



# WinSLAMM v 9.4

## User's Guide

### Advanced Features



# Start-Up Hints

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

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

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

# Advanced Features

**This section of the User's Guide explains various Advanced Features of the program. Features include:**

- 1. Pre-Development Runoff-Quantities**
- 2. Applying Cost Data to Control Devices**
- 3. Combining Two .DAT files**
- 4. Creating Detailed Output for Control Devices**
- 5. Updating \*.DAT files to the Current Version from Version 9.0, 9.1, 9.2, or 9.3 \*.DAT files**
- 6. Saving down to version 9.1, 9.2. or 9.3 \*.DAT files.**
- 7. Batch Editor**
- 8. Modifying Groups of \*.DAT Files**
- 9. Parameter File Editor**
- 10. Statistical Analysis to Determine the Average Annual Year of Rainfall**

# Pre-Development Runoff Quantities

## Pre-Development Runoff Quantities Overview

The program can calculate Pre-Development Runoff Quantities based on NRCS curve number methodology. Runoff is calculated for each rain event. This data is provided for information purposes only; the model uses Small Storm Hydrology in its runoff volumes calculations.



# Pre-Development Runoff Quantities

WinSLAMM Data File: [C:\Program Files\WinSLAMM\new mdr.dat]

File Land Use Pollutants Tools Run Utilities Help

SLAMM new

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Land Use Biofiltration

**Pre-Development Runoff Quantities**

Catchbasin or Drainage Control

Outfall

Current File Status

Current File Data Entered

Land Use Areas

Residential Area: 100

Institutional Area: 0

Commercial Area: 0

Industrial Area: 0

Other Urban Area: 0

Freeway Area: 0

Total Area: 100

Exit Program

Press F1 for Help

Source Area No.	Source Area	Area (acres)	I	W	P	O	S	B	Source Area Parameters
1	Roofs 1	2.06							Entered
2	Roofs 2	12.23							Entered
3	Roofs 3								
4	Roofs 4								
5	Roofs 5								
6	Paved Parking/Storage 1								
7	Paved Parking/Storage 2								
8	Paved Parking/Storage 3								
9	Unpaved Prkng/Storage 1								
10	Unpaved Prkng/Storage 2								
11	Playground 1								
12	Playground 2								
13	Driveways 1	5.14							Entered
14	Driveways 2	1.01							Entered
15	Driveways 3								
16	Sidewalks/Walks 1	3.73							Entered
29	Other Dir Cnctd Imp Area								
30	Other Part Cnctd Imp Area								

The model can calculate pre-development runoff volumes for each storm event at the outfall.

Select Land Use, then Pre-Development Runoff Quantities

# Pre-Development Runoff Quantities

WinSLAMM Data File: [C:\Program Files\WinSLAMM\new mdr.dat]

File Land Use Pollutants Tools Run Utilities Help

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☒ Residential  
☐ Institutional  
☐ Commercial  
☐ Industrial  
☐ Other Urban  
☐ Freeways  
☐ Land Use Biofiltration  
☒ Pre-Development Runoff Quantities

Source Area No.	Source Area	Area (acres)
1	Roofs 1	2.06
2	Roofs 2	12.23
3	Roofs 3	
4	Roofs 4	
5	Roofs 5	
6	Paved Parking/Storage 1	
7	Paved Parking/Storage 2	
8	Paved Parking/Storage 3	

Pre-Development Areas and CN

	Description	Area (ac)	CN
1		0.00	0
2		0.00	0
3		0.00	0
4		0.00	0
5		0.00	0
6		0.00	0
7		0.00	0
8		0.00	0
9		0.00	0
10		0.00	0
	Total Area (ac)	0.00	
	Composite CN		

Total Model Area (ac): 100.00

Continue Cancel Clear

Enter a Description, the Area in acres, and CN value for each of the land use or source area types that you want to calculate the pre-development runoff for. You may enter as many as ten different areas.

Commercial Area:	0.00 Acres	19	Street Area 2	1.33			S	Entered
Industrial Area:	0.00 Acres	20	Street Area 3	7.49			S	Entered
Other Urban		21	Large Landscaped Area 1				S	Entered
Freeway Area:								
Total A								

The program does not use this data to calculate runoff volumes for pollution loads; it is provided for informational purposes only. See the Help File Topic "Pre-Development Areas and CN" for more information.

Pre 30 Other Part Cnctd Imp Area

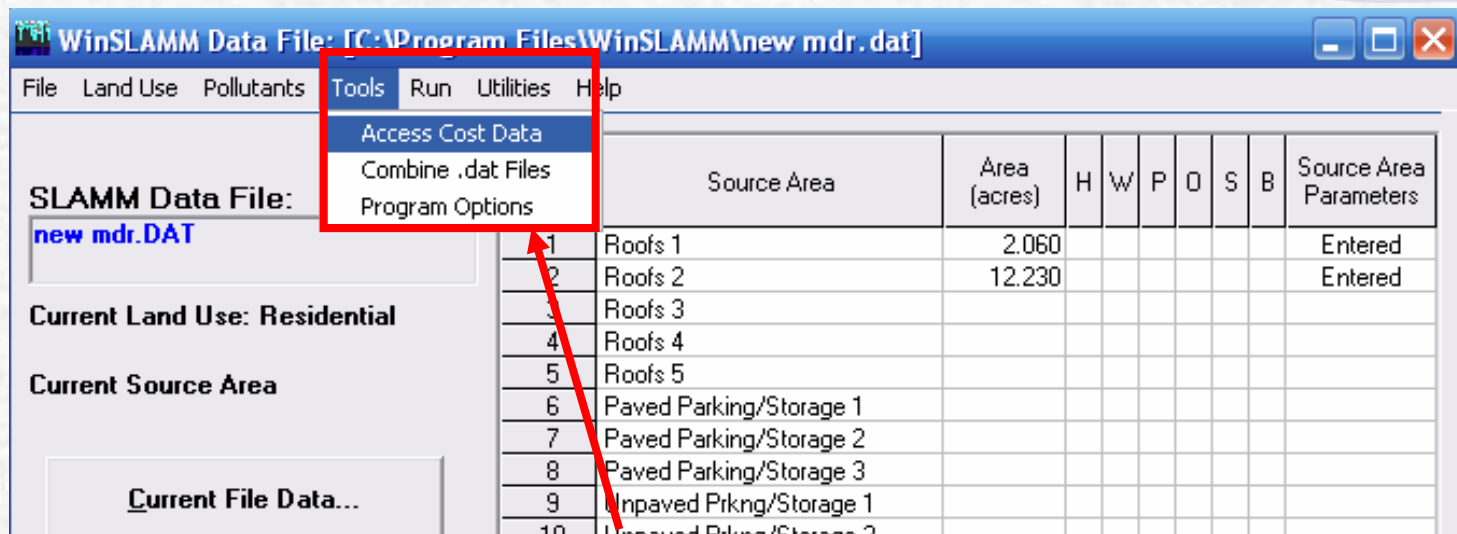
# Control Practice Cost Analysis

## Cost Analysis Overview

Performing a cost analysis is a two step process. The two steps are:

1. Accessing the cost data by creating or editing a Cost Data File
2. Perform a cost analysis by applying the Cost Data File to Model Runs.

# Access Cost Data



**The User can set up a Cost File that the program will use to calculate costs for the Control Devices. The costs will be calculated in tandem with the runoff and pollution calculations. The output will appear with the runoff and pollution results. To Access Cost Data, go to the Tools, then Access Cost Data.**





# Access Cost Data

The screenshot shows the 'Control Practice Cost Data' window. At the top, there are tabs for various cost categories: 'X8 - Upflow Filter', '9 - Grass Swales', 'X4 - Hydrodynamic Device', '5 - Street Cleaning', '6 - Biofiltration Device', '7 - Catchbasin Cleaning', '1 - Detention Pond', 'X New Device', and '3 - Porous Pavement'. Below these is a 'Summary Data' section. A red rectangle highlights the 'Select File' button in the 'Summary Data' section. A red arrow points from this button to the 'Open Cost Data File' dialog box. The dialog box shows the 'Look in:' field set to 'WinSLAMM'. The file list includes 'Control Demo Files', 'Huntsville Files', 'Rain Files', 'Shades Creek Files', 'Standard Land Use Files', 'v 9.2', 'Cost Data 1 Bham.csv', 'Cost Data 1 National CI.csv', and 'Cost Template.csv'. The 'File name:' field is set to 'Cost Template.csv' and the 'Files of type:' field is set to 'Critical Particle Size files (\*.csv)'. The 'Open' and 'Cancel' buttons are at the bottom right of the dialog box.

**First, select the Cost File.**

The user must begin with a Cost File template. The template can be modified through the Control Practice Cost Data Editor to reflect Site Specific costs. A template of default values is provided with the program.

# Access Cost Data

**Control Practice Cost Data**

X8 - Upflow Filter      9 - Grass Swales

X4 - Hydrodynamic Device      5 - Street Cleaning      6 - Biofiltration Device      7 - Catchbasin Cleaning

**Summary Data**      1 - Detention Pond      X New Device      3 - Porous Pavement

**Select File**

C:\PROGRAM FILES\WINSLAMM\COST TEMPLATE.CSV

**File Description:** Cost File Template for Pre-Determined Costs - Birmingham Cost Index

**Save File**

**Save File As...**

Interest Rate on Debt Capital  %

Project Life (Years)

**Land Cost by Land Use**

Land Use	Cost(\$)/acre
Residential	<input type="text" value="0"/>
Institutional	<input type="text" value="0"/>
Commercial	<input type="text" value="0"/>
Industrial	<input type="text" value="0"/>
Other Urban	<input type="text" value="0"/>
Freeways	<input type="text" value="0"/>
Outfall and Drain. System	<input type="text" value="0"/>

☒ Use City Cost Index Values

City Cost Index

☐ Current Year Cost Index Value

☐ User Defined Cost Index Multiplier

Birmingham, AL      City Cost Index Multiplier

Baseline National Cost Index       Current City Cost Index

**Exit**

**The File Path, File Description, and Summary Data default values will appear once the Cost File Template is selected.**

# Access Cost Data

This slide points out the Cost Index Selection, Interest Rate, Project Life, and Land Use Costs. The user can use the Pre-Determined Costs specified by the program or enter site specific data.

The screenshot shows a software window with various tabs and input fields. Three callout boxes with red arrows highlight specific sections:

- Land Use Costs:** Points to a table titled "Land Cost by Land Use".
- Interest Rate and Project Life:** Points to input fields for "Interest Rate on Debt Capital" and "Project Life (Years)".
- Cost Index Selection:** Points to a section with radio buttons for "Use User Defined Cost Index Values" and "Use City Cost Index Values", along with various index value and multiplier inputs.

**Land Cost by Land Use**

Land Use	Cost(\$)/acre
Residential	0
Institutional	0
Commercial	0
Industrial	0
Other Urban	0
Freeways	0
Outfall and Drain. System	0

**Interest Rate and Project Life**

Interest Rate on Debt Capital: 5 %  
Project Life (Years): 20

**Cost Index Selection**

☐ Use User Defined Cost Index Values  
☒ Use City Cost Index Values

Baseline Cost Index Value:   
Current Year Cost Index Value:   
User Defined Cost Index Multiplier:

City Cost Index  
Birmingham, AL (dropdown)  
City Cost Index Multiplier: 0.7  
Baseline National Cost Index: 7314.74  
Current City Cost Index: 5135.56

Buttons: Select File, Save File, Save File As..., Exit

# Access Cost Data

**Control Practice Cost Data**

X8 - Upflow Filter

9 - Grass Swales

X4 - Hydrodynamic Device

5 - Street Cleaning

6 - Biofiltration Device

7 - Catchbasin Cleaning

**Summary Data**

1 - Detention Pond

X New Device

3 - Porous Pavement

**Select File**

C:\PROGRAM FILES\WINSLAMM\COST TEMPLATE.CSV

File Description: Cost File Template for Pre-Determined Costs - Birmingham

al 5 %  
s) 20

**Land Cost by Land Use**

Land Use	Cost(\$)/acre
Residential	0
Institutional	0
Commercial	0
Industrial	0
Other Urban	0
Freeways	0
Outfall and Drain. System	0

☐ Use User Defined Cost Index Values

☒ Use City Cost Index Values

Baseline Cost Index Value

City Cost Index

☐ Current Year Cost Index Value

☐ User Defined Cost Index Multiplier

Birmingham, AL

City Cost Index Multiplier 0.7

Baseline National Cost Index 7314.74

Current City Cost Index 5135.56

Exit

**Once a Cost File Template is loaded, the user can access the various Control Practice Cost tabs. Each Control Devices' Pre-Determined Costs can be reviewed and modified, if necessary, to reflect the specific site.**



# Access Cost Data

**For each Control Practice, select the Use Pre-Determined Costs or Use User Defined Costs.**

**Control Practice Cost Data**

X8 - Upflow Filter      9 - Grass Swales  
X4 - Hydrodynamic Device      5 - Street Cleaning      6 - Biofiltration Device      7 - Catchbasin Cleaning  
Summary Data      **1 - Detention Pond**      X New Device      3 - Porous Pavement

☒ Use Pre-Determined Costs      ☐ Use User Defined Costs

Costs in Thousands of Dollars

Total Pond Volume (1000 cf)	Low Capital Cost	Med. Capital Cost	High Capital Cost	Annual O&M Cost
30.0	19.7	40.9	62.2	1.97
40.0	21.2	44.0	65.2	1.98
50.0	22.7	47.0	72.8	2.09
60.0	25.0	51.6	77.3	2.19
70.0	27.3	56.1	83.4	2.31
80.0	29.6	62.2	91.0	2.43
90.0	31.8	66.7	95.5	2.58
100.0	34.9	71.3	106.2	2.73
200.0	62.2	125.9	189.6	3.95
300.0	94.0	182.0	265.4	5.46
400.0	127.4	242.6	348.8	6.67
500.0	154.7	303.3	432.2	7.89
600.0	180.5	348.8	500.4	9.25
700.0	206.2	394.3	583.8	10.47
800.0	230.5	447.4	652.1	11.37
900.0	257.8	485.3	727.9	12.29
1000.0	280.5	515.6	788.6	13.65

2005 Costs - Cleveland, OH

**Capital Costs**

Item	Unit	\$/Unit	Quan.	Cost (\$)
Cut/Fill	CY	0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00

LF : Linear Feet      Total Unit Cost: \$ 0 /1000 cf  
SY : Square Yards  
CY : Cubic Yards  
EA : Each      Sediment Removal Frequency (yrs): 0  
Sediment Removal Cost (\$/CY of sediment): 0  
Annual Routine Maintenance Cost (\$/1000 cf): 0

Applicable Cost Range  
☐ Low Capital Cost  
☒ Medium Capital Cost  
☐ High Capital Cost

Land Cost Site Area Multiplier: 1.5

Exit

# Access Cost Data

## Wet Detention Pre-Determined Costs

### Pre-Determined Cost Table

Access Cost Data

Summary Data

1 - Detention Pond

☒ Use Pre-Determined Costs

Costs in Thousands of Dollars

Total Pond Volume (1000 cf)	Low Capital Cost	Med. Capital Cost	High Capital Cost	Annual O&M Cost
30.0	19.7	40.9	62.2	1.97
40.0	21.2	44.0	65.2	1.98
50.0	22.7	47.0	72.8	2.09
60.0	25.0	51.6	77.3	2.19
70.0	27.3	56.1	83.4	2.31
80.0	29.6	62.2	91.0	2.43
90.0	31.8	66.7	95.5	2.58
100.0	34.9	71.3	106.2	2.73
200.0	62.2	125.9	189.6	3.95
300.0	94.0	182.0	265.4	5.46
400.0	127.4	242.6	348.8	6.67
500.0	154.7	303.3	432.2	7.89
600.0	180.5	348.8	500.4	9.25
700.0	206.2	394.3	583.8	10.47
800.0	230.5	447.4	652.1	11.37
900.0	257.8	485.3	727.9	12.29
1000.0	280.5	515.6	788.6	13.65

2005 Costs - Cleveland, OH

☐ Use User Defined Costs

Capital Costs

Item	Unit	\$/Unit	Quan.	Cost (\$)
Cut/Fill	CY	0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

Sediment Removal Frequency (yrs): 0

Sediment Removal Cost (\$/CY of sediment): 0

Annual Routine Maintenance Cost (\$/1000 cf): 0

Applicable Cost Range

☐ Low Capital Cost

☒ Medium Capital Cost

☐ High Capital Cost

Land Cost Site Area Multiplier: 1.5

Exit

### Pre-Determined Capital Cost Range

# Access Cost Data

## Wet Detention User Defined Costs

**Control Practice Cost Data**

X8 - Upflow Filter      9 - Grass Swales

X4 - Hydrodynamic Device      5 - Street Cleaning      6 - Biofiltration Device      7 - Catchbasin Cleaning

Summary Data      **1 - Detention Pond**      X New Device      3 - Porous Pavement

**User-Defined Cost Table**

High Capital Cost	Annual O&M Cost
30.0	19.7
40.0	21.2
50.0	22.7
60.0	24.2
70.0	25.7
80.0	27.2
90.0	28.7
100.0	30.2

**Capital Costs**

Item	Unit	\$/Unit	Quan.	Cost (\$)
Cut/Fill	CY	3.00	15000	45000
Storm Sewer	LF	48.00	200	9600
Inlet MH	EA	3000.00	1	3000
Outlet Structure	EA	7000.00	1	7000
Landscaping	SY	0.75	10000	7500
		0.00	0	0.00
		0.00	0	0.00

**Total Unit Cost: \$178 /1000 cf**

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

Sediment Removal Frequency (yrs): 25

Sediment Removal Cost (\$/CY of sediment): 30

Annual Routine Maintenance Cost (\$/1000 cf): 2

Applicable Cost Range

☐ Low Capital Cost

☐ Medium Capital Cost

☐ High Capital Cost

Land Cost Site Area Multiplier: 1.5

Exit



# Access Cost Data

## Porous Pavement Pre-Determined Costs

### Pre-Determined Cost Table

Access Cost Data

Upflow Filter      9 - Grass Swales

X4 - Hydrodynamic Device      5 - Street Cleaning      6 - Biofiltration Device      7 - Catchbasin Cleaning

Summary Data      1 - Detention Pond      X New Device      **3 - Porous Pavement**

☒ Use Pre-Determined Costs      ☐ Use User Defined Costs

Costs in Thousands of Dollars/Acre

Stone Reservoir Depth (ft)	Low Capital Cost	Med. Capital Cost	High Capital Cost	Annual O&M Cost
0.5	39.43	62.17	83.40	0.30
1.0	60.66	90.98	121.32	0.30
1.5	90.98	128.90	174.39	0.30
2.0	122.83	166.81	227.47	0.30

Capital Costs

Item Description	Unit	\$/Unit	Quan.	Cost (\$)
Porous Pavement	SF	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00

Total Unit Cost: \$ 0 /sf

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

**Pre-Determined Capital Cost Range**

Applicable Cost Range

☐ Low Capital Cost

☒ Medium Capital Cost

☐ High Capital Cost

2005 Costs - Cleveland, OH

Land Cost Site Area Multiplier: 0

Exit



# Access Cost Data

## Porous Pavement User Defined Cost Data

Control Practice Cost Data

X8 - Upflow Filter      9 - Grass Swales

X4 - Hydrodynamic Device      5 - Street Cleaning      6 - Biofiltration Device      7 - Catchbasin Cleaning

Summary Data      1 - Detention Pond      X New Device      **3 - Porous Pavement**

**User-Defined Cost Table**

Reservoir Depth (ft)	Capital Cost	Capital Cost	Capital Cost	Annual O&M Cost
0.5	39.43	62.17	83.40	0.30
1.0	60.66	90.98	121.32	0.30
1.5	90.98	128.90	174.39	0.30
2.0	122.83	166.81	227.47	0.30

**Total Unit Cost per square foot**

☒ Use User Defined Costs

Capital Costs

Item Description	Unit	\$/Unit	Quan.	Cost (\$)
Porous Pavement	SF	15.00	2000	30000.00
underdrain	LF	1.50	800	1200.00
Rock Fill	CY	6.00	74	444.00
Excavation	CY	4.00	111	444.00
Design Costs	EA	4000.00	1	4000.00
		0.00	0	0.00
		0.00	0	0.00

Total Unit Cost: \$ 18 /sf

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

Annual Routine Maintenance Cost (\$/ac): 5500

☒ High Capital Cost

**Land Area Multiplier**

Land Cost Site Area Multiplier: 0

Exit

# Access Cost Data

## Street Cleaning Pre-Determined Cost Data

### Pre-Determined Cost Table

**Cost Data**

1 - Detention Pond    X New Device    3 - Porous Pavement

9 - Grass Swales

X4 - Hydrodynamic Device    **5 - Street Cleaning**    6 - Biofiltration Device    7 - Catchbasin Cleaning

☒ Use Pre-Determined Costs    ☐ Use User Defined Costs

	Capital Cost (\$) per Curb-Mile	O and M Cost (\$) per Curb-Mile Cleaned
Low	2.43	12.74
Medium	3.43	18.00
High	4.40	23.10

Cost per Street Sweeper (\$/unit): 100000

Miles Cleaned per year  
per Unit (Fleet Average): 6400.0

Expected Life of Typical Street Cleaner: 10.00

Capital Cost: \$ 156 per Curb-Mile

Operation and Maintenance  
Cost (\$) per Curb-Mile Cleaned 25

Applicable Cost Range

☐ Low Capital Cost

☐ Medium Capital Cost

☒ High Capital Cost

2005 Costs - Birmingham, AL

Exit

### Pre-Determined Capital Cost Range

# Access Cost Data

## Street Cleaning User Defined Cost Data

**Control Practice Cost Data**

Summary Data    1 - Detention Pond    X New Device    3 - Porous Pavement  
X8 - Upflow Filter    9 - Grass Swales    6 - Biofiltration Device    7 - Catchbasin Cleaning

**5 - Street Cleaning**

**User-Defined Cost Table**

Costs	Unit M Cost (\$)	per Curb-Mile Cleaned
Low	3.64	19.11
		27.01
		34.65

**Total Unit Cost per curb mile**

**Maintenance Cost Data - Routine Maintenance Cost**

☒ Use User Defined Costs

Cost per Street Sweeper (\$/unit): 100000

Miles Cleaned per year per Unit (Fleet Average): 6400

Expected Life of Typical Street Cleaner: 10

Capital Cost: \$ 156 per Curb-Mile

Operation and Maintenance Cost (\$) per Curb-Mile Cleaned 25

☐ Low Capital Cost  
☐ Medium Capital Cost  
☒ High Capital Cost

2005 Costs - Cleveland, OH

Exit

# Access Cost Data

## Biofiltration Pre-Determined Cost Data

### Pre-Determined Cost Table

Control Practice Cost Data

Summary Data    1 - Detention Pond    X New Device    3 - Porous Pavement

Upflow Filter    9 - Grass Swales

X4 - Hydrodynamic Device    5 - Street Cleaning    **6 - Biofiltration Device**    7 - Catchbasin Cleaning

☒ Use Pre-Determined Costs    ☐ Use User Defined Costs

Capital Costs in Dollars per LF    Maintenance Costs in Dollars per LF

Depth (ft)	m	B	m	B
3.0	4.57	30.86	0.32	1.38
4.0	5.70	34.69	0.36	1.42
5.0	6.60	38.49	0.40	1.58
6.0	7.91	41.23	0.46	1.48
8.0	10.05	45.93	0.55	1.55
10.0	12.43	49.53	0.63	1.85
12.0	14.66	58.31	0.73	1.99

Crushed Stone Fill (\$/CY):

Equation Form:  $y = m \cdot x + B$   
where:  $y == \text{Cost}$   
 $x == \text{Biofilter Depth (ft)}$

2005 Costs - Birmingham, AL

Capital Costs

Item	Unit	\$/Unit	Quan.	Cost (\$)
Cut/Fill Volume	CY	0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00

Total Unit Cost: \$ 0.00 /cy

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards

**Crushed Stone Fill Cost**

Annual Routine Maintenance Cost (\$/SY):

Land Cost Site Area Multiplier:

Exit



# Access Cost Data

## Biofiltration User Defined Cost Data

Control Practice Cost Data

Summary Data    1 - Detention Pond    X New Device    3 - Porous Pavement

X8 - Upflow Filter    9 - Grass Swales

X4 - Hydrodynamic Device    5 - Street Cleaning    **6 - Biofiltration Device**    7 - Catchbasin Cleaning

**User-Defined Cost Table**

Capital Costs

☒ Use User Defined Costs

Item	Unit	\$/Unit	Quan.	Cost (\$)
Cut/Fill Volume	CY	3.00	370	1110
Stone Fill	CY	15.00	277	4155
Underdrain pipe	LF	4.00	150	600
Plants	EA	4.50	2000	9000
EC	SY	0.75	3000	2250
		0.00	0	0.00
		0.00	0	0.00

**Total Unit Cost per cubic yard**

Total Unit Cost: \$ 46.26 /cy

Crushed Stone Fill (\$/CY): 10.00

Annual Routine Maintenance Cost (\$/SY): 22

Land Cost Site Area Multiplier: 1.25

2005

Exit

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

# Access Cost Data

## Catchbasin Cleaning Pre-Determined Cost Data

### Pre-Determined Cost Data

Cost Data

Primary Data

1 - Detention Pond

X New Device

3 - Porous Pavement

X8 - Inflow Filter

9 - Grass Swales

X4 - Hydrodynamic Device

5 - Street Cleaning

6 - Biofiltration Device

**7 - Catchbasin Cleaning**

☒ Use Pre-Determined Costs

Installation Cost per CB

Low Capital Cost 3032

Medium Capital Cost 4549

High Capital Cost 6065

Cleaning Cost (\$ per CB Cleaned) 53

☐ Use User Defined Costs

Capital Costs

Item Description	Unit	\$/Unit	Quan.	Cost (\$)
Catchbasin	EA	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00
	▼	0.00	0	0.00

Total Unit Cost: \$ 0 /unit

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

Applicable Cost Range

☐ Low Capital Cost

☒ Medium Capital Cost

☐ High Capital Cost

2005 Costs - Cleveland, OH

Exit

**Pre-Determined  
Capital Cost Range**

# Access Cost Data

## Catchbasin Cleaning User Defined Cost Data

**Control Practice Cost Data**

Summary Data    1 - Detention Pond    X New Device    3 - Porous Pavement

X8 - Upflow Filter    9 - Grass Swales

X4 - Hydrodynamic Device    5 - Street Cleaning    6 - Biofiltration Device    **7 - Catchbasin Cleaning**

**User-Defined Cost Table**

Low Capital Cost    3032

Medium Capital Cost    4549

High Capital Cost    6065

**Total Unit Cost per unit**

☒ Use User Defined Costs

Capital Costs

Item Description	Unit	\$/Unit	Quan.	Cost (\$)
Catchbasin	EA	4000.00	1	4000.00
Piping	LF	45.00	150	6750.00
Inlet protection	EA	60.00	1	60.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00

Total Unit Cost: \$ 10810 /unit

LF : Linear Feet  
SY : Square Yards  
CY : Cubic Yards  
: Each

Cleaning Cost (\$ per CB Cleaned): 7

2005 Costs - Cleveland, OH

Exit

# Access Cost Data

## Grass Swale Pre-Determined Cost Data

**Control Practice Cost Data**

X4 - Hydrodynamic Device    5 - Street Cleaning    6 - Biofiltration Device    7 - Catchbasin Cleaning  
Summary Data    1 - Detention Pond    X New Device    3 - Porous Pavement  
X8 - Upflow Filter    **9 - Grass Swales**

☒ Use Pre-Determined Costs    ☐ Use User Defined Costs

Capital Costs in Dollars per LF

Bottom Width (ft)	A	B	C
1.0	0.70	3.54	4.36
3.0	0.71	3.94	5.05
5.0	0.57	4.80	5.75
8.0	0.51	5.31	7.33
10.0	0.82	3.79	10.55

Maintenance Costs in Dollars per LF

Bottom Width (ft)	m	B
1.0	0.10	0.43
3.0	0.10	0.47
5.0	0.10	0.50
8.0	0.09	0.56
10.0	0.10	0.59

2005 Costs - Birmingham, AL

Capital Cost Equation Form:  $y = A \cdot x^2 + B \cdot x + C$   
where:  $y$  == Cost (\$/ft)  
 $x$  == Swale Depth (ft)

Maintenance Equation Form:  $y = m \cdot x + B$   
where:  $y$  == Cost (\$/ft)  
 $x$  == Swale Depth (ft)

Capital Costs

Item	Unit	\$/Unit	Quan.	Cost (\$)
Grass Swale	LF	0.00	0	0.00
		0.00	0	0.00
				0.00
				0.00
				0.00
				0.00
				0.00
		0.00	0	0.00

Pre-Determined Cost Tables

LF : Linear Feet    Total Unit Cost: \$ 0.00 /ft  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

Annual Routine Maintenance Cost (\$/LF): 0

Land Cost Site Area Multiplier: 0

Exit



# Access Cost Data

## Grass Swale User Defined Cost Data

Control Practice Cost Data

X4 - Hydrodynamic Device    5 - Street Cleaning    6 - Biofiltration Device    7 - Catchbasin Cleaning  
Summary Data    1 - Detention Pond    X New Device    3 - Porous Pavement  
X8 - Upflow Filter    **9 - Grass Swales**

**User-Defined Cost Table**

Bottom Width (ft)	A	B	C
1.0	1.04	5.31	6.54
3.0	1.06	5.91	7.58
5.0	0.85	7.20	8.62
8.0	0.76	7.96	10.99

**Total Unit Cost per foot**

Use User Defined Costs

Capital Costs

Item	Unit	\$/Unit	Quan.	Cost (\$)
Grass Swale	LF	25.00	300	7500.00
Erosion Control	SY	0.50	1000	500.00
deep tilling	SY	2.00	1000	2000.00
		0.00	0	0.00
		0.00	0	0.00
		0.00	0	0.00

LF: Linear Foot  
SY: Square Yards  
CY: Cubic Yards  
EA: Each

**Total Unit Cost: \$ 33.33 /ft**

**Maintenance Cost Data - Routine Maintenance Cost**

Annual Routine Maintenance Cost (\$/LF): 4

Cost Equation Form:  $y = A \cdot x^2 + B \cdot x + C$   
re:  $y == \text{Cost } (\$/\text{ft})$   
 $x == \text{Swale Depth (ft)}$   
Maintenance Equation Form:  $y = m \cdot x + B$

**Land Area Multiplier**

Land Cost Site Area Multiplier: 1.25

2005 Costs - Cl

Exit

# Perform a Cost Analysis

**WinSLAMM can generate two types of cost output. The Capital, Land, and Maintenance Costs can be reported on:**

- 1. The Summary Tab of an individual WinSLAMM Model Run**
- 2. The Output File when you run a set of \*.DAT files using the Batch Editor**

# Perform a Cost Analysis

**Current File Data**

**Edit** SLAMM Data File Name: C:\Files\SLAMM\WinSLAMM\Test Files\Cost Files\Detention Pond in Outfall.dat

**Edit** Site Descript.: Detention pond 0.5% resid area

**Edit** Seed: 42

**Edit** Rain File: C:\PROGRAM FILES\WINSLAMM\RAIN FILES\BHAMSRC.RAN

**Edit** Start Date: 01/01/99 ☐ Winter Season Range  
**Edit** End Date: 12/01/99 Start of Winter (mm/dd) End of Winter (mm/dd)

**Edit** Pollutant Probability Distribution File: C:\PROGRAM FILES\WINSLAMM\BHAM.PPD

**Edit** Runoff Coefficient File: C:\PROGRAM FILES\WINSLAMM\RUNOFF.RSV

**Edit** Particulate Solids Concentration File: C:\PROGRAM FILES\WINSLAMM\BHAM.PSD

**Edit** Particulate Residue Delivery Factor File: C:\PROGRAM FILES\WINSLAMM\BHAM.PRD

**Edit** Street Delivery File (Select LU)  
☒ Residential LU ☐ Industrial LU  
☐ Institutional LU ☐ Other Urban LU  
☐ Commercial LU ☐ Freeways

Change all Street Delivery Files to Match the Current File

☒ Use Cost  
☒ Estimation Option **Select Cost Data File** C:\Files\SLAMM\WinSLAMM\Test Files\Cost Files\Cost Data 1.csv

**Edit** Drainage System: Data Entered

Cancel Continue

**Enter the Cost File Name in the Current File Data Window**



# Perform a Cost Analysis

WinSLAMM Model Output

File View

Runoff Volume    Particulate Solids    Pollutants    **Output Summary**

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

### Drainage System and Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls	3.206E+06	<== Percent Reduction Basis Value	0.31	157.4	31471	<== Basis Value
Outfall Total without Controls						

---

Current File Output: Total Before Drainage System    3.206E+06    0.01 %    0.31    155.0    31005

Current File Output: Total After Drainage System    3.206E+06

Current File Output: Total After Outfall Controls    3.206E+06

Total Area Modeled (ac)    100.00

Print Output Summary to Text File

#### Total Control Practice Costs

Capital Cost	\$ 595
Land Cost	\$ 0
Annual Maintenance Cost	\$ 3123
Present Value of All Costs	\$ 39523
Annualized Value of All Costs	\$ 3171

Stormwater Runoff

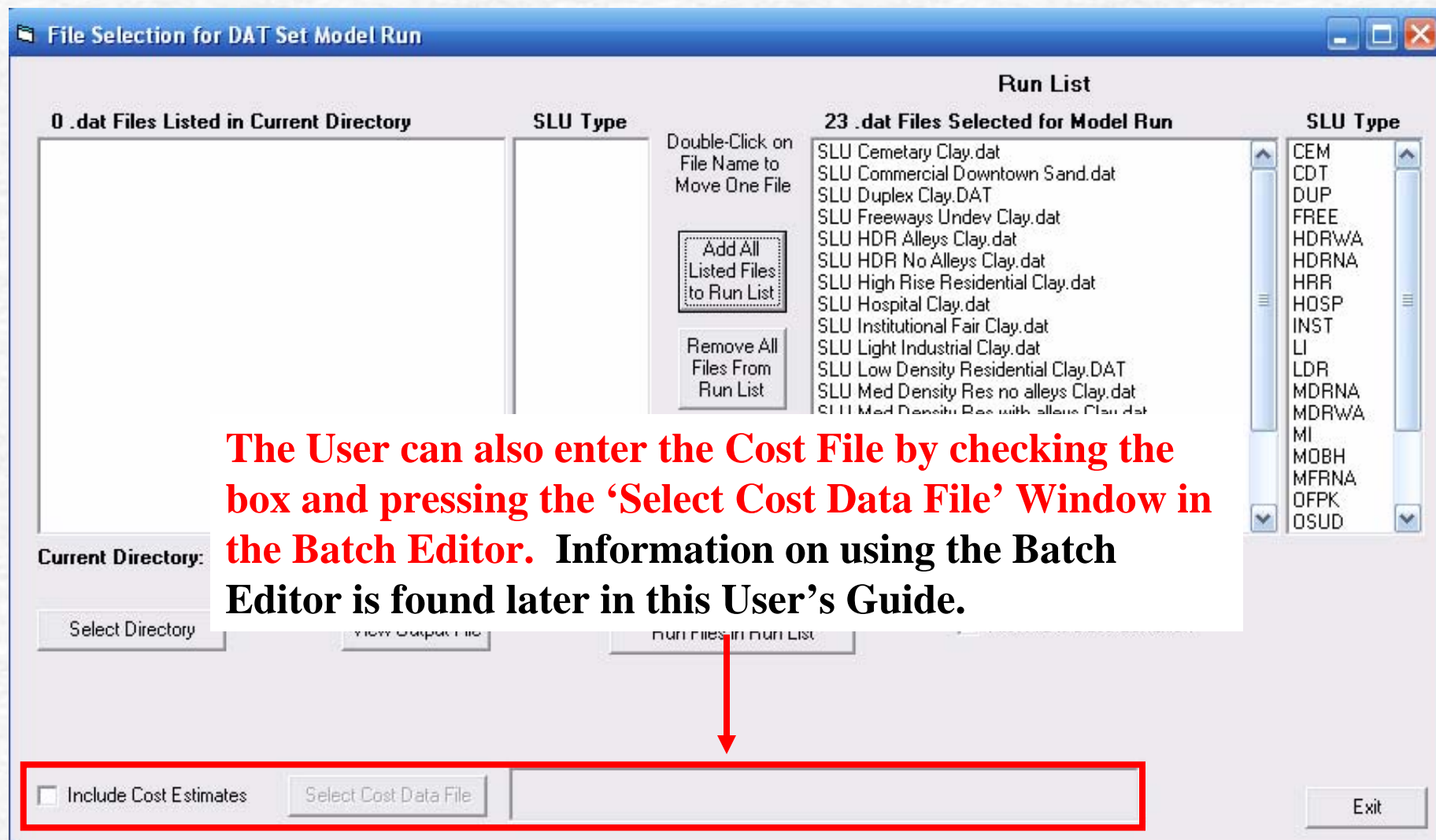
Perform Flow Duration Curve Calculations

	Calculated Rv	Approx. Biological Condition of Receiving Water
Without Controls	0.31	Poor
With Controls	0.31	Poor

**This shows the Cost Output on the Output Summary screen for an individual \*.DAT file run.**

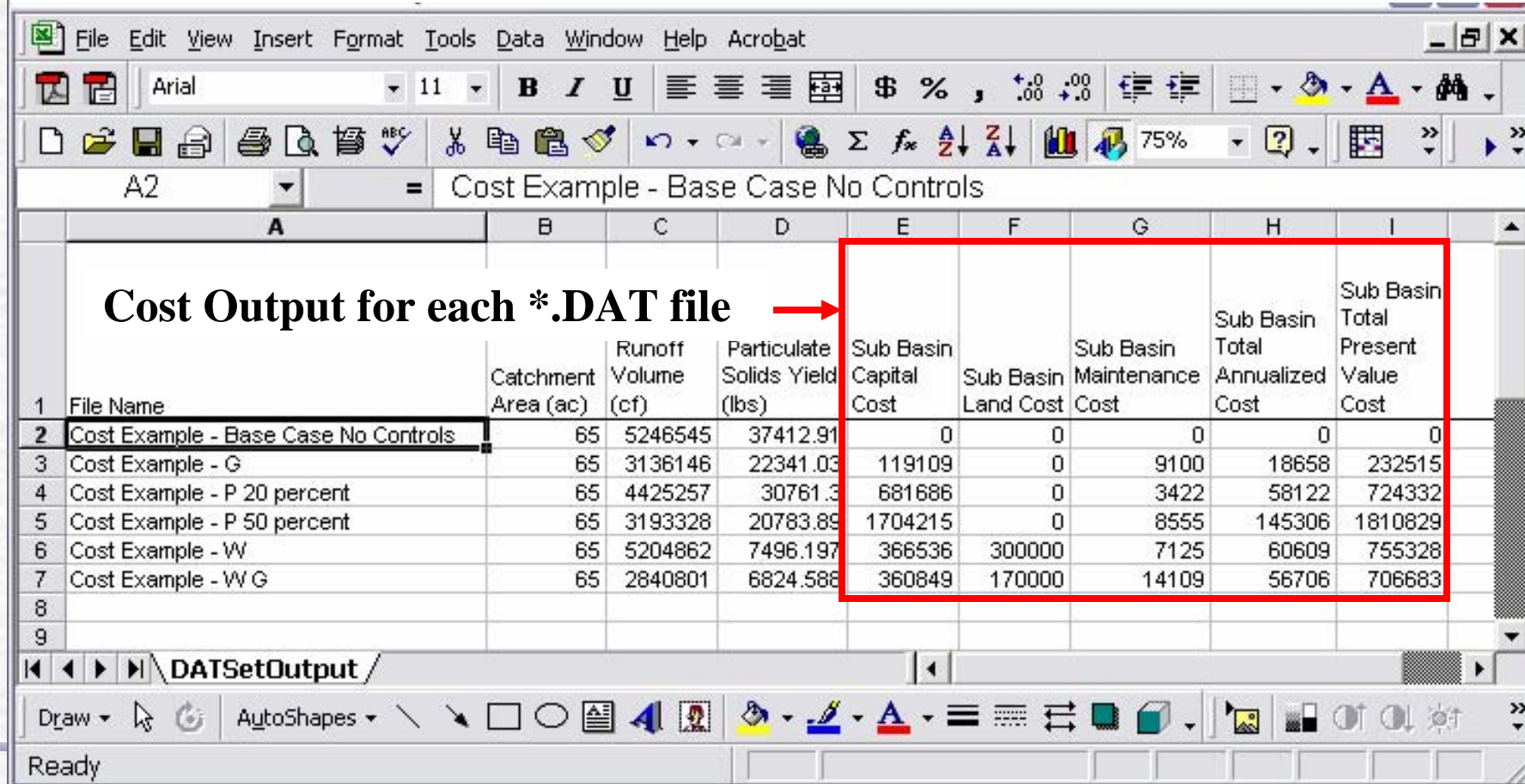


# Perform a Cost Analysis



# Perform a Cost Analysis

The shows the output for each \*.DAT file when the Cost File is run through the Batch Editor. Import the output file 'DATSetOutput.CSV' into Excel to view the Output File.



**Cost Output for each \*.DAT file** →

File Name	Catchment Area (ac)	Runoff Volume (cf)	Particulate Solids Yield (lbs)	Sub Basin Capital Cost	Sub Basin Land Cost	Sub Basin Maintenance Cost	Sub Basin Total Annualized Cost	Sub Basin Total Present Value Cost
Cost Example - Base Case No Controls	65	5246545	37412.91	0	0	0	0	0
Cost Example - G	65	3136146	22341.03	119109	0	9100	18658	232515
Cost Example - P 20 percent	65	4425257	30761.3	681686	0	3422	58122	724332
Cost Example - P 50 percent	65	3193328	20783.89	1704215	0	8555	145306	1810829
Cost Example - W	65	5204862	7496.197	366536	300000	7125	60609	755328
Cost Example - W G	65	2840801	6824.588	360849	170000	14109	56706	706683

# Perform a Cost Analysis

The shows the output for each Control Device when the Cost File is run through the Batch Editor. Import the output file 'DATSetOutputCostDetail.CSV' into Microsoft Excel.

Microsoft Excel - DATSetOutputCostDetail.csv

File Edit View Insert Format Tools Data Window Help Acrobat

Arial 11 B

**Cost Information for each Control Device**

A2 = Hunts indus A site bioret

	File Name	File Number	Source Area Number	Control Practice Type	Control Practice Cost Variable	Control Practice Cost Variable Value	Capital Cost	Land Cost	Maintenance Cost	Total Sediment Removal Cost	Sediment Accumulated During Model Run (lbs)	Total Sediment Removed pre Dredging (lbs)	BF Volume Above Rock	Present Value of Future Sed Removal Costs
1	Hunts indus A site bioret	0	0	Biofiltration	BF Length	160	29155	4242	1933	N/A	N/A	N/A	6244	N/A
2	Hunts indus B site bioret	1	0	Biofiltration	BF Length	160	68029	9899	4511	N/A	N/A	N/A	6244	N/A
3	Inst C	2	161	Catchbasin	Number of	40	161728	0	2800	N/A	N/A	N/A	N/A	N/A
4	Inst G	3	161	Grass Sw	Swale Dep	2	470209	0	20229	N/A	N/A	N/A	N/A	N/A
5	Inst S Ind S	4	48	Street Clee	Total Curb	156	687	0	3604	N/A	N/A	N/A	N/A	N/A
6	Inst S Ind S	4	109	Street Clee	Total Curb	65	286	0	1502	N/A	N/A	N/A	N/A	N/A
7	Instituional Detention Pond 2	5	35	Wet Detent	Pond Volur	108900	75718	3000	1892	N/A	N/A	N/A	N/A	N/A

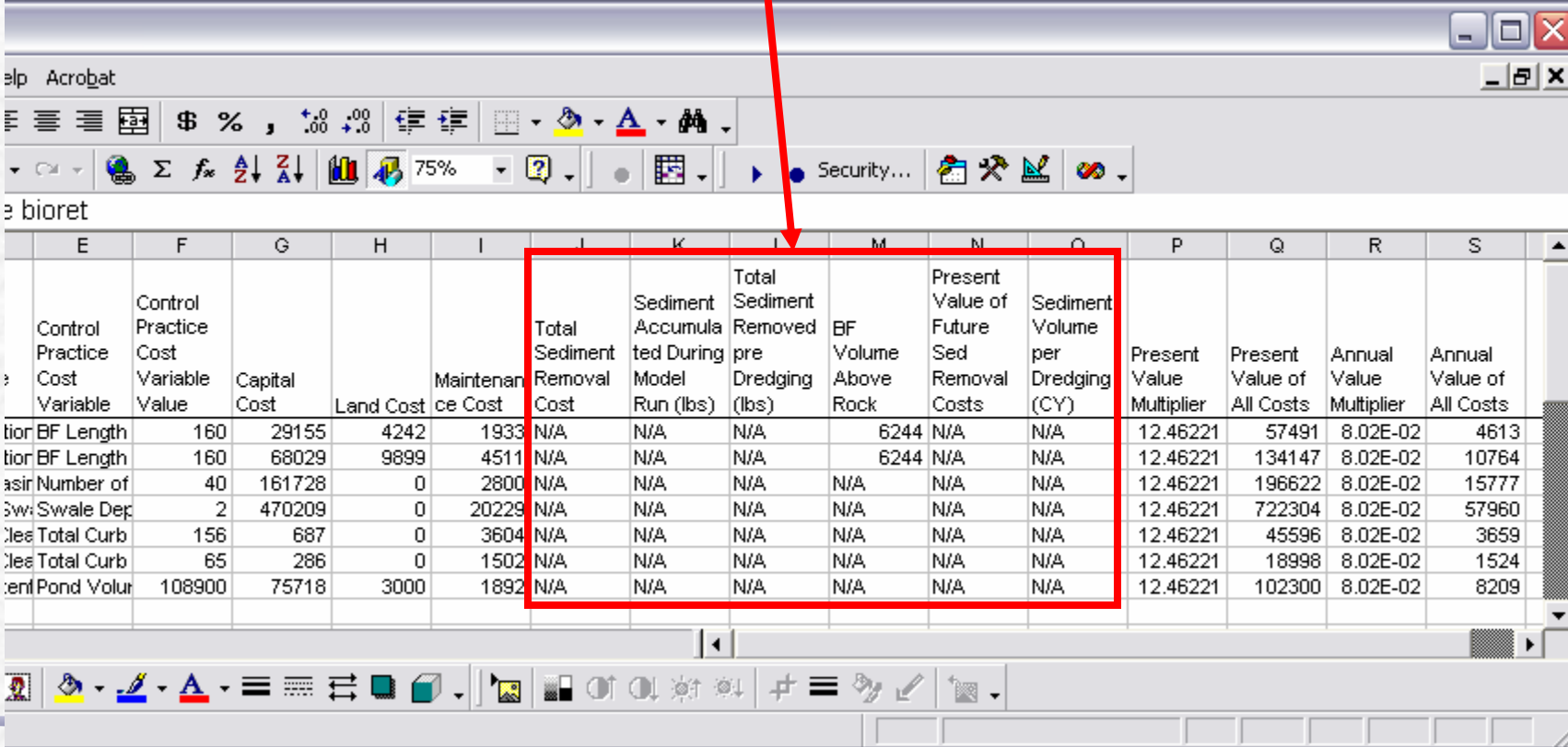
DATSetOutputCostDetail /

Draw AutoShapes

Ready

# Perform a Cost Analysis

## Additional Detention Pond Sediment and Biofilter Volume Information from the 'DATSetOutputCostDetail.CSV' output file



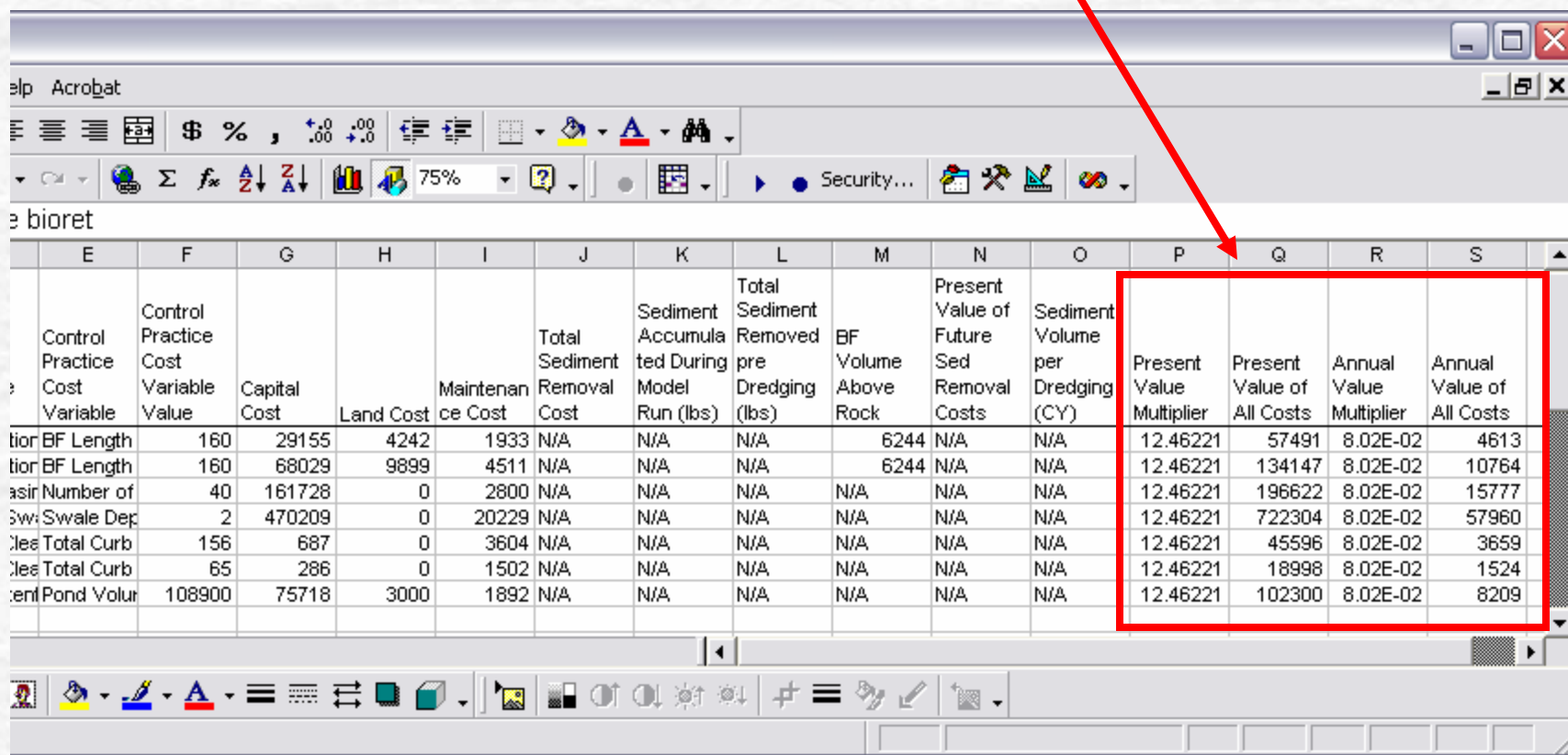
The screenshot shows a spreadsheet application window titled "e bioret". The spreadsheet contains a table with columns labeled E through S. A red box highlights columns J through N, which contain the following headers: "Total Sediment Removal Cost", "Sediment Accumulated During Model Run (lbs)", "Total Sediment Removed pre Dredging (lbs)", "BF Volume Above Rock", "Present Value of Future Sed Removal Costs", and "Sediment Volume per Dredging (CY)". A red arrow points from the title text to this highlighted area.

	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	Control Practice Cost Variable	Control Practice Cost Variable Value	Capital Cost	Land Cost	Maintenance Cost	Total Sediment Removal Cost	Sediment Accumulated During Model Run (lbs)	Total Sediment Removed pre Dredging (lbs)	BF Volume Above Rock	Present Value of Future Sed Removal Costs	Sediment Volume per Dredging (CY)	Present Value Multiplier	Present Value of All Costs	Annual Value Multiplier	Annual Value of All Costs
tion BF Length	160	29155	4242	1933	N/A	N/A	N/A	6244	N/A	N/A	12.46221	57491	8.02E-02	4613	
tion BF Length	160	68029	9899	4511	N/A	N/A	N/A	6244	N/A	N/A	12.46221	134147	8.02E-02	10764	
asir Number of	40	161728	0	2800	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	196622	8.02E-02	15777	
Swale Dep	2	470209	0	20229	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	722304	8.02E-02	57960	
les Total Curb	156	687	0	3604	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	45596	8.02E-02	3659	
les Total Curb	65	286	0	1502	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	18998	8.02E-02	1524	
en Pond Volu	108900	75718	3000	1892	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	102300	8.02E-02	8209	



# Perform a Cost Analysis

**Present Value and Annual Value Cost Information  
From the 'DATSetOutputCostDetail.CSV' output file**



	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	Control Practice Variable	Control Practice Cost Variable Value	Capital Cost	Land Cost	Maintenance Cost	Total Sediment Removal Cost	Sediment Accumulated During Model Run (lbs)	Total Sediment Removed pre Dredging (lbs)	BF Volume Above Rock	Present Value of Future Sed Removal Costs	Sediment Volume per Dredging (CY)	Present Value Multiplier	Present Value of All Costs	Annual Value Multiplier	Annual Value of All Costs
tion BF Length	160	29155	4242	1933	N/A	N/A	N/A	6244	N/A	N/A	N/A	12.46221	57491	8.02E-02	4613
tion BF Length	160	68029	9899	4511	N/A	N/A	N/A	6244	N/A	N/A	N/A	12.46221	134147	8.02E-02	10764
asir Number of	40	161728	0	2800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	196622	8.02E-02	15777
Swi Swale Dep	2	470209	0	20229	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	722304	8.02E-02	57960
les Total Curb	156	687	0	3604	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	45596	8.02E-02	3659
les Total Curb	65	286	0	1502	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	18998	8.02E-02	1524
ent Pond Volu	108900	75718	3000	1892	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.46221	102300	8.02E-02	8209

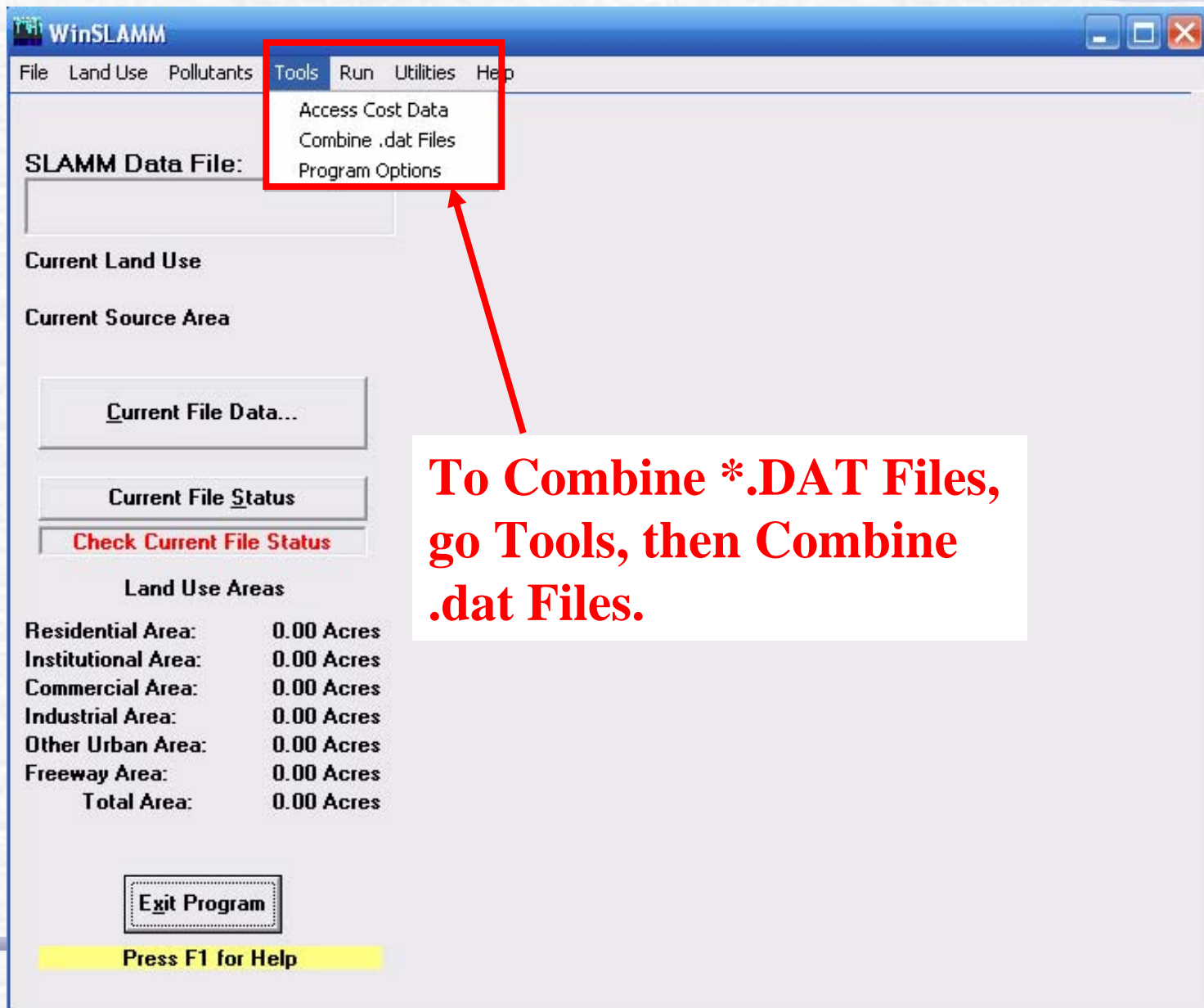
**See the “Control Practice Cost Data” Help File Topic for more information.**

# Combining Two \*.DAT Files

## Combining Two \*.DAT Files Overview

The program can combine two \*.DAT files containing different land uses into one \*.DAT file.

# Combining Two \*.DAT Files



# Combining Two \*.DAT Files

WinSLAMM Data File: [C:\Program Files\WinSLAMM\new mdr.dat]

File Land Use Pollutants Tools Run Utilities Help

SLAMM Data File:  
new mdr.DAT

Source Area No.	Source Area	Area (acres)	I	W	P	O	S	B	Source Area Parameters
1	Roofs 1	2.06							Entered
2	Roofs 2	12.23							Entered
3	Roofs 3								

Current Land Use: ...

Current Source Area: ...

Combine .dat Files

File Name of File 1:  
Browse

File Name of File 2:  
Browse

New File Name:  
Browse

Warning - Do not use this feature unless you are combining two files that are composed of separate land uses. If you attempt to combine files that have the same land use, you will screw up your files and not be able to recover them.

Combine Files

Freeway Area: 0.00 Acres  
Total Area: 100.00 Acres

Exit Program

Press F1 for Help

22	Large Landscaped Area 2								
23	Undeveloped Area								
24	Small Landscaped Area 1	63.09							Entered
25	Small Landscaped Area 2								
26	Small Landscaped Area 3								
27	Isolated/Water Body Area								
28	Other Pervious Area								
29	Other Dir Cnctd Imp Area								
30	Other Part Cnctd Imp Area								

Select the two \*.DAT files to be combined.



# Combining Two \*.DAT Files

WinSLAMM Data File: [C:\Program Files\WinSLAMM\new mdr.dat]

File Land Use Pollutants Tools Run Utilities Help

SLAMM Data File:  
new mdr.DAT

Source Area No.	Source Area	Area (acres)	I	W	P	O	S	B	Source Area Parameters
1	Roofs 1	2.06							Entered
2	Roofs 2	12.23							Entered
3	Roofs 3								

Current Land Use: ...

Combine .dat Files

File Name of File 1:  
Browse C:\WinSLAMM\Testing\Update Routine\Test 1\9.2 Clay\SLU Institutional Clay.dat

File Name of File 2:  
Browse C:\WinSLAMM\Testing\Update Routine\Test 1\9.2 Clay\SLU Light Industrial Clay.c

New File Name:  
Browse

Warning - Do not use this feature unless you are combining two files that are composed of separate land uses. If you attempt to combine files that have the same land use, you will screw up your files and not be able to recover them.

Combine Files

Clear Name

Exit

Residential  
Institutional  
Commercial  
Industrial  
Other Urban  
Freeway Area: 0.00 Acres  
Total Area: 100.00 Acres

Land Use	Area (acres)	I	W	P	O	S	B
22 Large Landscaped Area 2							
23 Undeveloped Area							
24 Small Landscaped Area 1	63.09						
25 Small Landscaped Area 2							
26 Small Landscaped Area 3							
27 Isolated/Water Body Area							
28 Other Pervious Area							
29 Other Dir Cnctd Imp Area							
30 Other Part Cnctd Imp Area							

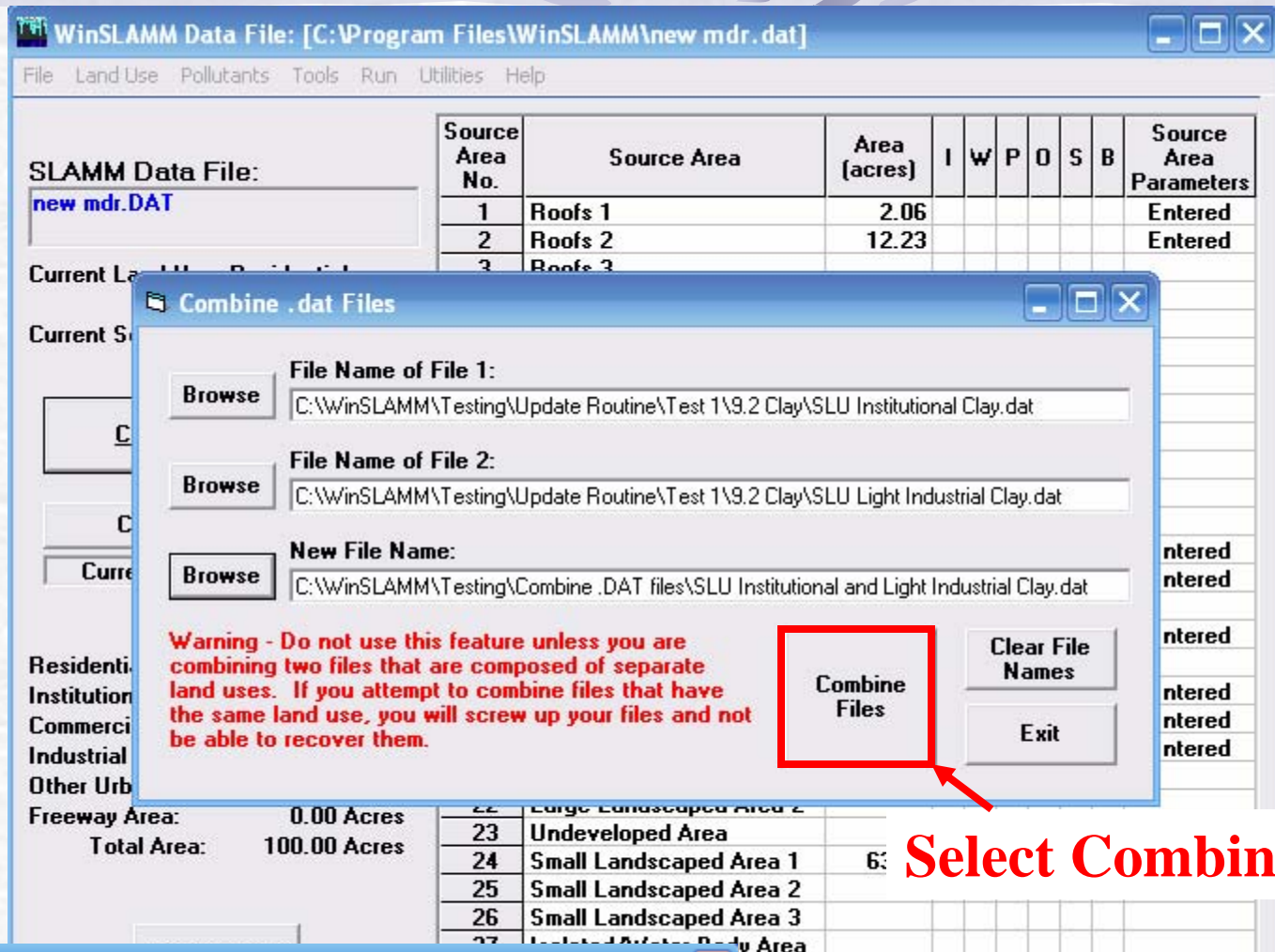
Exit Program

Press F1 for Help

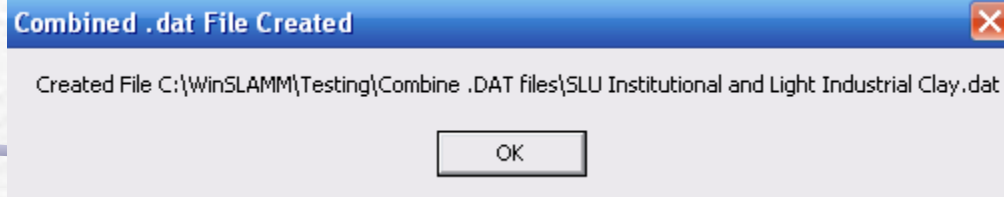
Next, select the new file name and its location.

Notice the Warning. The program can ONLY combine dissimilar land uses at this time. If the user needs to combine two similar land uses, it must be done manually.

# Combining Two \*.DAT Files



**Select Combine Files.**



**A note will appear saying the new file has been created and its location.**

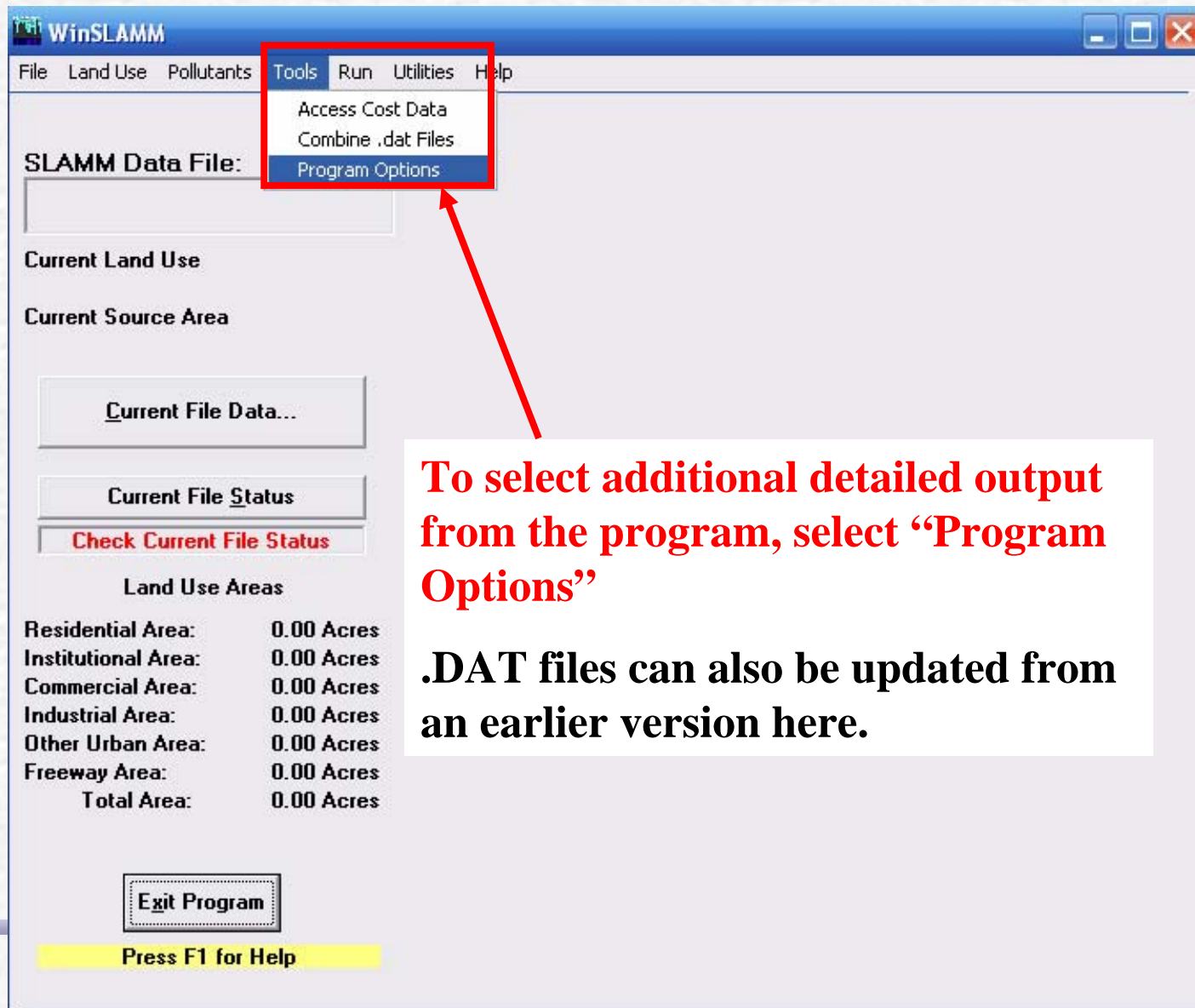
# Detailed Output Options for Control Devices

## Detailed Output Options Overview

The user now has the ability to choose which detailed output options the program generates. Previously, detailed output for each control practice was automatically generated.



# Detailed Output Options for Control Devices





# Detailed Output Options for Control Devices

**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

**Catchbasins**

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

**Flow Duration Curve Data**

- ☐ Detailed Data
- ☐ Plotting Calculations

**Freeway Data**

- ☐ Freeway Washoff Detail
- ☐ Critical Particle Size Calculation Detailed Output File

**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 Plot
- ☐ Street Dirt Removal
- ☐ Washoff or Street Cleaning Detail

**Wet Detention Ponds**

- ☐ Detailed Output
- ☐ Outfall Discharge Hydrograph
- ☐ 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

Select the Detailed Output needed by checking the box next to the output.

The Output List has been updated for version 9.4.0.

# Detailed Output Options for Control Devices

**Program Options**

**Detailed Output File Options** | Default Model Options

**Biofilters**

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

**Catchbasins**

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

**Flow Duration Curve Data**

- ☐ Detailed Data
- ☐ Plotting Calculations

**Freeway Data**

- ☐ Freeway Washoff Detail
- ☐ Critical Particle Size Calculation Detailed Output File

**Grass Swales**

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

**Street Cleaning**

☐ Uncheck All Detailed Output File Options

☐ Check All Detailed Output File Options

**File Update Options**

**Select Save .INI File. The form will then close and the program will return to the Main Data window. Each model run made will now include the Detailed Output Selected. Once the \*.DAT file is run, the output file will be saved in the same directory as your \*.DAT file. See the “Program Options” Help File Topic for more information.**

**Program Options**

Detailed Output File Options

☐ Suppress Control Practice Review Warning Messages

☐ Suppress 'No Street Cleaning with Catchbasin Cleaning' Warning Message

☐ Turn 'Save File Upon Exit' Message Off

☐ Turn 'Save Outfall Runoff and Particulate Loading for WinDETPOND Analysis' Output Option On

☐ Suppress the Wet Detention Pond Overflow Warning Message

Default Peak Flow to Average Flow Ratio

Standard Particle Size Distribution File

Default Monthly Temperature

January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0

**In version, 9.4.0, a Default Model Options form was added. This form can be used to suppress selected warning message, select a particle size distribution that will be used for all control practices and set the default monthly temperature values.**

File Update Options

Cancel Changes

Save .INI File

# File Update Options

## Updated File Update Options Overview Updated

The user can update version 9.0 or version 9.1 or version 9.2 or version 9.3 \*.DAT files to version 9.4 automatically. This is done through a file called a \*.INI file.



**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

**Catchbasins**

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

**Flow Duration Curve Data**

- ☐ Detailed Data
- ☐ Plotting Calculations

**Freeway Data**

- ☐ Freeway Washoff Detail
- ☐ Critical Particle Size Calculation

**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

**Street Cleaning**

- ☐ Street Dirt Plot
- ☐ Street Dirt Removal
- ☐ Washoff or Street Cleaning Detail

**Wet Detention Ponds**

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

**Default Model Options**

**Options**

**File Update Options**

**Cancel Changes**

**Save .INI File**

**To update version 9.0, 9.1, 9.2, or 9.3 .dat files to version 9.4, select the File Update Options button.**

# File Update Options

**Program Options**

**.DAT File Update Information**

Version 9.3 to Version 9.4  
Version 9.1 to Version 9.2  
Version 9.0 to Version 9.1  
**Version 9.2 to Version 9.3**

☒ Version 9.2 to Version 9.3 Note: To update files properly, this information must be filled in regardless of the file contents

☒ Grass Swale Update Information

Swale Retardance Factor: C  
Typical Grass Height (in): 6.0

Select Particle Size File  
C:\Program Files\WinSLAMM\NURP.CPZ

☒ Biofilter Update Information

Engineered Soil Type: User Defined  
Percent solids reduced to engineered soil (0 -100): 0  
Engineered Soil Infiltration Rate (in/hr): 0.000

Select Particle Size File  
C:\Program Files\WinSLAMM\NURP.CPZ

Continue Save File Update Information to .INI File Cancel Changes Reload .INI File ☐ Do Not Show Rename File Option

**Click on the tab representing the file version you have and enter the relevant data.**

**Enter data for all subsequent versions until the version 9.4 file will have all the needed data.**

**Program Options**

**.DAT File Update Information**

Version 9.3 to Version 9.4

Version 9.1 to Version 9.2

Version 9.0 to Version 9.1

**Version 9.2 to Version 9.3**

☒ Version 9.2 to Version 9.3 Note: To update files properly, this information must be filled in regardless of the file contents

☒ Grass Swale Update Information

Swale Retardance Factor: C

Typical Grass Height (in): 6.0

Select Particle Size File

C:\Program Files\WinSLAMM\NURP.CPZ

☒ Biofilter Update Information

Engineered Soil Type: User Defined

Select Particle

C:\Program Files\WinSLAMM\NURP.CPZ

Continue Save File Update Information to .INI File Cancel Changes Reload .INI File

☐ Do Not Show Rename File Option

**Each time a \*.DAT file is updated through the \*.INI file, it will ask if the user would like the rename the file. The Do Not Show Rename File Option can be selected if the user chooses to overwrite each \*.DAT file.**

**Program Options**

**.DAT File Update Information**

Version 9.3 to Version 9.4

Version 9.1 to Version 9.2

Version 9.0 to Version 9.1

**Version 9.2 to Version 9.3**

☒ Version 9.2 to Version 9.3      Note: To update files properly, this information must be filled in regardless of the file contents

☒ Grass Swale Update Information

Swale Retardance Factor

Typical Grass Height (in)

Select Particle Size File

C:\Program Files\WinSLAMM\NURP.CPZ

☒ Stormwater Management

in due   
(00)

ion

C:\Program Files\WinSLAMM\NURP.CPZ

**Once all relevant files are referenced,  
select Save File Update Information to  
.INI File.**

Continue **Save File Update Information to .INI File** Cancel Changes Reload .INI File ☐ Do Not Show Rename File Option



The screenshot shows the 'Program Options' dialog box, specifically the '.DAT File Update Information' tab. The 'Version 9.1 to Version 9.2' section is active, with a checked box for 'Version 9.1 to Version 9.2' and an unchecked box for 'Supress Porous Pavement update warnings'. A note states: 'Note: To update files properly, this information must be filled in regardless of the file contents'. Below this, there are several text input fields for selecting standard runoff coefficients and street delivery file names for different land uses. The 'Select Institutional Land Use .STD File' field is highlighted with a dashed border. At the bottom, there are buttons for 'Continue', 'Save File Update Information to .INI File', 'Cancel Changes', and 'Reload .INI File', along with a checkbox for 'Do Not Show Rename File'.

**Program Options**

**.DAT File Update Information**

Version 9.3 to Version 9.4      Version 9.0 to Version 9.1      Version 9.2 to Version 9.3

**Version 9.1 to Version 9.2**

☒ Version 9.1 to Version 9.2      Note: To update files properly, this information must be filled in regardless of the file contents

☐ Supress Porous Pavement update warnings

Select Standard Runoff Coefficient File name applied to all .DAT Files      C:\Program Files\WinSLAMM\WI\_SL06 Dec06.rsv

Standard Street Delivery File names applied to all .DAT Files:

Select Residential Land Use .STD File	C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Select Institutional Land Use .STD File	C:\Program Files\WinSLAMM\WI_Com Inst Indust Dec06.std
Select Commercial Land Use .STD File	
Select Industrial Land Use .STD File	
Select Other Urban Land Use .STD File	
Select Freeway Land Use .STD File	

Continue      Save File Update Information to .INI File      Cancel Changes      Reload .INI File      ☐ Do Not Show Rename File

An \*.INI file was distributed with the latest version of WinSLAMM containing all the updated default parameters.

Therefore, unless there is a special situation, the user should not have to modify these files.

This slide shows some of the files specified in the distributed \*.INI file. See the “Updating .dat Files” Help File Topic for more information.

# Saving Down to Earlier Versions

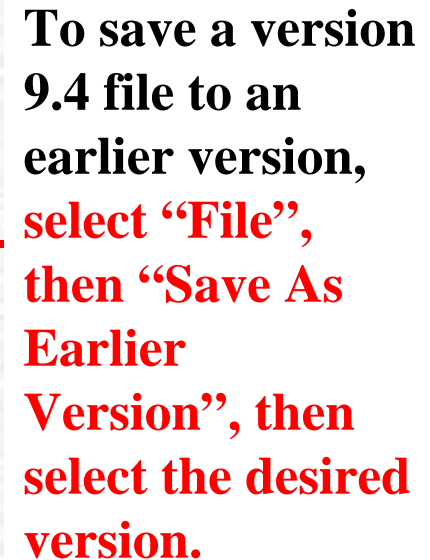
**New**

## Saving Down to Earlier Versions Overview

**New**

The user can save a version 9.4 file down to version 9.1, 9.2, or 9.3.

# New



## Batch Editor Overview

The Batch Editor can be used to perform three functions. The three functions are:

1. Prorate the source areas in a \*.DAT file,
2. Run a group of \*.DAT files at once, or
3. Prorate the source areas in a group of \*.DAT files and then run them at once.



# Batch Editor

WinSLAMM Data File: [C:\Program Files\WinSLAMM\new mdr.dat]

File Land Use Pollutants Tools **Run** Utilities Help

Calculation Module...  
Run Batch Editor...

SLAMM Data File:  
new mdr.DAT

Current Land Use: Residential

Current Source Area

No.	Source Area	Area (acres)	I	W	P	O	S	B	Source Area Parameters
1	Roofs 1	2.06							Entered
2	Roofs 2	12.23							Entered
3	Roofs 3								
4	Roofs 4								
5	Roofs 5								
6	Paved Parking/Storage 1								
12	Playground 2								
13	Driveways 1	5.14							Entered
14	Driveways 2	1.01							Entered
15	Driveways 3								
16	Sidewalks/Walks 1	3.73							Entered
17	Sidewalks/Walks 2								
18	Street Area 1	3.92					S		Entered
19	Street Area 2	1.33					S		Entered
20	Street Area 3	7.49					S		Entered
21	Large Landscaped Area 1								
22	Large Landscaped Area 2								
23	Undeveloped Area								
24	Small Landscaped Area 1	63.09							Entered
25	Small Landscaped Area 2								
26	Small Landscaped Area 3								
27	Isolated/Water Body Area								
28	Other Pervious Area								
29	Other Dir Cnctd Imp Area								
30	Other Part Cnctd Imp Area								

Current File Data...

Current File Status

Current File Data Entered

Land Use Areas

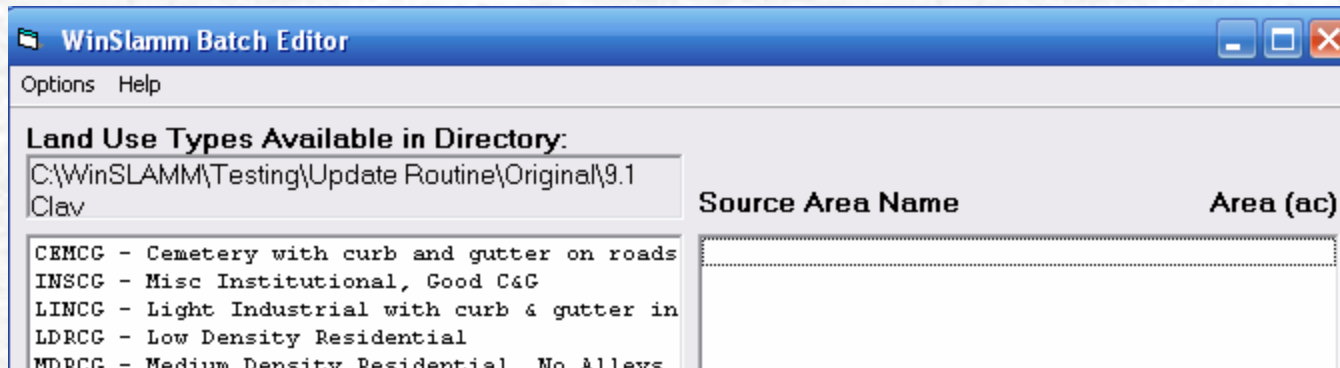
Residential Area: 100.00 Acres  
Institutional Area: 0.00 Acres  
Commercial Area: 0.00 Acres  
Industrial Area: 0.00 Acres  
Other Urban Area: 0.00 Acres  
Freeway Area: 0.00 Acres  
Total Area: 100.00 Acres

Exit Program

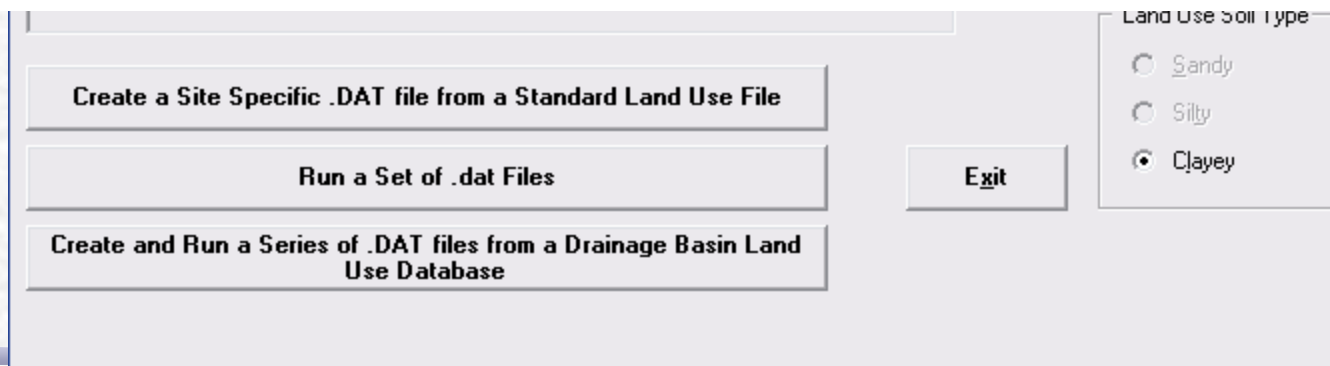
Press F1 for Help

Select Run, then Run Batch Editor to activate the Batch Editor routine.

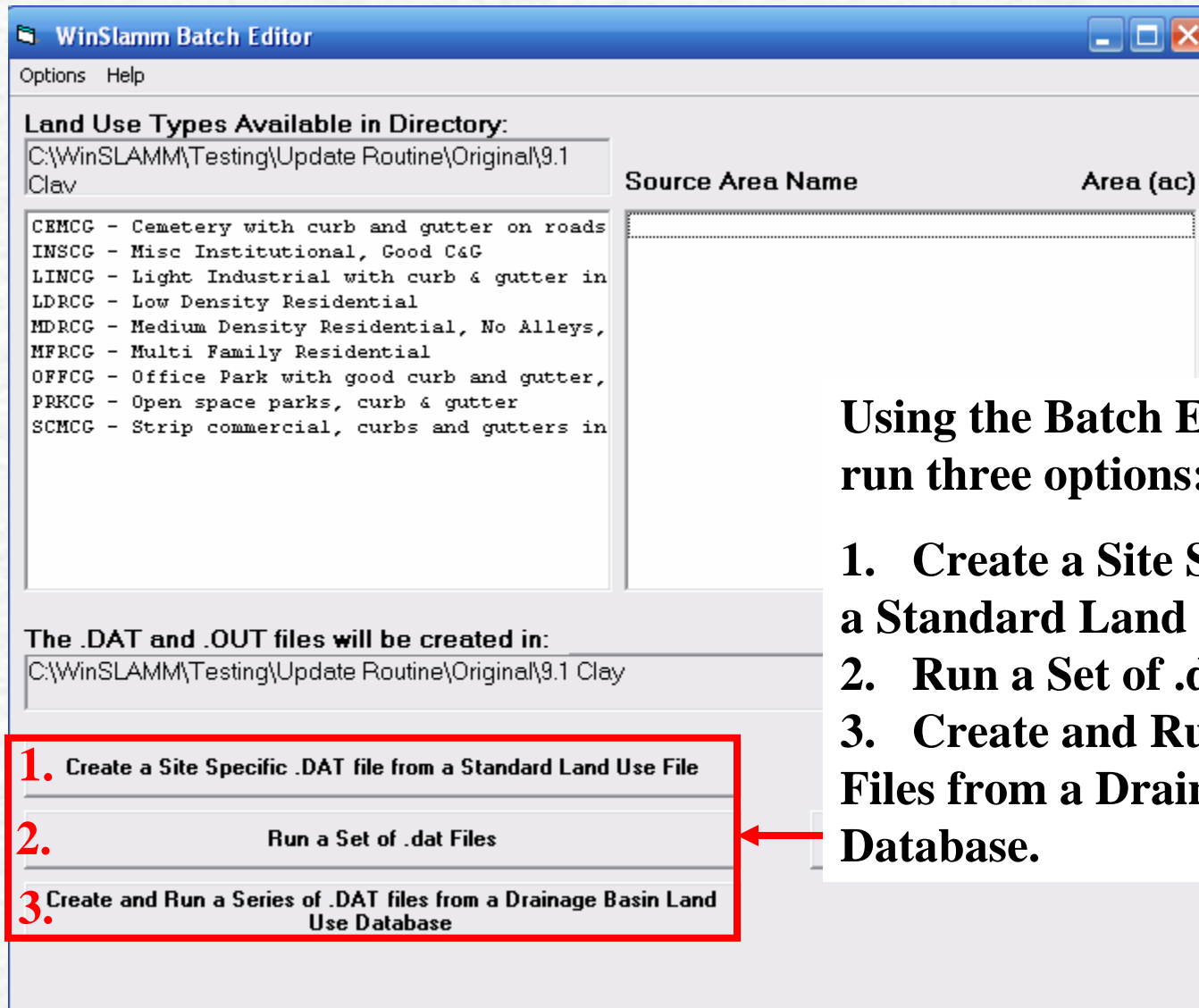
# Batch Editor



**The Batch Editor can use \*.DAT files called Standard Land Use Files. These \*.DAT files are 100 acres of one type of land use. The Source Areas and Source Area Parameters are based on a large sample of sites for that typical Land Use. For more information or descriptions of the Standard Land Use Files see the “Standard Land Use and Source Area Files” Help File topic.**



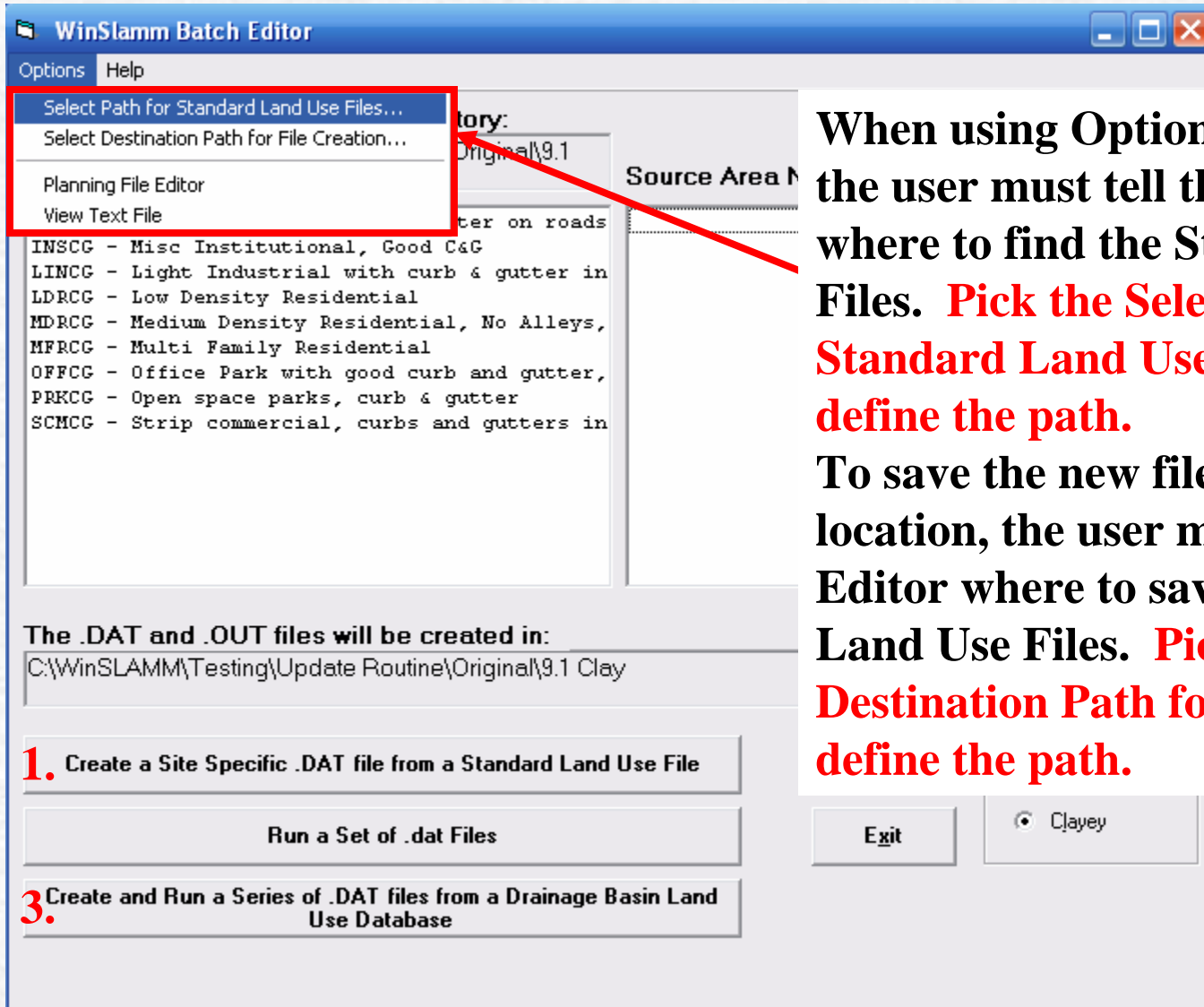
# Batch Editor



**Using the Batch Editor, the user can run three options:**

1. Create a Site Specific .dat File from a Standard Land Use File,
2. Run a Set of .dat Files, or
3. Create and Run a Series of .dat Files from a Drainage Basin Land Use Database.

# Batch Editor



**When using Option #1 or Option #3, the user must tell the Batch Editor where to find the Standard Land Use Files. Pick the Select Path for Standard Land Use Files menu item to define the path.**

**To save the new files in a different location, the user must tell the Batch Editor where to save the new Standard Land Use Files. Pick the Select Destination Path for File Creation to define the path.**



# Batch Editor

WinSlamm Batch Editor

Options Help

**Land Use Types Available in Directory:**  
C:\WinSLAMM\Testing\Update Routine\Test 1\9.2 Clay

Source Area Name	Area (ac)
CEMCG - Cemetery with curb and gutter on roads	
INSCG - Misc Institutional, Good C&G	
LINCG - Light Industrial with curb & gutter in	
LDRCG - Low Density Residential	
MDRCG - Medium Density Residential, No Alleys,	
MFRCG - Multi Family Residential	
OFFCG - Office Park with good curb and gutt	
PRKCG - Open space parks, curb & gutter	
SCMCG - Strip commercial, curbs and gutters	

**The .DAT and .OUT files will be created in:**  
C:\WinSLAMM\Testing\Update Routine\Test 1\9.2 Clay

**Total Area:**

**Land Use Soil Type**

☐ Sandy

☐ Silty

☒ Clayey

**1. Create a Site Specific .DAT file from a Standard Land Use File**

Run a Set of .dat Files

Create and Run a Series of .DAT files from a Drainage Basin Land Use Database

Exit

**To prorate a Standard Land Use File  
Select Create a Site Specific .DAT file  
from a Standard Land Use File.**

# Batch Editor

**Standard Land Use File Creator**

Enter New .DAT File Name...

Land Use Soil Type

☐ Sandy

☐ Silty

☒ Clayey

**Available Land Use Types**

CEMCG - Cemetery with curb and gutter on roads

INSCG - Misc Institutional, Good C&G

LINCG - Light Industrial with curb & gutter in good con

LDRCG - Low Density Residential

MDRCG - Medium Density Residential, No Alleys, good Curl

MFRCG - Multi Family Residential

OFFCG - Office Park with good curb and gutter, curb & g

PRKCG - Open space parks, curb & gutter

SCMCG - Strip commercial, curbs and gutters in good con

Selected Land Use Type:

**The window will show the Available Land Use Types for the Soil Type chosen.**

New Land Use Area (total acres):

**Cancel** **Create New File**

# Batch Editor

**Standard Land Use File Creator**

Enter New .DAT File Name...

**Land Use Soil Type**

☐ Sandy

☐ Silty

☒ Clayey

**Available Land Use Types**

CEMCG - Cemetery with curb and gutter on roads  
INSCG - Misc Institutional, Good C&G  
LINCG - Light Industrial with curb & gutter in good con  
LDRCG - Low Density Residential  
MDRCG - Medium Density Residential, No Alleys, good Curl  
MFRCG - Multi Family Residential  
OFFCG - Office Park with good curb and gutter, curb & g  
PRKCG - Open space parks, curb & gutter  
SCMCG - Strip commercial, curbs and gutters in good con

Selected Land Use Type:

**To choose a Land Use with a different soil type, select the specified Land Use Soil Type. The Standard Land Use Files for the new soil type will appear in the Available Land Use Types window.**

New File

# Batch Editor

**Standard Land Use File Creator**

Enter New .DAT File Name...

Land Use Soil Type

**Available Land Use Types**

- CEMCG - Cemetery with curb and gutter on roads**
- INSCG - Misc Institutional, Good C&G
- LINCG - Light Industrial with curb & gutter in good con
- LDRCG - Low Density Residential
- MDRCG - Medium Densitv Residential. No Alleys, good Curl

utter, curb & g

Selected Land Use Type: Cemetery with curb and gutter on roads

Selected Standard Land Use File Name: SLU Cemetery Clay.dat

New Land Use Area (total acres):

Cancel Create New File

Select a Land Use file by clicking on in it the Available Land Use Types window.



# Batch Editor

**Standard Land Use File Creator**

Enter New .DAT File Name...

Land Use Soil Type

☐ Sandy

☐ Silty

**Available Land Use Types**

- CEMCG - Cemetery with curb and gutter on roads
- INSCG - Misc Institutional, Good C&G
- LINCG - Light Industrial with curb & gutter in good con
- LDRCG - Low Density Residential
- MDRCG - Medium Density Residential, No Alleys, good Curl
- MFRCG - Multi Family Residential
- CEMCG - Cemetery with curb and gutter on roads

**Selected Land Use Type:** Cemetery with curb and gutter on roads

**Selected Standard Land Use File Name:** SLU Cemetery Clay.dat

**New Land Use Area (total acres):**

**Cancel** **Create New File**

The Site Description and Land Use File Name will appear in the windows below.

# Batch Editor

**Standard Land Use File Creator**

Enter New .DAT File Name...

Land Use Soil Type

☐ Sandy

☐ Silty

☒ Clayey

**Available Land Use Types**

- CEMCG - Cemetery with curb and gutter on roads
- INSCG - Misc Institutional, Good C&G
- LINCG - Light Industrial with curb & gutter in good con
- LDRCG - Low Density Residential
- MDRCG - Medium Density Residential, No Alleys, good Curl
- MFRCG - Multi Family Residential
- OFFCG - Office Park with good curb and gutter, curb & g
- PRKCG - Open space parks, curb & gutter
- STRIP - Strip commercial, curbs and gutters in good con

**Selected Land Use Type:** Cemetery with curb and gutter on roads

**Selected Standard Land Use File Name:** SLU Cemetery Clay.dat

**New Land Use Area (total acres):** 15

**Cancel** **Create New File**

# Batch Editor

**Standard Land Use File Creator**

C:\WinSLAMM\Testing\Prorate SLU File\15 acre Cemetery.dat

**Enter New .DAT File Name...**

Land Use Soil Type  
Sandu

**Available Land Use Types**

- CEMCG - Cemetery with curb and gutter on roads
- INSCG - Misc Institutional, Good C&G
- LINCG - Light Industrial with curb & gutter in good con
- LDRCG - Low Density Residential
- MDRCG - Medium Density Residential, No Alleys, good Curb
- .dential
- good curb and gutter, curb & g
- curb & gutter
- curbs and gutters in good con

**Selected Land Use Type:** Cemetery with curb and gutter on roads

**Selected Standard Land Use File Name:** SLU Cemetery Clay.dat

**New Land Use Area (total acres):** 15

**Cancel** **Create New File**

**Enter the New. DAT File Name and location the file should be saved. The file name and path will appear in the window above.**

# Batch Editor

**Standard Land Use File Creator**

C:\WinSLAMM\Testing\Prorate SLU File\15 acre Cemetery.dat

**Enter New .DAT File Name...**

Land Use Soil Type

☐ Sandy

☐ Silty

☒ Clayey

**Available Land Use Types**

- CEMCG - Cemetery with curb and gutter on roads
- INSCG - Misc Institutional, Good C&G
- LINCG - Light Industrial with curb & gutter in good con
- LDRCG - Low Density Residential
- MDRCG - Medium Density Residential, No Alleys, good Curl
- MFRCG - Multi Family Residential
- OFFCG - Office Park with good curb and gutter, curb & g
- PRKCG - Open space parks, curb & gutter
- SCMCG - Strip commercial, curbs and gutters in good con

**Selected Land Use Type:** Cemetery with curb and gutter on road

**Selected Standard Land Use File Name:** SLU Cemetery Clay.dat

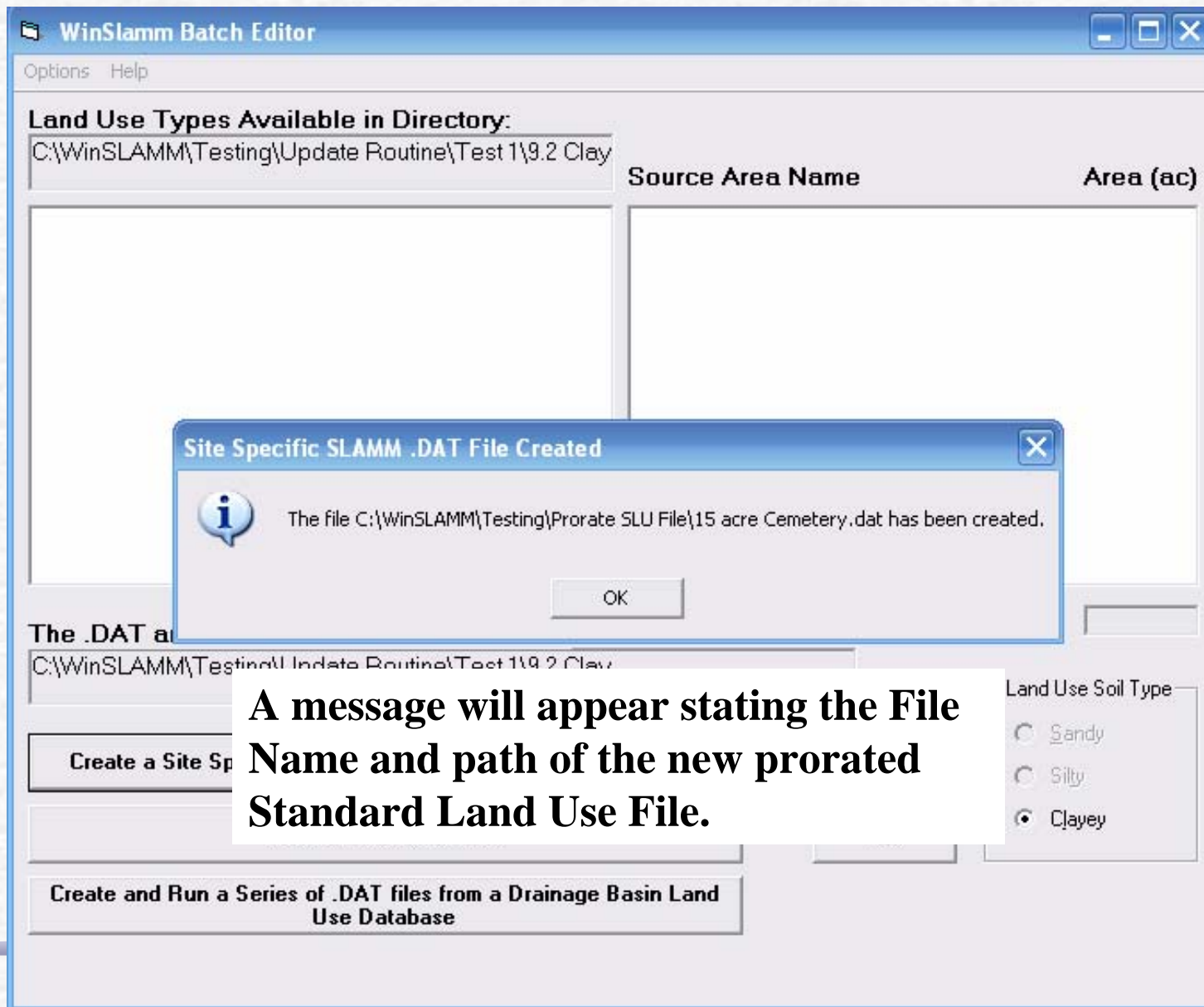
**New Land Use Area (total acres):** 15

**Cancel** **Create New File**

To generate the new prorated \*.DAT file, Select Create New File.



# Batch Editor



**A message will appear stating the File Name and path of the new prorated Standard Land Use File.**

# Batch Editor

WinSLamm Batch Editor

Options Help

**Land Use Types Available in Directory:**  
C:\WinSLAMM\Testing\Update Routine\Test 1\9.2 Clay

	Source Area Name	Area (ac)
CEMCG - Cemetery with curb and gutter on roads		
INSCG - Misc Institutional, Good C&G		
LINCG - Light Industrial with curb & gutter in		
LDRCG - Low Density Residential		
MDRCG - Medium Density Residential, No Alleys,		
MFRCG - Multi Family Residential		
OFFCG - Office Park w/		
PRKCG - Open space pa		
SCMCG - Strip commerc		

**To run a set of \*.DAT files, select the Run a Set of .dat Files. This option will run several \*.DAT files at once and create a summary of output.**

The .DAT and .OUT files will be created in:  
C:\WinSLAMM\Testing\Update Routine\Test 1\9.2 Clay

Total Area:

Land Use Soil Type  
☐ Sandy  
☐ Silty  
☒ Clayey

Create a Site Specific .DAT file from a Standard Land Use File

**2. Run a Set of .dat Files**

Create and Run a Series of .DAT files from a Drainage Basin Land Use Database

Exit

# Batch Editor

File Selection for DAT Set Model Run

Run List

0 .dat Files Listed in Current Directory	SLU Type		0 .dat Files Selected for Model Run	SLU Type
		Double-Click on File Name to Move One File		
		Add All Listed Files to Run List		
		Remove All Files From Run List		
		.DAT File Batch Changes		

Current Directory: None Selected

Select Directory

View Output

Select the directory the \*.DAT Files are in.

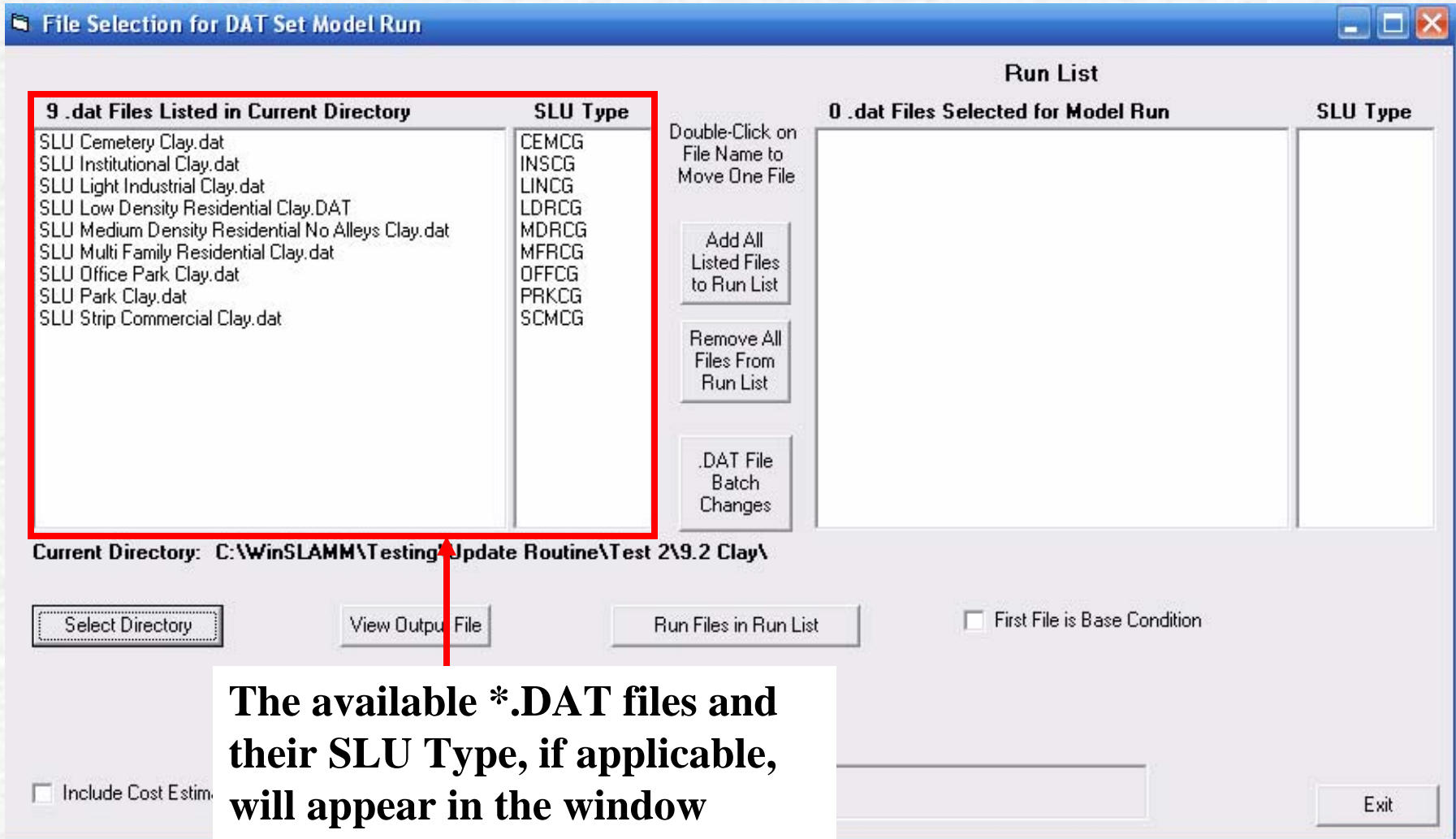
☐ First File is Base Condition

☐ Include Cost Estimates

Select Cost Data File

Exit

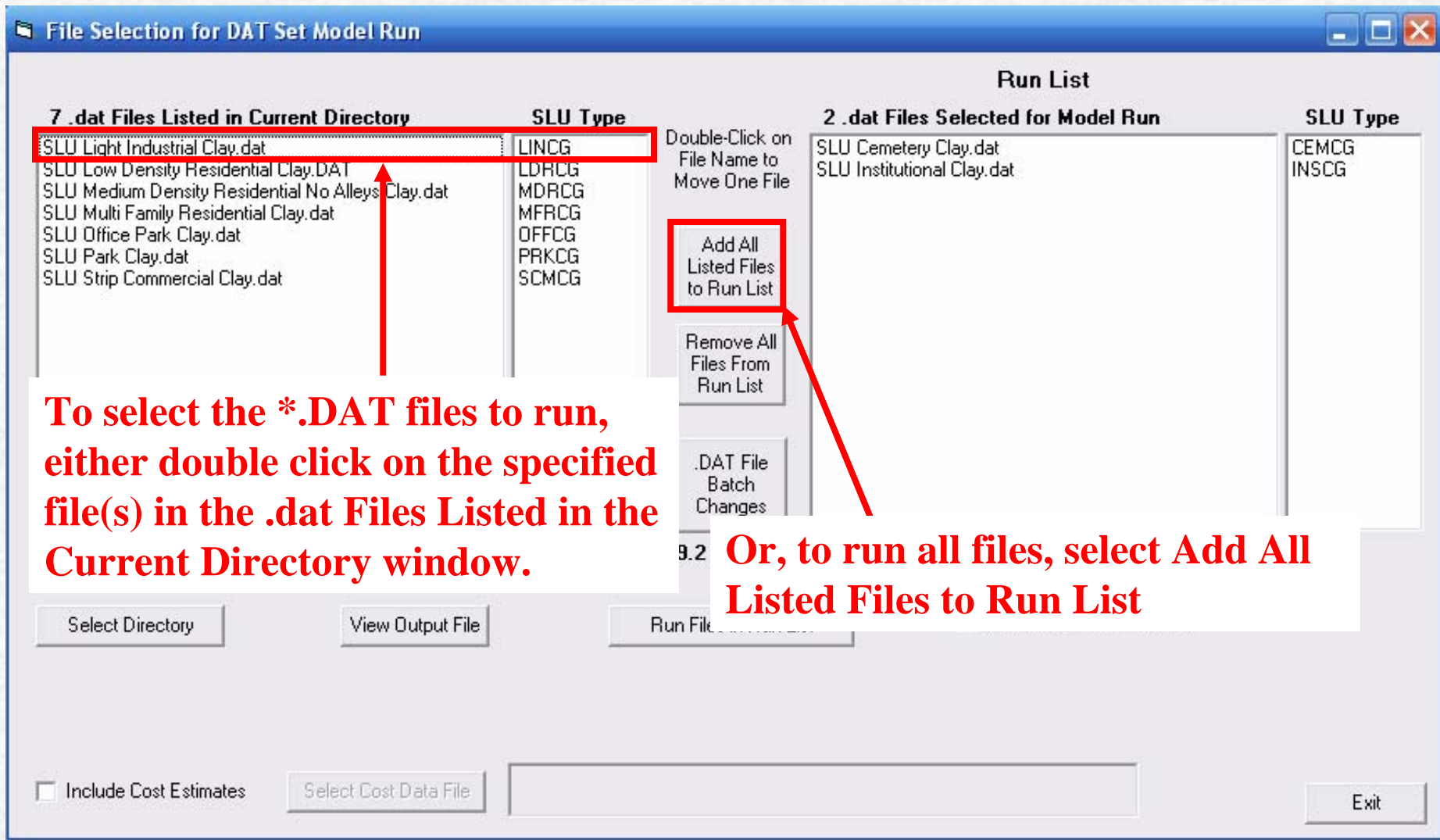
# Batch Editor



**The available \*.DAT files and their SLU Type, if applicable, will appear in the window above.**



# Batch Editor



# Batch Editor

**File Selection for DAT Set Model Run**

**0 .dat Files Listed in Current Directory**

**SLU Type**

Double-Click on File Name to Move One File

Add All Listed Files to Run List

Remove All Files From Run List

.DAT File Batch Changes

**Run List**

**9 .dat Files Selected for Model Run**

	SLU Type
SLU Cemetery Clay.dat	CEMCG
SLU Institutional Clay.dat	INSCG
SLU Light Industrial Clay.dat	LINCG
SLU Low Density Residential Clay.DAT	LDRCG
SLU Medium Density Residential No Alleys Clay.dat	MDRCG
SLU Multi Family Residential Clay.dat	MFRCG
SLU Office Park Clay.dat	OFFCG
SLU Park Clay.dat	PRKCG
SLU Strip Commercial Clay.dat	SCMCG

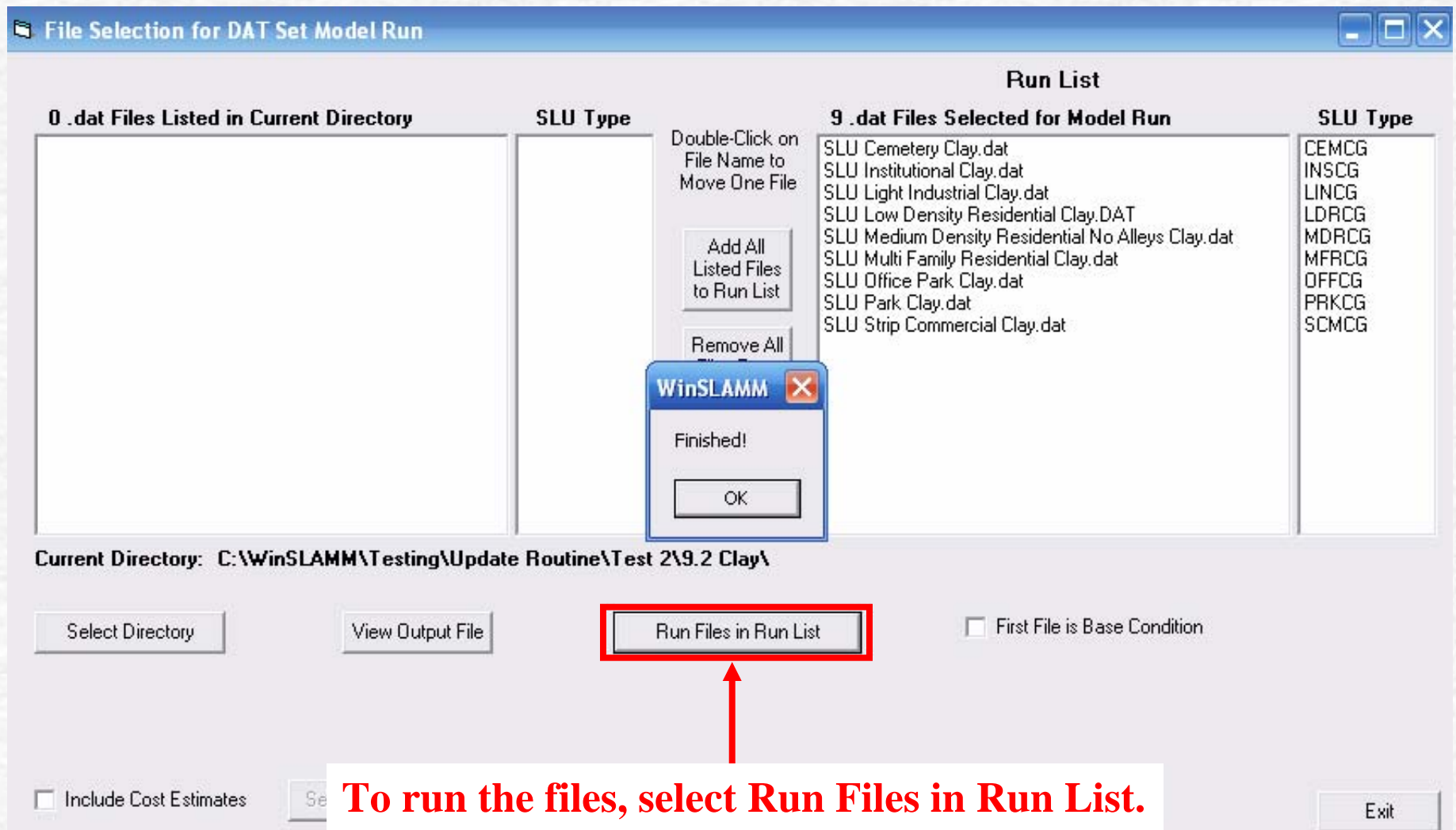
Current Directory: C:\WinSLAMM\Testing\Update Routine\Test 2\9.2 Clay\

Select Directory View Output File Run Files in Run List ☐ First File is Base Condition

☐ Include Cost Estimates Select Cost Data File

**The selected files will appear in this window.**  
**To remove a file from the window, double click on it, or select Remove All Files from Run List.**

# Batch Editor



**To run the files, select Run Files in Run List.  
A message will appear when complete.**

# Batch Editor

**File Selection for DAT Set Model Run**

0 .dat Files Listed in Current Directory	SLU Type	Run List	SLU Type
		Double-Click on File Name to Add to Run List	
		SLU Cemetery Clay.dat	CEMCG
			INSCG
			LINCG
			LDRCG
			MDRCG
			MFRCG
			OFFCG
			PRKCG
			SCMCG

**To view the output within WinSLAMM, select View Output File.** The output can also be viewed externally. The output file will be saved with the filename "DATSetOutput.csv" in the directory the \*.DAT files were located.  
Note: this output file is rewritten for each run from the same directory.

Current Directory: C:\WinSLAMM\Testing\Update Routine\Test 2\9.2 Clay\

☐ First File is Base Condition

☐ Include Cost Estimates



# Batch Editor

File Selection for DAT Set Model Run

0 .dat Files Listed in Current Directory

SLU Type

Double-Click on File Name to

9 .dat Files Selected for Model Run

SLU Cemetery Clay.dat

SLU Type

CEMCG

.dat Set Run Output

Print Exit

File Number	File Name	Catchment Area (ac)	Number of Years in Model Run	Runoff Volume (cf)	Rv	Biological Condition	Particulate Solids Yield (lbs)	Particulate Solids Concentration (mg/L)	Filterable Solids Yield (lbs)	Filterable Solids Concentration (mg/L)
1	SLU Commercial Downtown Clay	99.6	0.998	7840623	0.676	Poor	44072.23	90.11085	34549.13	70.
2	SLU Duplex Clay	100.	0.998	3120370	0.268	Poor	26958.24	138.4995	14898.02	76.
3	SLU Freeways Undev Clay	100.	0.998	4237278	0.364	Poor	73448.43	277.8806	23899.34	90.
4	SLU HDR Alleys Clay	100.	0.998	4769263	0.409	Poor	35171.39	118.2227	19236.12	64.
5	SLU HDR No Alleys Clay	100.	0.998	3631397	0.312	Poor	32498.79	143.4683	15578.46	68.
6	SLU High Rise Residential Clay	100.	0.998	5372443	0.461	Poor	39924.66	119.133	20115.92	60.
7	SLU Hospital Clay	100.	0.998	6435810	0.552	Poor	43516.9	108.397	28146.15	70.

Select Directory

View Output File

☐ Include Cost Estimates

Select Cost Data File

Exit

**This shows an example of the output created within WinSLAMM.**

# Batch Editor

**File Selection for DAT Set Model Run**

0 .dat Files Listed in Current Directory	SLU Type		Run List	SLU Type
		Double-Click on File Name to Move One File	9 .dat Files Selected for Model Run	
		<input type="button" value="Add All Listed Files to Run List"/>	SLU Cemetery Clay.dat	CEMCG
		<input type="button" value="Remove All Files From Run List"/>	SLU Institutional Clay.dat	INSCG
		<input type="button" value=".DAT File Batch Changes"/>	SLU Light Industrial Clay.dat	LINCG
			SLU Low Density Residential Clay.DAT	LDRCG
			SLU Medium Density Residential No Alleys Clay.dat	MDRCG
			SLU Multi Family Residential Clay.dat	MFRCG
			SLU Office Park Clay.dat	OFFCG
			SLU Park Clay.dat	PRKCG
			SLU Strip Commercial Clay.dat	SCMCG

Current Directory: C:\WinSLAMM\Testing\Update Routine\Test 2\9.2 Clay\

☐ First File is Base Condition

☐ Include Cost Estimates

If a cost file is specified, the Batch Editor will also calculate costs for each Control Device in the \*.DAT files. **Select Include Cost Estimates and then select a Cost File to include cost data.**

# Batch Editor

File Selection for DAT Set Model Run

If you want to compare the performance of various combinations of Control Devices to a base condition without controls, **Select First File is Base Condition**. When adding files to the list for this option, the base condition files must be first in the Run List. The output will include runoff volume and pollutant percent reduction calculations as well as the cost per cubic foot (for runoff volume) or cost per pound of pollutant reduced by the Control Devices in the file.

## Run List

ed for Model Run

lat  
y.dat  
dential Clay.DAT  
residential No Alleys Clay.dat  
ential Clay.dat  
lat  
Clay.dat

SLU Type

CEMCG  
INSCG  
LINCG  
LDRCG  
MDRCG  
MFRCG  
OFFCG  
PRKCG  
SCMCG

Current Directory: C:\WinSLAMM\Testing\Update Routine\Test 2\9.2 Clay\

Select Directory

View Output File

Run Files in Run List

☐ First File is Base Condition

☐ Include Cost Estimates

Select Cost Data File

Exit

# Batch Editor

**File Selection for DAT Set Model Run**

Run List	
0 .dat Files Listed in Current Directory	SLU Type

Double-Click on File Name to Move One File

Add All Listed Files to Run List

Remove All Files From Run List

.DAT File Batch Changes

9 .dat Files Selected for Model Run	SLU Type
SLU Cemetery Clay.dat	CEMCG
SLU Institutional Clay.dat	INSCG
SLU Light Industrial Clay.dat	LINCG
SLU Low Density Residential Clay.DAT	LDRCG
SLU Medium Density Residential No Alleys Clay.dat	MDRCG
SLU Multi Family Residential Clay.dat	MFRCG
SLU Office Park Clay.dat	OFFCG
SLU Park Clay.dat	PRKCG
SLU Strip Commercial Clay.dat	SCMCG

Current Directory: C:\WinSLAMM\Testing\Update Routine\Test 2\9.2 Clay\

Select Directory View Output File Run Files in Run List ☐ First File is Base Condition

☐ Include Cost Estimates Select Cost Data File

**Select Exit when finished.**

Exit



# Batch Editor

WinSlamm Batch Editor

Options Help

**Land Use Types Available in Directory:**

C:\WinSLAMM\Testing\Update Routine\Original\9.1 Clay

Source Area Name	Area (ac)
CEMCG - Cemetery with curb and gutter on roads	
INSCG - Misc Institutional, Good C&G	
LINCG - Light Industrial with curb & gutter in	
LDRCG - Low Density Residential	
MDRCG - Medium Density Residential, No Alleys,	
MFRCG - Multi Family Residential	
OFFCG - Office Park with good curb and gutter,	
PRKCG - Open space parks, curb & gutter	
SCMCG - Strip commercial, curbs and gutters in	

**The .DAT and .OUT files will be created in:**

C:\WinSLAMM\Testing\Update Routine\Original\9.1 Clay

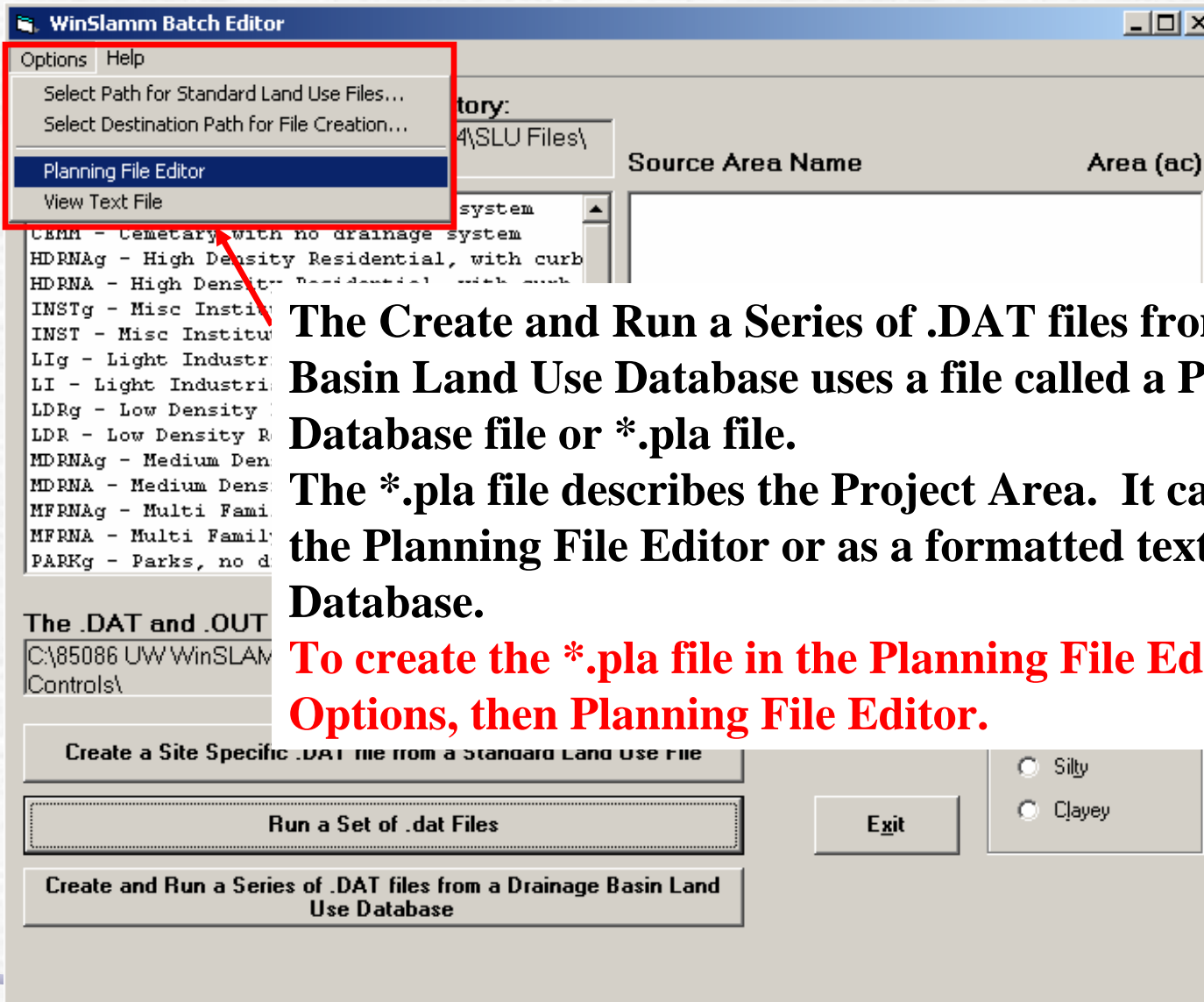
Create a Site Specific .DAT file from a Standard Land Use File

Run a Set of .dat Files

**3. Create and Run a Series of .DAT files from a Drainage Basin Land Use Database**

The third option in the Batch Editor combines Options 1 and 2. It prorates the selected Standard Land Use files, runs the files, and then combines the outfall results into one file. **Select Create and Run a Series of .DAT files from a Drainage Basin Land Use Database.**

# Batch Editor



**The Create and Run a Series of .DAT files from a Drainage Basin Land Use Database uses a file called a Planning Agency Database file or \*.pla file.**

**The \*.pla file describes the Project Area. It can be created in the Planning File Editor or as a formatted text file from a GIS Database.**

**To create the \*.pla file in the Planning File Editor, select Options, then Planning File Editor.**

# Batch Editor

**Planning File Editor**

File

Planning File Name: C:\PROGRAM FILES\WINSLAMM\STANDARD LAND USE FILES\MADISON TEST FILE.PLA

Line Number	Outfall Label	Sub-Basin Soil Type	Sub-Basin Land Use Type	Sub-Basin Area (ac)
1	0001	CLAY	DUP	15.00
2	0002	CLAY	AIRP	150.00
3	0003	SAND	LI	25.00
4	0004	SAND	HRR	75.00
5	0005	CLAY	HDRA	150.00
6	0006	SAND	AGRI	10.00
7	0007	SILT	AGRI	100.00
8	0008	CLAY	HDRNA	200.00

Replace One Standard Land Use Type for Another

Replace  with

☒ SAND ☐ SILT ☐ CLAY

**In the Planning File Editor, enter the Outfall Label. The Outfall Label nomenclature is based upon how you describe your drainage basin system.**

# Batch Editor

**Planning File Editor**

File

Planning File Name: C:\PROGRAM FILES\WINSLMM\STANDARD LAND USE FILES\MADISON TEST FILE.PLA

Line Number	Outfall Label	Sub-Basin Soil Type	Sub-Basin Land Use Type	Sub-Basin Area (ac)
1	0001	CLAY	DUP	15.00
2	0002	CLAY	AIRP	150.00
3	0003	SAND	LI	25.00
4	0004	SAND	HRR	75.00
5	0005	CLAY	HDRA	150.00
6	0006	SAND	AGRI	10.00
7	0007	SILT	AGRI	100.00
8	0008	CLAY	HDRNA	200.00

Replace One Standard Land Use Type for Another

Replace  with

☒ SAND ☐ SILT ☐ CLAY

**Then use the pull-down menu to select the Subbasin Soil Type.**



# Batch Editor

**Planning File Editor**

File

Planning File Name: C:\PROGRAM FILES\WINSLMM\STANDARD LAND USE FILES\MADISON TEST FILE.PLA

Line Number	Outfall Label	Sub-Basin Soil Type	Sub-Basin Land Use Type	Sub-Basin Area (ac)
1	0001	CLAY	DUP	15.00
2	0002	CLAY	AIRP	150.00
3	0003	SAND	LI	25.00
4	0004	SAND	HRR	75.00
5	0005	CLAY	HDRA	150.00
6	0006	SAND	AGRI	10.00
7	0007	SAND	AIRP	100.00
8	0008	CLAY	CEMM	200.00

Replace One Standard Land Use Type

Replace  with

☒ SAND ☐ SILT ☐ CLAY

High Density Residential with Alleys, C&G in Poor Condition

**Use the Pull-Down Menu to Select Subbasin Land Use Type.** The land uses are referenced from the folder that was originally selected in the Main Window of the Batch Editor.

# Batch Editor

**Planning File Editor**

File

Planning File Name: C:\PROGRAM FILES\WINSLAMM\STANDARD LAND USE FILES\MADISON TEST FILE.PLA

Line Number	Outfall Label	Sub-Basin Soil Type	Sub-Basin Land Use Type	Sub-Basin Area (ac)
1	0001	CLAY	DUP	15.00
2	0002	CLAY	AIRP	150.00
3	0003	SAND	LI	25.00
4	0004	SAND	HRR	75.00
5	0005	CLAY	HDRA	150.00
6	0006	SAND	Insert Row	10.00
7	0007	SAND	Delete Row	100.00
8	0008	CLAY	HDRNA	200.00

Replace One Standard Land Use Type for Another

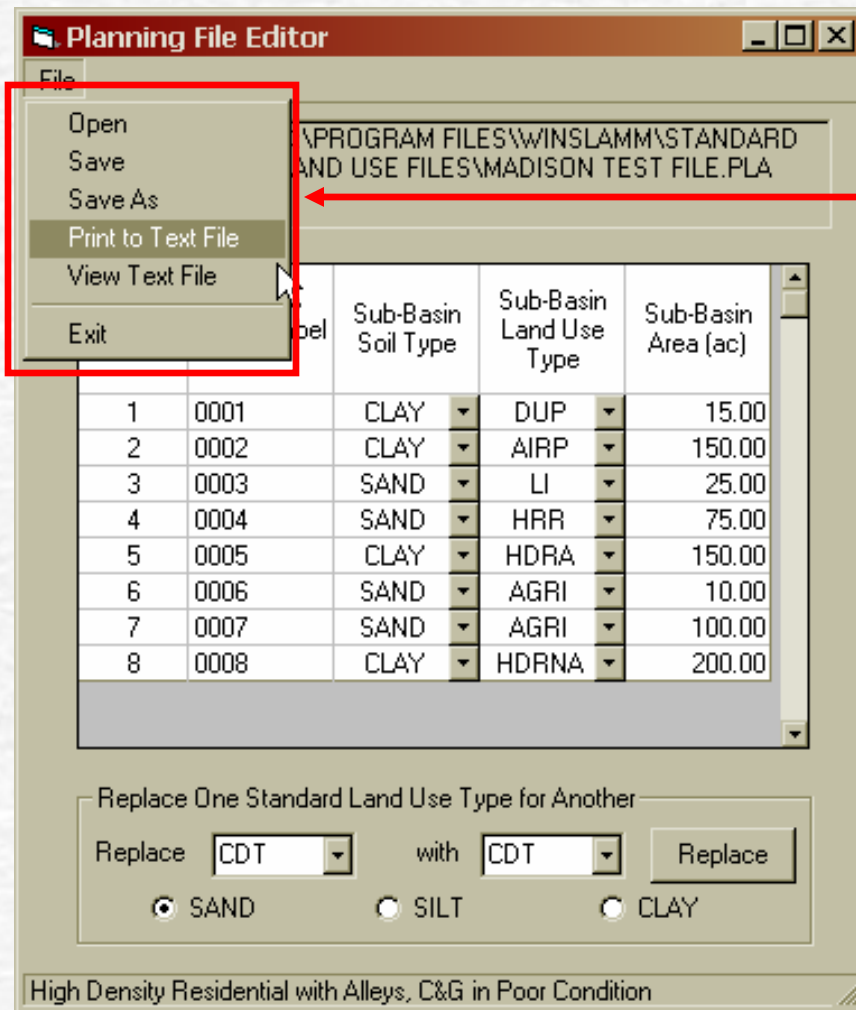
Replace  with

☒ SAND ☐ SILT ☐ CLAY

High Density Residential with Alleys, C&G in Poor Condition

**Right-mouse click to  
Insert or Delete a Row**

# Batch Editor



**Menu Options for the Planning File Editor**

# Batch Editor

**Planning File Editor**

File

Planning File Name: C:\PROGRAM FILES\WINSLAMM\STANDARD LAND USE FILES\MADISON TEST FILE.PLA

Line Number	Outfall Label	Sub-Basin Soil Type	Sub-Basin Land Use Type	Sub-Basin Area (ac)
1	0001	CLAY	DUP	15.00
2	0002	CLAY	AIRP	150.00
3	0003	SAND	LI	25.00
4	0004	SAND	HRR	75.00
5	0005	CLAY	HDRA	150.00
6	0006	SAND	AGRI	10.00
7	0007	SAND	AGRI	100.00
8	0008	CLAY	HDRNA	200.00

Replace One Standard Land Use Type for Another

Replace  with

☐ SAND ☐ SILT ☒ CLAY

Replace

**To replace a Standard Land Use File with another, select a soil type, then use the pull-down menus to:**

**1. Select a LU Type to replace**

**Select a LU Type as the replacement**

**Select the 'Replace' button**



# Batch Editor

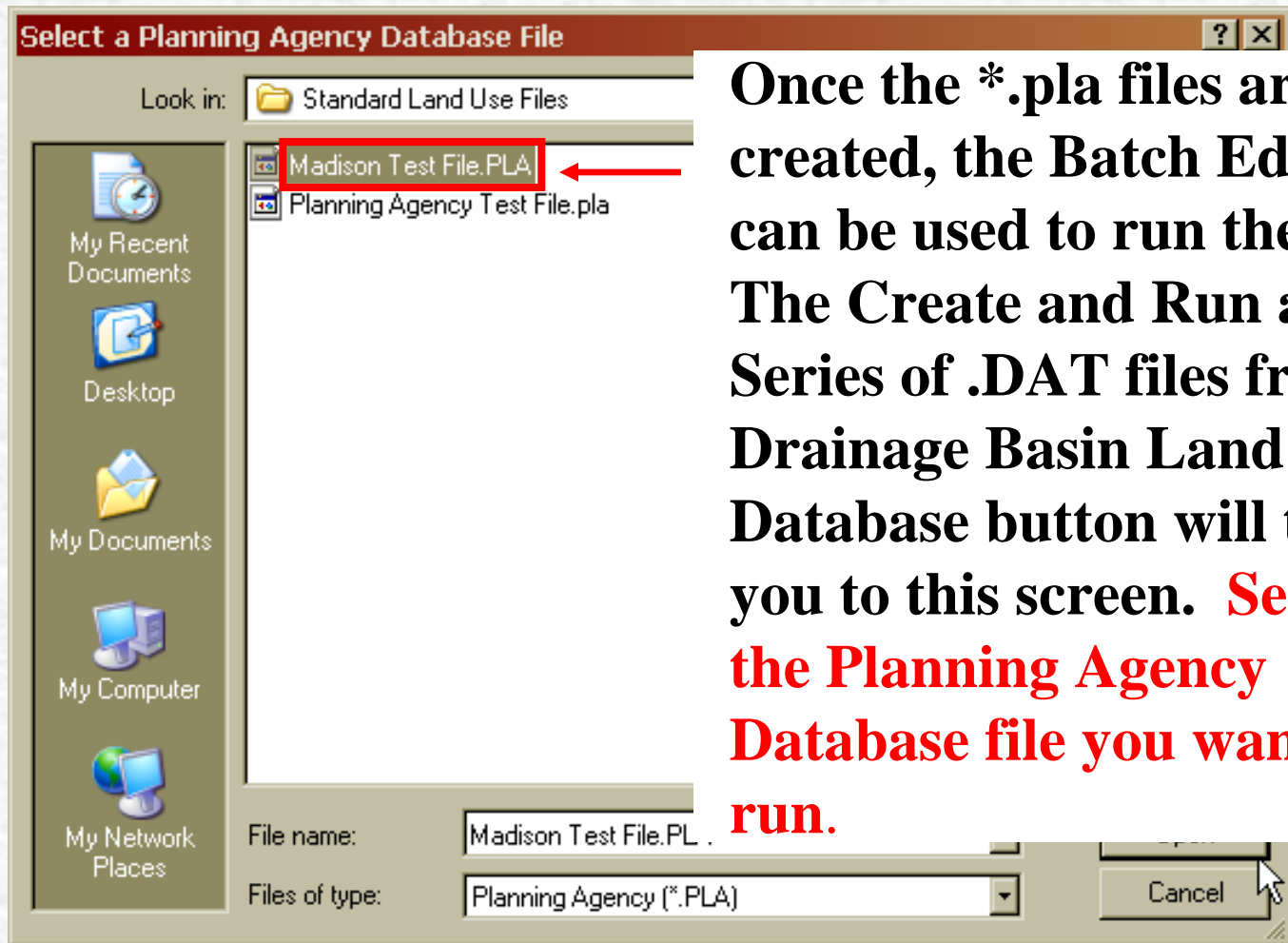
A Planning File can also be created directly from a GIS Database

- Export the GIS Attribute Table
- A Planning File is an ASCII Text file
- Revise the Table in a Text File Editor to look like the Example
- Each Line must be Unique
- No Spaces after any of the Values in a Planning File
- Save the Text File with a “.pla” Extension

## Planning File Example:

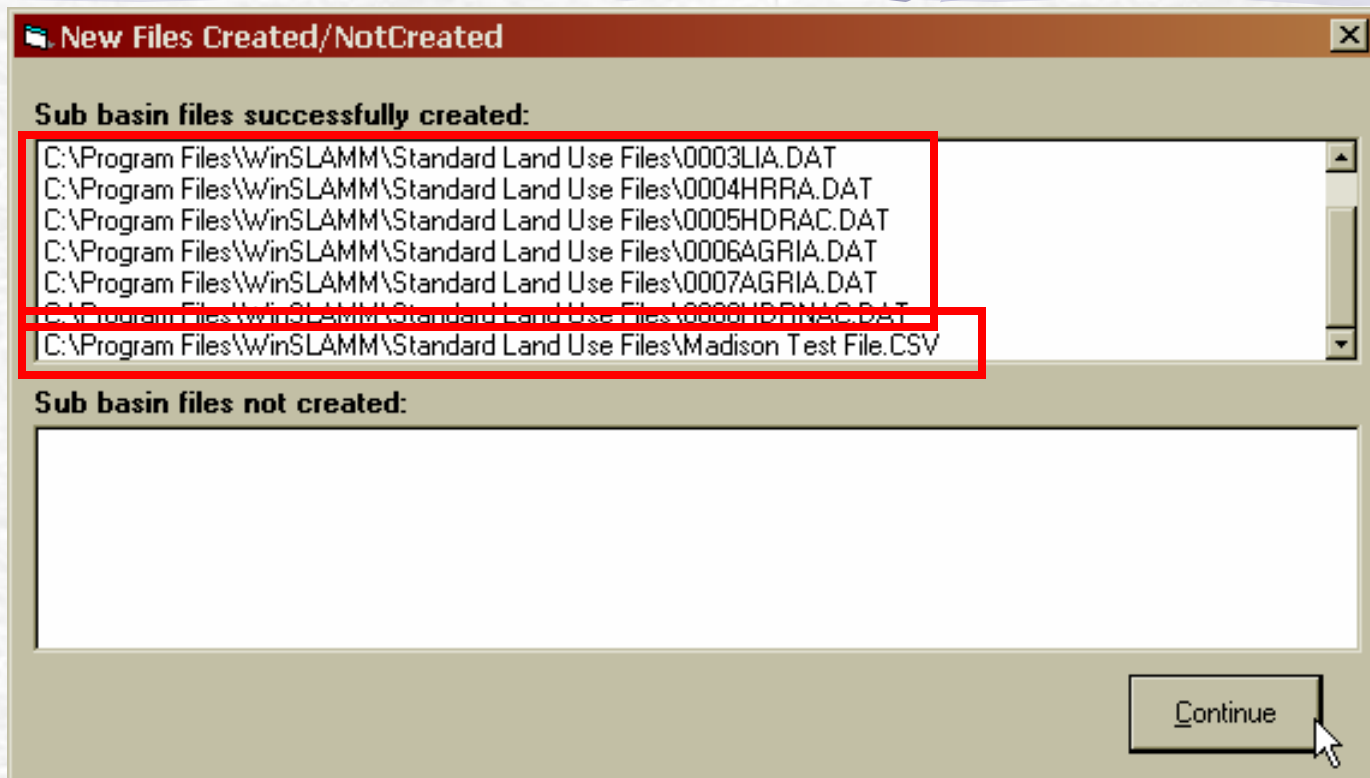
```
"W101","CLAY","FREE",52.6
"W101","CLAY","OSUD",82.7
"W101","CLAY","LDR",26.1
"W101","CLAY","MDRNA",361.2
"W101","CLAY","MFRNA",30.4
"W101","CLAY","OFPK",166.2
"W101","CLAY","PARK",5.2
"W101","CLAY","SHOP",62.8
"W101","CLAY","SCOM",27.4
"W107","CLAY","FREE",51.9
"W107","CLAY","OSUD",3.5
"W107","SILT","OSUD",3
"W107","CLAY","MDRNA",39.1
"W107","SILT","MDRNA",60
"W107","CLAY","MFRNA",20.2
"W107","SILT","MFRNA",20.2
"W107","CLAY","OFPK",15.1
"W107","CLAY","SHOP",11
```

# Batch Editor



**Once the \*.pla files are created, the Batch Editor can be used to run them. The Create and Run a Series of .DAT files from a Drainage Basin Land Use Database button will take you to this screen. **Select the Planning Agency Database file you want to run.****

# Batch Editor



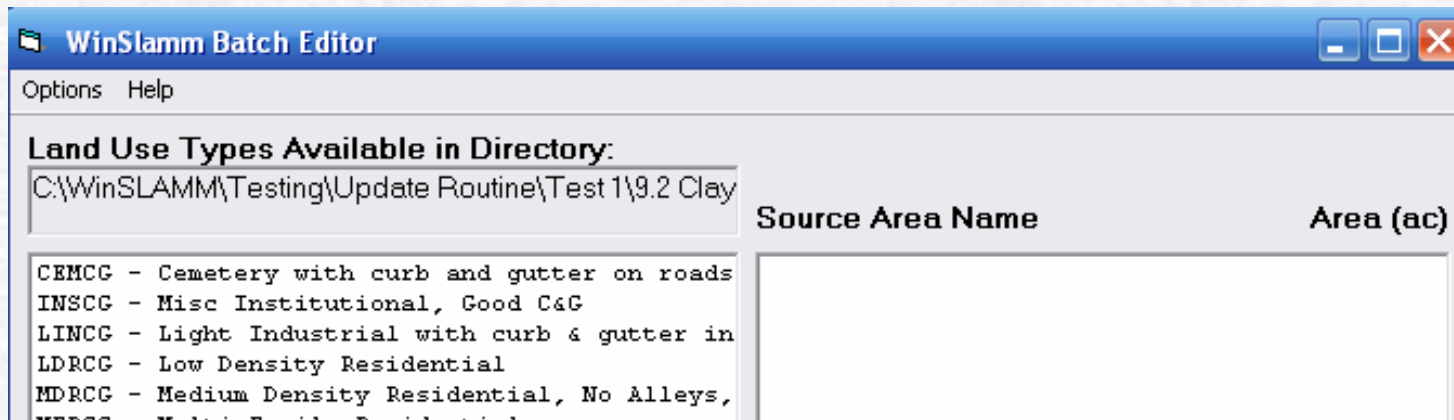
**When the Batch Editor is finished running the files, this screen will appear. The top window shows each \*.DAT file that was created and the comma-separated-value file (.csv) with the outfall summaries for each subcatchment. This \*.csv file can be imported into Microsoft Excel for analysis. The bottom window will show the \*.DAT files that could not be created. The user will need to check the files in the bottom window and modify them so they can be run by the Batch Editor.**

# Modifying Groups of \*.DAT Files

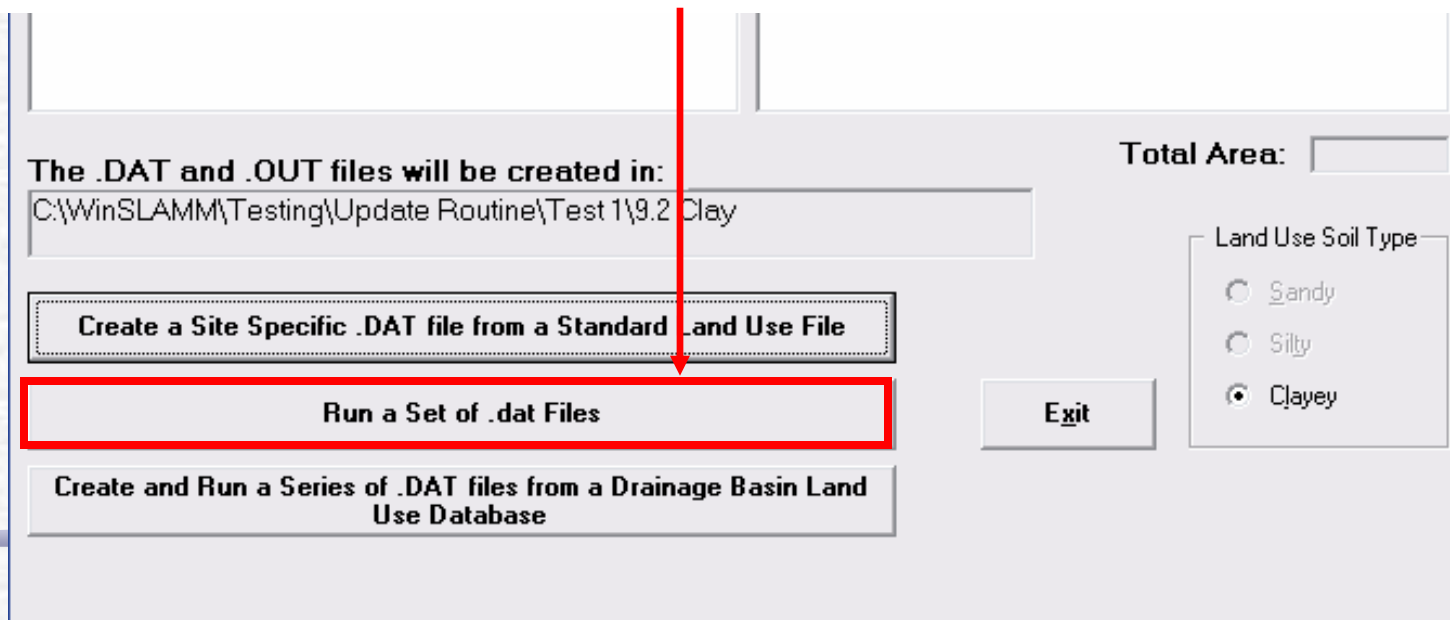
## Modifying Groups of \*.DAT Files Overview

The user has the ability to change a variable or add a control practice to a group of \*.DAT files.

# Modifying Groups of \*.DAT Files

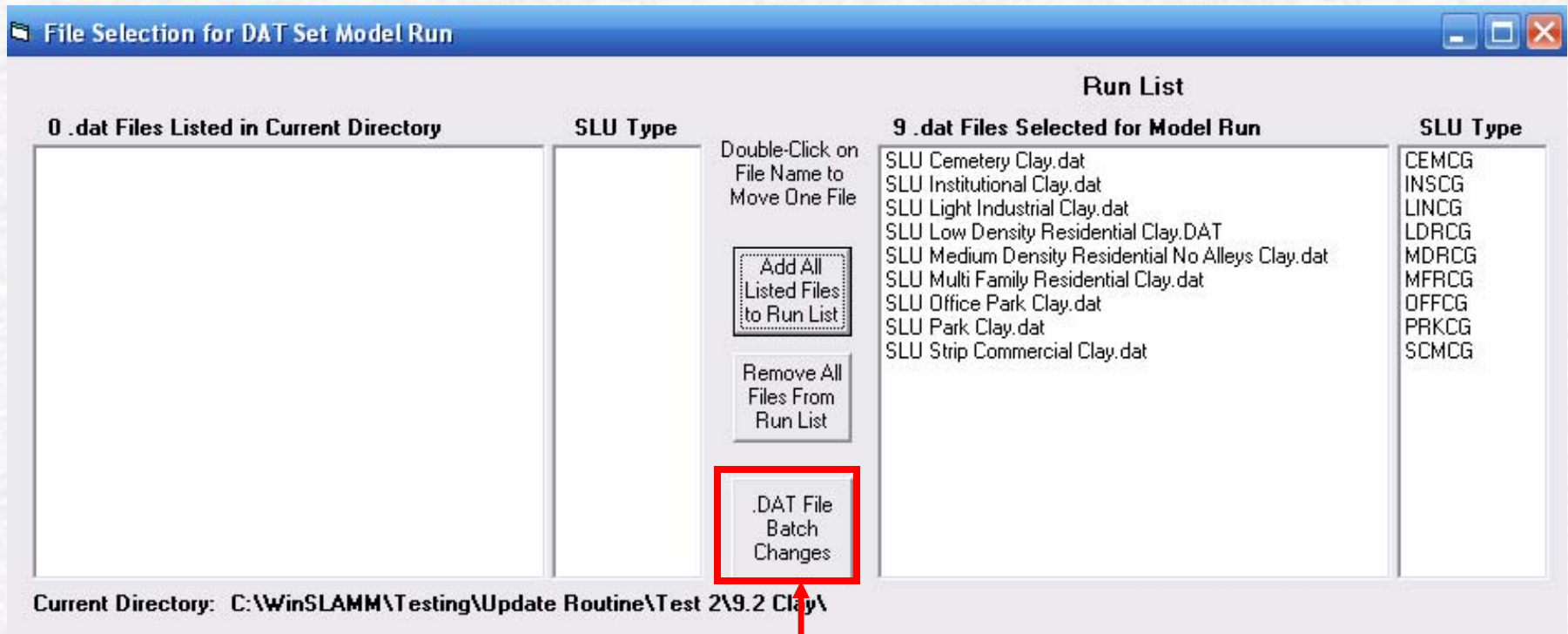


**To modify groups of \*.DAT files, open the Batch Editor and select the second option – Run a Set of .dat Files.**



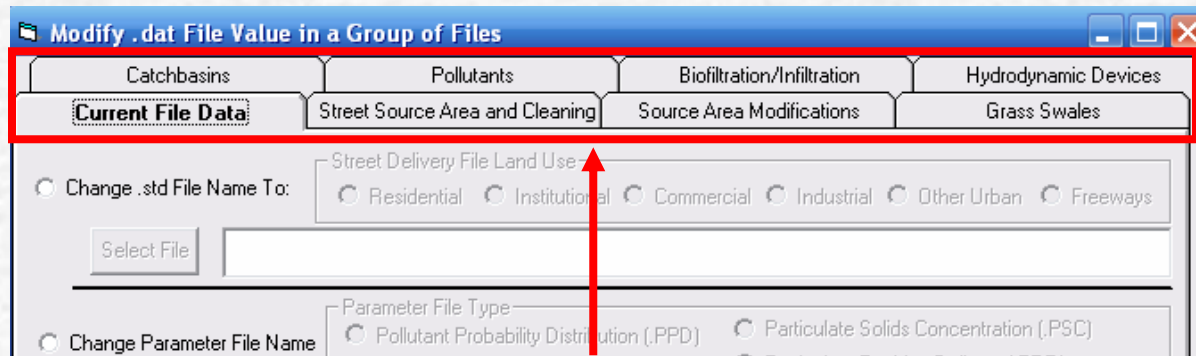


# Modifying Groups of \*.DAT Files

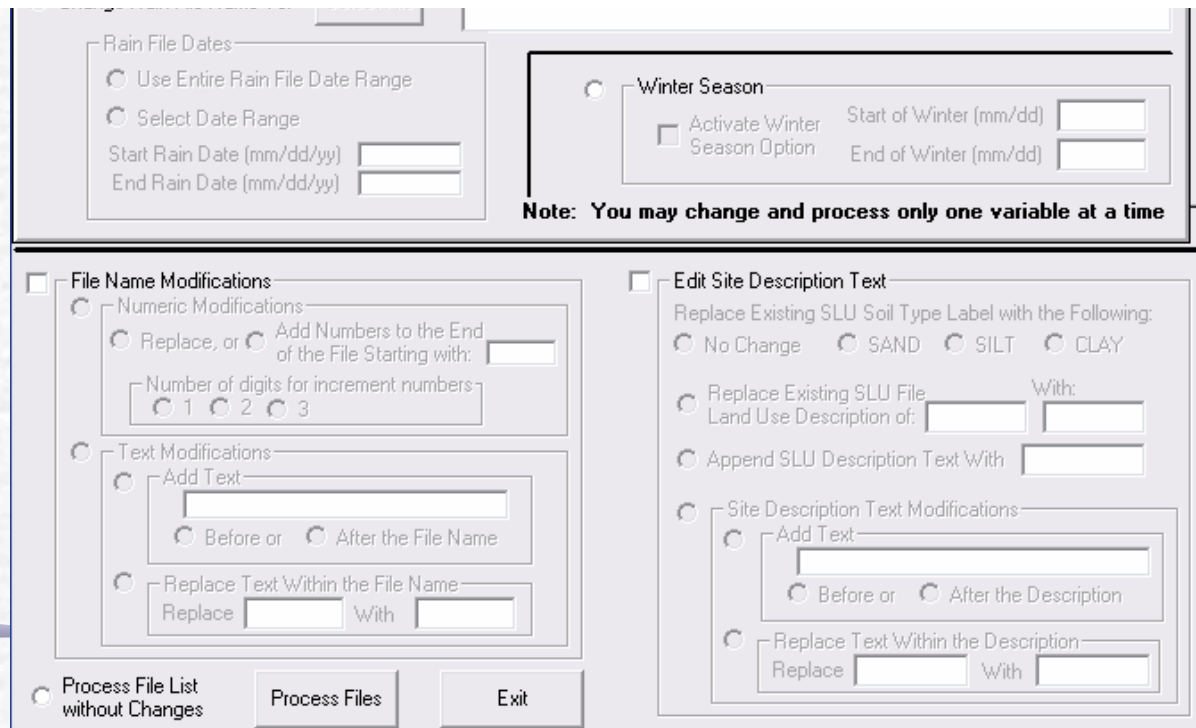


As with the Run a Set of \*.DAT Files feature, the user must select the directory the files are stored and add the files the user wants modified to the run list (Refer the to Batch Editor section of the Advanced Features User's Guide to review this). **Once the files are in the Run List, select the .DAT File Batch Changes button.**

# Modifying Groups of \*.DAT Files



**This is the Modify Groups of \*.DAT Files editor. Notice the tabs at the top showing the types of data that can be modified.**



# Modifying Groups of \*.DAT Files

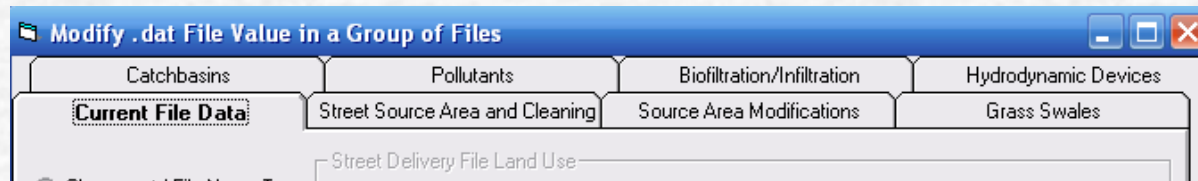
The dialog box is titled "Modify .dat File Value in a Group of Files". It has four tabs: "Catchbasins", "Pollutants", "Biofiltration/Infiltration", and "Hydrodynamic Devices". The "Pollutants" tab is selected, showing sub-tabs: "Current File Data", "Street Source Area and Cleaning", "Source Area Modifications", and "Grass Swales". The "Current File Data" sub-tab is active. It contains two main sections: "Change .std File Name To:" and "Change Parameter File Name". The first section has a "Select File" button and a list of land use types: Residential, Institutional, Commercial, Industrial, Other Urban, and Freeways. The second section has a "Parameter File Type" dropdown with options: Pollutant Probability Distribution (.PPD) and Particulate Solids Concentration (.PSC).

**Note: the user can only change one variable at a time, unless a control practice is being added to a \*.DAT file.**

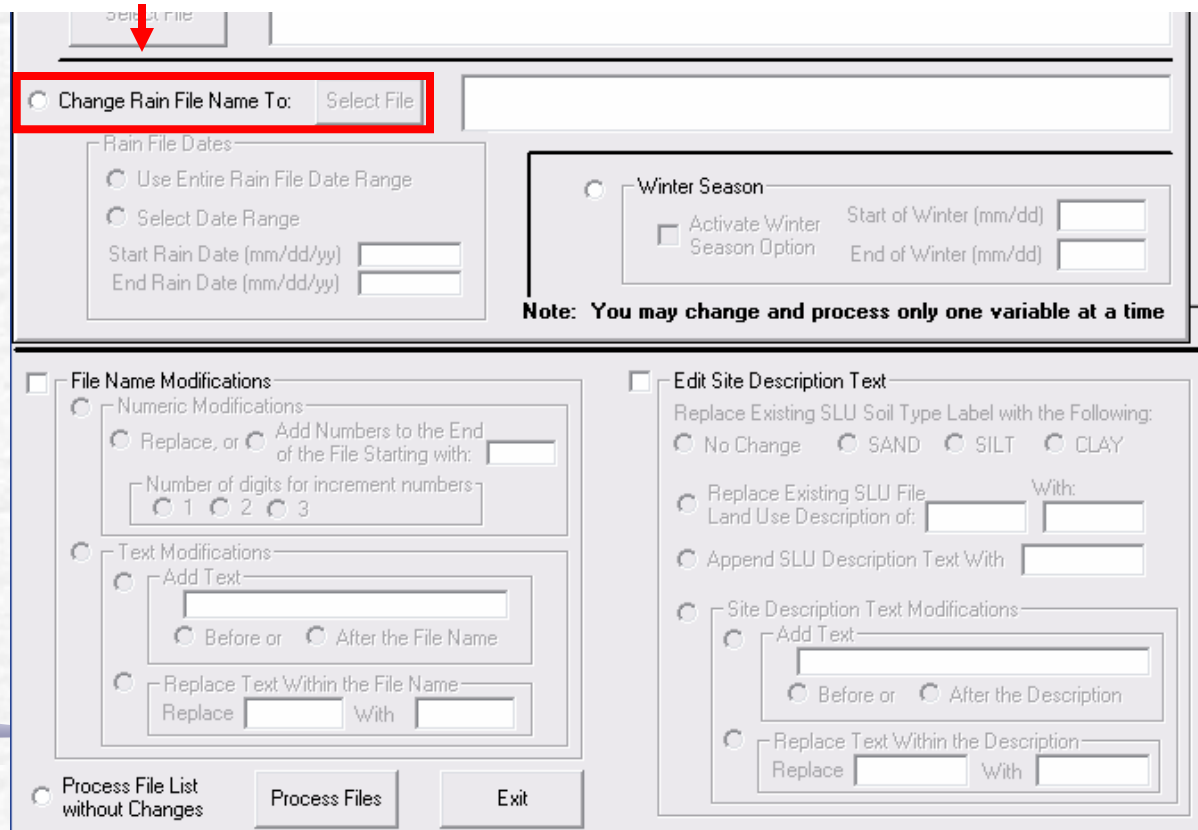
**To change multiple variables in a group of \*.DAT Files, the user must select the variable to be changed, then select the Process Files button, and repeat this process for each variable to be changed.**

The dialog box is titled "Process Files". It has two main sections: "File Name Modifications" and "Edit Site Description Text". The "File Name Modifications" section has two sub-sections: "Numeric Modifications" and "Text Modifications". The "Text Modifications" section has three options: "Add Text", "Before or After the File Name", and "Replace Text Within the File Name". The "Edit Site Description Text" section has two sub-sections: "Replace Existing SLU Soil Type Label with the Following:" and "Site Description Text Modifications". The "Site Description Text Modifications" section has two options: "Add Text" and "Replace Text Within the Description". At the bottom, there are three buttons: "Process File List without Changes", "Process Files", and "Exit". A red arrow points from the "Process Files" button in the "File Name Modifications" section to the "Process Files" button at the bottom.

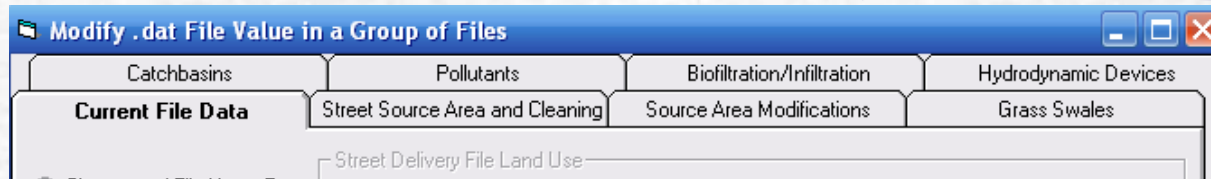
# Modifying Groups of \*.DAT Files



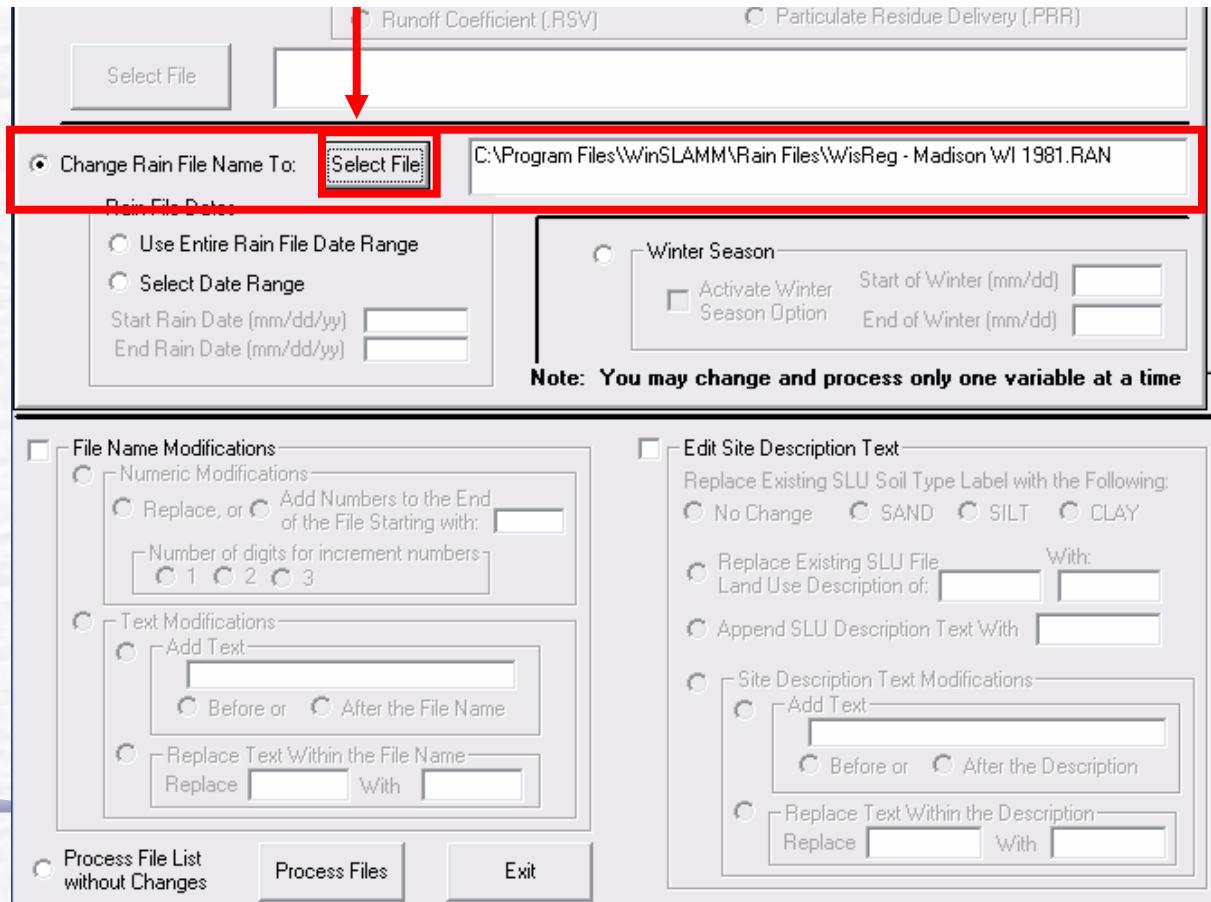
To change a variable, select the radial button next to the variable. We will change a rainfall file for an example.  
**Select the Change Rain File Name To:**



# Modifying Groups of \*.DAT Files



The data that can be modified will then be highlighted. **Choose the Select File button to select the new Rainfall File.**





# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

**Catchbasins** | **Pollutants** | **Biofiltration/Infiltration** | **Hydrodynamic Devices**

**Current File Data** | **Street Source Area and Cleaning** | **Source Area Modifications** | **Grass Swales**

☐ **Change .std File Name To:**

Street Delivery File Land Use

☐ Residential ☐ Institutional ☐ Commercial ☐ Industrial ☐ Other Urban ☐ Freeways

Select File

☐ **Change Parameter File Name**

Parameter File Type

☐ Pollutant Probability Distribution (.PPD) ☐ Particulate Solids Concentration (.PSC)  
☐ Runoff Coefficient (.RSV) ☐ Particulate Residue Delivery (.PRR)

Select File

☒ **Change Rain File Name To:** Select File C:\Program Files\WinSLAMM\Rain Files\WisRea - Madison\WI 1981.RAN

**Rain File Dates**

☒ **Use Entire Rain File Date Range**

☐ Select Date Range

Start Rain Date (mm/dd/yy)

End Rain Date (mm/dd/yy)

Note: You

☐ **File Name Modifications**

☐ Numeric Modifications

☐ Replace, or ☐ Add Numbers to the End of the File Starting with:

Number of digits for increment numbers

☐ 1 ☐ 2 ☐ 3

☐ Text Modifications

☐ Add Text

☐ Before or ☐ After the File Name

☐ Replace Text Within the File Name

Replace  With

☐ **Edit Site Description Text**

Replace Existing SLU Soil Type Label with the Following:

☐ No Change ☐ SAND ☐ SILT ☐ CLAY

☐ Replace Existing SLU File Land Use Description of:  With:

☐ Append SLU Description Text With

☐ Site Description Text Modifications

☐ Add Text

☐ Before or ☐ After the Description

☐ Replace Text Within the Description

Replace  With

☐ Process File List without Changes

Process Files

Exit

**Select Use Entire Rain File Date Range or Select Date Range.**

# Modifying Groups of \*.DAT Files

**For each change in variable or each addition of a Control Device, the user also has the option to rename the new file.**

**Modify .dat File Value in a Group of Files**

**Catchbasins** | **Pollutants** | **Biofiltration/Infiltration** | **Hydrodynamic Devices**

**Current File Data** | **Street Source Area and Cleaning** | **Source Area Modifications** | **Grass Swales**

☐ **Change .std File Name To:**

Street Delivery File Land Use

☐ Residential ☐ Institutional ☐ Commercial ☐ Industrial ☐ Other Urban ☐ Freeways

Select File

☐ **Change Parameter File Name**

Parameter File Type

☐ Pollutant Probability Distribution (.PPD) ☐ Particulate Solids Concentration (.PSC) ☐ Particulate Residue Delivery (.PRR)

s\WinSLAMM\Rain Files\WisReg - Madison WI 1981.RAN

☐ **Select Date Range**

Start Rain Date (mm/dd/yy)  End Rain Date (mm/dd/yy)

☐ **Winter Season**

☐ Activate Winter Season Option Start of Winter (mm/dd)  End of Winter (mm/dd)

**Note: You may change and process only one variable at a time**

☐ **File Name Modifications**

☐ **Numeric Modifications**

☐ Replace, or ☐ Add Numbers to the End of the File Starting with:

Number of digits for increment numbers

☐ 1 ☐ 2 ☐ 3

☐ **Text Modifications**

☐ **Add Text**

☐ Before or ☐ After the File Name

☐ **Replace Text Within the File Name**

Replace  With

☐ **Edit Site Description Text**

Replace Existing SLU Soil Type Label with the Following:

☐ No Change ☐ SAND ☐ SILT ☐ CLAY

☐ Replace Existing SLU File Land Use Description of:  With:

☐ Append SLU Description Text With

☐ **Site Description Text Modifications**

☐ **Add Text**

☐ Before or ☐ After the Description

☐ **Replace Text Within the Description**

Replace  With

☐ **Process File List without Changes**

# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

**Current File Data**

**Street Source Area and Cleaning**

**Source Area Modifications**

**Grass Swales**

☐ Change .std File Name To: Street Delivery File Land Use: ☐ Residential ☐ Institutional ☐ Commercial ☐ Industrial ☐ Other Urban ☐ Freeways

Select File

☐ Change Parameter File Name: Parameter File Type: ☐ Pollu ☐ Run

Select File

☒ Change Rain File Name To: Select File

Rain File Dates

☒ Use Entire Rain File Date Range

☐ Select Date Range

Start Rain Date (mm/dd/yy)

End Rain Date (mm/dd/yy)

☐ Winter Season

☐ Activate Winter Season Option

Start of Winter (mm/dd)

End of Winter (mm/dd)

**Note: You may change and process only one variable at a time**

☐ File Name Modifications

☐ Numeric Modifications

☐ Replace, or ☐ Add Numbers to the End of the File Starting with:

Number of digits for increment numbers: ☐ 1 ☐ 2 ☐ 3

☐ Text Modifications

☐ Add Text:

☐ Before or ☐ After the File Name

☐ Replace Text Within the File Name: Replace  With

☐ Edit Site Description Text

Replace Existing SLU Soil Type Label with the Following: ☐ No Change ☐ SAND ☐ SILT ☐ CLAY

☐ Replace Existing SLU File Land Use Description of:  With:

☐ Append SLU Description Text With:

☐ Site Description Text Modifications

☐ Add Text:

☐ Before or ☐ After the Description

☐ Replace Text Within the Description: Replace  With

☐ Process File List without Changes

Process Files

Exit

# Modifying Groups of \*.DAT Files

There are several options for renaming a file:

- **Replace Numbers at the End of a File**

To replace numbers at the end of a file, enter the number to start with and select the Number of Digits to be replaced.

- **Add Numbers at the End of a File**

The user can also just Add Numbers to the End of the File by selecting the radial button next to the option and enter the number to start with. The program will replace or add numbers incrementally by 1 whole number.

- **Add Text to File Name Before or After the File Name**

**This example Adds Text to File Names by entering the text in the Text Box and choosing the radial button next to After the File Name.**

- **Replace Text Within the File Name**

To replace text within a file name, select the radial button next to the option, enter the text that you want to replace and the new text. Note: this command is case sensitive; therefore the text to be replaced must be an exact match.

The screenshot shows a software interface for modifying file names. A red rectangular box highlights the 'Text Modifications' section on the left. This section contains three options: 'Add Text' (selected), 'Before or After the File Name' (radio buttons), and 'Replace Text Within the File Name' (radio button). The 'Add Text' option is active, showing a text input field and radio buttons for 'Before or' and 'After the File Name'. The 'Replace Text Within the File Name' option is inactive, showing 'Replace' and 'With' text input fields. To the right of the highlighted section, there are other options: 'Numeric Modifications' (radio button), 'Replace Existing SLU Soil Type Label with the Following:' (radio buttons for 'No Change', 'SAND', 'SILT', 'CLAY'), 'Replace Existing SLU File Land Use Description of:' (text input fields), 'Append SLU Description Text With' (text input field), and 'Site Description Text Modifications' (radio button). At the bottom of the interface, there are three buttons: 'Process File List without Changes', 'Process Files', and 'Exit'.

# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

**Current File Data**

☐ Change .std File Name To: ☐ Street Delivery File Land Use  
☐ Residential ☐ Institutional ☐ Commercial ☐ Industrial ☐ Other Urban ☐ Freeways

Select File

☐ Change Parameter File Name: ☐ Parameter File Type  
☐ Pollutant Probability Distribution (.PPD) ☐ Particulate Solids Concentration (.PSC)  
☐ Runoff Coefficient (.RSV) ☐ Particulate Residue Delivery (.PRR)

Select File

☒ Change Rain File Name To: Select File C:\Program Files\WinSLAMM\Rain Files\WisReg - Madison WI 1981.RAN

**Rain File Dates**

☒ Use Entire Rain File Date Range  
☐ Select Date Range  
Start Rain Date (mm/dd/yy)   
End Rain Date (mm/dd/yy)

☐ Winter Season  
☐ Activate Winter Season Option  
Start of Winter (mm/dd)   
End of Winter (mm/dd)

**Note: You may change and process only one variable at a time**

**Select Process Files to  
modify the group of  
\*.DAT files.**

☐ Before or ☐ After the File Name

☐ Replace Text Within the File Name  
Replace  With

☐ Process File List without Changes ☒ **Process Files**

**Edit Site Description Text**

Replace Existing SLU Soil Type Label with the Following:  
☐ No Change ☐ SAND ☐ SILT ☐ CLAY

☐ Replace Existing SLU File Land Use Description of:  With:

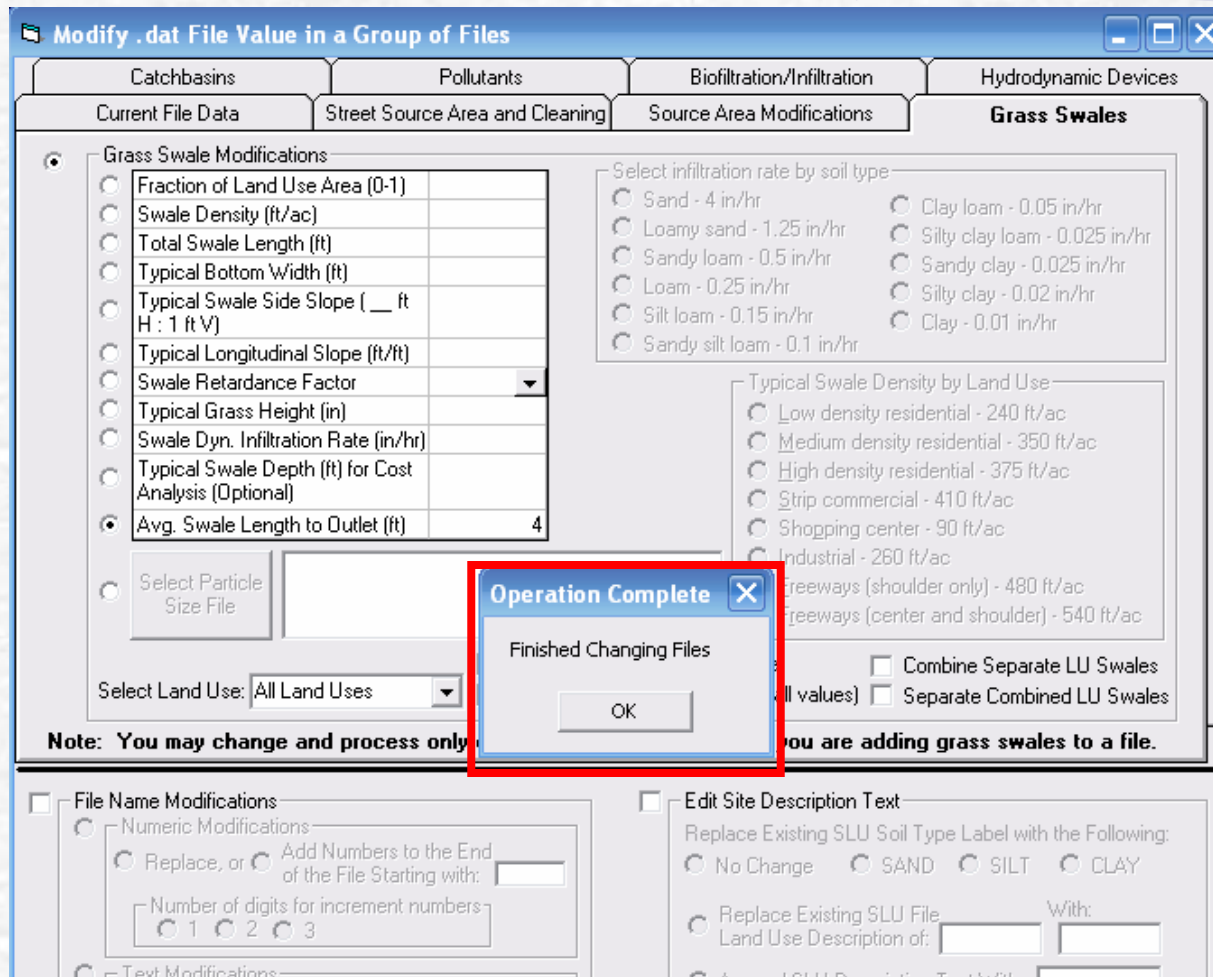
☐ Append SLU Description Text With

☐ Site Description Text Modifications  
☐ Add Text  
☐ Before or ☐ After the Description

☐ Replace Text Within the Description  
Replace  With

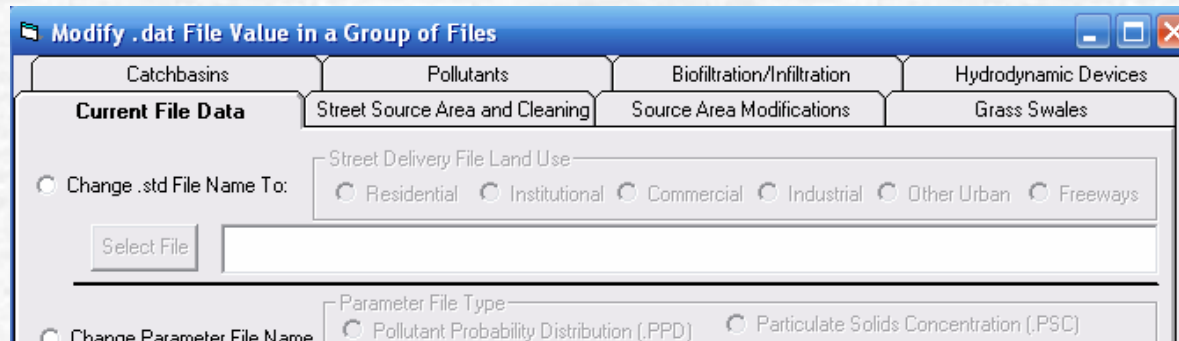


# Modifying Groups of \*.DAT Files



**A note will appear stating the changes have been made. The new files will be stored in the same directory as the original files.**

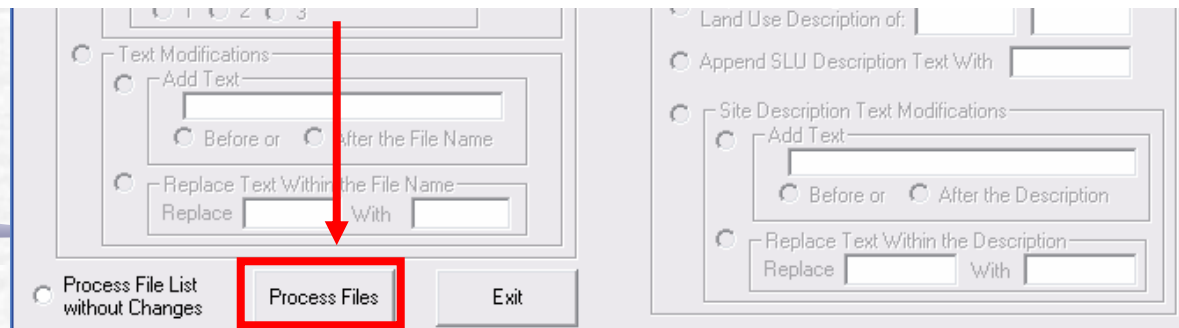
# Modifying Groups of \*.DAT Files



**Additionally, if the user only wants to update a group of \*.DAT files from version 9.0, 9.1, 9.2, 9.3 to version 9.4, do not add any variables, and select the **Process Files** button.**

**This will update all the files in the selected directory to version 9.4. If the user wants to save the older version \*.DAT files, they must make a copy of the \*.DAT files and place them in a separate directory. If the files are not renamed, they will be overwritten.**

**Note: when Modifying Groups of older version \*.DAT files, the user must select **Process Files** prior to changing any variables.**



# Modifying Groups of \*.DAT Files

The screenshot shows a dialog box titled "Modify .dat File Value in a Group of Files". It has four tabs: "Catchbasins", "Pollutants", "Biofiltration/Infiltration", and "Hydrodynamic Devices". The "Pollutants" tab is selected, showing sub-tabs for "Street Source Area and Cleaning", "Source Area Modifications", and "Grass Swales". The "Current File Data" section has two radio buttons: "Change .std File Name To:" and "Change Parameter File Name". The "Change .std File Name To:" section includes a "Street Delivery File Land Use" group with radio buttons for Residential, Institutional, Commercial, Industrial, Other Urban, and Freeways. Below this is a "Select File" button and a text field. The "Change Parameter File Name" section includes a "Parameter File Type" group with radio buttons for Pollutant Probability Distribution (.PPD), Particulate Solids Concentration (.PSC), Runoff Coefficient (.RSV), and Particulate Residue Delivery (.PRR). Below this is another "Select File" button and a text field.

To only update version 9.0, 9.1, 9.2, or 9.3 \*.DAT files to version 9.4 in a group, **select the Process File List without Changes button, Rename the File if necessary, and select Process Files.** The example shown below adds text to the file name and updates the files to version 9.4.

This screenshot shows a detailed view of the "Text Modifications" section, which is highlighted with a red rectangle. It includes radio buttons for "Add Text" (selected) and "Replace Text Within the File Name". The "Add Text" section has a text field containing "9\_4" and radio buttons for "Before or" and "After the File Name" (selected). The "Replace Text Within the File Name" section has "Replace" and "With" text fields. Below the "Text Modifications" section, there are two radio buttons: "Process File List without Changes" and "Process Files" (selected and highlighted with a red rectangle). An "Exit" button is also visible.

# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

**Current File Data** | **Street Source Area and Cleaning** | **Source Area Modifications**

☒ **Grass Swale Modifications**

☐ Fraction of Land Use Area (0-1)  
☐ Swale Density (ft/ac)  
☐ Total Swale Length (ft)  
☐ Typical Bottom Width (ft)  
☐ Typical Swale Side Slope (\_\_\_ ft H : 1 ft V)  
☐ Typical Longitudinal Slope (ft/ft)  
☐ Swale Retardance Factor  
☐ Typical Grass Height (in)  
☐ Swale Dyn. Infiltration Rate (in/hr)  
☐ Typical Swale Depth (ft) for Cost Analysis (Optional)  
☐ Avg. Swale Length to Outlet (ft)

Select infiltration rate by soil type  
☐ Sand - 4 in/hr  
☐ Loamy sand - 1.25 in/hr  
☐ Sandy loam - 0.5 in/hr  
☐ Loam - 0.25 in/hr  
☐ Silt loam - 0.15 in/hr  
☐ Silty clay loam - 0.1 in/hr  
☐ Clay loam  
☐ Silty clay  
☐ Sandy clay  
☐ Silty clay  
☐ Clay

Fraction of Drainage System Served by Grass Swales: 1

Typical Swale Density by Land Use  
☐ Low density residential  
☐ Medium density residential  
☐ High density residential  
☐ Strip commercial - 410  
☐ Shopping center - 90 ft  
☐ Industrial - 260 ft  
☐ Freeways (shoulder only)  
☐ Freeways (center and shoulders)

Select Particle Size File

Select Land Use: All Land Uses

☐ Remove Grass Swales from File  
☒ **Add Grass Swale to File (Enter all values)**  
☐ Combine  
☐ Separate

**Note: You may change and process only one variable at a time unless you are adding grass swales.**

☐ **File Name Modifications**  
☐ Numeric Modifications  
☐ Replace, or ☐ Add Numbers to the End of the File Starting with:   
Number of digits for increment numbers: ☐ 1 ☐ 2 ☐ 3  
☐ Text Modifications  
☐ Add Text  
☐ Before or ☐ After the File Name  
☐ Replace Text Within the File Name  
Replace  With   
☐ Edit Site Description Text  
Replace Existing SLU Soil Type L  
☐ No Change ☐ SAND  
☐ Replace Existing SLU File Land Use Description of:   
☐ Append SLU Description Text  
☐ Site Description Text Modification  
☐ Add Text  
☐ Before or ☐ After  
☐ Replace Text Within the File Name  
Replace  With

☐ Process File List without Changes

**Various Control Devices can be added to \*.DAT files in a batch. This example will show adding Grass Swales to a \*.DAT file.**

- To add a Grass Swale, select the Grass Swale Tab.**
  - Next select the radial button next to Grass Swale Modifications.**
  - Then check the box next to the Add Grass Swale to File.**
- All the needed variables for the Grass Swale will be highlighted once the Add Grass Swale to File box is selected.**



# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

**Grass Swales**

**Grass Swale Modifications**

<input type="radio"/> Fraction of Land Use Area (0-1)	1.00
<input type="radio"/> Swale Density (ft/ac)	230
<input type="radio"/> Total Swale Length (ft)	10000
<input type="radio"/> Typical Bottom Width (ft)	3.00
<input type="radio"/> Typical Swale Side Slope (___ ft H : 1 ft V)	4.00
<input type="radio"/> Typical Longitudinal Slope (ft/ft)	0.0100
<input type="radio"/> Swale Retardance Factor	D
<input type="radio"/> Typical Grass Height (in)	4.0
<input type="radio"/> Swale Dyn. Infiltration Rate (in/hr)	0.050
<input type="radio"/> Typical Swale Depth (ft) for Cost Analysis (Optional)	2.0
<input type="radio"/> Avg. Swale Length to Outlet (ft)	300

Select infiltration rate by soil type:

<input type="radio"/> Sand - 4 in/hr	<input type="radio"/> Clay loam - 0.05 in/hr
<input type="radio"/> Loamy sand - 1.25 in/hr	<input type="radio"/> Silty clay loam - 0.025 in/hr
<input type="radio"/> Sandy loam - 0.5 in/hr	<input type="radio"/> Sandy clay - 0.025
<input type="radio"/> Loam - 0.25 in/hr	<input type="radio"/> Silty clay - 0.02 in/hr
<input type="radio"/> Silt loam - 0.15 in/hr	<input type="radio"/> Clay - 0.01 in/hr
<input type="radio"/> Sandy silt loam - 0.1 in/hr	

Typical Swale Density by Land Use:

<input type="radio"/> Low density residential - 240 ft/ac
<input type="radio"/> Medium density residential - 350 ft/a
<input type="radio"/> High density residential - 375 ft/ac
<input type="radio"/> Strip commercial - 410 ft/ac
<input type="radio"/> Shopping center - 90 ft/ac
<input type="radio"/> Industrial - 260 ft/ac
<input type="radio"/> Freeways (shoulder only) - 480 ft/ac
<input type="radio"/> Freeways (center and shoulder) - 540 ft/ac

Fraction of Drainage System Served by Grass Swales: 1

Select Particle Size File: C:\Program Files\WinSLAMM\NURP.CPZ

Select Land Use: All Land Uses

☐ Remove Grass Swales from File ☐ Combine Separate LU Swales

☒ Add Grass Swale to File (Enter all values) ☐ Separate Combined LU Swales

**Note: You may change and process only one variable at a time unless you are adding grass swales to a file.**

☒ **File Name Modifications**

☐ Numeric Modifications

☐ Replace, or ☐ Add Numbers to the End of the File Starting with: \_\_\_\_\_

Number of digits for increment numbers: ☐ 1 ☐ 2 ☐ 3

☒ **Text Modifications**

☒ Add Text

swale

☐ Before or ☒ After the File Name

☐ Replace Text Within the File Name

Replace \_\_\_\_\_ With \_\_\_\_\_

☒ **Edit Site Description Text**

Replace Existing SLU Soil Type Label with the Following:

☒ No Change ☐ SAND ☐ SILT ☐ CLAY

☐ Replace Existing SLU File \_\_\_\_\_ With: \_\_\_\_\_

Land Use Description of: \_\_\_\_\_

☒ Append SLU Description Text With swale

☐ **Site Description Text Modifications**

☐ Add Text

\_\_\_\_\_

☐ Before or ☐ After the Description

☐ Replace Text Within the Description

Replace \_\_\_\_\_ With \_\_\_\_\_

☐ Process File List without Changes

**Enter the data for the swale and Rename the File if necessary.**



# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

**Catchbasins** **Pollutants** **Biofiltration/Infiltration** **Hydrodynamic Devices**

**Current File Data** **Street Source Area and Cleaning** **Source Area Modifications** **Grass Swales**

☒ **Grass Swale Modifications**

☐ Fraction of Land Use Area (0-1)

☐ Swale Density (ft/ac)

☐ Total Swale Length (ft)

☐ Typical Bottom Width (ft)

☐ Typical Swale Side Slope ( \_\_ ft H : 1 ft V)

☐ Typical Longitudinal Slope (ft/ft)

☐ Swale Retardance Factor

☐ Typical Grass Height (in)

☐ Swale Dyn. Infiltration Rate (in/hr)

☐ Typical Swale Depth (ft) for Cost Analysis (Optional)

☒ Avg. Swale Length to Outlet (ft)

☐ Select Particle Size File

Select Land Use:

Select infiltration rate by soil type:

☐ Sand - 4 in/hr

☐ Loamy sand - 1.25 in/hr

☐ Sandy loam - 0.5 in/hr

☐ Loam - 0.25 in/hr

☐ Silt loam - 0.15 in/hr

☐ Sandy silt loam - 0.1 in/hr

☐ Clay loam - 0.05 in/hr

☐ Silty clay loam - 0.025 in/hr

☐ Sandy clay - 0.025 in/hr

☐ Silty clay - 0.02 in/hr

☐ Clay - 0.01 in/hr

Typical Swale Density by Land Use:

☐ Low density residential - 240 ft/ac

☐ Medium density residential - 350 ft/ac

☐ High density residential - 375 ft/ac

☐ Strip commercial - 410 ft/ac

☐ Shopping center - 90 ft/ac

☐ Industrial - 260 ft/ac

☐ Freeways (shoulder only) - 480 ft/ac

☐ Freeways (center and shoulder) - 540 ft/ac

☐ Combine Separate LU Swales (all values)

☐ Separate Combined LU Swales

**Operation Complete**

Finished Changing Files

OK

**Note: You may change and process only** **you are adding grass swales to a file.**

☐ **File Name Modifications**

☐ Numeric Modifications:

☐ Replace, or ☐ Add Numbers to the End of the File Starting with:

Number of digits for increment numbers: ☐ 1 ☐ 2 ☐ 3

☐ Text Modifications:

☐ Add Text:

☐ Before or ☐ After the File Name

☐ Replace Text Within the File Name: Replace  With

☐ **Edit Site Description Text**

Replace Existing SLU Soil Type Label with the Following:

☐ No Change ☐ SAND ☐ SILT ☐ CLAY

☐ Replace Existing SLU File Land Use Description of:  With:

☐ Append SLU Description Text With

☐ Site Description Text Modifications:

☐ Add Text:

☐ Before or ☐ After the Description

☐ Replace Text Within the Description: Replace  With

☐ Process File List without Changes

**Process Files**

Exit

# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

Current File Data | **Street Source Area and Cleaning** | Source Area Modifications | Grass Swales

Catchbasins | **Pollutants** | Biofiltration/Infiltration | Hydrodynamic Devices

☒ **Pollutants to Analyze**

Particulate | Dissolved | Total

Select a Pollutant File that you will apply to all .dat files for your project. The program will list all the pollutants found in the Pollutant Relative Concentration file you selected. Then check the boxes of those pollutants you want to evaluate.

Select File

Global Pollutant Change

Select All ☐ Clear All ☐

**Edit Site Description Text**

Replace Existing SLU Soil Type Label with the Following:

☐ No Change ☐ SAND ☐ SILT ☐ CLAY

☐ Replace Existing SLU File \_\_\_\_\_ With: \_\_\_\_\_

Land Use Description of: \_\_\_\_\_

☐ Append SLU Description Text With \_\_\_\_\_

☐ Site Description Text Modifications

☐ Add Text: \_\_\_\_\_

☐ Before or ☐ After the Description

☐ Replace Text Within the Description

Replace \_\_\_\_\_ With \_\_\_\_\_

☐ Process File List without Changes

Process Files Exit

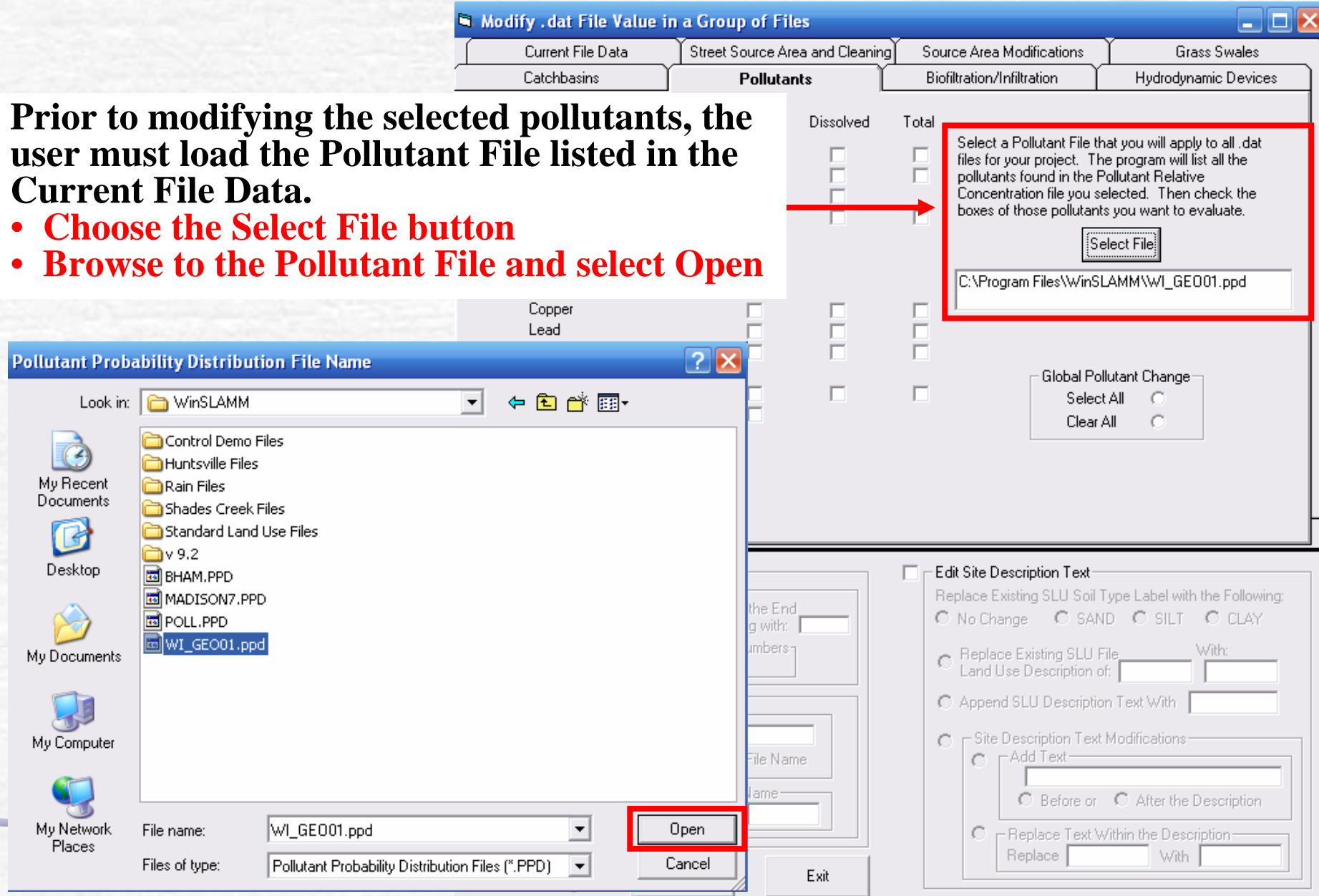
**The selected pollutants can be modified in a group.**

- **Select the Pollutants Tab**
- **Next select the radial button next to Pollutants to Analyze**

# Modifying Groups of \*.DAT Files

**Prior to modifying the selected pollutants, the user must load the Pollutant File listed in the Current File Data.**

- **Choose the Select File button**
- **Browse to the Pollutant File and select Open**



# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

Current File Data | Street Source Area and Cleaning | Source Area Modifications | Grass Swales

Catchbasins | **Pollutants** | Biofiltration/Infiltration | Hydrodynamic Devices

☒ Pollutants to Analyze

	Particulate	Dissolved	Total
Solids	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phosphorus	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Nitrates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TKN	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
COD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fecal Coliform Bacteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chromium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Copper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Zinc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cadmium (ug/L)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pyrene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Select a Pollutant File that you will apply to all .dat files for your project. The program will list all the pollutants found in the Pollutant Relative Concentration file you selected. Then check the boxes of those pollutants you want to evaluate.

Select File

C:\Program Files\WinSLAMM\W\I\_GEO01.ppd

Global Pollutant Change

Select All ☐

Clear All ☐

**The pollutants contained in the pollutant file will then be highlighted.**

- **Select specific pollutants to be analyzed**
- **Or select the Global Pollutant Change buttons to Select All the pollutants or Clear All**

Process File List without Changes | Process Files | Exit

Replace Text Within the Description  
Replace  With

# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

Current File Data | Street Source Area and Cleaning | Source Area Modifications | Grass Swales

Catchbasins | **Pollutants** | Biofiltration/Infiltration | Hydrodynamic Devices

☒ Pollutants to Analyze

	Particulate	Dissolved	Total
Solids	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phosphorus	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Nitrates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TKN	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
COD	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fecal Coliform Bacteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chromium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Copper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Zinc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cadmium (ug/L)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pyrene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Select a Pollutant File that you will apply to all .dat files for your project. The program will list all the pollutants found in the Pollutant Relative Concentration file you selected. Then check the boxes of those pollutants you want to evaluate.

Select File

C:\Program Files\WinSLAMM\W\I\_GEO01.ppd

Global Pollutant Change

Select All ☐

Clear All ☐

☐ File Name Modifications

☐ Edit Site Description Text

☐ Process File List without Changes

**Process Files**

Exit

**Rename the file if necessary and select Process Files**



# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

Catchbasins   Pollutants   Biofiltration/Infiltration   Hydrodynamic Devices

Current File Data   Street Source Area and Cleaning   **Source Area Modifications**   Grass Swales

☒ **Soil Type Modifications**

Soil Type  
☒ Sandy   ☐ Silty   ☐ Clayey

Building Density  
☐ Low   ☐ Medium or High

Alleys Present  
☐ Yes   ☐ No

**Note: You may change and process only one variable at a time.**

☐ **File Name Modifications**

☐ Numeric Modifications  
☐ Replace, or ☐ Add Numbers to the End of the File Starting with:   
Number of digits for increment numbers:  
☐ 1   ☐ 2   ☐ 3

☐ Text Modifications  
☐ Add Text  
☐ Before or ☐ After the File Name  
☐ Replace Text Within the File Name  
Replace  With

☐ **Edit Site Description Text**

Replace Existing SLU Soil Type Label with the Following:  
☐ No Change   ☐ SAND   ☐ SILT   ☐ CLAY

☐ Replace Existing SLU File Land Use Description of:  With:

☐ Append SLU Description Text With

☐ Site Description Text Modifications  
☐ Add Text  
☐ Before or ☐ After the Description  
☐ Replace Text Within the Description  
Replace  With

☐ Process File List without Changes   **Process Files**   **Exit**

**The soil type can be changed globally for a group of \*.DAT Files.**

- **Select the Source Area Modifications tab**
- **Next, select the radial button next to Soil Type Modifications**

# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

Catchbasins   Pollutants   Biofiltration/Infiltration   Hydrodynamic Devices

Current File Data   Street Source Area and Cleaning   **Source Area Modifications**   Grass Swales

☒ Soil Type Modifications

Soil Type  
☒ Sandy   ☐ Silty   ☐ Clayey

Building Density  
☐ Low   ☐ Medium or High

Alleys Present  
☐ Yes   ☐ No

**Note: You may change and process only one variable at a time.**

☒ File Name Modifications

☐ Numeric Modifications

☐ Replace, or ☐ Add Numbers to the End of the File Starting with:

Number of digits for increment numbers  
☐ 1   ☐ 2   ☐ 3

☒ Text Modifications

☐ Add Text  
  
☐ Before or ☐ After the File Name

☒ Replace Text Within the File Name  
Replace  clay With  sand

☒ Edit Site Description Text

Replace Existing SLU Soil Type Label with the Following:  
☐ No Change   ☐ SAND   ☐ SILT   ☐ CLAY

☐ Replace Existing SLU File Land Use Description of:  With:

☐ Append SLU Description Text With

☒ Site Description Text Modifications

☐ Add Text  
  
☐ Before or ☐ After the Description

☒ Replace Text Within the Description  
Replace  clay With  sand

☐ Process File List without Changes     

The file can be renamed through File Name Modifications.

Or, if the user is working with Standard Land Use Files, the Soil Type can be changed by selecting the new Soil Type Label. This option will change the soil type specified in the Site Description in the Current File Data.

# Modifying Groups of \*.DAT Files

**Modify .dat File Value in a Group of Files**

Catchbasins   Pollutants   Biofiltration/Infiltration   Hydrodynamic Devices

Current File Data   Street Source Area and Cleaning   **Source Area Modifications**   Grass Swales

☒ Soil Type Modifications

Soil Type  
☒ Sandy   ☐ Silty   ☐ Clayey

Building Density  
☐ Low   ☐ Medium or High

Alleys Present  
☐ Yes   ☐ No

**Note: You may change and process only one variable at a time**

☒ File Name Modifications   ☒ Edit Site Description Text

**When finished changing all the variables, select Exit.**

Type Label with the Following:  
D   ☐ SILT   ☐ CLAY

File:   With:  

n Text With  

☐ Before or   ☐ After the File Name

☒ Replace Text Within the File Name  
Replace  With

☐ Process File List without Changes     

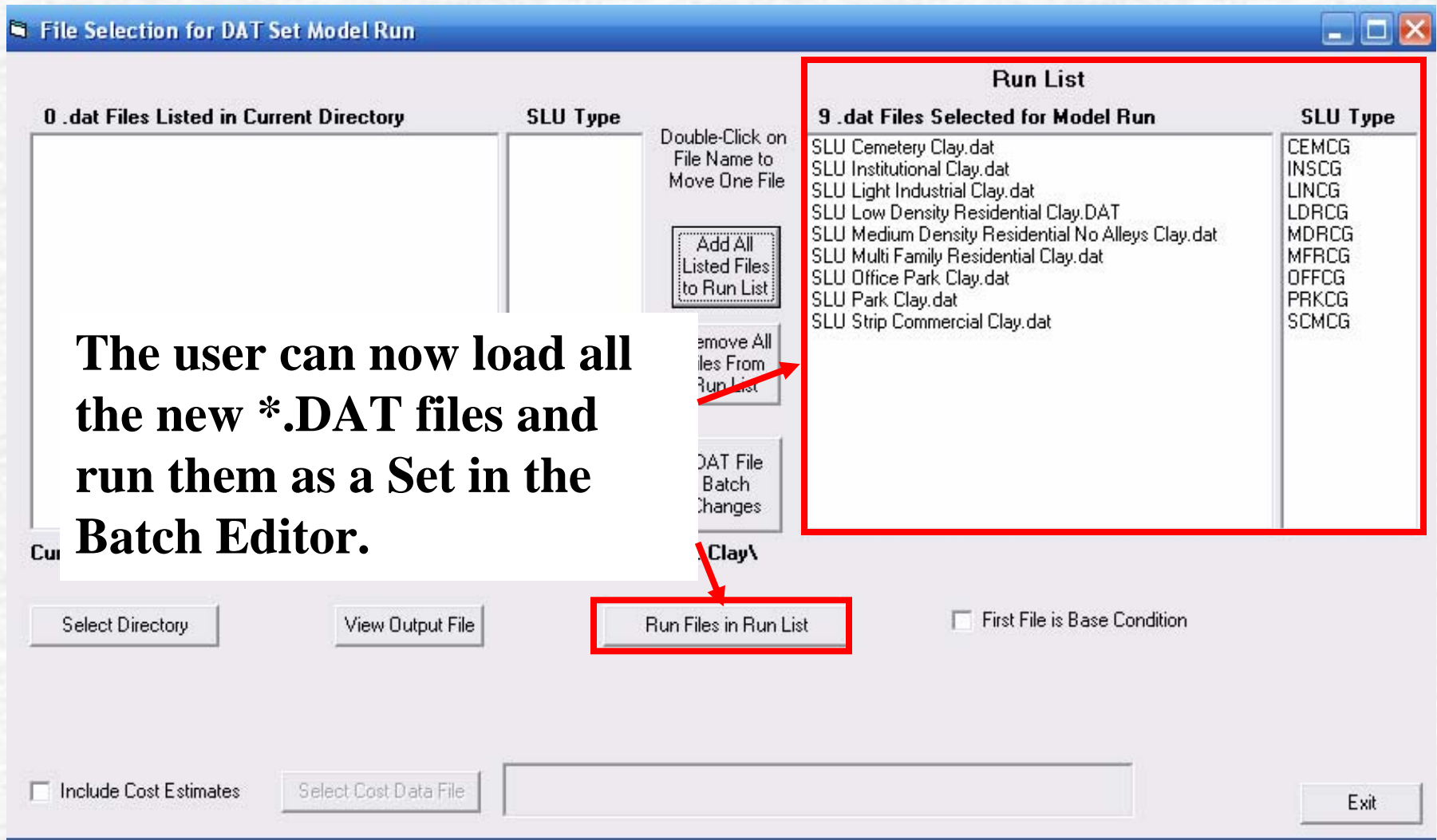
☐ Site Description Text Modifications

☐ Add Text

☐ Before or   ☐ After the Description

☒ Replace Text Within the Description  
Replace  With

# Modifying Groups of \*.DAT Files



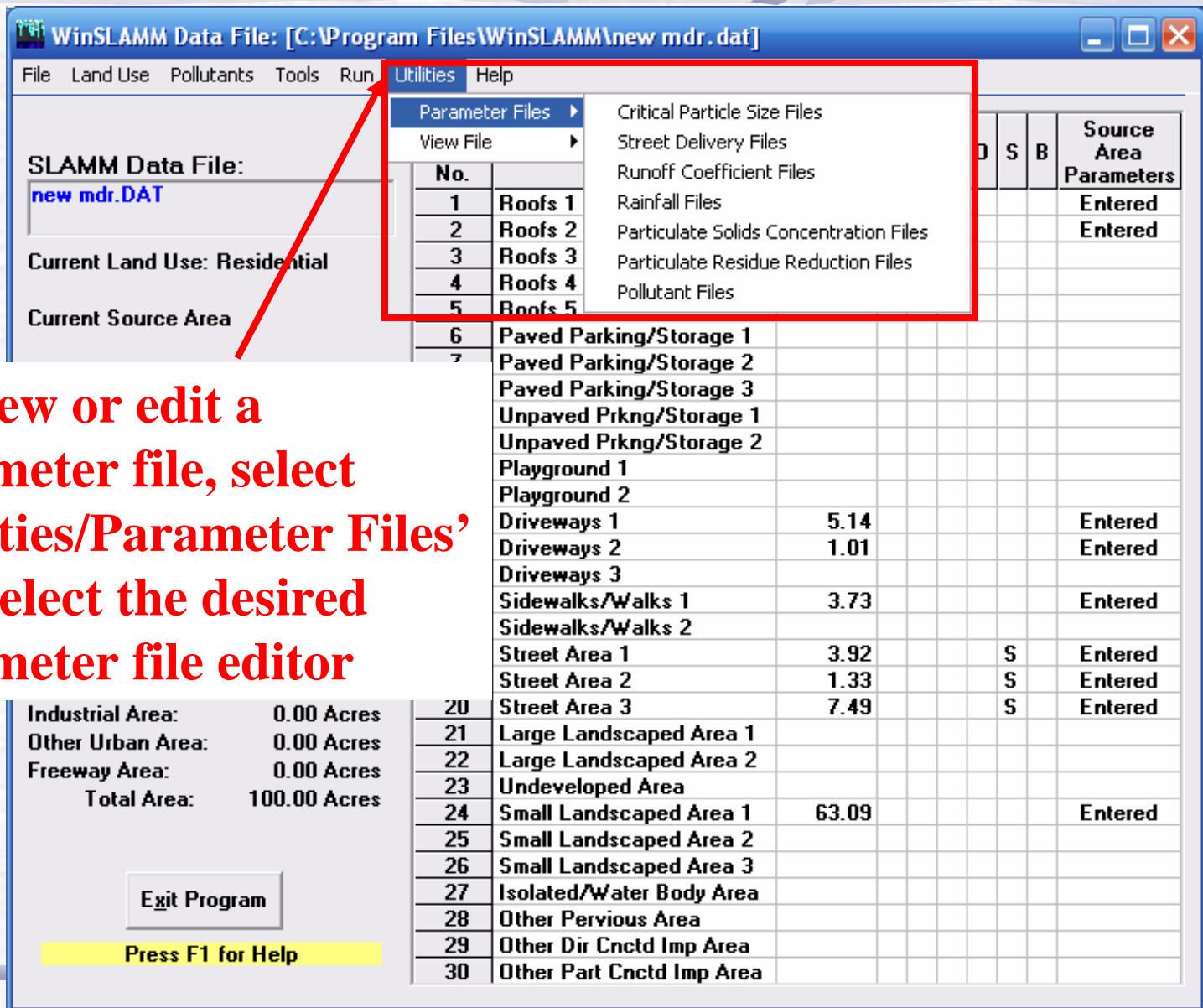
# Parameter File Editor

## Parameter File Editor Overview

The model uses several parameter files.  
The user can view each of these files  
through the Parameter File Editor.



# Parameter File Editor



**To view or edit a parameter file, select ‘Utilities/Parameter Files’ and select the desired parameter file editor**

# Parameter File Editor

**Critical Particle Size Parameter File**

Use Shift plus the arrow keys to move

**Select File**

C:\PROGRAM FILES\WINSLAMM\MIDWEST.CPZ

File Description:

**Save File**

**Save File As...**

**Print to Text File**

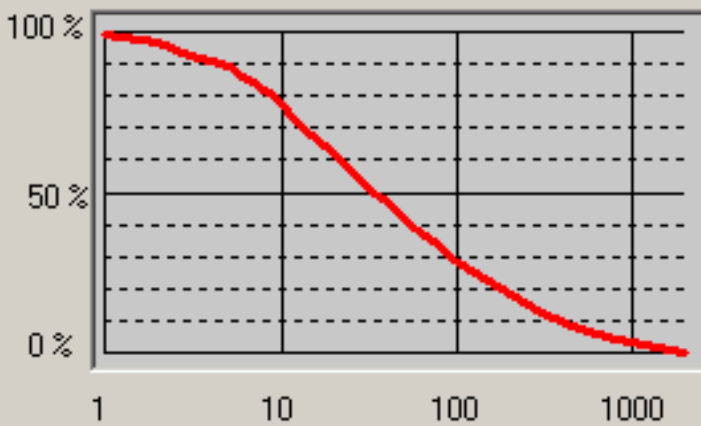
**View Text File**

**Continue**

**Cancel**

Enter Particle Size (100 - 0)

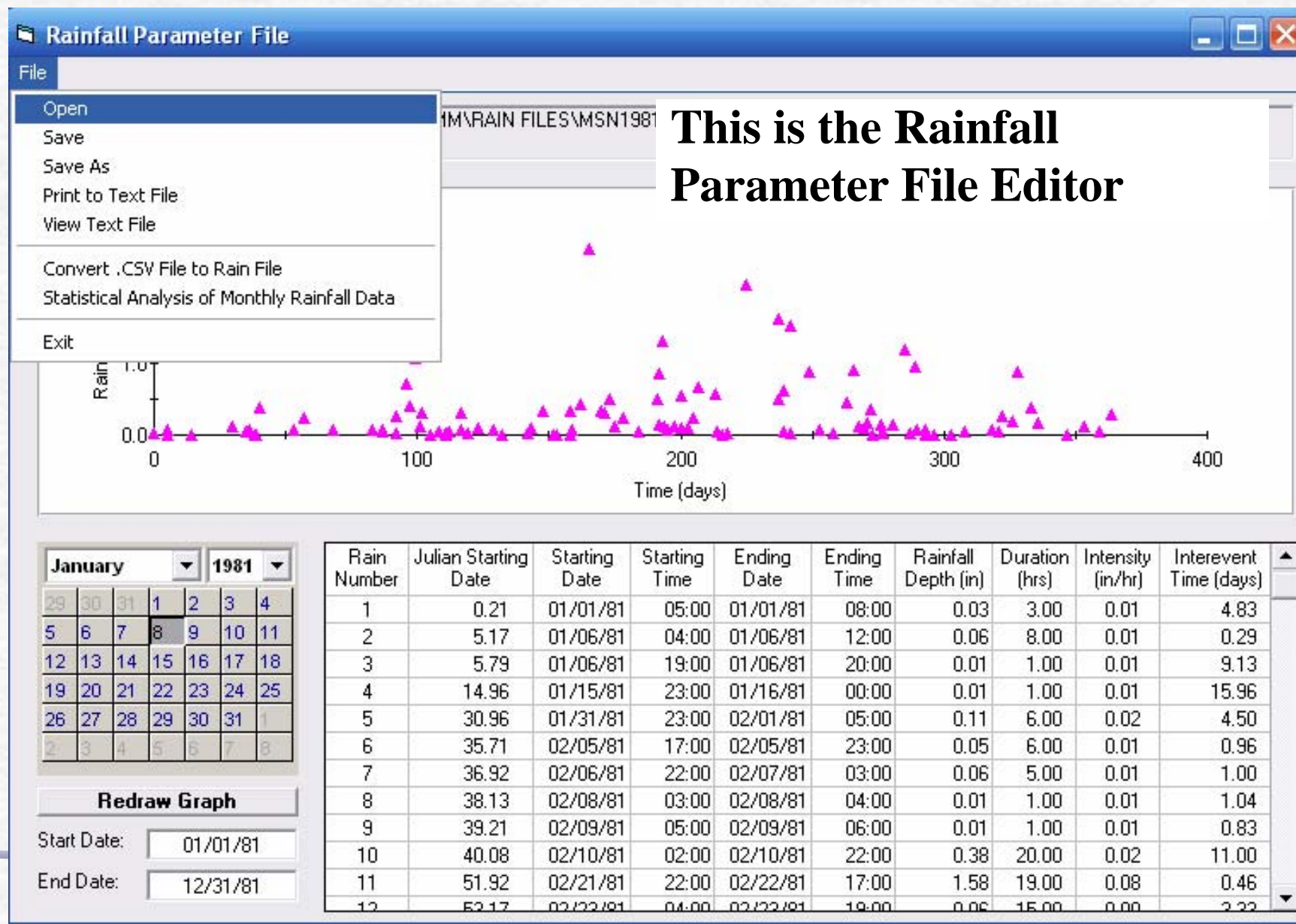
Percent Greater Than Particle Size



Particle Size (microns)

3	3	93
4	4	91
5	5	89
6	6	86
7	7	84
8	8	82
9	9	80
10	10	78
11	11	75
12	12	73
13	13	71
14	14	69
15	15	68
16	20	62
17	25	57
18	30	53
19	35	49
20	40	47

# Parameter File Editor



# Statistical Analysis to Determine the Average Annual Year of Rainfall

## Rainfall Analysis Overview

The user has the ability to analyze several years of rainfall data to determine the average annual year of rainfall.



# Statistical Analysis to Determine the Average Annual Year of Rainfall

**Rainfall Parameter File**

File

- Open
- Save
- Save As
- Print to Text File
- View Text File
- Convert .CSV File to Rain File
- Statistical Analysis of Monthly Rainfall Data**
- Exit

IM\RAIN FILES\NIN

Rain

0 2000 4000 6000 8000

July 1948

28 29 30 1 2 3 4  
5 6 7 8 9 10 11  
12 13 14 15 16 17 18  
19 20 21 22 23 24 25  
26 27 28 29 30 31  
2 3 4 5 6 7 8

Redraw Graph

Start Date: 07/05/48

End Date: 12/27/99

Rain Number	Julian Starting Date	Startin Date
1	0.08	07/05/
2	5.83	07/10/
3	7.50	07/12/
4	8.58	07/13/
5	10.75	07/15/
6	12.29	07/17/
7	14.50	07/19/
8	15.92	07/20/48
9	17.25	07/22/48
10	20.88	07/25/48
11	22.75	07/27/48
12	20.29	08/04/48

06:00	07/22/48	11:00	0.24	5.00	0.05	3.42
21:00	07/26/48	01:00	0.08	4.00	0.02	1.71
18:00	07/27/48	22:00	0.32	4.00	0.08	7.38
07:00	08/04/48	12:00	0.14	5.00	0.02	7.17

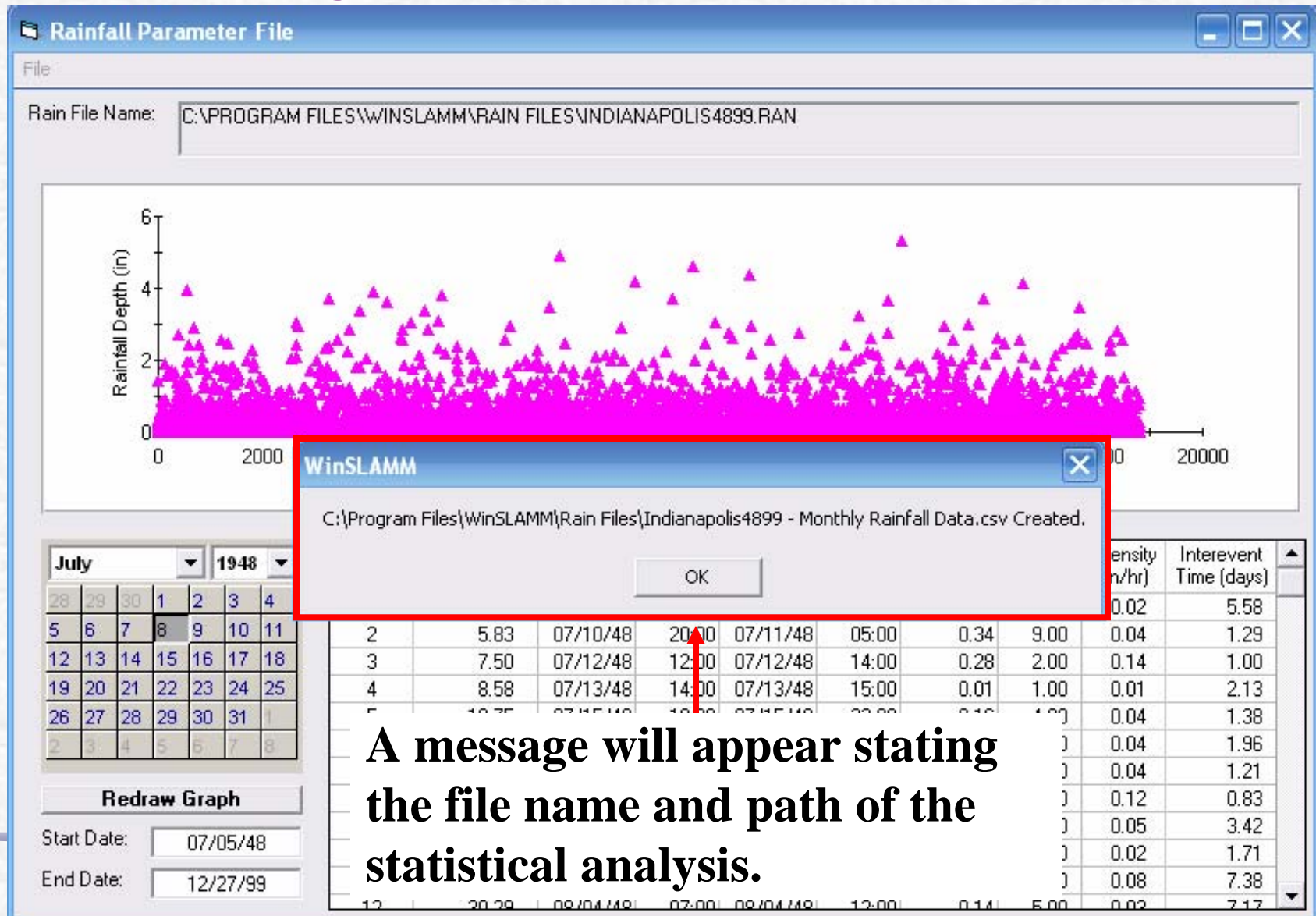
nt  
s)  
8  
9  
10  
3  
8  
16  
1  
3.33  
3.42  
1.71  
7.38  
7.17

**For areas where an Average Annual Year of Rainfall Data file is not available, the user can now perform a statistical analysis to determine an Average Annual Year of Rainfall.**

**First, open the rainfall file with the long term rainfall data in it. Next, select Statistical Analysis of Monthly Rainfall Data**



# Statistical Analysis to Determine the Average Annual Year of Rainfall



# Statistical Analysis to Determine the Average Annual Year of Rainfall

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Deviation From Average	Absolute Deviation
1949	0.00	2.38	3.16	1.62	2.75	4.18	2.95	6.64	2.52	4.25	0.89	4.32	35.66	-4.41	4.41
1950	12.72	5.29	3.89	3.43	2.68	6.55	2.15	4.08	4.96	0.98	5.52	3.00	55.25	15.18	15.18
1951	3.07	3.64	3.16	3.26	2.78	5.77	3.12	2.43	2.39	3.28	5.21	4.68	42.79	2.72	2.72
1952	3.69	2.71	5.77	3.99	3.90	6.17	2.45	2.46	4.62	0.64	3.87	3.01	43.28	3.21	3.21
1953	2.57	1.93	5.41	3.22	4.46	4.86	6.19	1.76	1.44	1.70	2.29	2.42	38.25	-1.82	1.82
1954	3.40	2.64	2.99	2.34	2.47	0.66	2.40	2.73	0.96	3.92	1.32	2.10	27.93	-12.14	12.14
1955	2.09	2.36	2.24	3.31	3.37	1.79	5.24	1.21	6.01	4.27	5.32	0.70	37.91	-2.16	2.16
1956	1.05	3.99	1.90	4.50	4.91	3.48	3.94	2.54	1.07	1.09	2.31	3.86	34.64	-5.43	5.43
1957	2.97	1.85										6.70	55.68	15.61	15.61
1958	1.48	0.41										0.66	38.30	-1.77	1.77
1959	4.49	3.22										2.90	39.41	-0.66	0.66
1960	2.35	3.28										1.88	33.41	-6.66	6.66
1961	1.22	3.15										3.05	46.64	6.57	6.57
1962	4.58	2.27										1.09	41.26	1.19	1.19
1963	1.20	0.53										0.86	32.78	-7.29	7.29
1964	2.04	2.01										3.05	36.35	-3.72	3.72
1965	3.86	4.33										3.17	38.31	-1.76	1.76
1966	0.93	2.92										5.23	32.52	-7.55	7.55
1967	1.81	1.84										4.92	34.75	-5.32	5.32
1968	2.96	1.51										4.18	41.05	0.98	0.98
1969	6.19	1.23										2.09	42.82	2.75	2.75
1970	1.12	1.86										2.07	32.93	-7.14	7.14
1971	1.98	5.35										6.02	37.48	-2.59	2.59
1972	1.57	1.15	2.75	3.01	1.85	5.87	2.81	2.87	3.85	7.77	3.70	2.83	40.27	0.20	0.20
1973	2.27	1.11	5.63	2.76	1.79	5.91	6.67	2.74	2.43	3.11	3.62	4.27	42.31	2.24	2.24
1974	3.39	2.58	3.60	3.45	6.27	5.15	1.20	5.63	3.25	0.99	3.18	2.62	41.31	1.24	1.24
1975	4.37	4.13	4.16	4.14	2.42	5.73	4.63	4.68	2.32	2.80	3.63	3.71	46.72	6.65	6.65
1976	2.29	2.90	3.46	0.98	3.10	3.97	3.09	7.85	2.02	2.79	0.82	0.45	33.72	-6.35	6.35
1977	4.58	2.62	2.82	4.84	2.78	2.86	2.57	4.17	4.82	4.57	2.84	4.44	38.45	4.82	4.82


**This shows an example of the data provided by the Statistical Analysis for each year of rainfall in the rainfall file. The top part of the spreadsheet calculates statistics for the rainfall values in each month. The bottom part of the spreadsheet calculates statistics for the number of rain events in each month.**

# Statistical Analysis to Determine the Average Annual Year of Rainfall


May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Deviation From Average	Absolute Deviation	Count	Average	Std Deviation	COV	Min	Max
10	14	7	9	10	8	5	11	103	-14.14	14.14	12	8.58	3.53	0.41	0	14
15	13	9	9	14	5	11	11	145	27.86	27.86	12	12.08	3.37	0.28	5	17
11	16	8	7	7	6	10	11	128	10.86	10.86	12	10.67	3.47	0.33	6	16
17	12	7	8	4	5	10	14	116	-1.14	1.14	12	9.67	3.89	0.40	4	17
14	8	6	6	5	4	8	8	113	-4.14	4.14	12	9.42	4.83	0.51	4	20
14	5	7	16	5	11	10	12	127	9.86	9.86	12	10.58	3.37	0.32	5	16
9	10	11	7	7	8	8	5	111	-6.14	6.14	12	9.25	2.34	0.25	5	13
15	9	12	7	5	3	7	11	116	-1.14	1.14	12	9.67	3.65	0.38	3	15
15	20	8	8	9	4	9	11	133	15.86	15.86	12	11.08	4.52	0.41	4	20
12	13	15	8	9	7	9	6	113	-4.14	4.14	12	9.42	3.45	0.37	3	15
13	4	10	9	7	11	11	11	117	-0.14	0.14	12	9.75	2.49	0.26	4	13
13	10	5	9	3	5	6	6	95	-22.14	22.14	12	7.92	3.00	0.38	3	13
12	9	16										10.08	3.29	0.33	6	16
8	8	7										8.33	1.92	0.23	6	13
8	7	11										7.42	3.73	0.50	1	16
6	12	11										9.08	4.58	0.50	2	17
8	8	8										9.17	2.48	0.27	6	14
6	7	9										7.92	2.39	0.30	4	13
12	8	10										9.50	3.15	0.33	6	15
18	9	8										9.25	3.52	0.38	5	18
9	13	10										8.67	2.46	0.28	5	13
11	9	12										9.75	2.22	0.23	5	12
8	10	13										9.08	3.53	0.39	4	15
10	8	6										11.25	2.86	0.25	6	15
16	13	9	8	7	9	10	19	139	21.86	21.86	12	11.58	4.64	0.40	6	19
17	13	6	9	9	8	9	16	128	10.86	10.86	12	10.67	3.68	0.34	6	17
11	9	7	9	5	6	9	10	117	-0.14	0.14	12	9.75	2.93	0.30	5	14
10	11	10	6	6	5	4	9	100	-17.14	17.14	12	8.33	3.08	0.37	4	15
8	11	7	12	9	8	16	14	127	9.86	9.86	12	10.58	3.03	0.29	7	16
13	6	11	12	6	12	7	13	131	13.86	13.86	12	10.92	3.12	0.29	6	16
9	11	16	13	2	14	12	10	146	28.86	28.86	12	12.17	4.26	0.35	2	18

**This shows more data provided by the Statistical Analysis for each year of rainfall in the rainfall file.**

**The user can use the data in this spreadsheet to determine which year of rainfall represents an average annual year.**

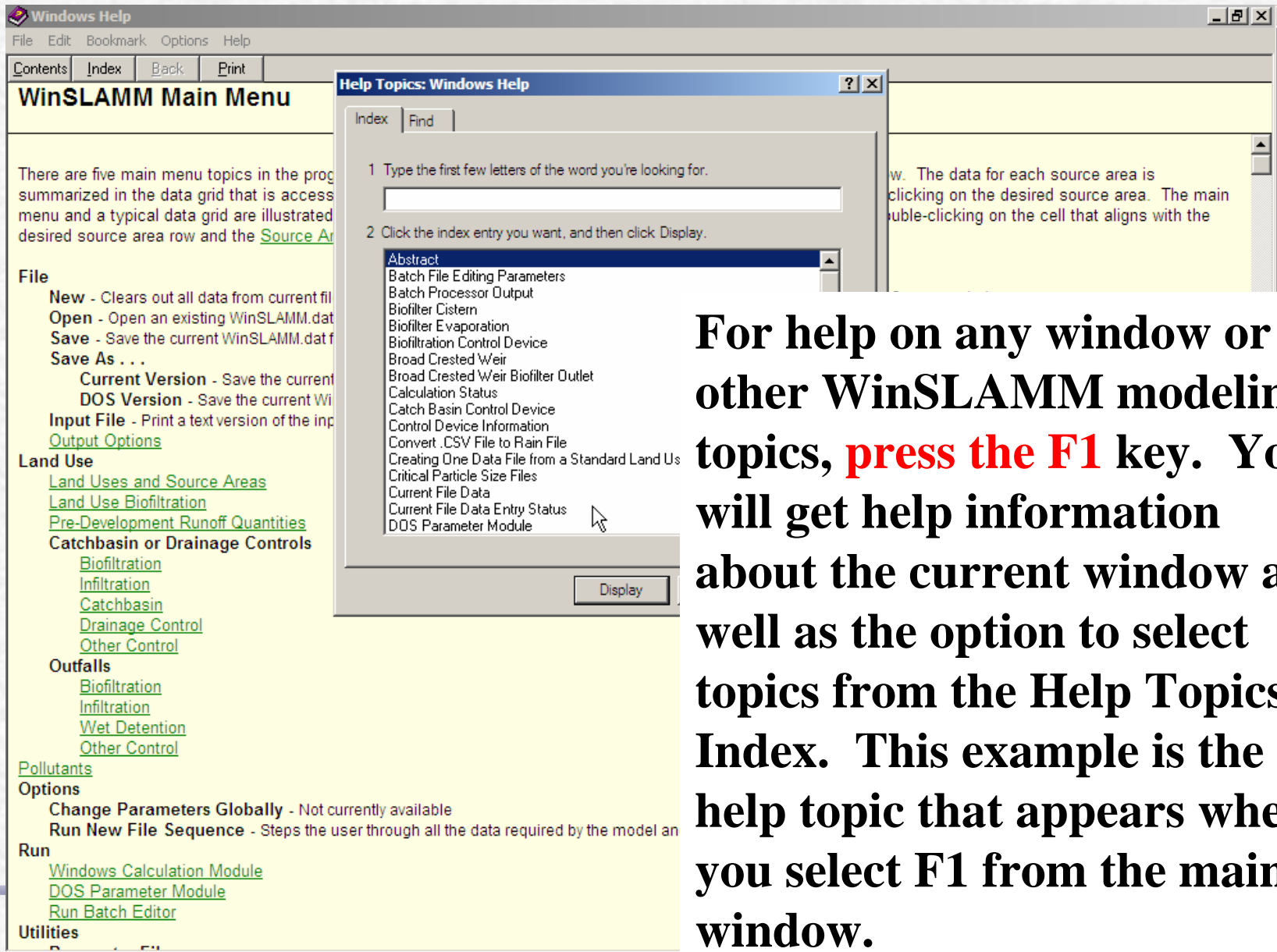


For Additional  
Information See . . .





# The Context-Sensitive Help in the Program



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



# Model Documentation Included on the CD

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