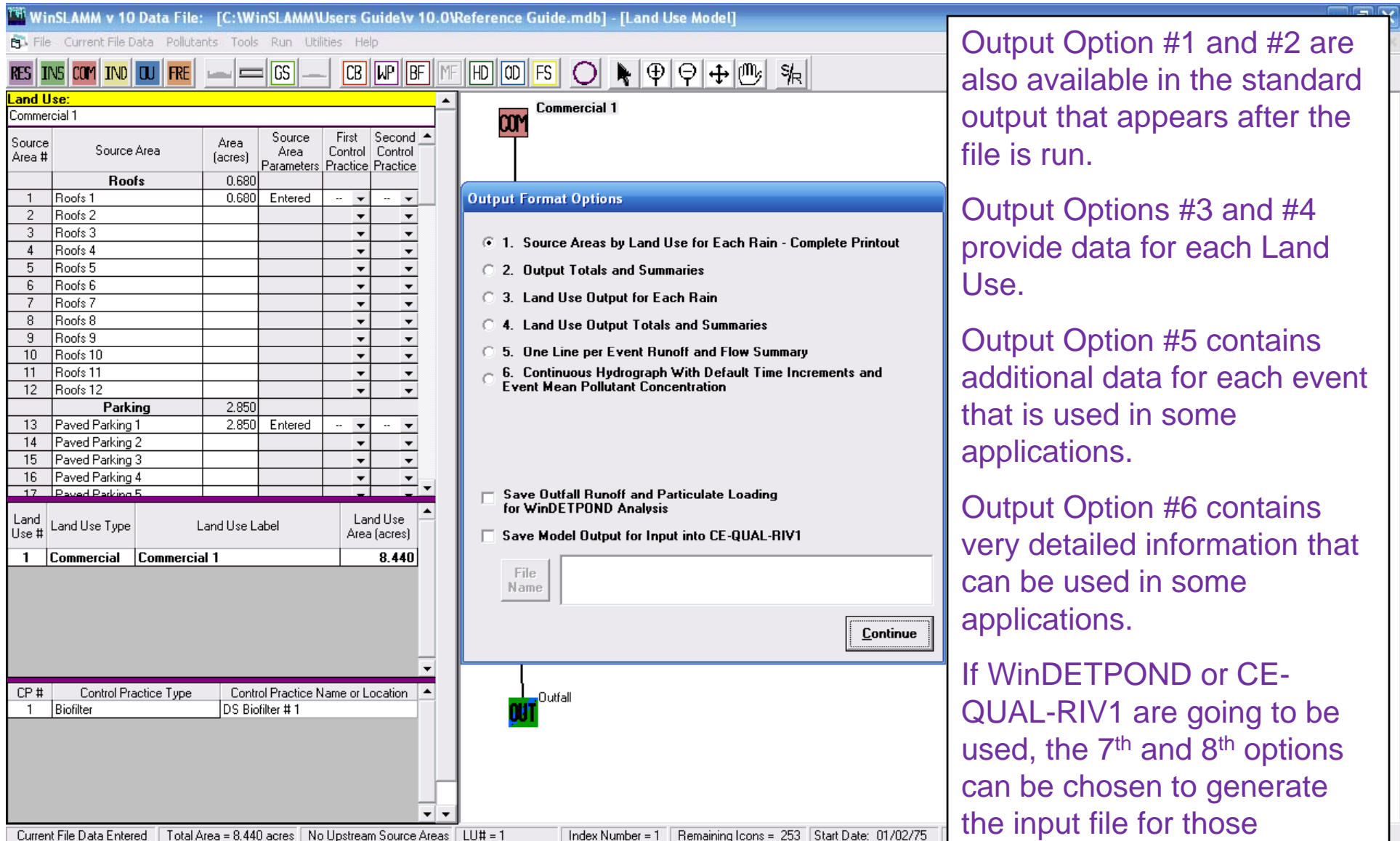
Current File Data Entered Total Area = 7.290 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/01/55 End Date: 12/30/55

For most applications, the output can be read and used after the model is run.

Two additional output options are available through the File pull-down menu.

Select "File", then "Output Options"

# File/Output Options



WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Commercial 1

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2	0.680			
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1	Commercial	Commercial 1	8.440
---	------------	--------------	-------

CP # Control Practice Type Control Practice Name or Location

1	Biofilter	DS Biofilter # 1
---	-----------	------------------

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75

**Output Format Options**

- ☒ 1. Source Areas by Land Use for Each Rain - Complete Printout
- ☐ 2. Output Totals and Summaries
- ☐ 3. Land Use Output for Each Rain
- ☐ 4. Land Use Output Totals and Summaries
- ☐ 5. One Line per Event Runoff and Flow Summary
- ☐ 6. Continuous Hydrograph With Default Time Increments and Event Mean Pollutant Concentration

☐ Save Outfall Runoff and Particulate Loading for WinDETPOND Analysis

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

File Name

Continue

Outfall

Output Option #1 and #2 are also available in the standard output that appears after the file is run.

Output Options #3 and #4 provide data for each Land Use.

Output Option #5 contains additional data for each event that is used in some applications.

Output Option #6 contains very detailed information that can be used in some applications.

If WinDETPOND or CE-QUAL-RIV1 are going to be used, the 7<sup>th</sup> and 8<sup>th</sup> options can be chosen to generate the input file for those models.

# Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	0.680			
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
13	Paved				
14	Paved				
15	Paved				
16	Paved				
17	Paved				

Land Use # Land Use Area (acres)

1	Commercial	Commercial 1	8.440
---	------------	--------------	-------

CP # Control Practice Type Control Practice Name or Location

1	Biofilter	DS Biofilter # 1
---	-----------	------------------

Land Uses Junctions Control Practices Outfall **Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

### 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
of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %

Print File Output: Annualized Total After Outfall Controls 159134 Years in Model Run: 0.99 1019

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Print Output Summary to Text File

Total Area Modeled (ac) 8.440

### Total Control Practice Costs

Capital Cost	\$ 486065
Land Cost	\$ 19399
Annual Maintenance Cost	\$ 28991
Present Value of All Costs	\$ 866768
Annualized Value of All Costs	\$ 69551

Perform Outfall Flow Duration Curve Calculations

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

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.38	Poor
With Controls	0.17	Fair

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010

This is the Output that appears after each model run. The first tab shows the Summary of the Output.

# Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1

**Land Uses** **Junctions** **Control Practices** **Outfall** **Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %

Current File Output: Annualized Total After Outfall Controls 159134 Years in Model Run: 0.99 1019

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Print Output Summary Text Total Area Modeled (ac)

Annual Maintenance Cost \$ 28991

Present Value of All Costs \$ 866768

Annualized Value of All Costs \$ 69551

Perform Outfall Flow Duration Curve Calculations

Without Controls Calculated Rv 0.38 Stream Classification Poor

With Controls Calculated Rv 0.17 Stream Classification Fair

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010

The first row of data summarizes the runoff volume and particulate solids before the control practices are applied.

# Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Commercial 1</b>					
	<b>Roofs</b>	0.680			
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
	<b>Parking</b>	2.850			
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1

**Land Uses** **Junctions** **Control Practices** **Outfall** **Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
<b>Outfall Total with Controls</b>	<b>157390</b>	<b>53.49 %</b>	<b>0.17</b>	<b>102.6</b>	<b>1008</b>	<b>71.31 %</b>
Current File Output: Annualized Total After Outfall Controls	159134		Years in Model Run: 0.99		1019	

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Print Output Summary to Text Total Area Modeled (ac)

Annual Maintenance Cost \$ 28991

Present Value of All Costs \$ 866768

Annualized Value of All Costs \$ 69551

Perform Outfall Flow Duration Curve Calculations

Without Controls Calculated Rv 0.38 Urban Stream Classification Poor

With Controls Calculated Rv 0.17 Urban Stream Classification Fair

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010

The second row of data summarizes the runoff volume and particulate solids after all control practices are applied.

# Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1

CP # 1

**Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %
Current File Output: Annualized Total After Outfall Controls	159134				1019	

Years in Model Run: 0.99

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Print Output Summary Text Total Area Modeled (ac)

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010

The third row of data summarizes the runoff volume and particulate solids after all control practices are applied on an annual basis. The program divides the data in the 2<sup>nd</sup> row by the Years in the Model run to determine the annual runoff volume and particulate solids.

# Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1	Commercial	Commercial 1	8.440
---	------------	--------------	-------

CP # 1

Land Uses Junctions Control Practices Outfall **Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %
Current File Output: Annualized Total After Outfall Controls	159134					
Years in Model Run:			0.99		1019	

Print Output Summary to Text File

Total Area Modeled (ac) 8.440

Total Control Practice Costs

Receiving Water Impacts Due To Stormwater Runoff

**The Pollutant Grid summarizes the concentration, yield and percent reduction (if Control Devices are being modeled) for each pollutant.**

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010

# Printing the Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
13	Paved Parking 1				
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1	Commercial	Commercial 1	8.440
---	------------	--------------	-------

CP # Control Practice Type Control Practice Name or Location

1	Biofilter	DS Biofilter # 1
---	-----------	------------------

Land Uses Junctions Control Practices Outfall **Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

**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
0.38			166.3	3514	
0.17			102.6	1008	71.31 %
0.99				1019	

As with the input, the Output Summary can be printed to a text file. Select "Print Output Summary to Text File."

Print Output Summary to Text File

Total Area Modeled (ac) 8.440

**Total Control Practice Costs**

Capital Cost	\$ 486065
Land Cost	\$ 19399
Annual Maintenance Cost	\$ 28991
Present Value of All Costs	\$ 866768
Annualized Value of All Costs	\$ 69551

Perform Outfall Flow Duration Curve Calculations

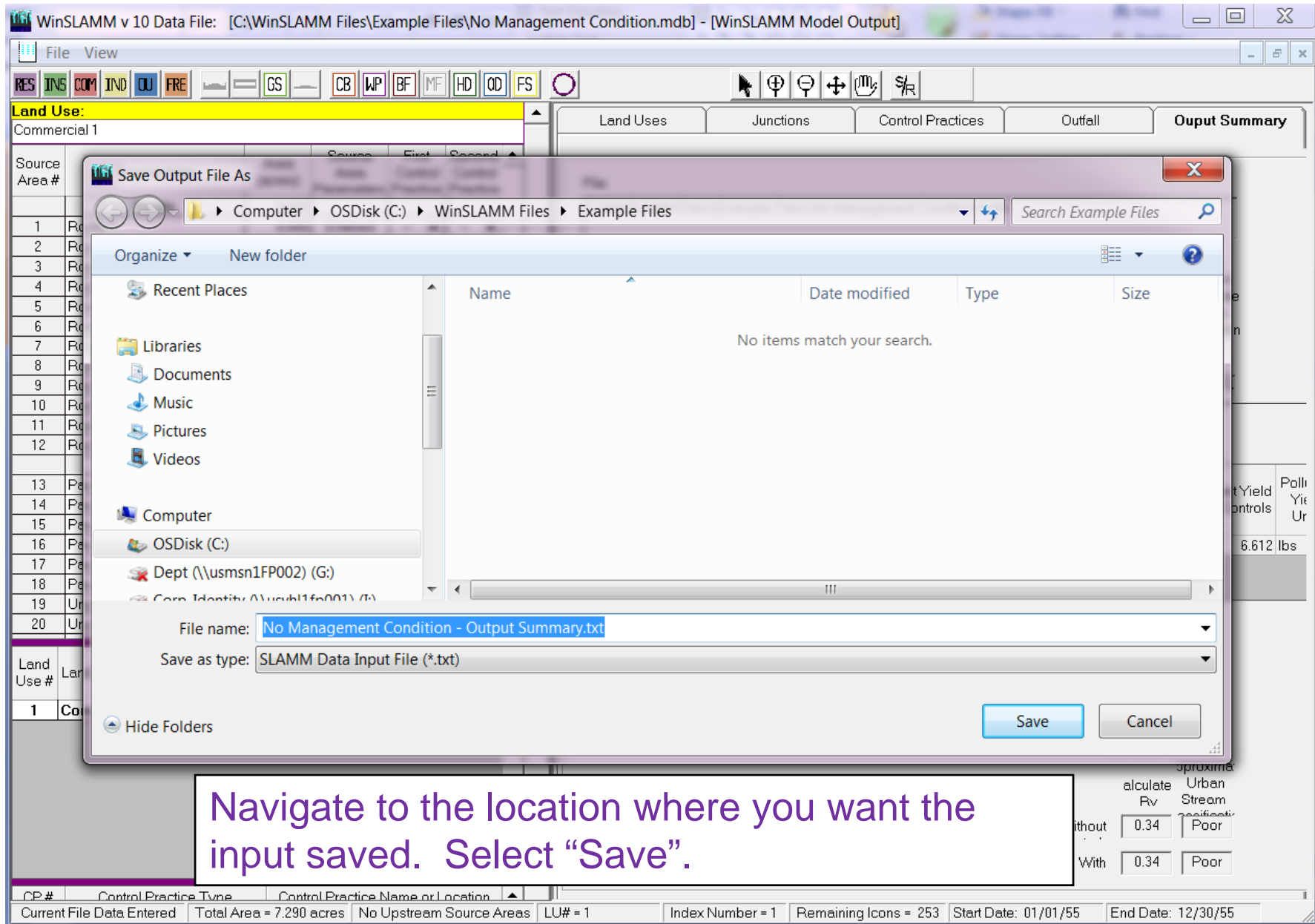
**Receiving Water Impacts Due To Stormwater Runoff**  
(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.38	Poor
With Controls	0.17	Fair

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010



# Printing the Output Summary



# Printing the Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMMUsers Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Commercial 1

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1	Commercial	Commercial 1	8.440
---	------------	--------------	-------

CP # Control Practice Type Control Practice Name or Location

1	Biofilter	DS Biofilter # 1
---	-----------	------------------

Current File Data Entered Total Area = 8.440 acres No Upstream S

Land Uses Junctions Control Practices Outfall **Output Summary**

File Name: C:\WinSLAMMUsers Guide\10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %
Current File Output: Annualized Total After Outfall Controls	159134				1019	

Years in Model Run: 0.99

**Output File Printed**

Printed Summary Output File C:\WinSLAMMUsers Guide\10.0\Reference Guide - Output Summary.txt

OK

Print Output Summary to Text File

Total Area Modeled (ac) 8.440

**Total Control Practice Costs**

Capital Cost	\$ 486065
Land Cost	\$ 19399
Annual Maintenance Cost	\$ 28991
Present Value of All Costs	\$ 866768
Annualized Value of All Costs	\$ 69551

Perform Outfall Flow Duration Curve Calculations

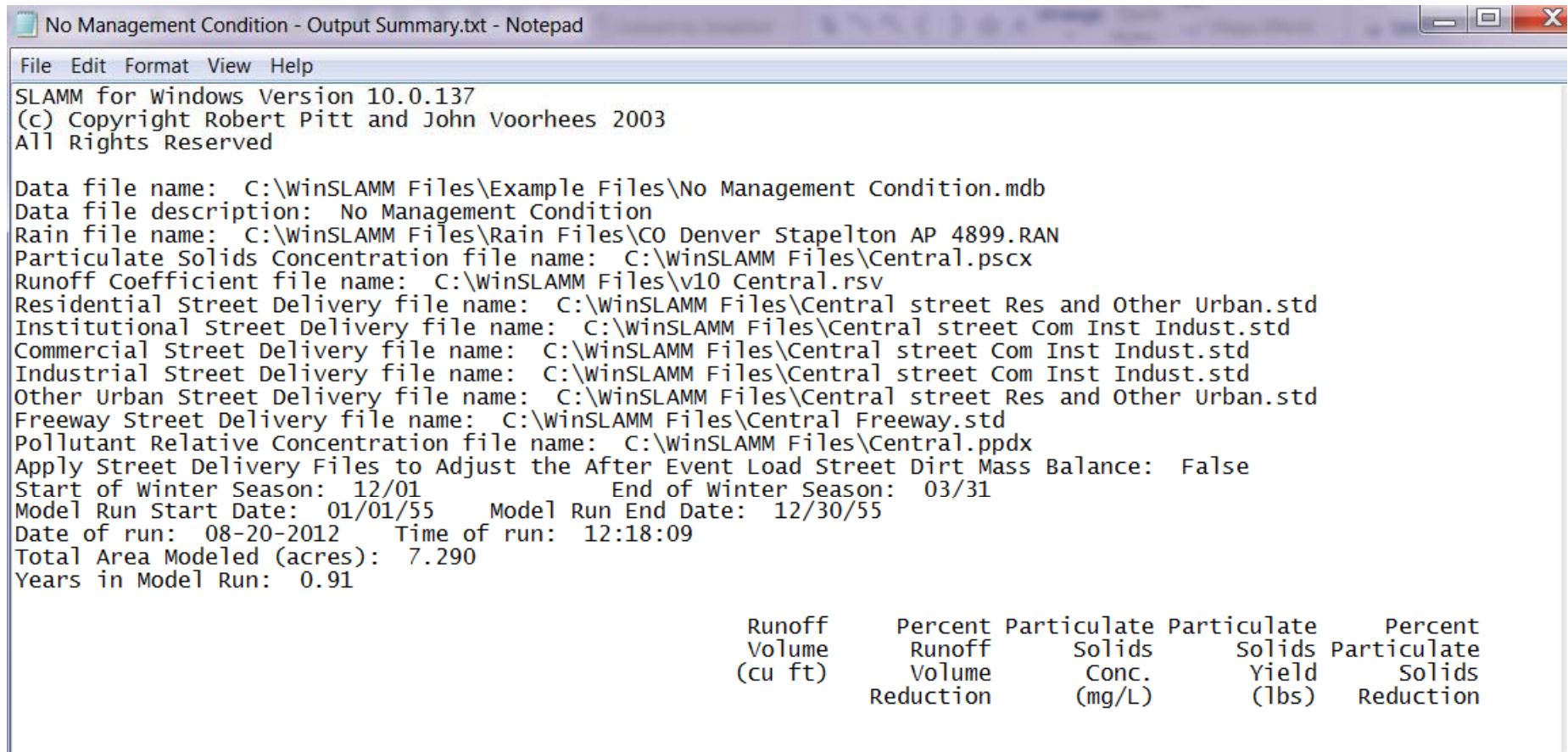
**Receiving Water Impacts Due To Stormwater Runoff** (CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.38	Poor
With Controls	0.17	Fair

End Date: 12/29/75 X = 6165 Y = 2010

A message will pop up saying where the file was saved.

# Printing the Output Summary



```
No Management Condition - Output Summary.txt - Notepad
File Edit Format View Help
SLAMM for Windows Version 10.0.137
(C) Copyright Robert Pitt and John Voorhees 2003
All Rights Reserved

Data file name: C:\WinSLAMM Files\Example Files\No Management Condition.mdb
Data file description: No Management Condition
Rain file name: C:\WinSLAMM Files\Rain Files\CO Denver Stapelton AP 4899.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\Central.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\v10 Central.rsv
Residential Street Delivery file name: C:\WinSLAMM Files\Central street Res and Other Urban.std
Institutional Street Delivery file name: C:\WinSLAMM Files\Central street Com Inst Indust.std
Commercial Street Delivery file name: C:\WinSLAMM Files\Central street Com Inst Indust.std
Industrial Street Delivery file name: C:\WinSLAMM Files\Central street Com Inst Indust.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\Central street Res and Other Urban.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Central Freeway.std
Pollutant Relative Concentration file name: C:\WinSLAMM Files\Central.ppdx
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Start of Winter Season: 12/01 End of Winter Season: 03/31
Model Run Start Date: 01/01/55 Model Run End Date: 12/30/55
Date of run: 08-20-2012 Time of run: 12:18:09
Total Area Modeled (acres): 7.290
Years in Model Run: 0.91

Runoff      Percent Particulate Particulate      Percent
Volume      Runoff      Solids      Solids      Particulate
(cu ft)     Volume      Conc.      Yield      Solids
              Reduction  (mg/L)     (lbs)     Reduction
```

The output summary file will have "...Output Summary.txt" in the file name. It is a text file and can be opened in any text file editor. It is easiest to view using 'Courier' or another fixed length font. It can then be printed or saved as a \*.pdf for inclusion in reports.

# Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1	Commercial	Commercial 1	8.440
---	------------	--------------	-------

CP # Control Practice Type Control Practice Name or Location

1	Biofilter	DS Biofilter # 1
---	-----------	------------------

Land Uses Junctions Control Practices Outfall **Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %

Years in Model Run: 0.99 1019

Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
1.2109 mg/L	8.178	2.073 lbs		74.66 %
1.067 mg/L	36.09	10.48 lbs		70.96 %

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

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.38	Poor
With Controls	0.17	Fair

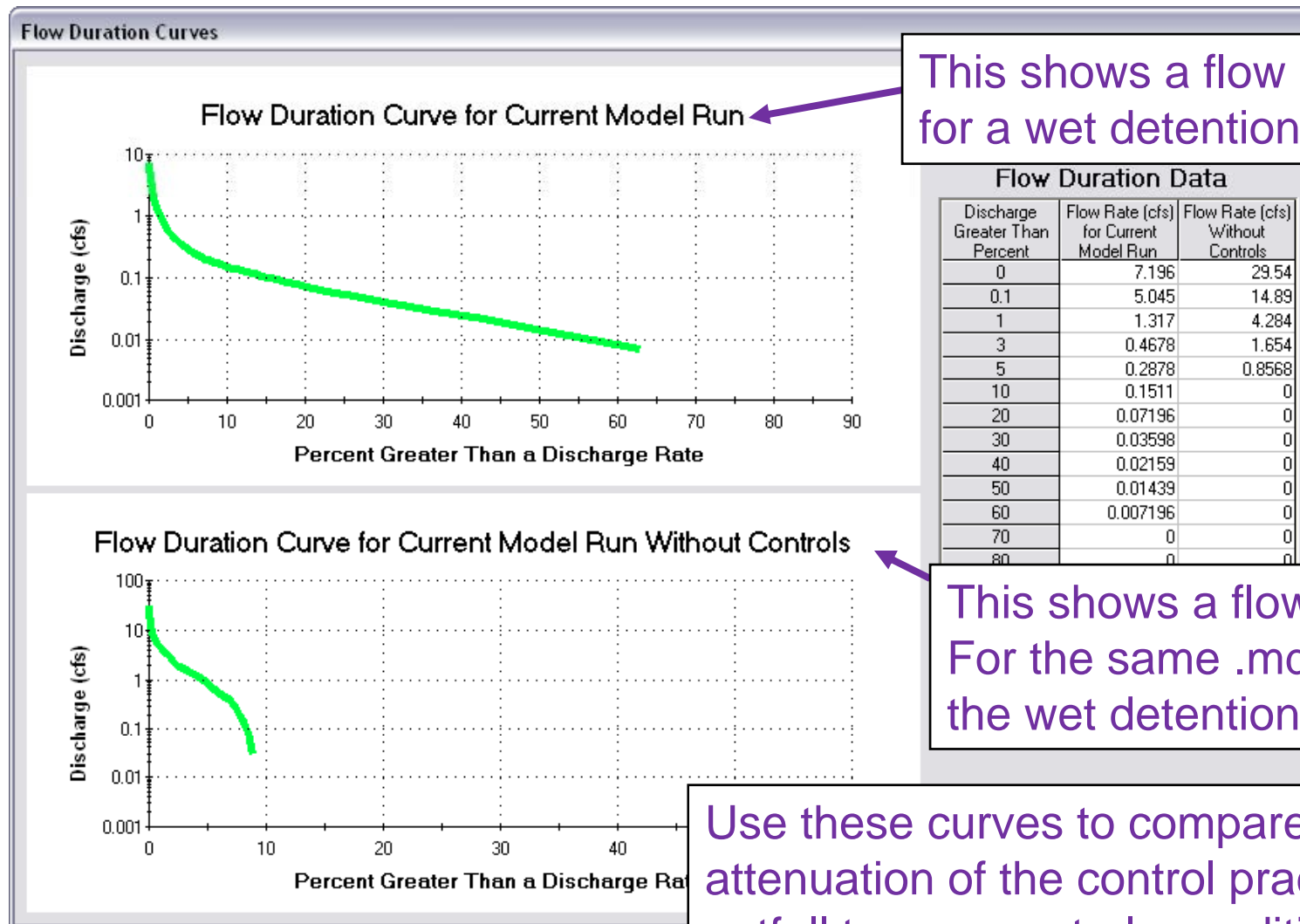
Perform Outfall Flow Duration Curve Calculations

The Output Summary also includes:

1. The site's impact on receiving waters, and
2. Flow Duration Curves with and without Control Practices

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010

# Flow Duration Curves



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

This shows a flow duration curve For the same .mdb 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.

# Reading Land Use, Junction, Control Practice and Outfall Output

# Output

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1

**Output Tabs**

Land Uses Junctions Control Practices Outfall **Output Summary**

File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %
Current File Output: Annualized Total After Outfall Controls	159134					
Years in Model Run:			0.99		1019	

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Print Output Summary Text Total Area Modeled (ac)

Annual Maintenance Cost \$ 28991

Present Value of All Costs \$ 866768

Annualized Value of All Costs \$ 69551

Perform Outfall Flow Duration Curve Calculations

Without Controls Calculated Rv 0.38 Stream Classification Poor

With Controls Calculated Rv 0.17 Stream Classification Fair

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/02/75 End Date: 12/29/75 X = 6165 Y = 2010

After reviewing the Output Summary, select the desired tab to review the output for Land Uses, Junctions, Control Practices, and Outfall.

# Output – Changing the View

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Commercial 1

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
	<b>Roofs</b>	0.680			
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
13	Paved				
14	Paved				
15	Paved				
16	Paved				
17	Paved				
Land Use #	Land Use				
1	Commercial 1				

**Land Uses**

Junctions Control Practices Outfall Output Summary

**Runoff Volume**

Particulate Solids Pollutants

**Runoff Volume (cu. ft.)**

Source Area Runoff Contribution (%)

Data File: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb  
 Rain File: WisReg - Duluth MN 1975.RAN  
 Date: 10-15-12 Time: 7:34:09 AM  
 Site Description: Biofilters, Commercial Development

Commercial 1 Areas - Runoff Volume (cu. ft.)

Start Date	Rain Total	Land Use Totals	Roofs 1	Paved Parking/Storage 1	Driveways 1	Sidewalks/Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2	Rv
03/04/75	-	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-	-
04/26/75	1.41	24696	3034	12240	565	2449	4709	1113	328	260	0.57
05/03/75	0.10	897.3	77	483	25	107	206	0	0	0	0.29
05/04/75	0.19	2136	292	1089	55	239	460	0	0	0	0.37
05/14/75	0.03	124.3	0	83	3	13	25	0	0	0	0.14
05/17/75	0.56	8172	1088	3953	212	918	1765	155	46	36	0.48
05/19/75	0.01	9.197	0	9	0	0	0	0	0	0	0.03
05/20/75	0.26	3112	438	1575	79	341	657	15	4	3	0.39
05/23/75	1.06	17500	2218	8613	422	1828	3516	590	174	138	0.54
05/27/75	0.03	124.3	0	83	3	13	25	0	0	0	0.14
05/31/75	0.25	2969	417	1504	75	326	628	12	4	3	0.39
06/04/75	0.16	1715	218	873	46	198	381	0	0	0	0.35
06/07/75	0.05	326.3	5	194	9	40	78	0	0	0	0.21
06/10/75	0.11	1049	105	546	29	126	242	0	0	0	0.31
06/13/75	0.02	41.94	0	37	0	2	3	0	0	0	0.07
06/16/75	0.29	3555	502	1794	89	387	745	25	7	6	0.40
06/19/75	0.32	4016	570	2020	100	435	836	36	11	8	0.41
06/22/75	0.18	1992	266	1015	52	225	434	0	0	0	0.36
06/25/75	0.03	124.3	0	83	3	13	25	0	0	0	0.14
06/28/75	0.54	7794	1046	3783	201	871	1674	143	42	33	0.47

CP # Control Practice Type Control Practice Name or Location

1 Biofilter DS Biofilter # 1

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 03/02/75 End Date: 12/29/75 X = 4575 Y = 0

Each tab has various sub-tabs. Select the tab and sub-tab to review the desired data.



# Output – Changing the View

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

**View**

- ✓ 1. Source Areas by Land Use for Each Rain - Complete Printout (Default Option)
- 2. Source Area, Junction, Control Practice and Outfall Totals and Summaries
- 3. Output Option 1, for Land Uses Only
- 4. Output Option 2, for Land Uses Only

**Land Uses** | Junctions | Control Practices | Outfall | Output Summary

**Runoff Volume** | Particulate Solids | Pollutants

**Runoff Volume (cu. ft.)** | **Source Area Runoff Contribution (%)**

Data File: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb  
Rain File: WisReg - Duluth MN 1975.RAN  
Time: 7:34:09 AM  
Biofilters, Commercial Development

Basins - Runoff Volume (cu. ft.)		Source Area Runoff Contribution (%)								
Rain Total	Land Use Totals	Roofs 1	Paved Parking/Storage 1	Driveways 1	Sidewalks/Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2	Rv
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.41	24696	3034	12240	565	2449	4709	1113	328	260	0.57
0.10	897.3	77	483	25	107	206	0	0	0	0.29
0.19	2136	292	1089	55	239	460	0	0	0	0.37
0.03	124.3	0	83	3	13	25	0	0	0	0.14
0.56	8172	1088	3953	212	918	1765	155	46	36	0.48
0.01	9.197	0	9	0	0	0	0	0	0	0.03
0.26	3112	438	1575	79	341	657	15	4	3	0.39
1.06	17500	2218	8613	422	1828	3516	590	174	138	0.54
0.03	124.3	0	83	3	13	25	0	0	0	0.14
0.25	2969	417	1504	75	326	628	12	4	3	0.39
0.16	1715	218	873	46	198	381	0	0	0	0.35
0.05	326.3	5	194	9	40	78	0	0	0	0.21
0.11	1049	105	546	29	126	242	0	0	0	0.31
05/19/75	0.02	41.94	0	37	0	2	3	0	0	0.07
05/20/75	0.29	3555	502	1794	89	387	745	25	7	0.40
05/23/75	0.32	4016	570	2020	100	435	836	36	11	0.41
05/27/75	0.18	1992	266	1015	52	225	434	0	0	0.36
05/31/75	0.03	124.3	0	83	3	13	25	0	0	0.14
06/04/75	0.54	7794	1046	3783	201	871	1674	143	42	0.47

CP # | Control Practice Type | Control Practice Name or Location

1	Biofilter	DS Biofilter # 1
---	-----------	------------------

Current File Data Entered | Total Area = 8.440 acres | No Upstream Source Areas | LU# = 1 | Index Number = 1 | Remaining Icons = 253 | Start Date: 03/02/75 | End Date: 12/29/75 | X = 4575 | Y = 0

The Land Use, Junction, Control Practice and Outfall tabs have four Views. Each View displays various levels of detail for the output.

To change the View, select "View", then select the desired view.

# Land Use - Runoff Volume Output

Land Uses			Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume			Particulate Solids					Pollutants			
Runoff Volume (cu. ft.)			Source Area Runoff Contribution (%)								
Data File: C:\WinSLAMM\Users Guide\w 10.1											
Rain File: WisReg - Duluth MN 1975.RAN											
Date: 10-15-12 Time: 7:34:09 AM											
Site Description: Biofilters, Commercial Develop											
Commercial 1 Areas - Runoff Volume (cu. ft.)											
Start Date	Rain Total	Land Use Totals	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area	Small Landscaped	Rv	Total Losses	Calculated CN*
03/04/75	-	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-	-
04/17/75	0.19	2136	55	239	460	0	0	0	0.37	0.12	98.2
04/19/75	0.03	124.3	3	13	25	0	0	0	0.14	0.03	99.4
04/22/75	0.56	8172	212	918	1765	155	46	36	0.48	0.29	96.3
04/24/75	0.01	9.197	0	0	0	0	0	0	0.03	0.01	99.7
04/26/75	0.26	3112	79	341	657	15	4	3	0.39	0.16	97.7
04/28/75	1.06	17500	422	1828	3516	590	174	138	0.54	0.49	94.3
05/03/75	0.03	124.3	3	13	25	0	0	0	0.14	0.03	99.4
05/04/75	0.25	2969	75	326	628	12	4	3	0.39	0.15	97.8
05/14/75	0.16	1715	46	198	381	0	0	0	0.35	0.10	98.4
05/17/75	0.05	326.3	9	40	78	0	0	0	0.21	0.04	99.2
05/19/75	0.11	1049	29	126	242	0	0	0	0.31	0.08	98.8
05/20/75	0.02	41.94	0	2	3	0	0	0	0.07	0.02	99.5
05/20/75	0.29	3555	89	387	745	25	7	6	0.40	0.17	97.5
05/23/75	0.32	4016	100	435	836	36	11	8	0.41	0.19	97.3
05/27/75	0.18	1992	52	225	434	0	0	0	0.36	0.11	98.3
05/31/75	0.03	124.3	3	13	25	0	0	0	0.14	0.03	99.4
06/04/75	0.54	7794	201	871	1674	143	42	33	0.47	0.29	96.3

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.

# Land Use - Runoff Volume Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary			
Runoff Volume			Particulate Solids				Pollutants				
Runoff Volume (cu. ft.)					Source Area Runoff Contribution (%)						
Data File: C:\WinSLAMM\Users Guide\w 10.											
09/20/75	0.12	1203	33	145	279	0	0	0	0.33	0.08	98.7
09/22/75	0.01	9.197	0	0	0	0	0	0	0.03	0.01	99.7
09/30/75	0.02	41.94	0	2	3	0	0	0	0.07	0.02	99.5
10/09/75	0.20	2278	58	253	487	1	0	0	0.37	0.13	98.1
10/10/75	0.02	41.94	0	2	3	0	0	0	0.07	0.02	99.5
10/12/75	0.02	41.94	0	2	3	0	0	0	0.07	0.02	99.5
10/14/75	0.06	417.7	12	51	97	0	0	0	0.23	0.05	99.1
10/23/75	0.10	897.3	25	107	206	0	0	0	0.29	0.07	98.8
10/23/75	0.76	11845	300	1301	2503	326	96	76	0.51	0.37	95.4
10/24/75	0.04	243.6	7	31	60	0	0	0	0.20	0.03	99.4
11/09/75	0.5	3304	60	234	434	16	16	28	0.29	0.29	96.3
11/11/75	0.7	3304	60	234	434	16	16	28	0.37	0.37	95.5
11/18/75	2.4	3304	60	234	434	16	16	28	0.87	0.87	91.2
11/28/75									-	-	-
11/29/75									-	-	-
12/03/75									-	-	-
12/04/75									-	-	-
12/08/75									-	-	-
12/10/75									-	-	-
12/13/75									-	-	-
12/15/75	-	-	-	-	-	-	-	-	-	-	-
12/19/75	-	-	-	-	-	-	-	-	-	-	-
12/20/75	-	-	-	-	-	-	-	-	-	-	-
12/29/75	-	-	-	-	-	-	-	-	-	-	-

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

Summary for All Events											
	Rain Total	Land Use Totals	Driveways 1	Sidewalks/Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2	Rv	Total Losses (in.)	Calculated CN*
Minimum:	0.00	0	0	0	0	0	0	0	0.00	0.00	N/A
Maximum:	2.40	47020	973.0	4217	8111	3729	1098	871.0	0.64	0.87	99.7
Average:	0.24	4573	109.6	475.3	914.1	163.8	48.23	38.23	0.00	0.24	90.6
Total:	22.64	338420	8114	35171	67645	12121	3569	2829		11.63	

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

# Land Use - Runoff Volume Output

Land Uses			Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume			Particulate Solids					Pollutants			
Runoff Volume (cu. ft.)			Source Area Runoff Contribution (%)								
Data File: C:\WinSLAMM\Users Guide\w 10.0\Reference Guide.mdb											
Rain File: WisReg - Duluth MN 1975.RAN											
Date: 10-15-12 Time: 7:34:09 AM											
Site Description: Biofilters, Commercial Development											
Commercial 1 - Source Area Percentage Contribution of Runoff Volume											
Start Date	Rain Total (in.)	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2	
03/04/75	-	-	-	-	-	-	-	-	-	-	
03/11/75	-	-	-	-	-	-	-	-	-	-	
03/18/75	-	-	-	-	-	-	-	-	-	-	
03/19/75	-	-	-	-	-	-	-	-	-	-	
03/20/75	-	-	-	-	-	-	-	-	-	-	
03/20/75	-	-	-	-	-	-	-	-	-	-	
03/21/75	-	-	-	-	-	-	-	-	-	-	
03/23/75	-	-	-	-	-	-	-	-	-	-	
03/26/75	1.41	100.	-	-	-	-	-	-	1.3	1.1	
04/17/75	0.10	100.	-	-	-	-	-	-	0.0	0.0	
04/17/75	0.19	100.	-	-	-	-	-	-	0.0	0.0	
04/19/75	0.03	100.	-	-	-	-	-	-	0.0	0.0	
04/22/75	0.56	100.0	13.3	48.4	2.6	11.2	21.6	1.9	0.6	0.4	
04/24/75	0.01	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
04/26/75	0.26	100.0	14.1	50.6	2.5	11.0	21.1	0.5	0.1	0.1	
04/28/75	1.06	100.0	12.7	49.2	2.4	10.4	20.1	3.4	1.0	0.8	
05/03/75	0.03	100.0	0.0	66.6	2.4	10.6	20.4	0.0	0.0	0.0	
05/04/75	0.25	100.0	14.0	50.7	2.5	11.0	21.1	0.4	0.1	0.1	
05/14/75	0.16	100.0	12.7	50.9	2.7	11.6	22.2	0.0	0.0	0.0	
05/17/75	0.05	100.0	1.5	59.3	2.9	12.4	23.9	0.0	0.0	0.0	
05/19/75	0.11	100.0	10.0	52.0	2.8	12.0	23.1	0.0	0.0	0.0	
05/20/75	0.02	100.0	0.0	87.7	0.9	3.9	7.5	0.0	0.0	0.0	
05/20/75	0.29	100.0	14.1	50.4	2.5	10.9	21.0	0.7	0.2	0.2	
05/23/75	0.32	100.0	14.2	50.3	2.5	10.8	20.8	0.9	0.3	0.2	
05/27/75	0.18	100.0	13.4	50.9	2.6	11.3	21.8	0.0	0.0	0.0	
05/31/75	0.03	100.0	0.0	66.6	2.4	10.6	20.4	0.0	0.0	0.0	

The percentage contribution of each source area for each event is shown on this tab.

The percentage contribution of each source area for each event is shown on this tab.

# Land Use – Particulate Solids Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume		Particulate Solids		Pollutants						
Yield (lbs)		Concentration (mg/L)		Source Area Yield Contribution (%)						
Data File: C:\WinSLAMM\Users Guide\w 10.0\Reference Guide.mdb										
Rain File: WisReg - Duluth MN 1975.RAN										
Date: 10-15-12 Time: 7:34:09 AM										
Site Description: Biofilters, Commercial Development										
Commercial 1 Areas - Particulate Solids Yield (lbs)										
Start Date	Rain Total	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2
03/04/75	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-
03/19/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/21/75	-	-	-	-	-	-	-	-	-	-
03/23/75	-	-	-	-	-	-	-	-	-	-
03/26/75	-	-	-	-	-	-	-	-	-	-
04/17/75	-	-	-	-	-	-	-	-	-	-
04/17/75	0.19	137.6	0.6024	8.836	0.5310	1.121	126.5	0	0	0
04/19/75	0.03	1.909	0	0.6718	0.02922	0.06167	1.147	0	0	0
04/22/75	0.56	165.0	2.241	32.08	2.036	4.297	121.0	2.199	0.6474	0.5138
04/24/75	0.01	0.07464	0	0.07464	0	0	0	0	0	0
04/26/75	0.26	91.85	0.9013	12.78	0.7575	1.599	75.49	0.2112	0.06217	0.04934
04/28/75	1.06	172.2	4.569	69.90	4.057	8.561	72.34	8.366	2.463	1.955
05/03/75	0.03	1.119	0	0.6718	0.02922	0.06167	0.3563	0	0	0
05/04/75	0.25	57.77	0.8583	12.21	0.7241	1.528	42.19	0.1709	0.05031	0.03993
05/14/75	0.16	35.30	0.4484	7.083	0.4395	0.9276	26.40	0	0	0
05/17/75	0.05	3.318	0.01030	1.571	0.08981	0.1895	1.457	0	0	0
05/19/75	0.11	19.62	0.2171	4.430	0.2796	0.5901	14.10	0	0	0
05/20/75	0.02	0.3891	0	0.2986	0.003621	0.007642	0.07931	0	0	0
05/20/75	0.29	44.60	1.035	14.56	0.8597	1.814	25.80	0.3475	0.1023	0.08118
05/23/75	0.32	45.71	1.174	16.39	0.9649	2.036	24.37	0.5069	0.1492	0.1184
05/27/75	0.18	27.38	0.5486	8.237	0.5002	1.056	17.03	0	0	0
05/31/75	0.03	0.9018	0	0.6718	0.02922	0.06167	0.1391	0	0	0

The Particulate Solids Yield is listed for each event, for each source area.

# Land Use – Particulate Solids Output

Land Uses		Junctions		Control Practices		Outfall		Duput Summary		
Runoff Volume		Particulate Solids		Pollutants						
Yield (lbs)		Concentration (mg/L)		Source Area Yield Contribution (%)						
Data File: C:\WinSLAMM\Users Guide\w 10.0\Reference Guide.mdb										
09/19/75	0.29	37.70	1.035	14.56	0.8597	1.814	18.90	0.3475	0.1023	0.08118
09/20/75	0.12	15.51	0.2774	4.954	0.3220	0.6795	9.276	0	0	0
09/22/75	0.01	0.07464	0	0.07464	0	0	0	0	0	0
09/30/75	0.02	0.3732	0	0.2986	0.003621	0.007642	0.06340	0	0	0
10/09/75	0.20	32.71	0.6530	9.425	0.5622	1.187	20.88	0.008102	0.002385	0.001893
10/10/75	0.02	0.3766	0	0.2986	0.003621	0.007642	0.06680	0	0	0
10/12/75	0.02	0.3777	0	0.2986	0.003621	0.007642	0.06792	0	0	0
10/14/75	0.06	4.371	0.02398	2.001	0.1122	0.2369	1.997	0	0	0
10/23/75	0.10	14.60	0.1587	3.921	0.2372	0.5006	9.780	0	0	0
10/23/75	0.76	95.17	3.186	46.23	2.887	6.094	29.72	4.620	1.360	1.079
10/24/75	0	0	0	0	0	0	0	0	0	0
11/09/75	0	0	0	0	0	0	0	0	0	0.4743
11/11/75	0	0	0	0	0	0	0	0	0	1.046
11/18/75	2	2	2	2	2	2	2	2	2	12.35
11/28/75	-	-	-	-	-	-	-	-	-	-
11/29/75	-	-	-	-	-	-	-	-	-	-
12/03/75	-	-	-	-	-	-	-	-	-	-
12/04/75	-	-	-	-	-	-	-	-	-	-
12/08/75	-	-	-	-	-	-	-	-	-	-
12/10/75	-	-	-	-	-	-	-	-	-	-
12/13/75	-	-	-	-	-	-	-	-	-	-
12/15/75	-	-	-	-	-	-	-	-	-	-
12/19/75	-	-	-	-	-	-	-	-	-	-
12/20/75	-	-	-	-	-	-	-	-	-	-
12/29/75	-	-	-	-	-	-	-	-	-	-
Summary for All Events										
	Rain Total	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2
Minimum:	0	0	0	0	0	0	0	0	0	0
Maximum:	2.400	396.6	11.13	183.6	9.357	19.75	250.0	52.84	15.56	12.35
Flow Wt Avg	0	4.520	72.37	3.799	8.017	47.27	28.03	8.251	6.548	4.520
Total:	22.64	3514	87.45	1351	78.04	164.7	1570	171.8	50.57	40.13

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

# Land Use – Particulate Solids Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume		Particulate Solids				Pollutants				
Yield (lbs)		Concentration (mg/L)				Source Area Yield Contribution (%)				
Data File: C:\WinSLAMM\Users Guide\w 10.0\Reference Guide.mdb										
Rain File: WisReg - Duluth MN 1975.RAN										
Date: 10-15-12 Time: 7:34:09 AM										
Site Description: Biofilters, Commercial Development										
Commercial 1 Areas - Particulate Solids Concentration (mg/L)										
Start Date	Rain Total	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2
03/04/75	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-
03/19/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/21/75	-	-	-	-	-	-	-	-	-	-
03/23/75	-	-	-	-	-	-	-	-	-	-
03/26/75	-	-	-	-	-	-	50.4	227.0	227.0	227.0
04/17/75	0.10	1547	33.00	130.0	154.0	75.00	6376	0	0	0
04/17/75	0.19	1032	33.00	130.0	154.0	75.00	4402	0	0	0
04/19/75	0.03	246.0	0	130.0	154.0	75.00	725.2	0	0	0
04/22/75	0.56	323.4	33.00	130.0	154.0	75.00	1098	227.0	227.0	227.0
04/24/75	0.01	130.0	0	130.0	0	0	0	0	0	0
04/26/75	0.26	472.7	33.00	130.0	154.0	75.00	1842	227.0	227.0	227.0
04/28/75	1.06	157.6	33.00	130.0	154.0	75.00	329.6	227.0	227.0	227.0
05/03/75	0.03	144.2	0	130.0	154.0	75.00	225.3	0	0	0
05/04/75	0.25	311.7	33.00	130.0	154.0	75.00	1077	227.0	227.0	227.0
05/14/75	0.16	329.7	33.00	130.0	154.0	75.00	1110	0	0	0
05/17/75	0.05	162.9	33.00	130.0	154.0	75.00	299.8	0	0	0
05/19/75	0.11	299.7	33.00	130.0	154.0	75.00	932.0	0	0	0
05/20/75	0.02	148.6	0	130.0	154.0	75.00	404.7	0	0	0
05/20/75	0.29	200.9	33.00	130.0	154.0	75.00	554.6	227.0	227.0	227.0
05/23/75	0.32	182.3	33.00	130.0	154.0	75.00	466.7	227.0	227.0	227.0
05/27/75	0.18	220.1	33.00	130.0	154.0	75.00	629.3	0	0	0
05/31/75	0.03	116.2	0	130.0	154.0	75.00	87.98	0	0	0

The Particulate Solids Concentration is listed for each event, for each source area.

# Land Use – Particulate Solids Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume		Particulate Solids				Pollutants				
Yield (lbs)		Concentration (mg/L)				Source Area Yield Contribution (%)				
Data File: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb										
Rain File: WisReg - Duluth MN 1975.RAN										
Date: 10-15-12 Time: 8:07:16 PM										
Site Description: Biofilters, Commercial Development										
Commercial 1 - Source Area Percentage Contribution of Particulate Solids Yield										
Start Date	Rain Total (in.)	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2
03/04/75	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-
03/19/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/21/75	-	-	-	-	-	-	-	-	-	-
03/23/75	-	-	-	-	-	-	-	-	-	-
03/26/75	1.41	100.0	1.6	23.0	1.4	2.3	63.0	4.0	1.2	0.9
04/17/75	0.10	100.0	0.2	4.5	0.3	0.6	94.4	0.0	0.0	0.0
04/17/75	0.19	100.0	0.4	6.4	0.4	0.8	91.9	0.0	0.0	0.0
04/19/75	0.03	100.0	0.0	35.2	1.5	3.2	60.1	0.0	0.0	0.0
04/22/75	0.56	100.0	1.4	19.4	1.2	2.6	73.3	1.3	0.4	0.3
04/24/75	0.01	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
04/26/75	0.26	100.0	1.0	13.9	0.8	1.7	82.2	0.2	0.1	0.1
04/28/75	1.06	100.0	2.7	40.6	2.4	5.0	42.0	4.9	1.4	1.1
05/03/75	0.03	100.0	0.0	60.0	2.6	5.5	31.8	0.0	0.0	0.0
05/04/75	0.25	100.0	1.5	21.1	1.3	2.6	73.0	0.3	0.1	0.1
05/14/75	0.16	100.0	1.3	20.1	1.2	2.6	74.8	0.0	0.0	0.0
05/17/75	0.05	100.0	0.3	47.4	2.7	5.7	43.9	0.0	0.0	0.0
05/19/75	0.11	100.0	1.1	22.6	1.4	3.0	71.9	0.0	0.0	0.0
05/20/75	0.02	100.0	0.0	76.7	0.9	2.0	20.4	0.0	0.0	0.0
05/20/75	0.29	100.0	2.3	32.6	1.9	4.1	57.9	0.8	0.2	0.2
05/23/75	0.32	100.0	2.6	35.9	2.1	4.5	53.3	1.1	0.3	0.3
05/27/75	0.18	100.0	2.0	30.1	1.8	3.9	62.2	0.0	0.0	0.0
05/31/75	0.03	100.0	0.0	74.5	3.2	6.8	15.4	0.0	0.0	0.0

The percentage contribution of each source area for each event is shown on this tab.



# Land Use – Pollutant Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume		Particulate Solids		Pollutants						
Yield		Concentration		Source Area Yield Contribution						
Data File: C:\WinSLAMM\Users Guide\vv 10.0\Reference Guide.mdb										
Rain File: WisReg - Duluth MN 1975.RAN										
Date: 10-15-12 Time: 8:07:16 PM										
Site Description: Biofilters, Commercial Development										
Commercial 1 Areas - Pollutant Yield: Total Phosphorus (lbs)										
Start Date	Rain Total	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2
03/04/75	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-
03/19/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/21/75	-	-	-	-	-	-	-	-	-	-
03/23/75	-	-	-	-	-	-	-	-	-	-
03/26/75	-	-	-	-	-	-	8983	0.1135	0.03341	0.02652
04/17/75	-	-	-	-	-	-	279	0	0	0
04/17/75	0.19	0.2227	0.003905	0.01461	0.001706	0.004521	0.1979	0	0	0
04/19/75	0.03	0.003288	0	0.001111	9.389E-05	2.488E-04	0.001834	0	0	0
04/22/75	0.56	0.3074	0.01453	0.05305	0.006543	0.01734	0.1918	0.01583	0.004660	0.003698
04/24/75	0.01	1.234E-04	0	1.234E-04	0	0	0	0	0	0
04/26/75	0.26	0.1570	0.005842	0.02114	0.002434	0.006449	0.1188	0.001520	4.475E-04	3.552E-04
04/28/75	1.06	0.4041	0.02962	0.1156	0.01303	0.03454	0.1193	0.06022	0.01773	0.01407
05/03/75	0.03	0.002056	0	0.001111	9.389E-05	2.488E-04	6.025E-04	0	0	0
05/04/75	0.25	0.1030	0.005563	0.02019	0.002327	0.006164	0.06690	0.001230	3.622E-04	2.874E-04
05/14/75	0.16	0.06163	0.002906	0.01171	0.001412	0.003742	0.04185	0	0	0
05/17/75	0.05	0.006134	6.675E-05	0.002599	2.886E-04	7.646E-04	0.002415	0	0	0
05/19/75	0.11	0.03444	0.001408	0.007327	8.985E-04	0.002391	0.02243	0	0	0
05/20/75	0.02	6.657E-04	0	4.938E-04	1.164E-05	3.083E-05	1.294E-04	0	0	0
05/20/75	0.29	0.08628	0.006706	0.02407	0.002762	0.007319	0.04159	0.002501	7.363E-04	5.844E-04
05/23/75	0.32	0.09114	0.007609	0.02711	0.003101	0.008215	0.03953	0.003649	0.001074	8.525E-04
05/27/75	0.18	0.05040	0.003556	0.01362	0.001607	0.004258	0.02735	0	0	0

The Pollutant Yield for each modeled pollutant is listed for each event, for each source area.

# Land Use – Pollutant Output

Land Uses			Junctions		Control Practices			Outfall		Output Summary	
Runoff Volume				Particulate Solids				Pollutants			
Yield				Concentration				Source Area Yield Contribution			
Data File: C:\WinSLAMM\Users Guide\w 10.0\Reference Guide.mdb											
09/18/75	1.00	1.540	0.2081	0.4958	0.04130	0.1158	0.2816	0.2602	0.07659	0.06078	
09/19/75	0.29	0.3245	0.05031	0.1112	0.009307	0.02609	0.1096	0.01180	0.003475	0.002758	
09/20/75	0.12	0.1140	0.01349	0.03783	0.003486	0.009774	0.04946	0	0	0	
09/22/75	0.01	5.700E-04	0	5.700E-04	0	0	0	0	0	0	
09/30/75	0.02	0.002829	0	0.002280	3.921E-05	1.099E-04	3.996E-04	0	0	0	
10/09/75	0.20	0.2316	0.03176	0.07198	0.006087	0.01707	0.1043	2.753E-04	8.103E-05	6.431E-05	
10/10/75	0.02	0.002842	0	0.002280	3.921E-05	1.099E-04	4.126E-04	0	0	0	
10/12/75	0.02	0.002846	0	0.002280	3.921E-05	1.099E-04	4.169E-04	0	0	0	
10/14/75	0.06	0.03358	0.001166	0.01528	0.001215	0.003407	0.01251	0	0	0	
10/23/75	0.10	0.09515	0.007716	0.02994	0.002568	0.007200	0.04773	0	0	0	
10/23/75	0.76	1.106	0.1550	0.3530	0.03126	0.08765	0.2388	0.1569	0.04620	0.03667	
10/24/75	0									0	
11/09/75	0									0.01611	
11/11/75	0									0.03552	
11/18/75	2									0.4194	
11/28/75										-	
11/29/75										-	
12/03/75										-	
12/04/75										-	
12/08/75										-	
12/10/75	-	-	-	-	-	-	-	-	-	-	
12/13/75	-	-	-	-	-	-	-	-	-	-	
12/15/75	-	-	-	-	-	-	-	-	-	-	
12/19/75	-	-	-	-	-	-	-	-	-	-	
12/20/75	-	-	-	-	-	-	-	-	-	-	
12/29/75	-	-	-	-	-	-	-	-	-	-	
Summary for Runoff Producing Events											
	Rain Total	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2	
Minimum:	0.00	0	0	0	0	0	0	0	0	0	
Maximum:	2.40	5.589	0.5412	1.402	0.1013	0.2840	1.193	1.795	0.5285	0.4194	
Fl w/ Ave:	N/A	2.087	0.5527	0.04113	0.1153	0.3455	0.9521	0.2803	0.2225	0.2198	
Total:	22.64	36.09	4.252	10.32	0.8449	2.369	9.391	5.835	1.718	1.363	

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

# Land Use – Pollutant Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume			Particulate Solids			Pollutants				
Yield			Concentration			Source Area Yield Contribution				
Data File: C:\WinSLAMM\Users Guide\w 10.0\Reference Guide.mdb										
Rain File: WisReg - Duluth MN 1975.RAN										
Date: 10-15-12 Time: 8:07:16 PM										
Site Description: Biofilters, Commercial Development										
Commercial 1 Areas - Pollutant Concentration: Total Phosphorus (mg/L)										
Start Date	Rain Total	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2
03/04/75	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-
03/19/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/21/75	-	-	-	-	-	-	-	-	-	-
03/23/75	-	-	-	-	-	-	-	-	-	-
03/26/75	-	-	-	-	-	-	1.355	1.634	1.634	1.634
04/17/75	-	-	-	-	-	-	9.963	0	0	0
04/17/75	0.15	1.670	0.2139	0.2150	0.4948	0.3026	6.888	0	0	0
04/19/75	0.03	0.4236	0	0.2150	0.4948	0.3026	1.160	0	0	0
04/22/75	0.56	0.6026	0.2139	0.2150	0.4948	0.3026	1.741	1.634	1.634	1.634
04/24/75	0.01	0.2150	0	0.2150	0	0	0	0	0	0
04/26/75	0.26	0.8082	0.2139	0.2150	0.4948	0.3026	2.899	1.634	1.634	1.634
04/28/75	1.06	0.3699	0.2139	0.2150	0.4948	0.3026	0.5435	1.634	1.634	1.634
05/03/75	0.03	0.2649	0	0.2150	0.4948	0.3026	0.3811	0	0	0
05/04/75	0.25	0.5559	0.2139	0.2150	0.4948	0.3026	1.708	1.634	1.634	1.634
05/14/75	0.16	0.5755	0.2139	0.2150	0.4948	0.3026	1.760	0	0	0
05/17/75	0.05	0.3011	0.2139	0.2150	0.4948	0.3026	0.4970	0	0	0
05/19/75	0.11	0.5260	0.2139	0.2150	0.4948	0.3026	1.482	0	0	0
05/20/75	0.02	0.2543	0	0.2150	0.4948	0.3026	0.6606	0	0	0
05/20/75	0.29	0.3887	0.2139	0.2150	0.4948	0.3026	0.8941	1.634	1.634	1.634
05/23/75	0.32	0.3635	0.2139	0.2150	0.4948	0.3026	0.7571	1.634	1.634	1.634
05/27/75	0.18	0.4052	0.2139	0.2150	0.4948	0.3026	1.010	0	0	0

The Pollutant Concentration for each modeled pollutant is listed for each event, for each source area.

# Land Use – Pollutant Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary		
Runoff Volume			Particulate Solids				Pollutants			
Yield			Concentration				Source Area Yield Contribution			
Data File: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb										
Rain File: WisReg - Duluth MN 1975.RAN										
Date: 10-15-12 Time: 8:07:17 PM										
Site Description: Biofilters, Commercial Development										
Commercial 1 Areas - Pollutant Yield Source Area Contribution: Total Phosphorus										
Start Date	Rain Total (in.)	Land Use Totals	Roofs 1	Paved Parking/ Storage 1	Driveways 1	Sidewalks/ Walks 1	Street Area 1	Large Landscaped Area 1	Small Landscaped Area 1	Small Landscaped Area 2
03/04/75	-	-	-	-	-	-	-	-	-	-
03/11/75	-	-	-	-	-	-	-	-	-	-
03/18/75	-	-	-	-	-	-	-	-	-	-
03/19/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/20/75	-	-	-	-	-	-	-	-	-	-
03/21/75	-	-	-	-	-	-	-	-	-	-
03/23/75	-	-	-	-	-	-	-	-	-	-
03/26/75	-	-	-	-	-	-	47.4	13.5	4.0	3.2
04/17/75	0.10	100.0	0.7	4.7	0.6	1.3	32.5	0.0	0.0	0.0
04/17/75	0.19	100.0	1.8	6.6	0.8	2.0	88.9	0.0	0.0	0.0
04/19/75	0.03	100.0	0.0	33.8	2.9	7.6	55.8	0.0	0.0	0.0
04/22/75	0.56	100.0	4.7	17.3	2.1	5.6	62.4	5.1	1.5	1.2
04/24/75	0.01	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
04/26/75	0.26	100.0	3.7	13.5	1.5	4.1	75.7	1.0	0.3	0.2
04/28/75	1.06	100.0	7.3	28.6	3.2	8.5	29.5	14.9	4.4	3.5
05/03/75	0.03	100.0	0.0	54.0	4.6	12.1	29.3	0.0	0.0	0.0
05/04/75	0.25	100.0	5.4	19.6	2.3	6.0	64.9	1.2	0.4	0.3
05/14/75	0.16	100.0	4.7	19.0	2.3	6.1	67.9	0.0	0.0	0.0
05/17/75	0.05	100.0	1.1	42.4	4.7	12.5	39.4	0.0	0.0	0.0
05/19/75	0.11	100.0	4.1	21.3	2.6	6.9	65.1	0.0	0.0	0.0
05/20/75	0.02	100.0	0.0	74.2	1.7	4.6	19.4	0.0	0.0	0.0
05/20/75	0.29	100.0	7.8	27.9	3.2	8.5	48.2	2.9	0.9	0.7
05/23/75	0.32	100.0	8.3	29.7	3.4	9.0	43.4	4.0	1.2	0.9
05/27/75	0.18	100.0	7.1	27.0	3.2	8.5	54.3	0.0	0.0	0.0
05/31/75	0.03	100.0	0.0	64.7	5.5	14.5	15.4	0.0	0.0	0.0

The percentage contribution of each source area for each event is shown on this tab.

# Junction and Outfall - Output

Land Uses		Junctions		Control Practices		Outfall		Output Summary	
Runoff Volume (cf)		Part. Solids Yield (lbs)		Part. Solids Conc. (mg/L)		Pollutant Yield (lbs)		Pollutant Concentration	
Data File: C:\WinSLAMM Files\Example Files\Retrofit Example With Management Condition.mdb									
Rain File: CA Los Angeles WSO AP 4899.RAN									
Date: 08-20-12 Time: 3:18:04 PM									
Site Description: Santa Monica, CA, Urban Stormwater Retrofit Example, With Management Condition									
Runoff Volume Total (cf) at the Outfall									
Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*			
162	01/11/54	0.09	838.4	0.204	0.07	98.6			
163	01/12/54	1.21	32379	0.586	0.50	94.4			
164	01/17/54	0.25	3521	0.309	0.17	97.2			
165	01/18/54	1.16	26757	0.506	0.57	93.7			
166	01/19/54	0.95	19477	0.449	0.52	93.3			
167	01/23/54	1.12	20943	0.410	0.66	91.3			
168	02/13/54	3.28	100361	0.671	1.08	89.9			
169	02/14/54	0.02	18.68	0.020	0.02	99.3			
170	02/17/54	0.06	444.7	0.162	0.05	98.9			
171	03/16/54	0.60	10857	0.397	0.36	95.0			
172	03/19/54	0.77	16656	0.474	0.40	94.9			
173	03/20/54	0.14	1521	0.238	0.11	98.0			
174	03/21/54	0.26	3240	0.273	0.19	96.8			
175	03/24/54	0.03	112.3	0.082	0.03	99.3			
176	03/24/54	0.14	1781	0.279	0.10	98.3			
177	03/29/54	0.66	12499	0.415	0.39	94.8			
178	04/27/54	0.11	1155	0.230	0.08	98.4			
179	05/15/54	0.01	3.763	0.008	0.01	99.6			
180	05/29/54	0.01	3.763	0.008	0.01	99.6			
181	06/13/54	0.01	3.763	0.008	0.01	99.6			
182	07/24/54	0.01	3.763	0.008	0.01	99.6			
183	08/03/54	0.04	245.1	0.134	0.03	99.2			
184	11/10/54	1.19	23837	0.439	0.67	91.9			
185	11/15/54	0.04	245.1	0.134	0.03	99.2			
186	11/29/54	0.01	3.763	0.008	0.01	99.6			
187	12/03/54	0.37	5836	0.346	0.24	96.3			
188	12/04/54	0.01	2.195	0.005	0.01	99.6			
189	12/09/54	0.36	5979	0.364	0.23	96.6			
Minimum:		0.01	2.195	0.005	0.01	89.9			
Maximum:		3.28	100361	0.671	1.08	99.6			
Average:		0.46	10312	0.256	0.23	92.3			
Total:		12.91	288724		6.56				

The Junctions and Outfall tabs have the same type of output as the Land Use tabs.

The Junctions and Outfall tabs have the same type of output as the Land Use tabs.

# Control Practices - Summary

Land Uses		Junctions		Control Practices		Outfall		Output Summary				
Runoff Volume		Part. Solids Yield (lbs)			Part. Solids Conc. (mg/L)			Summary Table				
Data File: C:\WinSLAMM Files\Engagement Condition.mdb												
Rain File: CA Los Angeles WSO												
Date: 08-20-12 Time: 3:18:03 PM												
Site Description: Santa Monica, CA With Management Condition												
Control Practice No.	Control Practice Type	Total Inflow Volume (cf)	Total Outflow Volume (cf)	Percent Volume Reduction	Total Influent Load (lbs)	Total Effluent Load (lbs)	Percent Load Reduction	Flow Weighted Influent Conc (mg/L)	Flow Weighted Effluent Conc (mg/L)	Percent Conc. Reduction	Influent Median Part. Size (microns)	Effluent Median Part. Size (microns)
1	Porous Pavement	8671	0	100.0	68.20	0	100.0	126.0	0	100.000	0.00	0.00
2	Porous Pavement	41495	0	100.0	160.6	0	100.0	62.00	0	100.000	0.00	0.00
3	Catchbasin Cleaning	207082	207082	0	439.8	331.8	24.56	34.02	25.66	24.567	7.80	7.80
4	Biofilter	207082	118592	42.73	331.8	197.6	40.45	25.66	26.69	-3.996	5.30	5.30

The Control Practices Summary Table shows selected data for each control practice, including volume and particulate solids reductions.

The Control Practices Summary Table shows selected data for each control practice, including volume and particulate solids reductions.

# Control Practices – Runoff Volume

Land Uses			Junctions			Control Practices			Outfall			Output Summary		
Runoff Volume			Part. Solids Yield (lbs)			Part. Solids Conc. (mg/L)			Summary Table					
Data File: C:\WinSLAMM Files\Example Files\Retrofit Example With Management Cc														
Rain File: CA Los Angeles WSO AP 4899.f														
Date: 08-20-12 Time: 3:18:03 PM														
Site Description: Santa Monica, CA, Urban Stormwater Retrofit Example, With Manage														
Control Practice Type ==>			CP# 1 - Porous Pavement			CP# 2 - Porous Pavement			CP# 3 - Catchbasin Cleaning			CP# 4 - E		
Control Practice Name/Location ==>			SA Device, LU# 1 ,SA# 27			SA Device, LU# 1 ,SA# 33			DS Catchbasins # 1			DS Biofil		
Rain Number	Start Date	Rain Total (in)	Influent Runoff Vol.(cf)	Effluent Runoff Vol.(cf)	Runoff Vol. Percent Reduction	Influent Runoff Vol.(cf)	Effluent Runoff Vol.(cf)	Runoff Vol. Percent Reduction	Influent Runoff Vol.(cf)	Effluent Runoff Vol.(cf)	Runoff Vol. Percent Reduction	Influent Runoff Vol.(cf)		
164	01/17/54	0.25	131.8	0	100.00	630.8	0	100.00	3670	3670	0.00			
165	01/18/54	1.16	812.6	0	100.00	3889	0	100.00	19251	19251	0.00		19	
166	01/19/54	0.95	659.0	0	100.00	3154	0	100.00	15595	15595	0.00		19	
167	01/23/54	1.12	782.8	0	100.00	3746	0	100.00	18548	18548	0.00		18	
168	02/13/54	3.28	2384	0	100.00	11407	0	100.00	55108	55108	0.00		59	
169	02/14/54	0.02	0.6592	0	100.00	3.155	0	100.00	41.90	41.90	0.00		4	
170	02/17/54	0.06								458.0	0.00		4	
171	03/16/54	0.60								9667	0.00		9	
172	03/19/54	0.77								12524	0.00		12	
173	03/20/54	0.14								1837	0.00		1	
174	03/21/54	0.26								3835	0.00		3	
175	03/24/54	0.03								98.11	0.00		9	
176	03/24/54	0.14								1837	0.00		1	
177	03/29/54	0.66								10670	0.00		10	
178	04/27/54	0.11								1346	0.00		1	
179	05/15/54	0.01								10.31	0.00		1	
180	05/29/54	0.01								10.31	0.00		1	
181	06/13/54	0.01								10.31	0.00		1	
182	07/24/54	0.01								10.31	0.00		1	
183	08/03/54	0.04	12.54	0	100.00	59.99	0	100.00	178.9	178.9	0.00		1	
184	11/10/54	1.19	834.6	0	100.00	3994	0	100.00	19770	19770	0.00		19	
185	11/15/54	0.04	12.54	0	100.00	59.99	0	100.00	178.9	178.9	0.00		1	
186	11/29/54	0.01	0	0	0	0	0	0	10.31	10.31	0.00		1	
187	12/03/54	0.37	208.8	0	100.00	999.4	0	100.00	5738	5738	0.00		9	
188	12/04/54	0.01	0	0	0	0	0	0	10.31	10.31	0.00		1	
189	12/09/54	0.36	202.1	0	100.00	967.0	0	100.00	5558	5558	0.00		9	
Minimum:		0.01	0.00	0.00	0.00	0.00	0.00	0.00	10.31	10.31	0.00		1	
Maximum:		3.28	2384.00	0.00	100.00	11407.00	0.00	100.00	55108.00	55108.00	0.00		5510	
Average:		0.46	309.68	0.00	78.57	1481.92	0.00	78.57	7395.74	7395.74	0.00		739	
Total:		12.91	8671	0	100.00	41494	0	100.00	207081	207081	0.00		207	

Runoff Volume for each rainfall event for each control practice, along with the Minimum, Maximum, Average, and Total are shown on this tab.

# Control Practices – Particulate Solids Yield

Land Uses			Junctions			Control Practices			Outfall			Output Summary		
Runoff Volume			Part. Solids Yield (lbs)			Part. Solids Conc. (mg/L)			Summary Table					
Data File: C:\WinSLAMM Files\Example Files\Retrofit Example With Management Co														
Rain File: CA Los Angeles WSO AP 4899.f														
Date: 08-20-12 Time: 3:18:03 PM														
Site Description: Santa Monica, CA, Urban Stormwater Retrofit Example, With Manage														
Control Practice Type ==>			CP# 1 - Porous Pavement			CP# 2 - Porous Pavement			CP# 3 - Catchbasin Cleaning			CP# 4 - E		
Control Practice Name/Location ==>			SA Device, LU# 1, SA# 27			SA Device, LU# 1, SA# 33			DS Catchbasins # 1			DS Biofil		
Rain Number	Start Date	Rain Total (in)	Influent Part. Sol. Yield(lbs)	Effluent Part. Sol. Yield(lbs)	Part.Yield Percent Reduction	Influent Part. Sol. Yield(lbs)	Effluent Part. Sol. Yield(lbs)	Part.Yield Percent Reduction	Influent Part. Sol. Yield(lbs)	Effluent Part. Sol. Yield(lbs)	Part.Yield Percent Reduction	Influent Part. Sol. Yield(lbs)	Effluent Part. Sol. Yield(lbs)	Part.Yield Percent Reduction
164	01/17/54	0.25	1.037	0	100.00	2.441	0	100.00	7.663	5.149	32.81	5		
165	01/18/54	1.16	6.392	0	100.00	15.05	0	100.00	40.92	31.05	24.11	3		
166	01/19/54	0.95	5.184	0	100.00	12.21	0	100.00	33.16	24.95	24.76	2		
167	01/23/54	1.12	6.158	0	100.00	14.50	0	100.00	39.43	26.96	31.62	2		
168	02/13/54	3.28	18.75	0	100.00	44.15	0	100.00	117.5	97.70	16.84	9		
169	02/14/54	0.02	0.005185	0	100.00	0.01221	0	100.00	0.08242	0.03924	52.40	0.009655	50.00	0.009655
170	02/17/54	0.06								0.5238	46.56	0.009655	50.00	0.009655
171	03/16/54	0.60								14.16	31.09	1		
172	03/19/54	0.77								19.72	26.02	1		
173	03/20/54	0.14								2.110	45.27	2		
174	03/21/54	0.26								4.428	44.70	4		
175	03/24/54	0.03								0.09188	57.39	0.009655	50.00	0.009655
176	03/24/54	0.14								3.020	21.67	3		
177	03/29/54	0.66								16.47	27.41	1		
178	04/27/54	0.11								1.535	45.69	1		
179	05/15/54	0.01								0.009655	50.00	0.009655	50.00	0.009655
180	05/29/54	0.01								0.009655	50.00	0.009655	50.00	0.009655
181	06/13/54	0.01								0.009655	50.00	0.009655	50.00	0.009655
182	07/24/54	0.01								0.009655	50.00	0.009655	50.00	0.009655
183	08/03/54	0.04	0.09861	0	100.00	0.2322	0	100.00	0.4101	0.1773	56.77	0.1		
184	11/10/54	1.19	6.565	0	100.00	15.46	0	100.00	42.03	30.31	27.87	3		
185	11/15/54	0.04	0.09861	0	100.00	0.2322	0	100.00	0.4101	0.1777	56.68	0.1		
186	11/29/54	0.01	0	0	0	0	0	0	0.01931	0.009655	50.00	0.009655	50.00	0.009655
187	12/03/54	0.37	1.643	0	100.00	3.868	0	100.00	12.00	7.871	34.40	7		
188	12/04/54	0.01	0	0	0	0	0	0	0.01931	0.009655	50.00	0.009655	50.00	0.009655
189	12/09/54	0.36	1.589	0	100.00	3.743	0	100.00	11.62	8.367	28.00	8		
Minimum:		0.01	0	0	0	0	0	0	0.01931	0.009655	16.84	0.009655	50.00	0.009655
Maximum:		3.28	18.75	0	100.0	44.15	0	100.0	117.5	97.70	57.39	9		
Average:		0.46	2.436	0	78.57	5.736	0	78.57	15.71	11.85	38.75	1		
Total:		12.91	68.20	0	100.00	160.6	0	100.00	439.8	331.7	24.57	3		

Particulate Solids Yield for each rainfall event for each control practice, along with the Minimum, Maximum, Average, and Total are shown on this tab.



# Control Practices – Particulate Solids Concentration

Land Uses			Junctions			Control Practices			Outfall			Output Summary		
Runoff Volume			Part. Solids Yield (lbs)			Part. Solids Conc. (mg/L)			Summary Table					
Data File: C:\WinSLAMM Files\Example Files\Retrofit Example With Management Co														
Rain File: CA Los Angeles WSO AP 4899.f														
Date: 08-20-12 Time: 3:18:03 PM														
Site Description: Santa Monica, CA, Urban Stormwater Retrofit Example, With Manage														
Control Practice Type ==>			CP# 1 - Porous Pavement			CP# 2 - Porous Pavement			CP# 3 - Catchbasin Cleaning			CP# 4 - B		
Control Practice Name/Location ==>			SA Device, LU# 1, SA# 27			SA Device, LU# 1, SA# 33			DS Catchbasins # 1			DS Biofil		
Rain Number	Start Date	Rain Total (in)	Influent Part. Sol. Conc.(mg/L)	Effluent Part. Sol. Conc.(mg/L)	Part.Conc. Percent Reduction	Influent Part. Sol. Conc.(mg/L)	Effluent Part. Sol. Conc.(mg/L)	Part.Conc. Percent Reduction	Influent Part. Sol. Conc.(mg/L)	Effluent Part. Sol. Conc.(mg/L)	Part.Conc. Percent Reduction	Influent Part. Sol. Conc.(mg/L)	Effluent Part. Sol. Conc.(mg/L)	Part.Conc. Percent Reduction
164	01/17/54	0.25	126.0	126.0	0	62.00	62.00	0	33.45	22.47	32.81	2		
165	01/18/54	1.16	126.0	126.0	0	62.00	62.00	0	34.05	25.84	24.11	2		
166	01/19/54	0.95	126.0	126.0	0	62.00	62.00	0	34.06	25.63	24.76	2		
167	01/23/54	1.12	126.0	126.0	0	62.00	62.00	0	34.05	23.28	31.62	2		
168	02/13/54	3.28	126.0	126.0	0	62.00	62.00	0	34.15	28.40	16.84	2		
169	02/14/54	0.02							35.51	15.00	52.40	1		
170	02/17/54	0.06							34.28	18.32	46.56	1		
171	03/16/54	0.60							34.05	23.46	31.09	2		
172	03/19/54	0.77							34.09	25.22	26.02	2		
173	03/20/54	0.14							33.62	18.40	45.27	1		
174	03/21/54	0.26							33.45	18.50	44.70	1		
175	03/24/54	0.03							35.20	15.00	57.39	1		
176	03/24/54	0.14							33.62	26.33	21.67	2		
177	03/29/54	0.66							34.06	24.73	27.41	2		
178	04/27/54	0.11							33.63	18.26	45.69	1		
179	05/15/54	0.01							30.00	15.00	50.00	1		
180	05/29/54	0.01							30.00	15.00	50.00	1		
181	06/13/54	0.01	0	0	0	0	0	0	30.00	15.00	50.00	1		
182	07/24/54	0.01	0	0	0	0	0	0	30.00	15.00	50.00	1		
183	08/03/54	0.04	126.0	126.0	0	62.00	62.00	0	36.73	15.88	56.77	1		
184	11/10/54	1.19	126.0	126.0	0	62.00	62.00	0	34.05	24.56	27.87	2		
185	11/15/54	0.04	126.0	126.0	0	62.00	62.00	0	36.73	15.91	56.68	1		
186	11/29/54	0.01	0	0	0	0	0	0	30.00	15.00	50.00	1		
187	12/03/54	0.37	126.0	126.0	0	62.00	62.00	0	33.49	21.97	34.40	2		
188	12/04/54	0.01	0	0	0	0	0	0	30.00	15.00	50.00	1		
189	12/09/54	0.36	126.0	126.0	0	62.00	62.00	0	33.49	24.11	28.00	2		
Minimum:		0.01	0	0	0	0	0	0	30.00	15.00	16.84	1		
Maximum:		3.28	126.0	126.0	0	62.00	62.00	0	36.73	28.40	57.39	2		
Average:		0.46	99.00	99.00	0	48.71	48.71	0	33.19	20.39	38.75	2		

Particulate Solids Concentration for each rainfall event for each control practice, along with the Minimum, Maximum and Average are shown on this tab.

# Saving/Printing the Output

The screenshot shows the WinSLAMM v 10 software interface. The title bar reads "WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb] - [WinSLAMM Model Output]". The File menu is open, showing options: File, View, Print..., and Close. A yellow arrow points from the "Print..." option to a text box. The text box contains the following instructions:

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

Navigate to where you would like to save the output.

An output file that can be opened in a program such as Microsoft Excel will be created.

The main window displays several summary tables and controls:

- Land Uses**: A list of land use types (ND, OU, FRE, GS, CB, WP, BF, MF, HD, OD, FS) with corresponding icons.
- Junctions**: A section for defining junctions.
- Control Practices**: A section for defining control practices.
- Outfall**: A section for defining outfall parameters.
- Output Summary**: A section containing several tables and summary statistics.

**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
All Land Uses without Controls	338418		0.44	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.21	102.6	1008	71.31 %

File Output: Annualized Total After Outfall Controls: 191491

Years in Model Run: 0.82

1226

**Pollutant**

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Out Summary to Text File

Total Area Modeled (ac): 8.440

**Control Practice Costs**

Cost	\$ 486065
Maintenance Cost	\$ 19399
Value of All Costs	\$ 28991
Value of All Costs	\$ 866768
Value of All Costs	\$ 69551

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

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.44	Poor
With Controls	0.21	Poor

Perform Outfall Flow Duration Curve Calculations

Current File Data Entered | Total Area = 8.440 acres | Upstream Drainage Area = 0.000 acres | Icon Number | Index Number = | Icons Left = | Start Date: 03/02/75 | End Date: 12/29/75 | X = 8025 | Y = 6240

# Exiting the Output

WinSLAMM v 10 Data File: [C:\WinSLAMM\Users Guide\lv 10.0\Reference Guide.mdb] - [WinSLAMM Model Output]

File View

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

**Land Use:**

Commercial 1

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	0.680	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	2.850	Entered	--	--
14	Paved Parking 2				
15	Paved Parking 3				
16	Paved Parking 4				
17	Paved Parking 5				

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1 Commercial Commercial 1 8.440

CP # Control Practice Type Control Practice Name or Location

1 Biofilter DS Biofilter # 1

Current File Data Entered Total Area = 8.440 acres No Upstream Source Areas LU# = 1 Index Number = 1 Remaining Icons = 235 Start Date: 01/02/73 End Date: 12/23/73 TX = 0100 Y = 2010

Land Uses Junctions Control Practices Outfall **Output Summary**

File Name: C:\WinSLAMM\Users Guide\lv 10.0\Reference Guide.mdb

**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
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %
Current File Output: Annualized Total After Outfall Controls	159134				1013	

Years in Model Run: 0.99

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Total Phosphorus	0.3871	0.2109	mg/L	8.178	2.073	lbs	74.66 %
Total TKN	1.708	1.067	mg/L	36.09	10.48	lbs	70.96 %

Print Output Summary to Text File

Total Area Modeled (ac) 8.440

**Total Control Practice Costs**

Capital Cost \$ 486065

Land Cost \$ 19399

Annual Maintenance Cost \$ 28991

Present Value of All Costs \$ 866768

Annualized Value of All Costs \$ 866768

Perform Outfall Flow Duration Curve Calculation

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

Without Controls Calculated Rv 0.38 Approximate Urban Stream Classification Poor

Fair

To exit the Output Screens, select the lower "X" in the upper right hand corner.

# Output Option 5

## One Line per Event Summary

WinSLAMM v 10 Data File: [C:\WinSLAMM Files\Example Files\Retrofit Example With Management Condition.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

RES INS COM IND CU FRE CS CB WP BF IM HD OD FS

Land Use:  
Commercial 1

Output Option 5 will create a text file in the same folder that the model file is located.

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Residential	Residential 1	7.887
2	Residential	Residential 2	4.683

CP #	Control Practice Type	Control Practice Name or Location
1	Porous Pavement	SA Device, LU# 1, SA# 27
2	Porous Pavement	SA Device, LU# 1, SA# 33
3	Catchbasin Cleaning	DS Catchbasins # 1
4	Biofilter	DS Biofilters # 1

Current File Data Entered Total Area = 12.570 acres Upstream Drainage Area = 0.000 acres LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/01/54 End Date: 12/31/54

Residential 2  
Junction 3  
DS Catchbasins # 1  
Junction 2  
DS Biofilters # 1  
Residential 1

Model Run Complete

The output for this model run is in the file: C:\WinSLAMM Files\Example Files\Retrofit Example With Management Condition.TXT

OK

# Output Option 5 - One Line per Event Summary

Retrofit Example With Management Condition.TXT - Notepad									
File Edit Format View Help									
Event Number	Rain_Start Start Date	Rain_Start Start Time	Julian Start_Date & Time	Rain Duration (hrs)	Rain Interevent Period(days)	Runoff Duration (hrs)	Rain Depth (in)		
162	01/11/54	12:00	741.50	3.00	0.75	3.60	0.09		
163	01/12/54	09:00	742.38	6.00	5.17	7.20	1.21		31
164	01/17/54	19:00	747.79	8.00	0.42	9.60	0.25		20
165	01/18/54	13:00	748.54	16.00	0.29	19.20	1.16		20
166	01/19/54	12:00	749.50	14.00	3.63	16.80	0.95		19
167	01/23/54	17:00	753.71	36.00	19.00	43.20	1.12		20
168	02/13/54	05:00	774.21	15.00	0.42	18.00	3.28		100
169	02/14/54	06:00	775.25	5.00	3.42	6.00	0.02		
170	02/17/54	21:00	778.88	3.00	26.63	3.60	0.06		
171	03/16/54	15:00	805.63	15.00	2.67	18.00	0.60		10
172	03/19/54	22:00	808.92	11.00	0.37	13.20	0.77		10
173	03/20/54	18:00	809.75	10.00	0.63	12.00	0.14		1
174	03/21/54	19:00	810.79	20.00	1.71	24.00	0.26		1
175	03/24/54	08:00	813.33	4.00	0.37	4.80	0.03		1
176							0.14		1
177							0.66		12
178							0.11		1
179							0.01		
180							0.01		
181							0.01		
182							0.01		
183							0.04		
184							1.19		21
185	11/15/54	18:00	1,049.75	3.00	13.42	3.60	0.04		
186	11/29/54	07:00	1,063.29	1.00	3.87	1.20	0.01		
187	12/03/54	05:00	1,067.21	16.00	0.25	19.20	0.37		1
188	12/04/54	03:00	1,068.13	1.00	5.46	1.20	0.01		1
189	12/09/54	15:00	1,073.63	8.00	0.00	9.60	0.36		
Summary Statistics				Rain Duration (hrs)	Rain Interevent Period(days)	Runoff Duration (hrs)	Rain Depth (in)		
Number of Events				27	27	28	27		
Total				248.0	322.1	297.6	12.91		28
Equivalent Annual Total				272.5	354.0	327.1	14.19		31
Minimum				1.000	0	1.200	1.000E+07		1
Maximum				36.00	99.38	43.20	3.280		10
Average of All Events				8.857	11.50	10.63	0.4611		1
Median				6.000	3.792	7.800	0.1400		
Std. Deviation				8.767	20.08	10.52	0.6950		
COV				0.9899	1.746	0.9899	1.507		1
First Rain Date: 01/11/54									
Last Rain Date: 12/09/54									
Total Time Period (yrs): 0.9099315									

The Output Option 5 text file can be reviewed in a text editor. It'll provide additional output such as runoff duration and peak flow for each event.

# Output Option 5 - One Line per Event Summary

Retrofit Example With Management Condition.TXT - Notepad							
File	Edit	Format	View	Help			
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)
0.09	838	0.20	0.06	0.24	1,070	56	
1.21	32,379	0.59	1.25	4.40	106	214	
0.25	3,521	0.31	0.10	0.33	361	79	
1.16	26,757	0.51	0.39	1.17	93	156	
0.95	19,477	0.45	0.32	1.02	101	123	
1.12	20,943	0.41	0.13	0.42	100	130	
3.28	100,361	0.67	1.55	5.37	49	310	
0.02	19	0.02	0.00	0.00	3,235	4	
0.06	445	0.16	0.03	0.12	819	23	
0.60	10,857	0.40	0.17	0.53	203	137	
0.77	16,656	0.47	0.35	1.05	138	143	
0.14	1,521	0.24	0.04	0.14	524	50	
0.26	3,240	0.27	0.04	0.14	318	64	
0.03	112	0.08	0.01	0.02	1,066	7	
0.14	1,781	0.28	0.41	1.40	394	44	
0.66	12,499	0.42	0.26	0.78	132	103	
0.11	1,155	0.23	0.04	0.13	805	58	
0.01	4	0.01	0.00	0.00	466	0	
0.01	4	0.01	0.00	0.00	466	0	
0.01	4	0.01	0.00	0.00	466	0	
0.01	4	0.01	0.00	0.00	466	0	
0.04	245	0.13	0.03	0.10	2,888	44	
1.19	23,837	0.44	0.20	0.60	166	246	
0.04	245	0.13	0.02	0.07	2,325	36	
0.01	4	0.01	0.00	0.00	466	0	
0.37	5,836	0.35	0.08	0.27	398	145	
0.01	2	0.00	0.00	0.00	787	0	
0.36	5,979	0.36	0.17	0.51	334	125	
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)
27	28	28	28	28	28	28	Number of Events
2.91	288725	n/a	n/a	n/a	n/a	2299	Total
4.19	317304	n/a	n/a	n/a	n/a	2526	Equivalent Annual Total
3.07	2,195	0.004811	5.081E-04	0.002170	49.48	0.1079	Minimum
1.280	100361	0.6706	1.549	5.375	3235	310.0	Maximum
4611	10312	0.2560	0.2022	0.6728	669.3	82.09	Average of All Events
1400	1651	0.2556	0.05144	0.1889	432.0	57.02	Median
5950	20090	0.1973	0.3638	1.263	817.7	82.11	Std. Deviation
1.507	1.948	0.7708	1.799	1.878	1.222	1.000	COV

# Output Option 6 – Hydrograph with Concentrations

WinSLAMM v 10 Data File: [C:\WinSLAMM Files\Example Files\Retrofit Example With Management Condition.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

RES INS COM IND OU FRE GS CB WP BF MF HD OD FS

Land Use:  
Commercial 1

Output Option 6 will create a \*.csv file in the same folder that the model file is located.

Land Use # Land Use Type Land Use Label Land Use Area (acres)

1	Residential	Residential 1	7.887
2	Residential	Residential 2	4.683

CP # Control Practice Type Control Practice Name or Location

1	Porous Pavement	SA Device, LU# 1, SA# 27
2	Porous Pavement	SA Device, LU# 1, SA# 33
3	Catchbasin Cleaning	DS Catchbasins # 1
4	Biofilter	DS Biofilters # 1

Current File Data Entered Total Area = 12.570 acres Upstream Drainage Area = 0.000 acres LU# = 1 Index Number = 1 Remaining Icons = 253 Start Date: 01/01/54 End Date: 12/31/54

Residential 2  
Junction 3  
DS Catchbasins # 1  
Junction 2  
DS Biofilters # 1  
Residential 1

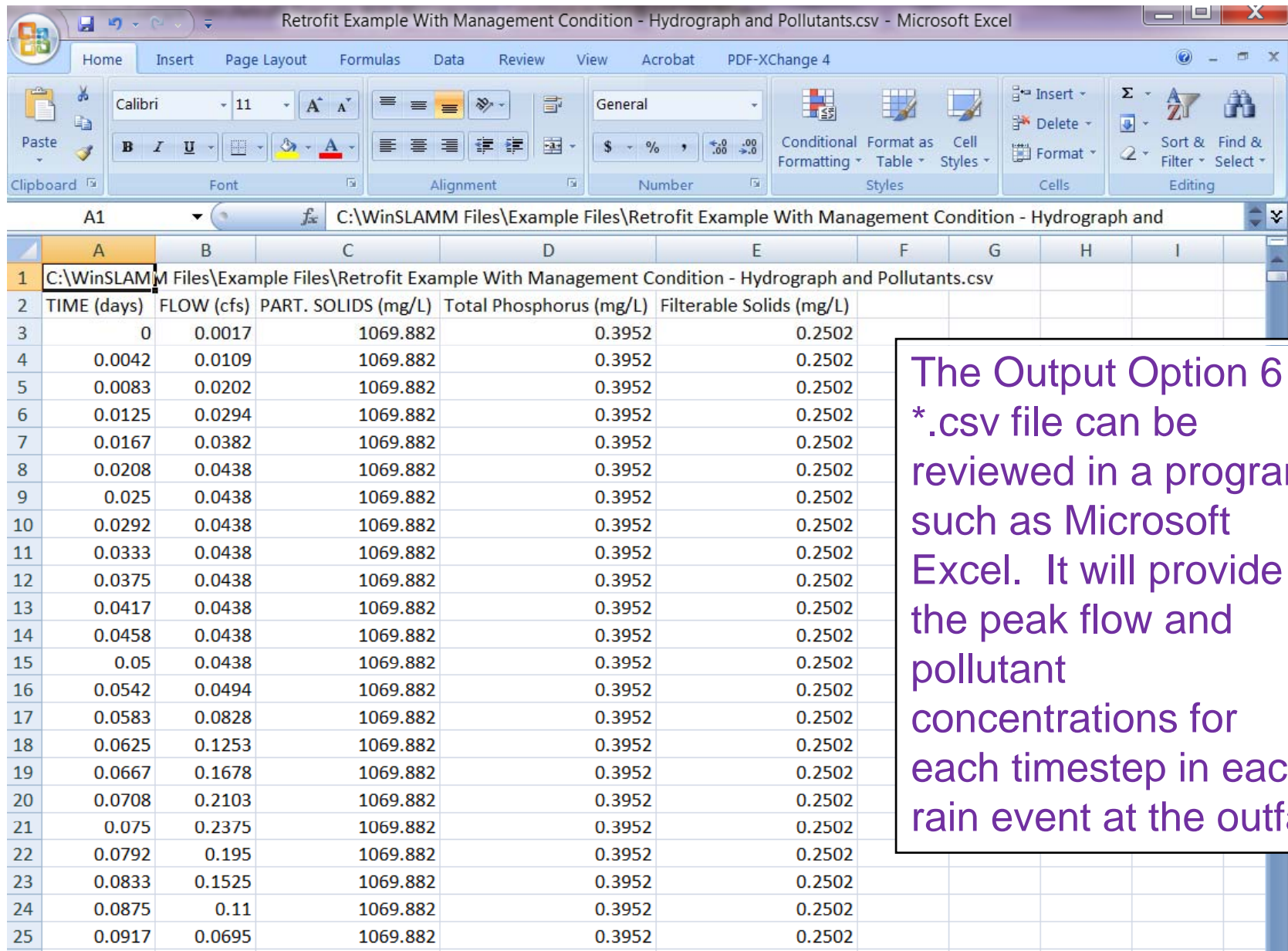
Output Complete

The hydrograph output for this model run is in the file:  
C:\WinSLAMM Files\Example Files\Retrofit Example With Management Condition - Hydrograph and Pollutants.csv

OK



# Output Option 6 – Hydrograph with Concentrations



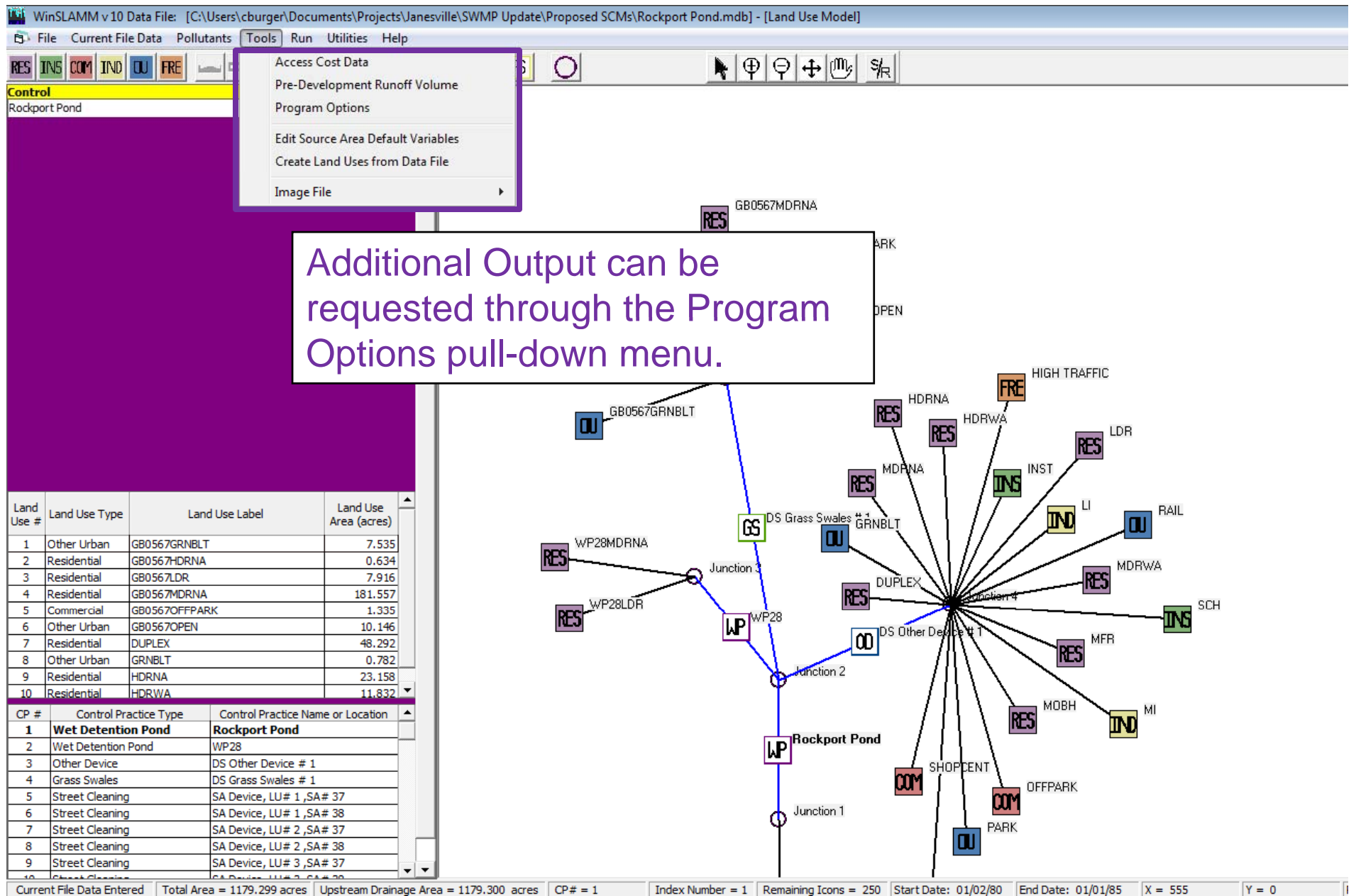
	A	B	C	D	E	F	G	H	I
1	C:\WinSLAMM Files\Example Files\Retrofit Example With Management Condition - Hydrograph and Pollutants.csv								
2	TIME (days)	FLOW (cfs)	PART. SOLIDS (mg/L)	Total Phosphorus (mg/L)	Filterable Solids (mg/L)				
3	0	0.0017	1069.882	0.3952	0.2502				
4	0.0042	0.0109	1069.882	0.3952	0.2502				
5	0.0083	0.0202	1069.882	0.3952	0.2502				
6	0.0125	0.0294	1069.882	0.3952	0.2502				
7	0.0167	0.0382	1069.882	0.3952	0.2502				
8	0.0208	0.0438	1069.882	0.3952	0.2502				
9	0.025	0.0438	1069.882	0.3952	0.2502				
10	0.0292	0.0438	1069.882	0.3952	0.2502				
11	0.0333	0.0438	1069.882	0.3952	0.2502				
12	0.0375	0.0438	1069.882	0.3952	0.2502				
13	0.0417	0.0438	1069.882	0.3952	0.2502				
14	0.0458	0.0438	1069.882	0.3952	0.2502				
15	0.05	0.0438	1069.882	0.3952	0.2502				
16	0.0542	0.0494	1069.882	0.3952	0.2502				
17	0.0583	0.0828	1069.882	0.3952	0.2502				
18	0.0625	0.1253	1069.882	0.3952	0.2502				
19	0.0667	0.1678	1069.882	0.3952	0.2502				
20	0.0708	0.2103	1069.882	0.3952	0.2502				
21	0.075	0.2375	1069.882	0.3952	0.2502				
22	0.0792	0.195	1069.882	0.3952	0.2502				
23	0.0833	0.1525	1069.882	0.3952	0.2502				
24	0.0875	0.11	1069.882	0.3952	0.2502				
25	0.0917	0.0695	1069.882	0.3952	0.2502				

The Output Option 6 \*.csv file can be reviewed in a program such as Microsoft Excel. It will provide the peak flow and pollutant concentrations for each timestep in each rain event at the outfall.



Additional Output

# Additional Output



# Additional Output

Program Options

**Detailed Output File Options**

**Biofilters**

- ☐ Detailed Biofilter Output
- ☐ Irreducible Concentration Detailed Output
- ☐ Particulate Reduction Output
- ☐ Stage-Outflow
- ☐ Stochastic Seepage Rate Detail
- ☒ Water Balance
- ☐ Evapotranspiration Detail

**Catchbasins**

- ☐ Performance by Event Output
- ☐ Performance By Step Output
- ☐ Stage-Inflow Data
- ☐ Stage-Outflow

**Cisterns**

- ☐ Detailed Output
- ☐ Outfall Discharge Hydrograph
- ☐ Water Balance

**Filter Strips**

- ☐ Hydraulics and Concentration by Event
- ☐ Hydraulics Detailed Output
- ☐ Incremental Performance Output
- ☐ Irreducible Concentration Detailed Output
- ☐ Particulate Reduction Output

**Flow Duration Curve Data**

- ☐ Detailed Data
- ☐ Plotting Calculations

☐ Critical Particle Size Calculation Detailed Output File

**Freeway Data**

- ☐ Freeway Washoff Detail

**Grass Swales**

- ☐ Hydraulics and Concentration by Event
- ☐ Hydraulics Detailed Output
- ☐ Incremental Performance Output
- ☐ Irreducible Concentration Detailed Output
- ☐ Particulate Reduction Output

**Hydrodynamic Devices**

- ☐ Detailed Output
- ☐ Performance By Event
- ☐ Stage-Inflow
- ☐ Stage-Outflow

**Porous Pavement**

- ☐ Detailed Output
- ☐ Stage-Outflow
- ☐ Stochastic Seepage Rate Detail
- ☐ Surface Seepage Rate
- ☐ Water Balance

**Street Cleaning**

- ☐ Street Dirt/Accumulation Plots
- ☐ Street Dirt Removal
- ☐ Washoff or Street Cleaning Detail

**Wet Detention Ponds**

- ☐ Detailed Output
- ☐ Pond Stage-Area-Volume Data
- ☐ Stage-Outflow
- ☐ Stone Weeper Detailed Output
- ☐ Water Balance Summary of All Ponds

**Media Filters (all types)**

- ☐ Detailed Time Step Output
- ☐ Stage-Outflow Data
- ☐ Stage-Area-Storage
- ☐ Device Effluent Concentrations
- ☐ Performance By Event
- ☐ Puls Routing Detail
- ☐ Iteration Information

**Green Roofs**

- ☐ Time Step Output
- ☐ Irreducible Concentration Calculations
- ☐ Particulate Reduction Output
- ☐ Stage-Area-Outflow
- ☐ Water Balance
- ☐ Evapotranspiration Detail

☐ Uncheck All Detailed Output File Options

☐ Check All Detailed Output File Options

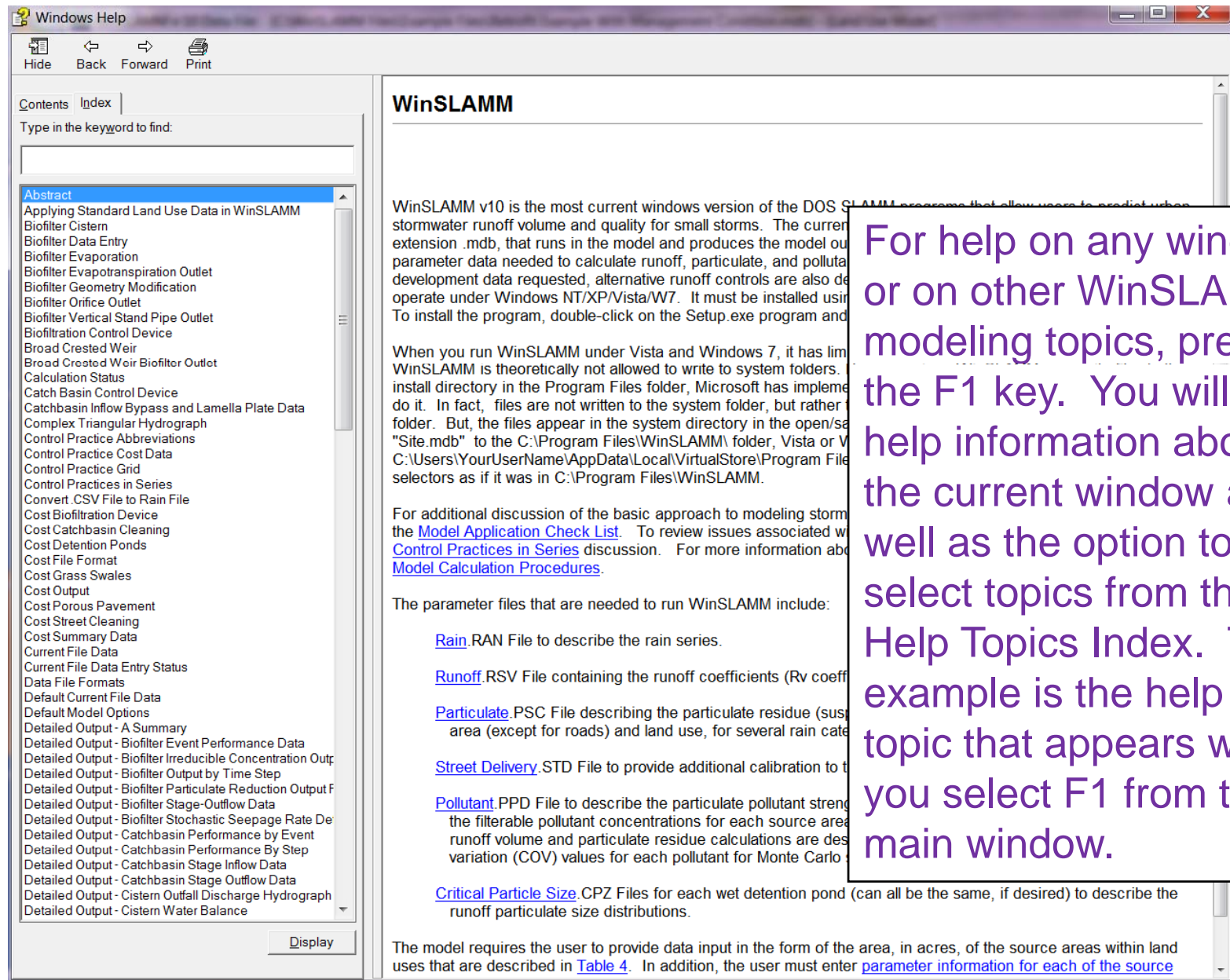
**File Update Options**

**Cancel Changes** **Save .INI File**

Check the box next to the desired output, then select "Save .INI File". A \*.csv file with the output will be created in the same folder as the model file.

For Additional Information  
See . . .

# The Context-Sensitive Help in the Program





# Questions?

For model information, go to [www.winslamm.com](http://www.winslamm.com)  
*Remember to Press the "F1" to access the Help File*