



# WinSLAMM v 10.0 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 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

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**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 | 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

**Print Input Data**

☒ Print Input Data to File  
☐ Print Input Data to Printer  
 Default Printer: Adobe PDF  
☒ Print Drainage System Image

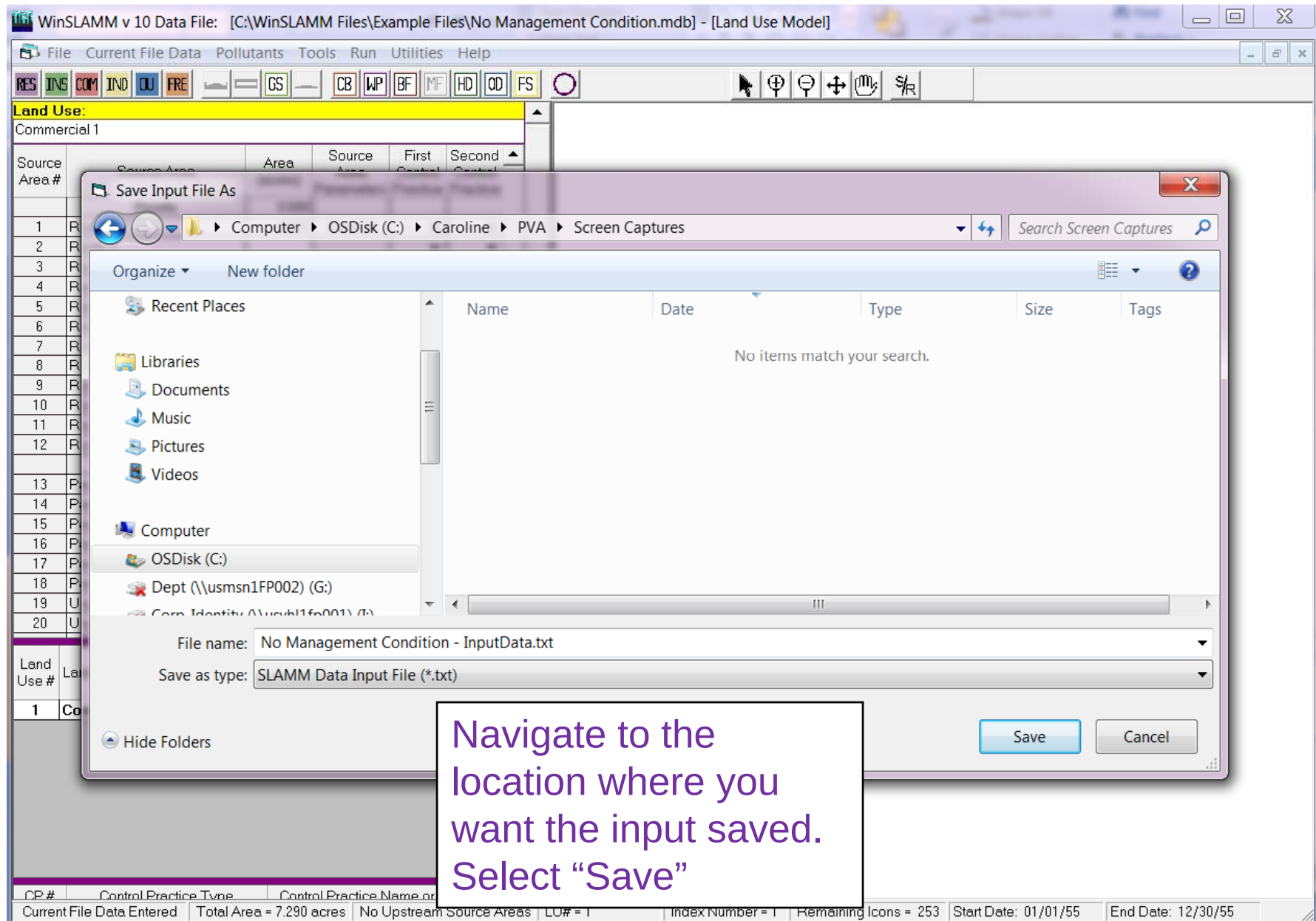
Cancel Print

Commercial 1

Junction 1

Select the desired options and then select "Print"

# 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>   |                   |              |                        |                        |                         |
|                | Roofs             | 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> |                   |              |                        |                        |                         |
|                | Parking           | 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   |              |                        |                        |                         |
| 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

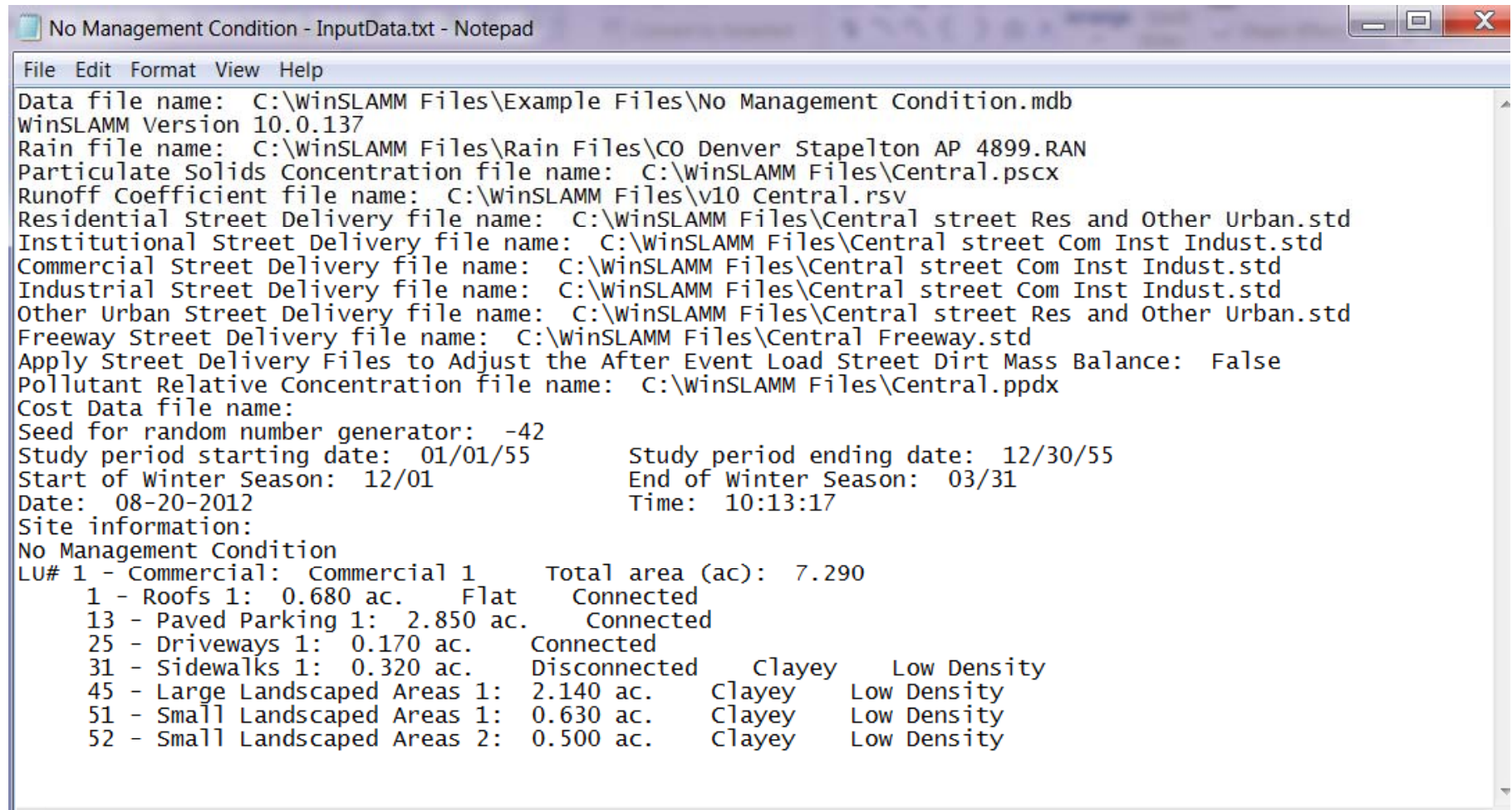
OK

Commercial 1

Outfall

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

# Printing the Input

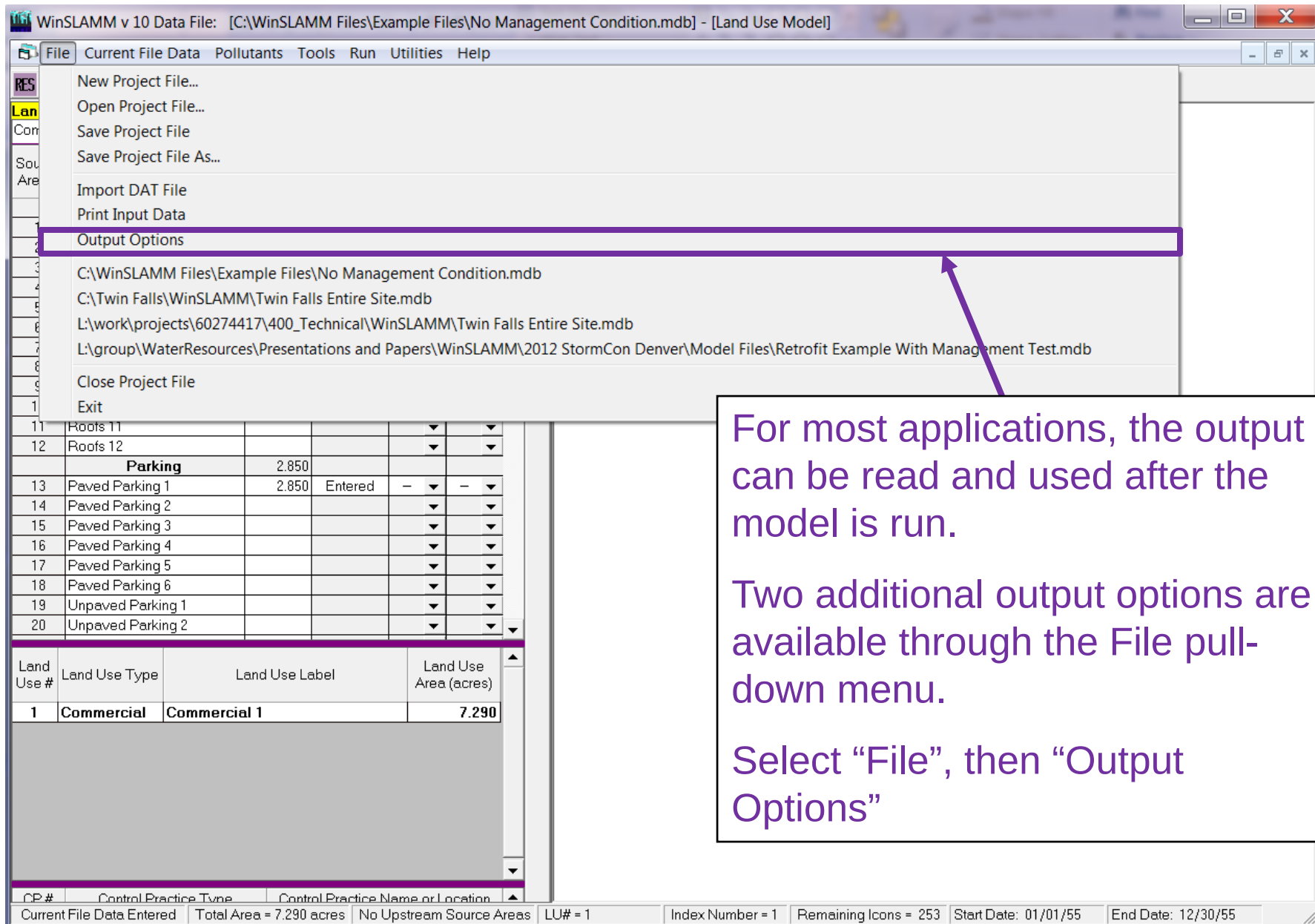


```
File Edit Format View Help
Data file name: C:\WinSLAMM Files\Example Files\No Management Condition.mdb
WinSLAMM Version 10.0.137
Rain file name: C:\WinSLAMM Files\Rain Files\CO Denver Stapelton AP 4899.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\Central.pscx
Runoff Coefficient 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\w 10.0\Reference Guide.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

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**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 |
|---|-----------|------------------|

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>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                           |                                      |
| 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 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 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 to 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>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 | Commercial | Commercial 1 | 8.440 |
|---|------------|--------------|-------|

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

**Pollutant Grid**

| 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

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

# 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>    | 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 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 |
|---|-----------|------------------|

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                           |                                      |

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  |

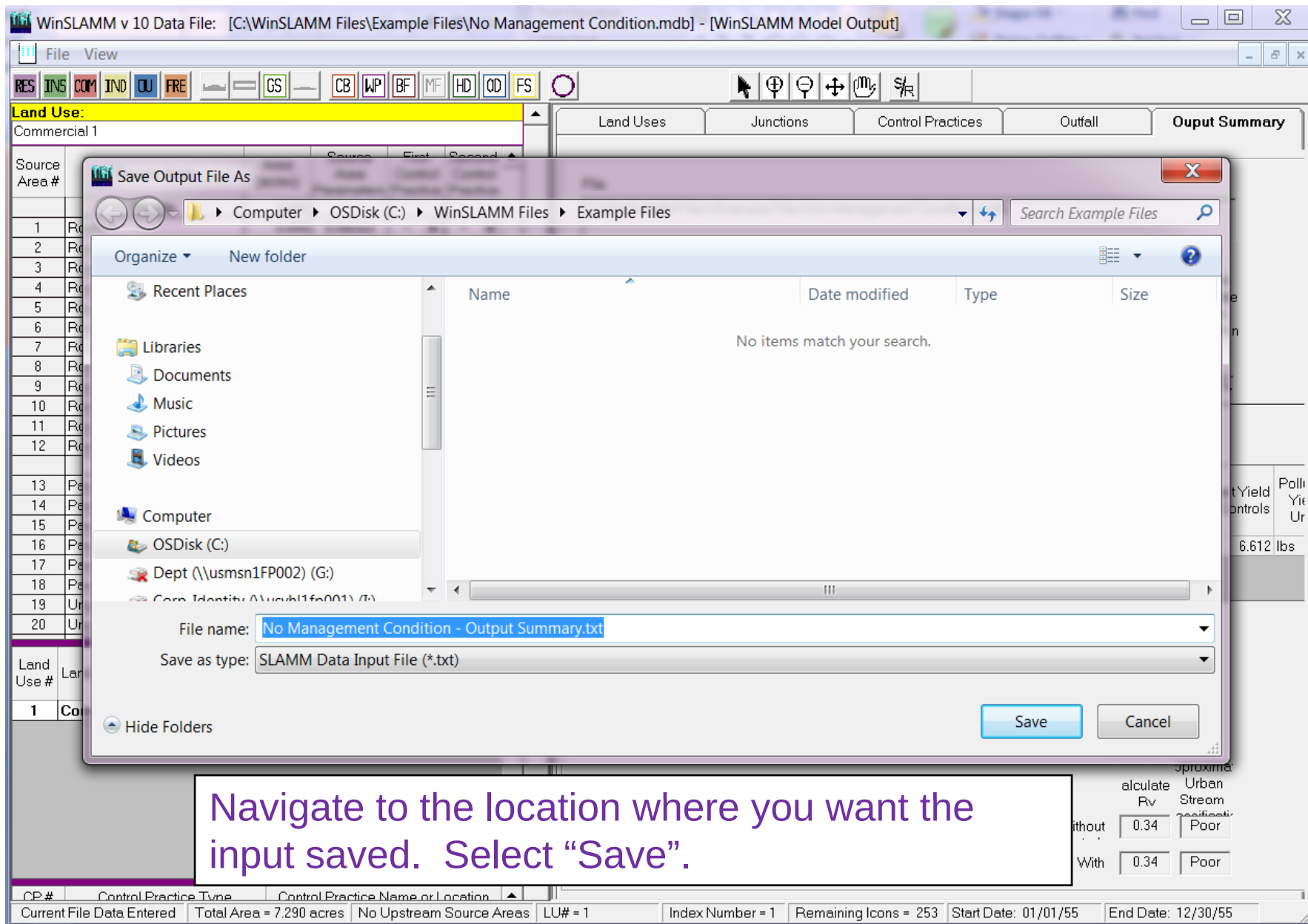
Perform Outfall Flow Duration Curve Calculations

**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

# Printing the Output Summary



# Printing the Output Summary

WinSLAMM v 10 Data File: [C:\WinSLAMMUsers Guide\v 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\v 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\v 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

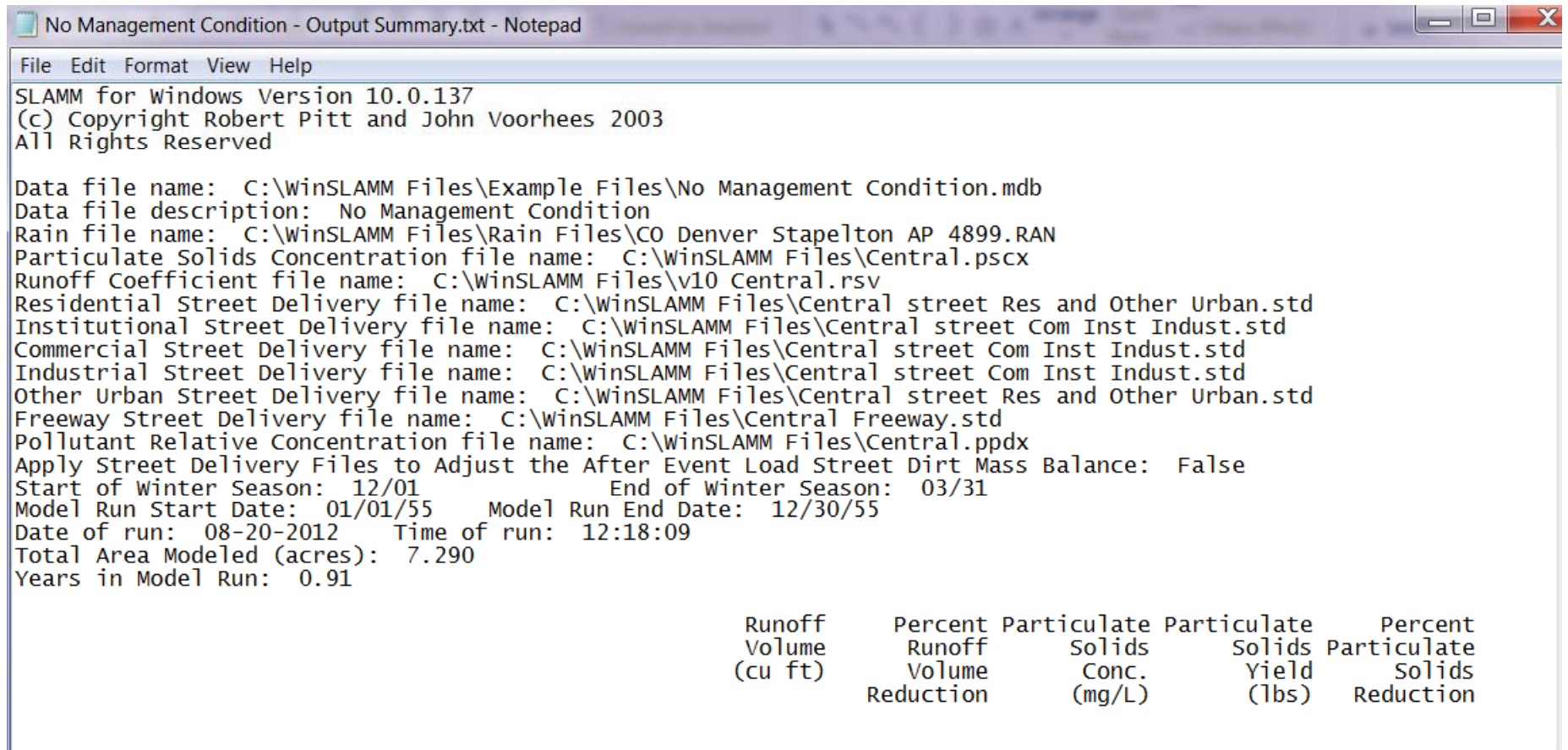
**Receiving Water Impacts Due To Stormwater Runoff** (CWP Impervious Cover Model)

|                  | 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                                    |

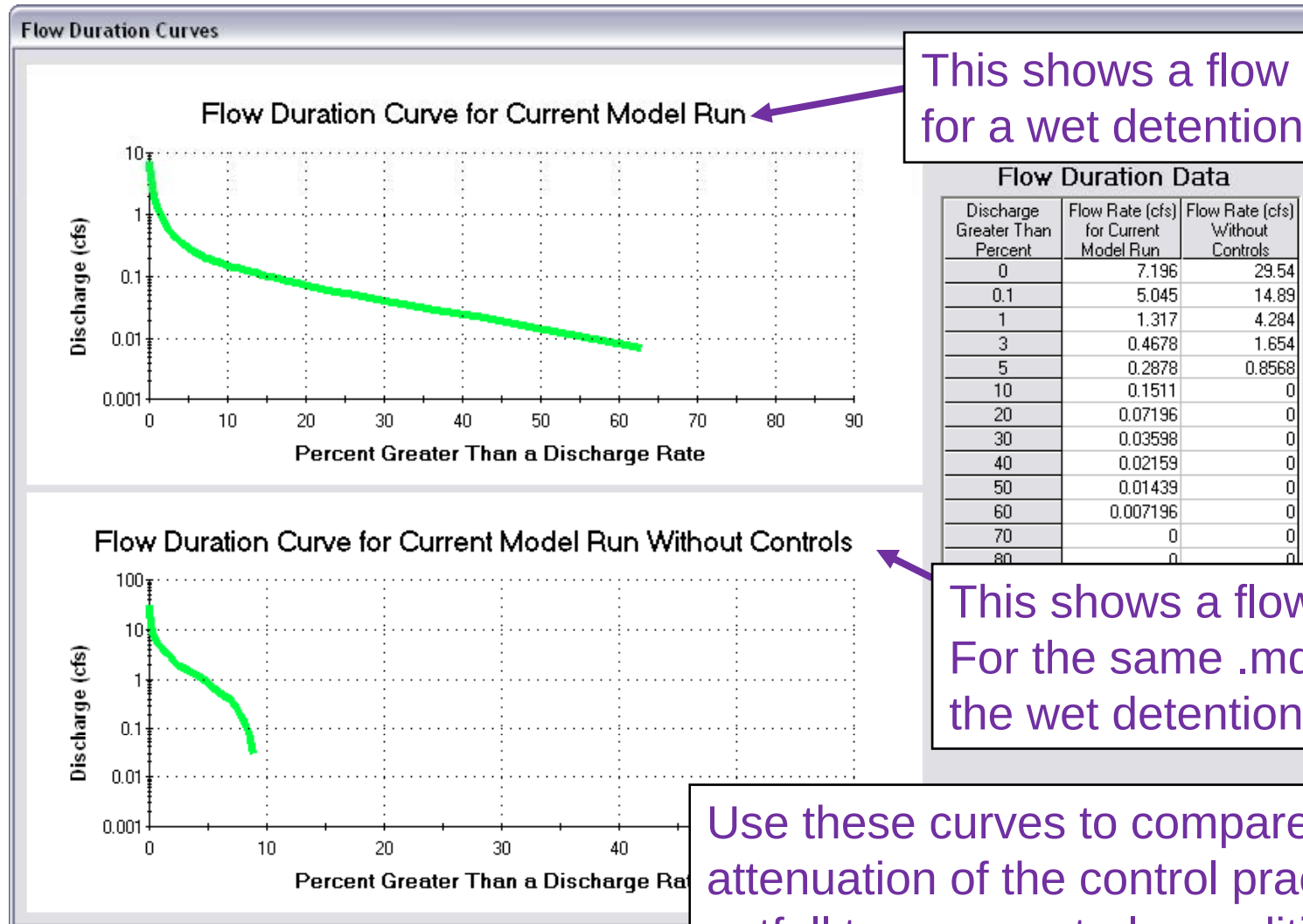
Perform Outfall Flow Duration Curve Calculations

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 Output Summary also includes:

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

# 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 Table 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        | Entered                | --                     | --                      |
| 1             | Roofs 1      | 0.680        |                        |                        |                         |
| 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        |              |                        |                        |                         |
| 18            | Paved        |              |                        |                        |                         |
| 19            | Paved        |              |                        |                        |                         |
| 20            | Paved        |              |                        |                        |                         |
| 21            | Paved        |              |                        |                        |                         |
| 22            | Paved        |              |                        |                        |                         |
| 23            | Paved        |              |                        |                        |                         |
| 24            | Paved        |              |                        |                        |                         |
| 25            | Paved        |              |                        |                        |                         |
| 26            | Paved        |              |                        |                        |                         |
| 27            | Paved        |              |                        |                        |                         |
| 28            | Paved        |              |                        |                        |                         |
| 29            | Paved        |              |                        |                        |                         |
| 30            | Paved        |              |                        |                        |                         |
| 31            | Paved        |              |                        |                        |                         |
| 32            | Paved        |              |                        |                        |                         |
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# 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   |
| -                                | -               | -                                   | -                       | -           | -                 | -             | -                       | -                       | -                       | -    |
| -                                | -               | -                                   | -                       | -           | -                 | -             | -                       | -                       | -                       | -    |
| -                                | -               | -                                   | -                       | -           | -                 | -             | -                       | -                       | -                       | -    |
| -                                | -               | -                                   | -                       | -           | -                 | -             | -                       | -                       | -                       | -    |
| -                                | -               | -                                   | -                       | -           | -                 | -             | -                       | -                       | -                       | -    |
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| -                                | -               | -                                   | -                       | -           | -                 | -             | -                       | -                       | -                       | -    |
| 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 |
| 0.02                             | 41.94           | 0                                   | 37                      | 0           | 2                 | 3             | 0                       | 0                       | 0                       | 0.07 |
| 0.29                             | 3555            | 502                                 | 1794                    | 89          | 387               | 745           | 25                      | 7                       | 6                       | 0.40 |
| 0.32                             | 4016            | 570                                 | 2020                    | 100         | 435               | 836           | 36                      | 11                      | 8                       | 0.41 |
| 0.18                             | 1992            | 266                                 | 1015                    | 52          | 225               | 434           | 0                       | 0                       | 0                       | 0.36 |
| 0.03                             | 124.3           | 0                                   | 83                      | 3           | 13                | 25            | 0                       | 0                       | 0                       | 0.14 |
| 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

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\lv 10.1      |            |                 |                                     |                    |                   |                         |                       |                  |                |              |                |
| Rain File: WisReg - Duluth MN 1975.RAN          |            |                 |                                     |                    |                   |                         |                       |                  |                |              |                |
| Date: 10-15-12 Time: 7:34:09 AM                 |            |                 |                                     |                    |                   |                         |                       |                  |                |              |                |
| Site Description: Biofilters, Commercial Develo |            |                 |                                     |                    |                   |                         |                       |                  |                |              |                |
| 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                                        | -          | -               | -                                   | -                  | -                 | -                       | -                     | -                |                |              |                |
| 04/04/75                                        | -          | -               | -                                   | -                  | -                 | -                       | -                     | -                |                |              |                |
| 04/11/75                                        | -          | -               | -                                   | -                  | -                 | -                       | -                     | -                |                |              |                |
| 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        | 5554            | 684                | 284               | 433                                 | 16                      | 28                      | 24                      | 0.29           | 0.13               | 96.3           |
| 11/11/75                                 | 0.7        | 7200            | 884                | 353               | 532                                 | 20                      | 35                      | 30                      | 0.37           | 0.17               | 95.5           |
| 11/18/75                                 | 2.4        | 24000           | 2928               | 1131              | 1696                                | 76                      | 132                     | 114                     | 0.87           | 0.40               | 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                                 | -          | -               | -                  | -                 | -                                   | -                       | -                       | -                       | -              | -                  | -              |
| 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             | 100.0           | -                  | -                        | -                                   | -                  | -             | -                       | 1.3                     | 1.1                     |  |
| 04/17/75                                                            | 0.10             | 100.0           | -                  | -                        | -                                   | -                  | -             | -                       | 0.0                     | 0.0                     |  |
| 04/17/75                                                            | 0.19             | 100.0           | -                  | -                        | -                                   | -                  | -             | -                       | 0.0                     | 0.0                     |  |
| 04/19/75                                                            | 0.03             | 100.0           | -                  | -                        | -                                   | -                  | -             | -                       | 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                                                      | -          | -               | -                    | -                        | -           | -                  | 60.0          | 15.77                              | 4.642                   | 3.684                   |
| 04/17/75                                                      | -          | -               | -                    | -                        | -           | -                  | .83           | 0                                  | 0                       | 0                       |
| 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.

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          | 0                    | 0       | 0                        | 0           | 0                                  | 0             | 0                       | 0                       | 12.35                   |
| 11/28/75                                                      | 0          | 0                    | 0       | 0                        | 0           | 0                                  | 0             | 0                       | 0                       | -                       |
| 11/29/75                                                      | 0          | 0                    | 0       | 0                        | 0           | 0                                  | 0             | 0                       | 0                       | -                       |
| 12/03/75                                                      | 0          | 0                    | 0       | 0                        | 0           | 0                                  | 0             | 0                       | 0                       | -                       |
| 12/04/75                                                      | 0          | 0                    | 0       | 0                        | 0           | 0                                  | 0             | 0                       | 0                       | -                       |
| 12/08/75                                                      | 0          | 0                    | 0       | 0                        | 0           | 0                                  | 0             | 0                       | 0                       | -                       |
| 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                                                      | -          | -                    | -       | -                                  | -           | -                  | 60.4          | 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.

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       | 1.676              | 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\w 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               |  | Ouput 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                          |                          |  |
| 166                                                                                | 01/19/54   | 0.95            | 659.0                    | 0                        | 100.00                        | 3154                      | 0                        | 100.00                        | 15595                       | 15595                    | 0.00                          |                          |  |
| 167                                                                                | 01/23/54   | 1.12            | 782.8                    | 0                        | 100.00                        | 3746                      | 0                        | 100.00                        | 18548                       | 18548                    | 0.00                          |                          |  |
| 168                                                                                | 02/13/54   | 3.28            | 2384                     | 0                        | 100.00                        | 11407                     | 0                        | 100.00                        | 55108                       | 55108                    | 0.00                          |                          |  |
| 169                                                                                | 02/14/54   | 0.02            | 0.6592                   | 0                        | 100.00                        | 3.155                     | 0                        | 100.00                        | 41.90                       | 41.90                    | 0.00                          |                          |  |
| 170                                                                                | 02/17/54   | 0.06            |                          |                          |                               |                           |                          |                               |                             | 458.0                    | 0.00                          |                          |  |
| 171                                                                                | 03/16/54   | 0.60            |                          |                          |                               |                           |                          |                               |                             | 9667                     | 0.00                          |                          |  |
| 172                                                                                | 03/19/54   | 0.77            |                          |                          |                               |                           |                          |                               |                             | 12524                    | 0.00                          |                          |  |
| 173                                                                                | 03/20/54   | 0.14            |                          |                          |                               |                           |                          |                               |                             | 1837                     | 0.00                          |                          |  |
| 174                                                                                | 03/21/54   | 0.26            |                          |                          |                               |                           |                          |                               |                             | 3835                     | 0.00                          |                          |  |
| 175                                                                                | 03/24/54   | 0.03            |                          |                          |                               |                           |                          |                               |                             | 98.11                    | 0.00                          |                          |  |
| 176                                                                                | 03/24/54   | 0.14            |                          |                          |                               |                           |                          |                               |                             | 1837                     | 0.00                          |                          |  |
| 177                                                                                | 03/29/54   | 0.66            |                          |                          |                               |                           |                          |                               |                             | 10670                    | 0.00                          |                          |  |
| 178                                                                                | 04/27/54   | 0.11            |                          |                          |                               |                           |                          |                               |                             | 1346                     | 0.00                          |                          |  |
| 179                                                                                | 05/15/54   | 0.01            |                          |                          |                               |                           |                          |                               |                             | 10.31                    | 0.00                          |                          |  |
| 180                                                                                | 05/29/54   | 0.01            |                          |                          |                               |                           |                          |                               |                             | 10.31                    | 0.00                          |                          |  |
| 181                                                                                | 06/13/54   | 0.01            |                          |                          |                               |                           |                          |                               |                             | 10.31                    | 0.00                          |                          |  |
| 182                                                                                | 07/24/54   | 0.01            |                          |                          |                               |                           |                          |                               |                             | 10.31                    | 0.00                          |                          |  |
| 183                                                                                | 08/03/54   | 0.04            | 12.54                    | 0                        | 100.00                        | 59.99                     | 0                        | 100.00                        | 178.9                       | 178.9                    | 0.00                          |                          |  |
| 184                                                                                | 11/10/54   | 1.19            | 834.6                    | 0                        | 100.00                        | 3994                      | 0                        | 100.00                        | 19770                       | 19770                    | 0.00                          |                          |  |
| 185                                                                                | 11/15/54   | 0.04            | 12.54                    | 0                        | 100.00                        | 59.99                     | 0                        | 100.00                        | 178.9                       | 178.9                    | 0.00                          |                          |  |
| 186                                                                                | 11/29/54   | 0.01            | 0                        | 0                        | 0                             | 0                         | 0                        | 0                             | 10.31                       | 10.31                    | 0.00                          |                          |  |
| 187                                                                                | 12/03/54   | 0.37            | 208.8                    | 0                        | 100.00                        | 999.4                     | 0                        | 100.00                        | 5738                        | 5738                     | 0.00                          |                          |  |
| 188                                                                                | 12/04/54   | 0.01            | 0                        | 0                        | 0                             | 0                         | 0                        | 0                             | 10.31                       | 10.31                    | 0.00                          |                          |  |
| 189                                                                                | 12/09/54   | 0.36            | 202.1                    | 0                        | 100.00                        | 967.0                     | 0                        | 100.00                        | 5558                        | 5558                     | 0.00                          |                          |  |
| Minimum:                                                                           |            | 0.01            | 0.00                     | 0.00                     | 0.00                          | 0.00                      | 0.00                     | 0.00                          | 10.31                       | 10.31                    | 0.00                          |                          |  |
| Maximum:                                                                           |            | 3.28            | 2384.00                  | 0.00                     | 100.00                        | 11407.00                  | 0.00                     | 100.00                        | 55108.00                    | 55108.00                 | 0.00                          |                          |  |
| Average:                                                                           |            | 0.46            | 309.68                   | 0.00                     | 78.57                         | 1481.92                   | 0.00                     | 78.57                         | 7395.74                     | 7395.74                  | 0.00                          |                          |  |
| Total:                                                                             |            | 12.91           | 8671                     | 0                        | 100.00                        | 41494                     | 0                        | 100.00                        | 207081                      | 207081                   | 0.00                          |                          |  |

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            |                                 |                                 |                              |                                 |                                 |                              | 51                              | 15.00                           | 52.40                        | 1                               |                                 |                              |
| 170                                                                                | 02/17/54   | 0.06            |                                 |                                 |                              |                                 |                                 |                              | 4.28                            | 18.32                           | 46.56                        | 1                               |                                 |                              |
| 171                                                                                | 03/16/54   | 0.60            |                                 |                                 |                              |                                 |                                 |                              | 4.05                            | 23.46                           | 31.09                        | 2                               |                                 |                              |
| 172                                                                                | 03/19/54   | 0.77            |                                 |                                 |                              |                                 |                                 |                              | 4.09                            | 25.22                           | 26.02                        | 2                               |                                 |                              |
| 173                                                                                | 03/20/54   | 0.14            |                                 |                                 |                              |                                 |                                 |                              | 8.62                            | 18.40                           | 45.27                        | 1                               |                                 |                              |
| 174                                                                                | 03/21/54   | 0.26            |                                 |                                 |                              |                                 |                                 |                              | 8.45                            | 18.50                           | 44.70                        | 1                               |                                 |                              |
| 175                                                                                | 03/24/54   | 0.03            |                                 |                                 |                              |                                 |                                 |                              | 5.20                            | 15.00                           | 57.39                        | 1                               |                                 |                              |
| 176                                                                                | 03/24/54   | 0.14            |                                 |                                 |                              |                                 |                                 |                              | 8.62                            | 26.33                           | 21.67                        | 2                               |                                 |                              |
| 177                                                                                | 03/29/54   | 0.66            |                                 |                                 |                              |                                 |                                 |                              | 4.06                            | 24.73                           | 27.41                        | 2                               |                                 |                              |
| 178                                                                                | 04/27/54   | 0.11            |                                 |                                 |                              |                                 |                                 |                              | 8.63                            | 18.26                           | 45.69                        | 1                               |                                 |                              |
| 179                                                                                | 05/15/54   | 0.01            |                                 |                                 |                              |                                 |                                 |                              | 0.00                            | 15.00                           | 50.00                        | 1                               |                                 |                              |
| 180                                                                                | 05/29/54   | 0.01            |                                 |                                 |                              |                                 |                                 |                              | 0.00                            | 15.00                           | 50.00                        | 1                               |                                 |                              |
| 181                                                                                | 06/13/54   | 0.01            |                                 |                                 |                              |                                 |                                 |                              | 0.00                            | 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

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

File View  
Print ...  
Close

Land Uses Junctions Control Practices Outfall Output Summary

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

**Outfall Output Summary**

|                                                         | Runoff Volume<br>(cu. ft.) | Percent Runoff<br>Reduction | Runoff<br>Coefficient<br>(Rv) | Particulate Solids<br>Conc. (mg/L) | Particulate Solids<br>Yield (lbs) | Percent<br>Particulate<br>Solids<br>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<br>After Outfall Controls | 191491                     |                             |                               |                                    | 1226                              |                                               |

Years in Model Run: 0.82

| Pollutant        | Concen-<br>tration - No<br>Controls | Concen-<br>tration - With<br>Controls | Concen-<br>tration<br>Units | Pollutant Yield<br>- No Controls | Pollutant Yield<br>- With Controls | Pollutant<br>Yield<br>Units | Percent Yield<br>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  |

Perform Outfall Flow Duration Curve Calculations

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

|                  | Calculated<br>Rv | Approximate<br>Urban Stream<br>Classification |
|------------------|------------------|-----------------------------------------------|
| Without Controls | 0.44             | Poor                                          |
| With Controls    | 0.21             | Poor                                          |

Land Use # Land Use Type  
1 Commercial

CP # Control Practice  
1 Biofilter

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

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.

# 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)

Calculated Rv Without Controls 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 MF 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            | 37  |
| 164          | 01/17/54              | 19:00                 | 747.79                   | 8.00                | 0.42                         | 9.60                  | 0.25            |     |
| 165          | 01/18/54              | 13:00                 | 748.54                   | 16.00               | 0.29                         | 19.20                 | 1.16            | 28  |
| 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            |     |
| 176          |                       |                       |                          |                     |                              |                       | 0.14            | 1   |
| 177          |                       |                       |                          |                     |                              |                       | 0.66            | 17  |
| 178          |                       |                       |                          |                     |                              |                       | 0.11            | 1   |
| 179          |                       |                       |                          |                     |                              |                       | 0.01            |     |
| 180          |                       |                       |                          |                     |                              |                       | 0.01            |     |
| 181          |                       |                       |                          |                     |                              |                       | 0.01            |     |
| 182          |                       |                       |                          |                     |                              |                       | 0.01            |     |
| 183          |                       |                       |                          |                     |                              |                       | 0.04            |     |
| 184          |                       |                       |                          |                     |                              |                       | 1.19            | 23  |
| 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            |     |

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.

| 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           | 37 |
| 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<br>Depth<br>(in)                                    | Runoff<br>Volume<br>(cf) | R_sub_v  | Average<br>Flow<br>(cfs) | Peak<br>Flow<br>(cfs) | Suspended<br>Solids<br>Conc(mg/L) | Suspended<br>Solids<br>Mass(lbs) | Pre-Develop.<br>Runoff<br>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<br>Depth<br>(in)                                    | Runoff<br>Volume<br>(cf) | R sub v  | Average<br>Flow<br>(cfs) | Peak<br>Flow<br>(cfs) | Suspended<br>Solids<br>Conc(mg/L) | Suspended<br>Solids<br>Mass(lbs) | Pre-Develop.<br>Runoff<br>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 UJ 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

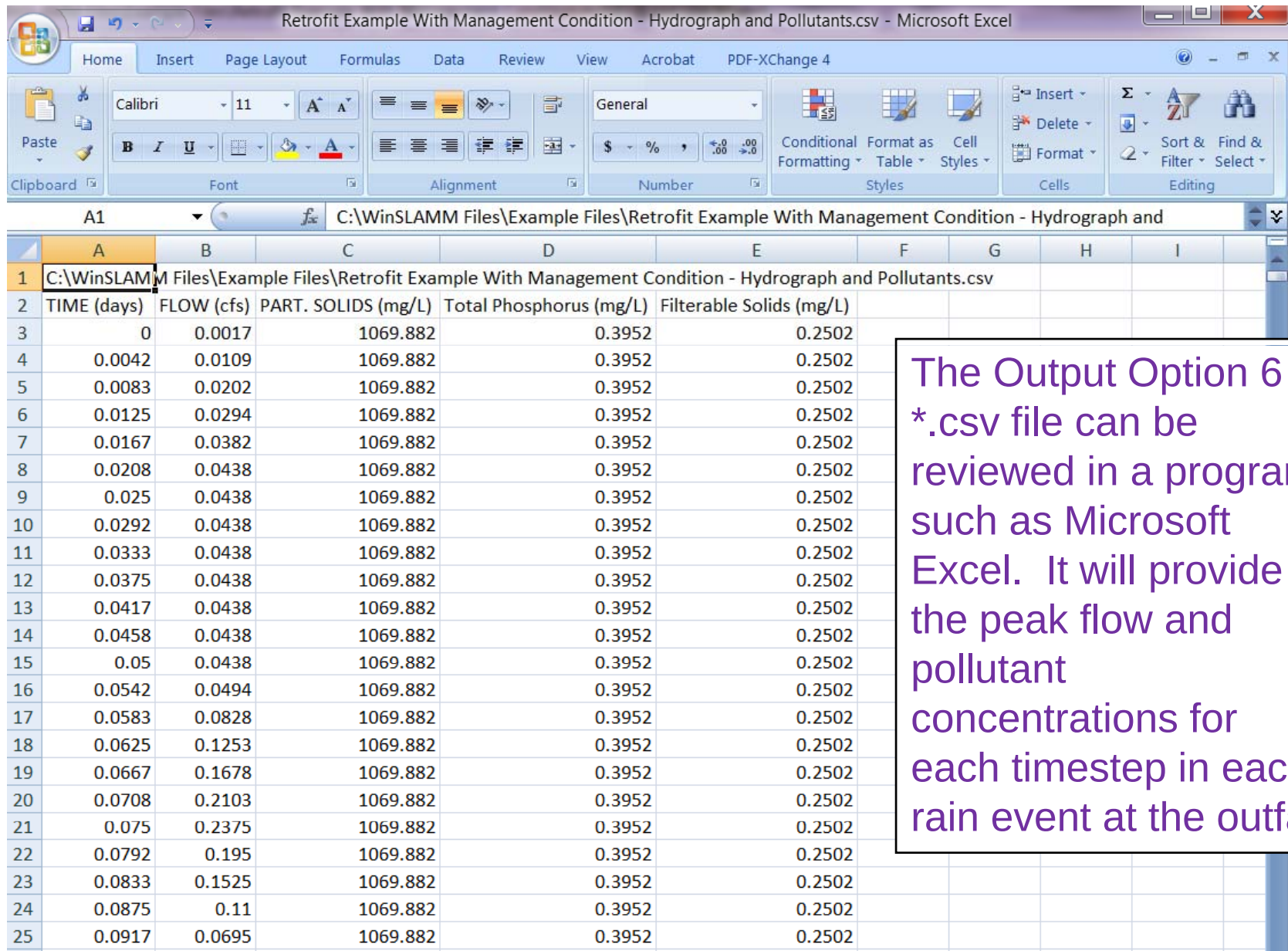
Residential 2  
Junction 3  
DS Catchbasins # 1  
Junction 2  
DS Biofilters # 1  
Residential 1

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

The screenshot displays the WinSLAMM v 10 - [Land Use Model] interface. The 'Tools' menu is open, showing 'Access Cost Data', 'Pre-Development Runoff Volume', and 'Program Options'. The 'Land Use' table is visible, showing 'Freeway 1' and 'Urban Highways'. A callout box states: 'Additional Output can be requested through the Program Options pull-down menu.' The map view shows 'Freeway 1' and 'Junction 1' leading to an 'Outfall' point marked with a green 'OUT' icon. The status bar at the bottom shows 'Total Area = 1.000 acres' and 'Index Number = 1'.

| Source Area #         | Source Area                 | Area (acres) | Source Area Parameters | First Control Practice | Second Control Practice |
|-----------------------|-----------------------------|--------------|------------------------|------------------------|-------------------------|
| <b>Freeway Areas</b>  |                             | 0.000        |                        |                        |                         |
| 1                     | Paved Lane/Shoulder Area 1  |              |                        |                        |                         |
| 2                     | Paved Lane/Shoulder Area 2  |              |                        |                        |                         |
| 3                     | Paved Lane/Shoulder Area 3  |              |                        |                        |                         |
| 4                     | Paved Lane/Shoulder Area 4  |              |                        |                        |                         |
| 5                     | Paved Lane/Shoulder Area 5  |              |                        |                        |                         |
| 6                     | Paved Lane/Shoulder Area 6  |              |                        |                        |                         |
| 7                     | Paved Lane/Shoulder Area 7  |              |                        |                        |                         |
| 8                     | Paved Lane/Shoulder Area 8  |              |                        |                        |                         |
| 9                     | Paved Lane/Shoulder Area 9  |              |                        |                        |                         |
| 10                    | Paved Lane/Shoulder Area 10 |              |                        |                        |                         |
| <b>Urban Highways</b> |                             | 1.000        |                        |                        |                         |
| 11                    | High Traffic Urban 1        | 1.000        | Entered                |                        |                         |
| 12                    | High Traffic Urban 2        |              |                        |                        |                         |
| 13                    | High Traffic Urban 3        |              |                        |                        |                         |
| 14                    | High Traffic Urban 4        |              |                        |                        |                         |
| 15                    | High Traf. Urban Pervious 1 |              |                        |                        |                         |
| 16                    | High Traf. Urban Pervious 2 |              |                        |                        |                         |
| 17                    | High Traf. Urban Pervious 3 |              |                        |                        |                         |

| Land Use # | Land Use Type | Land Use Label | Land Use Area (acres) |
|------------|---------------|----------------|-----------------------|
| 1          | Freeway       | Freeway 1      | 1.000                 |
| 2          | Residential   | Residential 2  | 4.683                 |

| CP # | Control Practice Type | Control Practice Name or Location |
|------|-----------------------|-----------------------------------|
| 1    | Street Cleaning       | SA Device, LU# 1 ,SA# 11          |

Check Current File Status | Total Area = 1.000 acres | No Upstream Source Areas | LU# = 1 | Index Number = 1 | Remaining Icons = 253 | Start Date: 01/02/75 | End Date: 12/29/75 | X = 465 | Y = 1890

# 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

☐ Critical Particle Size Calculation Detailed Output File

**Flow Duration Curve Data**

- ☐ Detailed Data
- ☐ Plotting Calculations

**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

☐ Uncheck All Detailed Output File Options

☐ Check All Detailed Output File Options

**File Update Options**

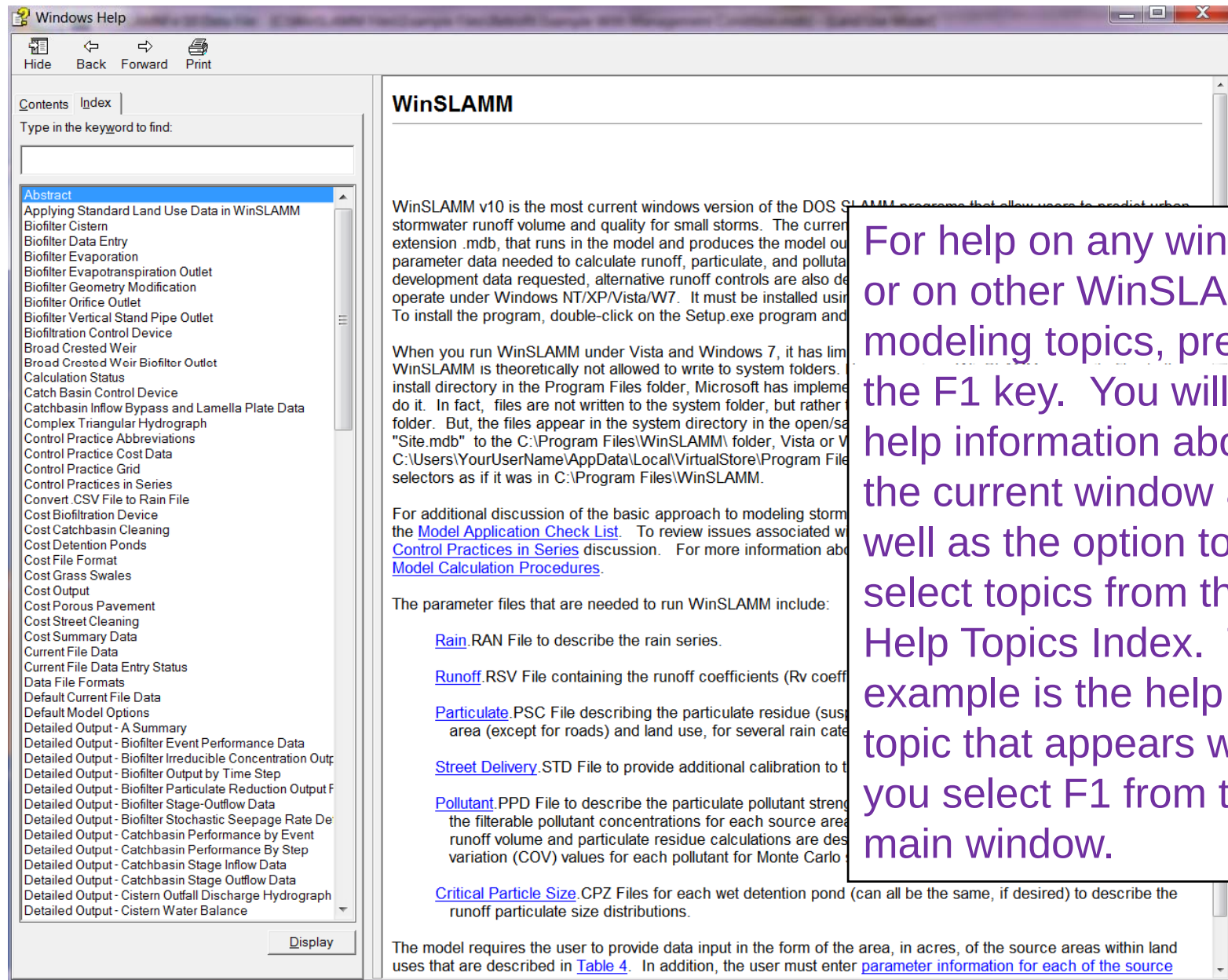
**Cancel Changes**

**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



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.



# Questions?

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