



# WinSLAMM v 10.2 User's Guide

Batch Editor, Cost Analysis, pre-Development  
Runoff Volume Calculation and Creating a Model  
File from a Data File

# Batch Editor – Running a Set of Files

# Batch Editor

The Batch Editor can be used to:

- Run a set of files at the same time
- Add or modify data in a set of files
- Import a set of v9.4 dat files and update them to v10.

# Batch Editor

The screenshot displays the WinSLAMM v10 software interface. The title bar reads "WinSLAMM v 10 Data File: [C:\WinSLAMM\Training Courses\2013 NJ DEP\Examples\1a No Management Condition.mdb] - [Land Use Model]". The menu bar includes "File", "Current File Data", "Pollutants", "Tools", "Run", "Utilities", and "Help". The "Run" menu is open, showing "Current Project File ..." and "Set of Project Files". A purple box highlights the "Run" menu, and a callout box points to the "Set of Project Files" option with the text: "Select Run, then 'Set of Project Files' to activate the Batch Editor routine." The main workspace is divided into a purple area on the left and a diagram on the right. The diagram shows a drainage system with a "Junction 1" and an "Outfall" labeled "OUT". The status bar at the bottom displays: "Current File Data Entered", "Total Area = 7.290 acres", "Upstream Drainage Area = 0.000 acres", "Icon Number", "Index Number =", "Icons Left =", "Start Date: 01/06/91", and "End Date: 12/30/91".

WinSLAMM v 10 Data File: [C:\WinSLAMM\Training Courses\2013 NJ DEP\Examples\1a No Management Condition.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

RES INS COM IND UJ FRE

Element Name:

Current Project File ...  
Set of Project Files

Select Run, then "Set of Project Files" to activate the Batch Editor routine.

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

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

Junction 1

Outfall

OUT

Current File Data Entered Total Area = 7.290 acres Upstream Drainage Area = 0.000 acres Icon Number Index Number = Icons Left = Start Date: 01/06/91 End Date: 12/30/91

# Batch Editor

WinSLAMM v 10 Data File: [C:\WinSLAMM\Training Courses\2013 NJ DEP\Examples\1a No Management Condition.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

RES INS COM IND OU FRE

Current Project File ...

Element Name Select Source Path for .mdb Files

Standard Land Use File Directory: C:\WinSLAMM Files\Example Files

C:\  
WinSLAMM Files  
Example Files

Commercial 1

COM

Outfall

OUT

Land Use # Land U  
1 Comme

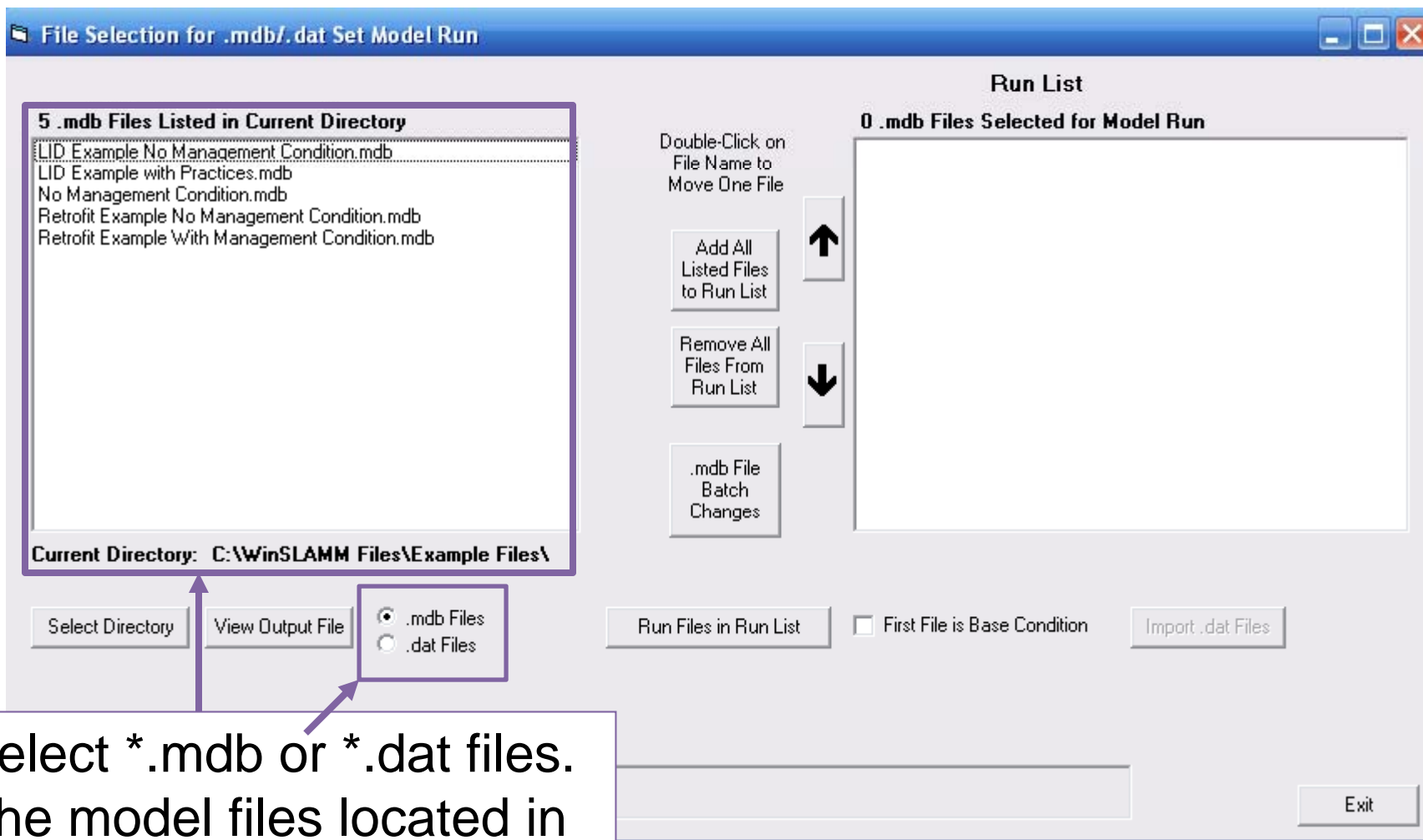
OK Exit Drive: c:

CP # Control Practice Type Control Practice Name or Location

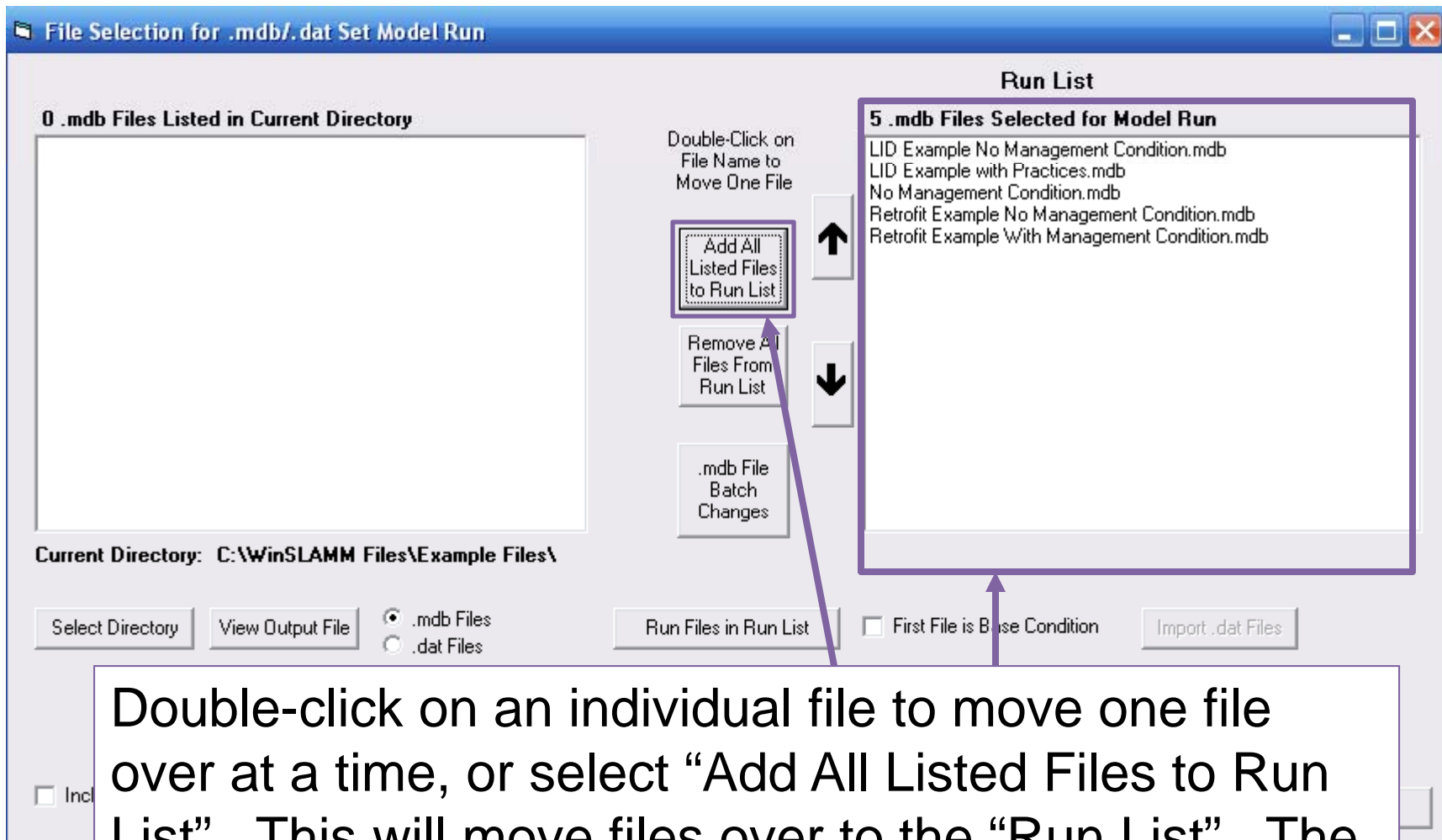
Current File Data Entered Total Area = 7.290 acres Upstream Drainage Area = 0.000 acres Icon Number Index Number = Icons Left = Start Date: 01/06/91 End Date: 12/30/91

Navigate to where the \*.dat files or the \*.mdb files are stored on your computer.

# Batch Editor – Running a Set of Files

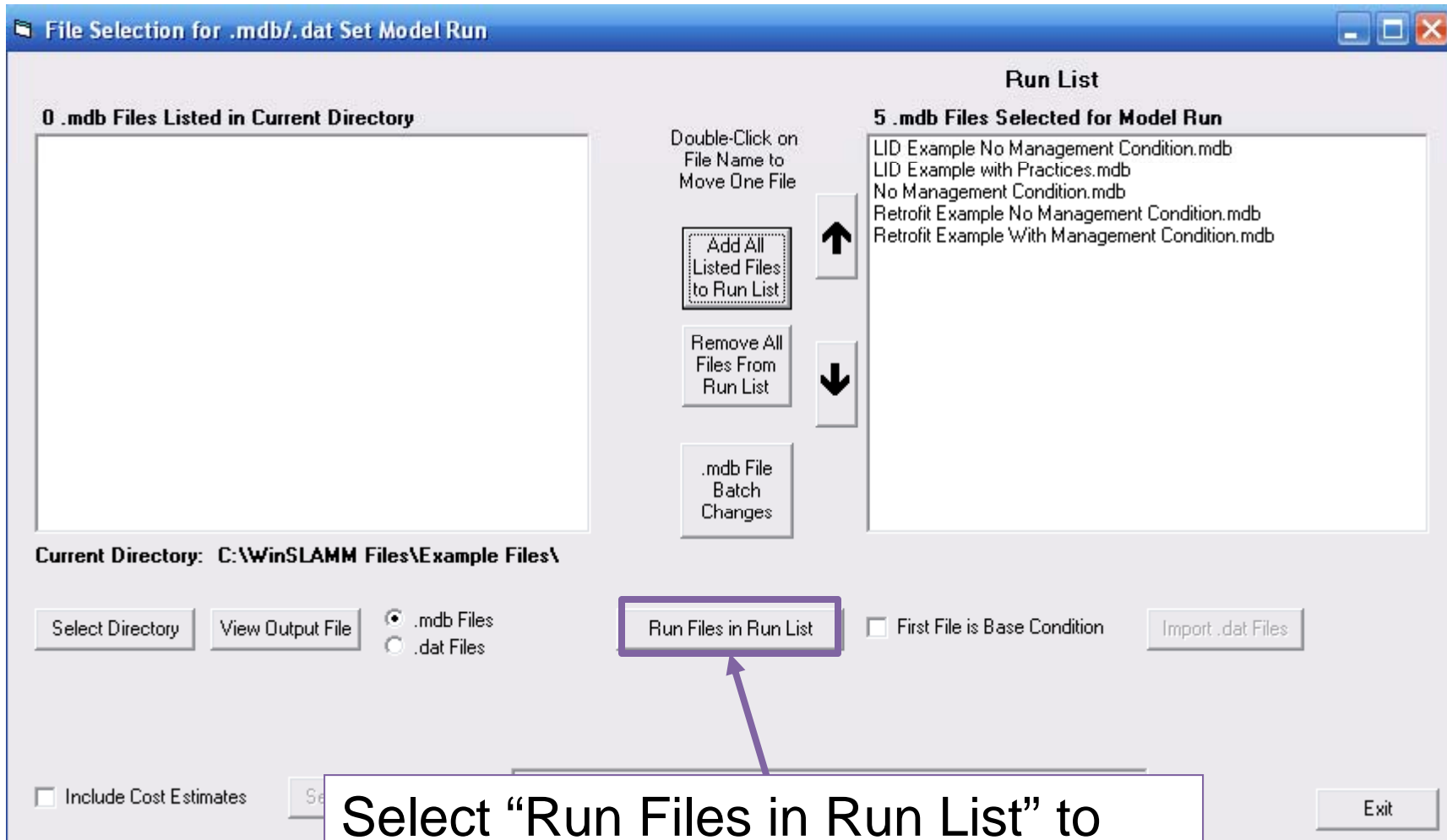


# Batch Editor – Running a Set of Files



Double-click on an individual file to move one file over at a time, or select “Add All Listed Files to Run List”. This will move files over to the “Run List”. The files in the “Run List” are the files that will be run or modified through the Batch Changes.

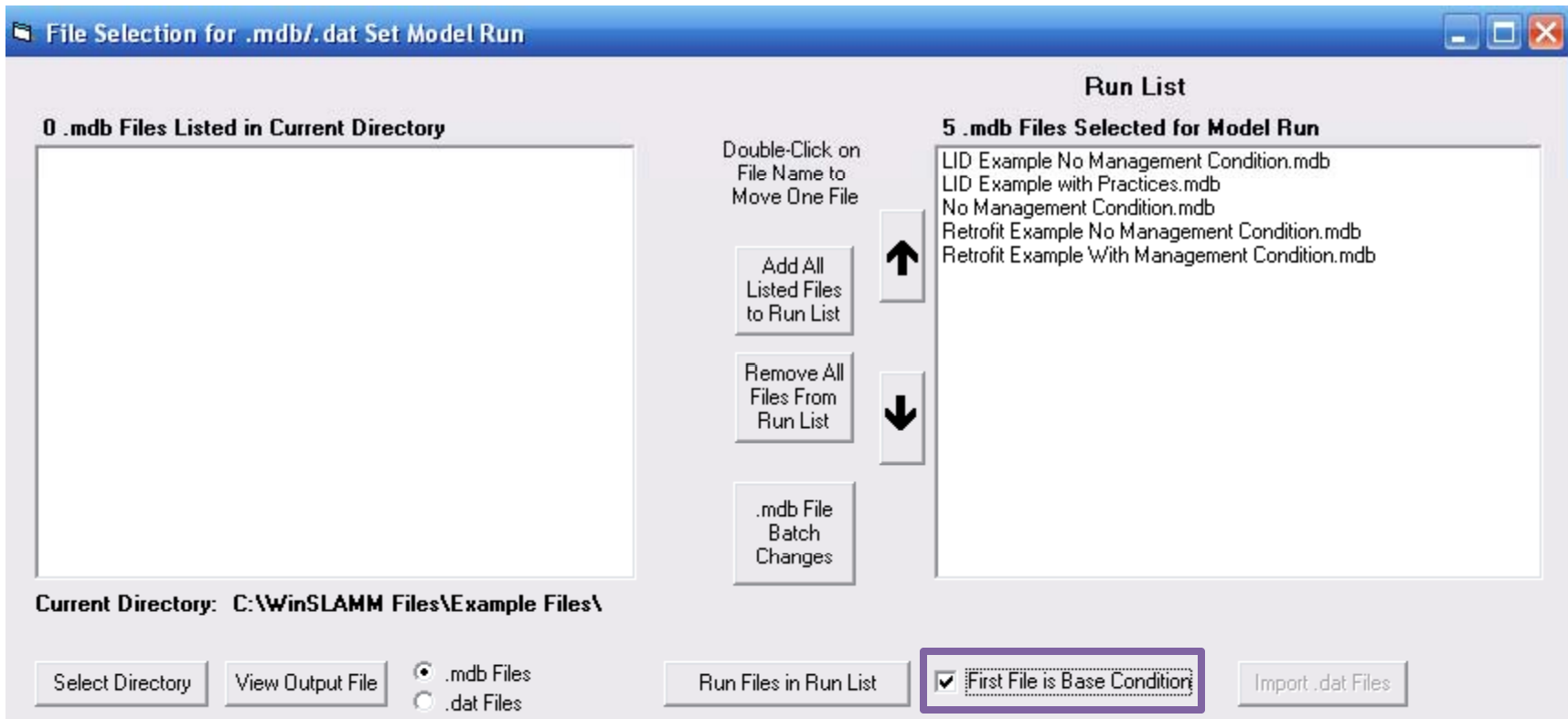
# Batch Editor – Running a Set of Files



Select "Run Files in Run List" to run the files in a group.

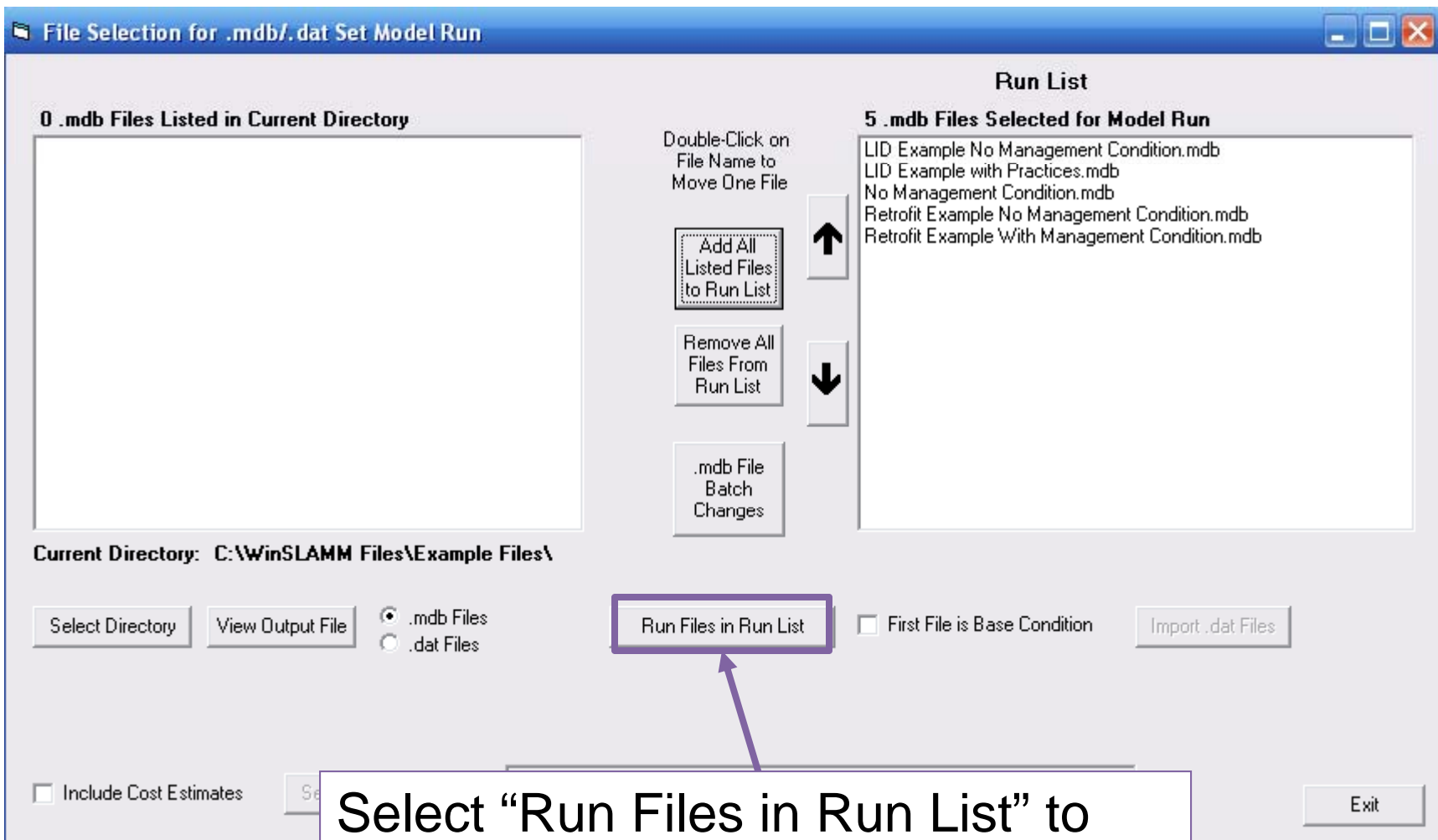


# Batch Editor – Running a Set of Files



To compare several files against a “No Management Condition” model file, check the box next to “First Files is Base Conditions”. Then select “Run Files in Run List”. The program will calculate runoff volume and pollutant reduction percentages for each of the Management Conditions.

# Batch Editor – Running a Set of Files



Select "Run Files in Run List" to run the files in a group.

# Batch Editor – Running a Set of Files

**File Selection for .mdb/.dat Set Model Run**

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

**Run List**

**5 .mdb Files Selected for Model Run**

- LID Example No Management Condition.mdb
- LID Example with Practices.mdb
- No Management Condition.mdb
- Retrofit Example No Management Condition.mdb
- Retrofit Example With Management Condition.mdb

Double-Click on File Name to Move One File

Add All Listed Files to Run List

Remove All Files From Run List

Current Directory: C:\W

Select Directory View

Include Cost Estimates

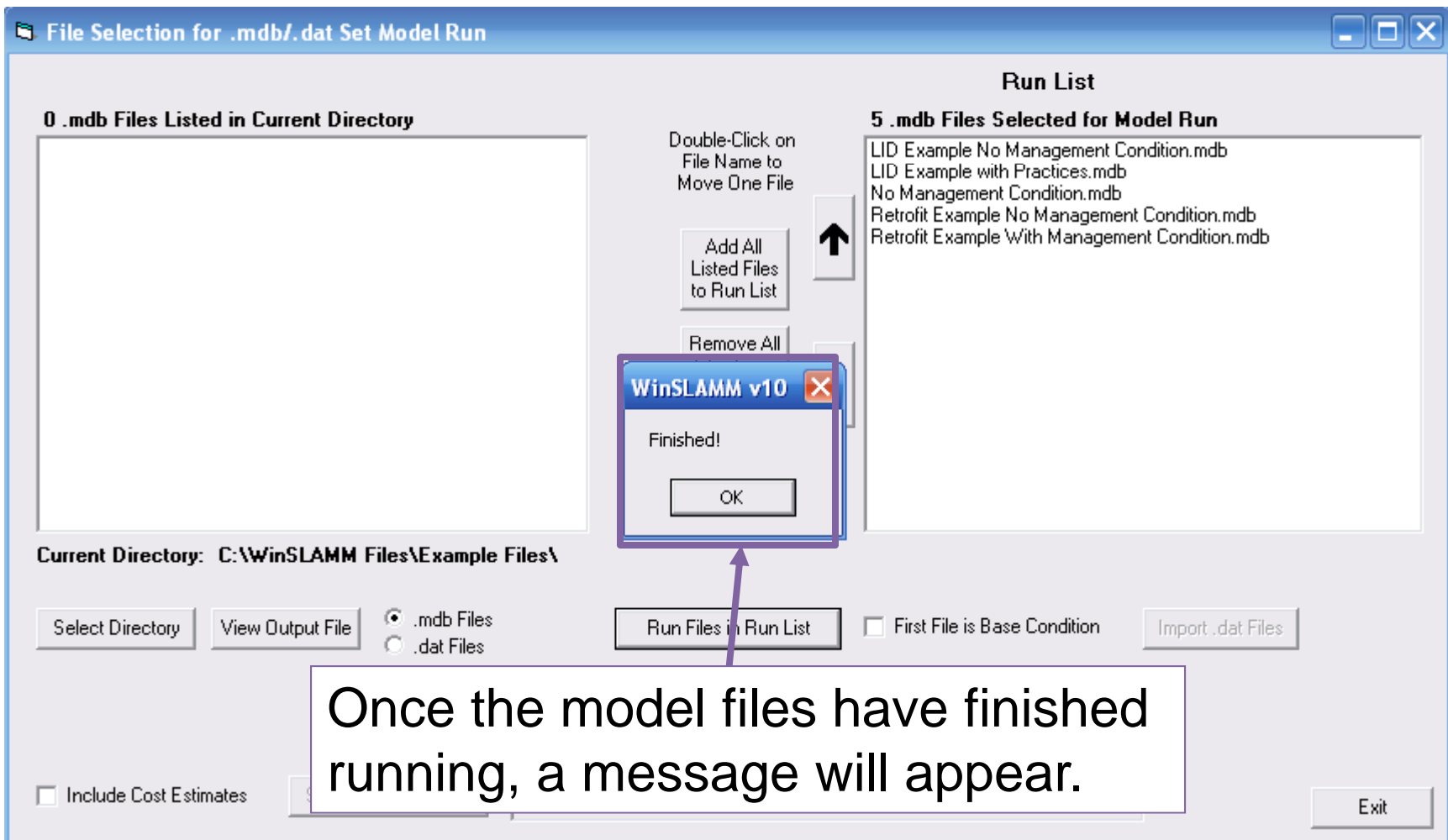
Select Cost Data File

C:\WinSLAMM Files\Cost Template.csv

Exit

To include cost data, check the box next to “Include Cost Estimates”, then “Select Cost Data File” to load the file with the cost data for the stormwater control measures.

# Batch Editor – Running a Set of Files



# Batch Editor – Running a Set of Files

The screenshot displays two windows from the Batch Editor software. The top window, titled "File Selection for .mdb/.dat Set Model Run", shows a "Run List" of five selected .mdb files. The bottom window, titled "Project File Set Run Output", contains a table with the following data:

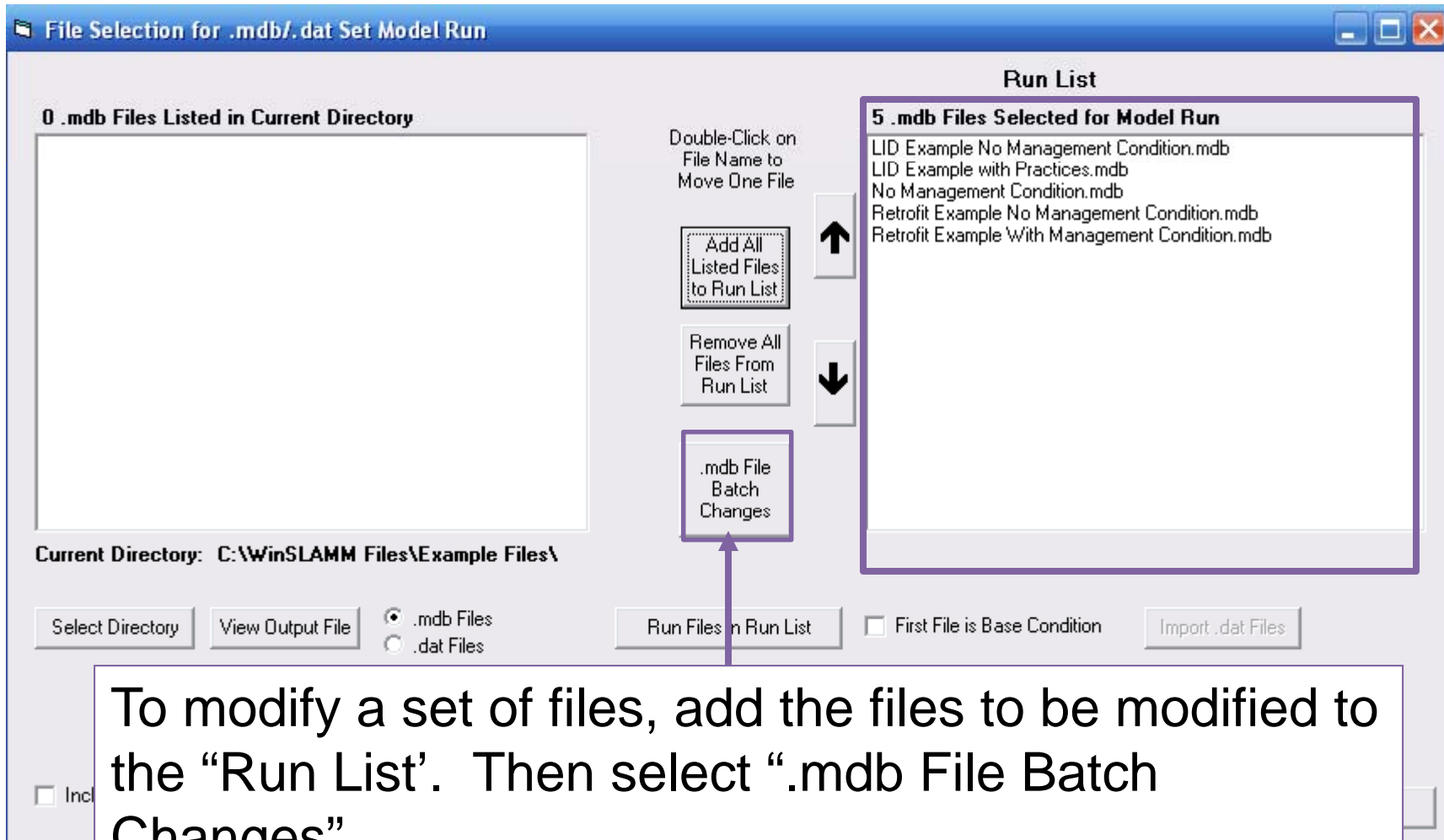
File Number	File Name	File Description	Catchment Area (ac)	Number of Years in Model Run	Runoff Volume (cf)	Rv	B	C
1	LID Example No Management Condition	Calgary AB LID Example No Management Condition	23.670	0.909	739762.1	0.536		
2	LID Example with Practices	Calgary AB LID Example with Biofilters and Wet Detention P	23.670	0.909	442039.4	0.321		
3	No Management Condition	No Management Condition	7.290	0.909	153232.1	0.361		
4	Retrofit Example No Management Condition	Santa Monica CA Urban Stormwater Retrofit Example No Mana	12.570	0.910	408485.4	0.693		
0.6311358	24.74956	5ment Conditionmple With Ma			12.570	0.910		

Below the table, the "View Output File" button is highlighted with a purple box and an arrow. A text box explains that the output can be viewed within the program by selecting "View Output File", or by opening the "MDB\_SetOutput.csv" file in a program such as Microsoft Excel.

The output can be viewed within the program by selecting "View Output File", or by opening the "MDB\_SetOutput.csv" file in a program such as Microsoft Excel.

# Batch Editor – Modifying a Set of Files

# Batch Editor – Modifying a Set of Files



To modify a set of files, add the files to be modified to the "Run List". Then select ".mdb File Batch Changes".

# Batch Editor – Modifying a Set of Files

Modify .mdb File Value in a Group of Files

Filter Strips    Cisterns    Tab 10    Tab 11

Catchbasins    Pollutants    Biofiltration/Infiltration    Hydrodynamic Devices

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

Change .std File Name To:  Residential  Institutional  Commercial  Industrial  Other Urban  Freeways

Select File

Street Delivery File Land Use

Change Parameter File Name  Pollutant Probability Distribution (PPD)  Particulate Solids Concentration (PSC)

Parameter File Type

The tabs at the top of the form show the various characteristics and/or Control Devices that can be modified.

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 (Case Sensitive)

Replace  With

Edit Site Description Text

Site Description Text Modifications

Add Text

Before or  After the Description

Replace Text Within the Description (Case Sensitive)

Replace  With

Process File List without Changes

Process Files

Exit



# Batch Editor – Modifying a Set of Files

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

Filter Strips      Cisterns      Tab 10      Tab 11

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)

Select File

Ch

**Only one variable can be modified at a time, unless an entire Control Device is being added to each model file.**

End Rain Date (mm/dd/yy)

**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 (Case Sensitive)—  
Replace  With

**Edit Site Description Text**

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

Replace Text Within the Description (Case Sensitive)—  
Replace  With

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

# Batch Editor – Modifying a Set of Files

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

Filter Strips   Cisterns   Tab 10   Tab 11  
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)

Select File

Change Rain File Name To:   Select File

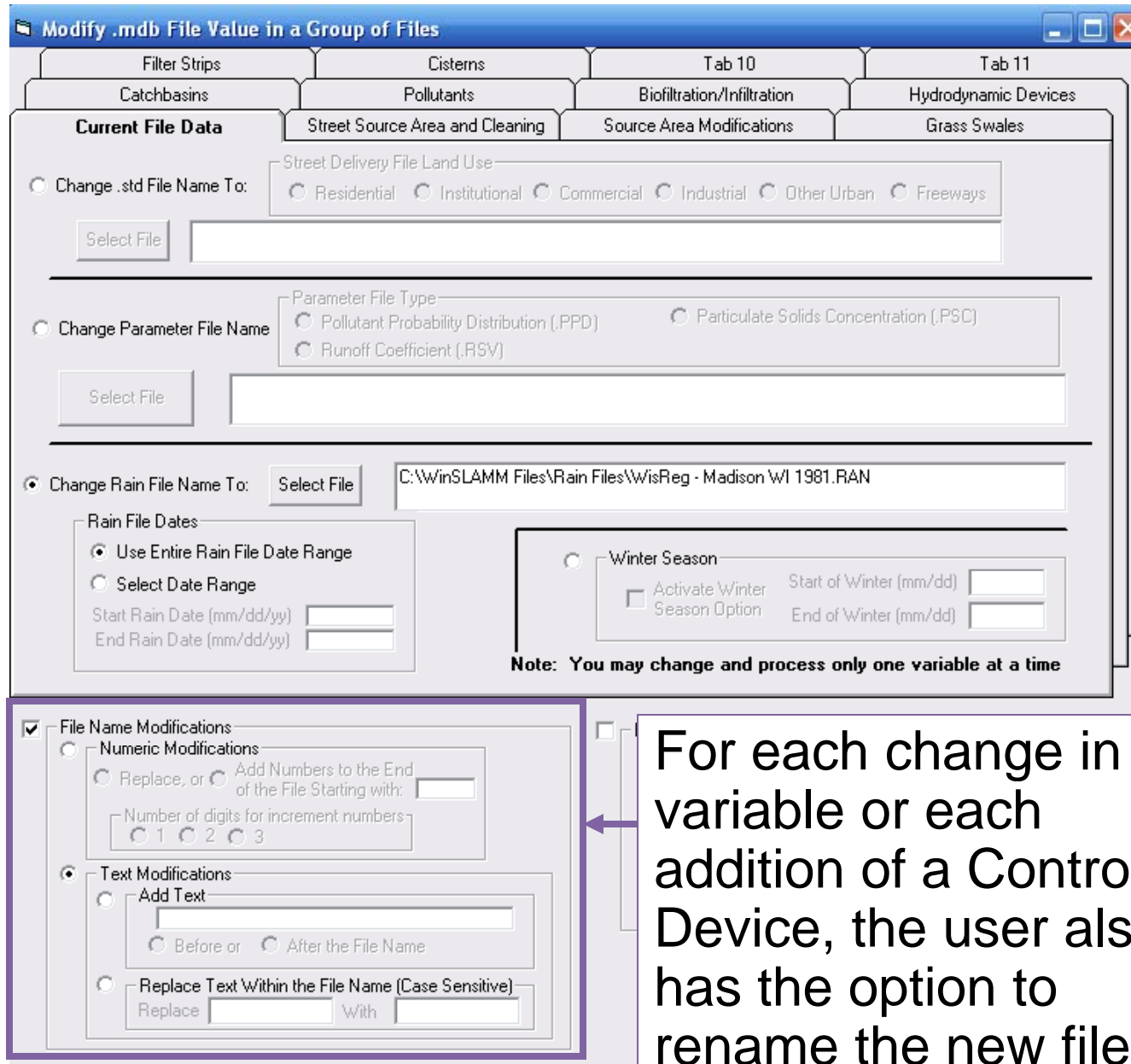
Use Entire Rain File Date Range    Winter Season  
 Select Date Range   Activate Winter   Start of Winter (mm/dd)

Replace Text Within the File Name (Case Sensitive)  
Replace   With

Process File List without Changes   Process Files   Exit

To change a variable, select the tab where the variable is located, and then select the radio button next to the variable. The data that can be modified will be highlighted. Either navigate to where the new file is located, or choose the new variable.

# Batch Editor – Modifying a Set of Files



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

Filter Strips    Cisterns    Tab 10    Tab 11

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)

Select File

Change Rain File Name To: Select File C:\WinSLAMM Files\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**

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 (Case Sensitive)

Replace  With

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

# Batch Editor – Modifying a Set of Files

Modify .mdb File Value in a Group of Files

Filter Strips    Cisterns    Tab 10    Tab 11

Catchbasins    Pollutants    Biofiltration/Infiltration    Hydrodynamic Devices

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

Change .std File Name To:  Residential  Institutional  Commercial  Industrial  Other Urban  Freeways

Select File

Change Parameter File Name  Pollutant Probability Distribution (.PPD)  Particulate Solids Concentration (.PSC)

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 (Case Sensitive)

Replace  With

Edit Site Description Text

Site Description Text Modifications

Add Text

Before or  After the Description

Replace Text Within the Description (Case Sensitive)

Replace  With

Process File List without Changes

Process Files

Exit

The Site Description text in Current File Data can also be modified.

# Batch Editor – Modifying a Set of Files

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

Filter Strips    Cisterns    Tab 10    Tab 11  
Catchbasins    Pollutants    Biofiltration/Infiltration    Hydrodynamic Devices  
Street Source Area and Cleaning    Source Area Modifications    Grass Swales

**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)  
Select File

Change Rain File Name To: Select File    C:\WinSLAMM Files\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)

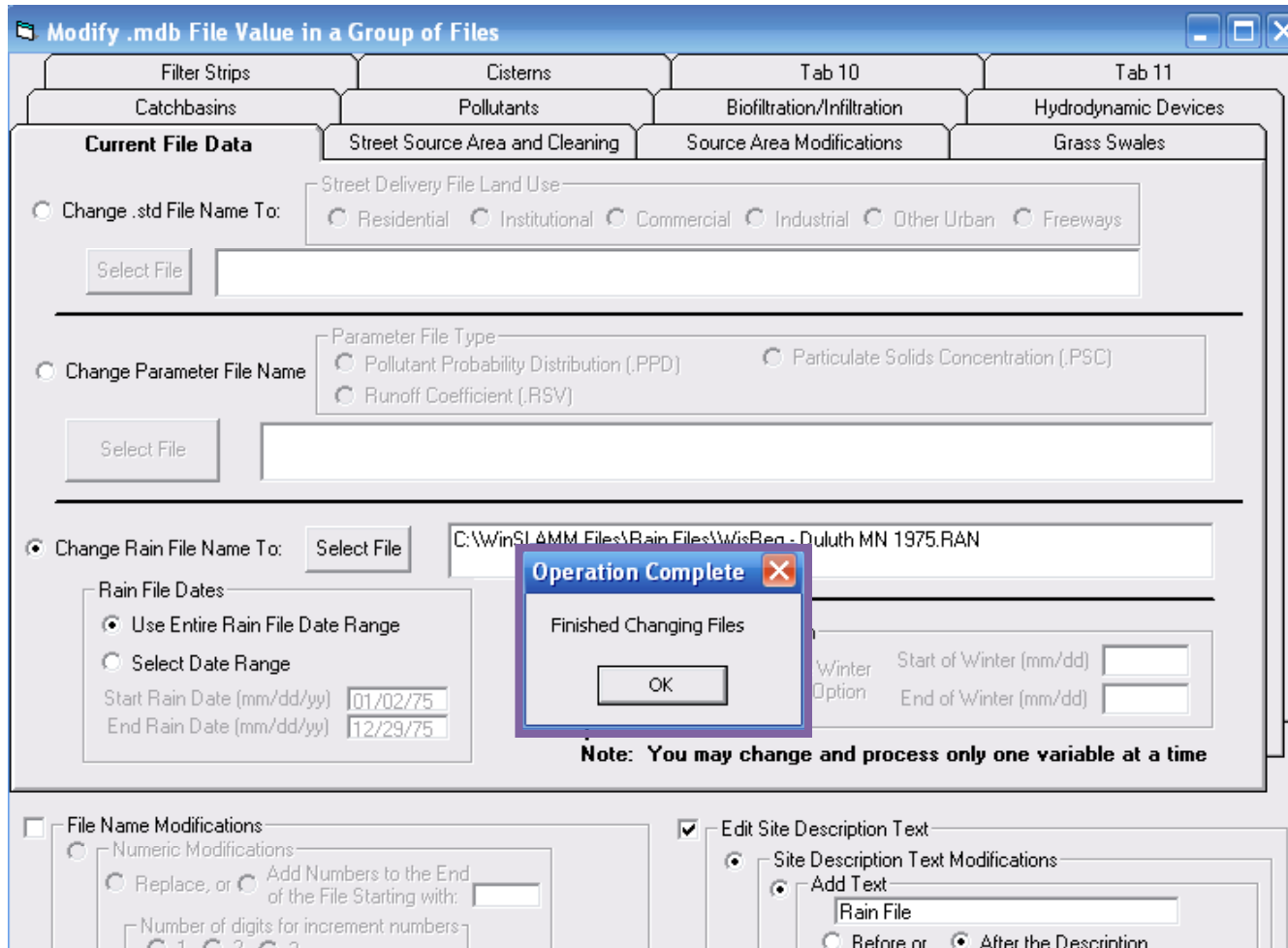
**Note:** Once the modifications have been identified, then select "Process Files".

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  
Rain File    Before or After the File Name  
 Replace Text Within the File Name (Case Sensitive)  
Replace    With

Replace Text Within the Description (Case Sensitive)  
Replace    With

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

# Batch Editor – Modifying a Set of 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.

# Batch Editor – Modifying a Set of Files

Modify .mdb File Value in a Group of Files

Filter Strips    Cisterns    Tab 10    Tab 11

Catchbasins    Pollutants    Biofiltration/Infiltration    Hydrodynamic Devices

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

Change Street Textures in File to:  
 Smooth     Intermediate     Rough     Very Rough

Street Cleaning Frequency

7 Passes per Week     One Pass Every Two Weeks  
 5 Passes per Week     One Pass Every Four Weeks  
 4 Passes per Week     One Pass Every Eight Weeks  
 3 Passes per Week     One Pass Every Twelve Weeks  
 2 Passes per Week     Two Passes per Year (Spring and Fall)  
 One Pass per Week     One Pass Each Spring

Street Cleaner Type  
 Mechanical Broom Sweeper     Vacuum Assisted Sweeper

Add Street Cleaning to File

**Note: You may change and process only one variable at a time unless you are adding street cleaning to a file. If you are adding street cleaning to a file, you must enter a value for all activated variables.**

Parking Densities  
 1. None  
 2. Light  
 3. Medium  
 4. Extensive (short term)  
 5. Extensive (long term)

Are Parking Controls Imposed?  
 Yes     No

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 (Case Sensitive):  
Replace  With

Edit Site Description Text

Site Description Text Modifications:  
 Add Text:  
  
 Before or  After the Description  
 Replace Text Within the Description (Case Sensitive):  
Replace  With

Process File List without Changes       

Depending on the Control Practice, some can be added and some can only be modified. Select the tab with the data to be modified or added. Then, select the radio button next to the desired choice. Add the required data. When finished, select "Process Files".

# Batch Editor – Modifying a Set of Files

Modify .mdb File Value in a Group of Files

Filter Strips   Cisterns   Porous Pavement   Tab 11  
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

Street Length Multiplier

Street Length Multiplier

High Traffic Urban Street Length Multiplier

High Traffic Urban Street Length Multiplier

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

File Name Modifications

Edit Site Description Text

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 (Case Sensitive)

Replace  With

Site Description Text Modifications

Add Text

Before or  After the Description

Replace Text Within the Description (Case Sensitive)

Replace  With

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

The soil type can be changed from one soil type to another.

Please note: if there are several different soil types in a model file, they will all be changed to the selected soil type.



# Batch Editor – Modifying a Set of Files

Modify .mdb File Value in a Group of Files

Filter Strips   Cisterns   Porous Pavement   Tab 11  
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

Street Length Multiplier

Street Length Multiplier  

High Traffic Urban Street Length Multiplier  

**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 (Case Sensitive)

Replace  With

Replace Text Within the Description (Case Sensitive)

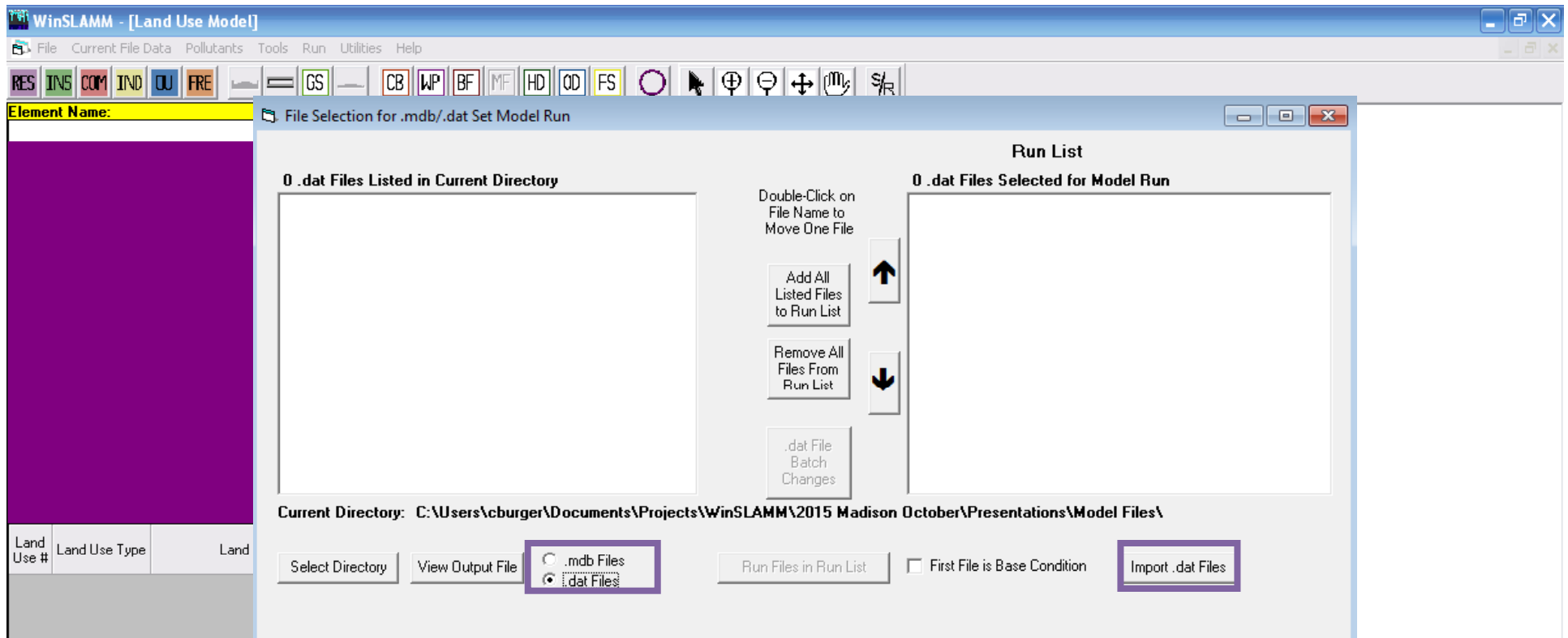
Replace  With

Process File List without Changes     

When finished changing all the variables, select Exit.

# Batch Editor – Importing \*.dat Files

# Batch Editor – Importing \*.dat Files



To update v9.4 files to v10, select the “dat Files” radial button, then navigate to where the v9.4 files are saved. When the file names appear in the Current Directory, select “Add all Files to Run List”.

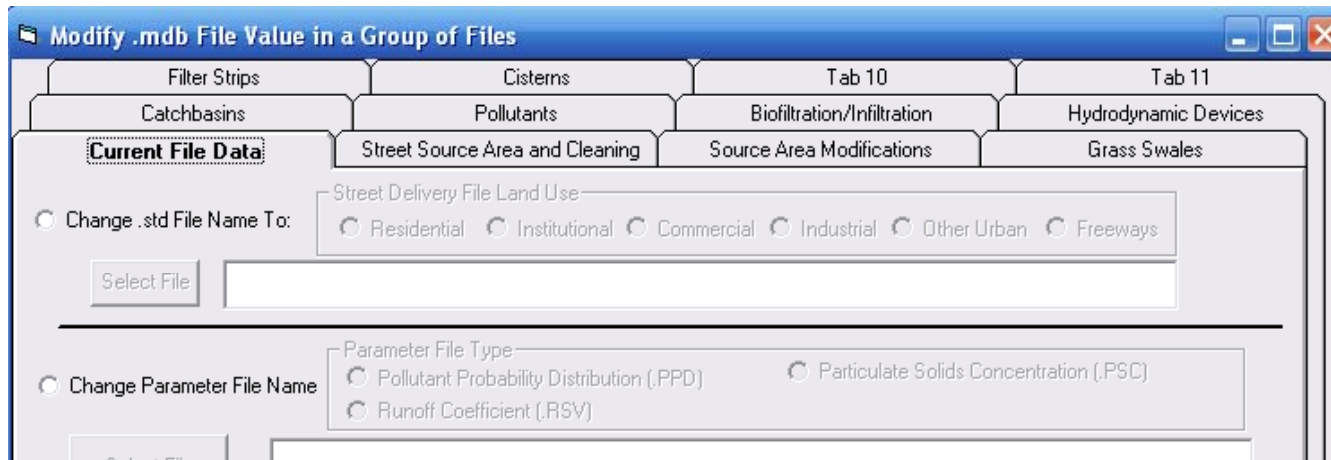
Then select “Import dat Files”.

This will create v10 files in the same directory the v9.4 files were saved in.

Note: Save a copy of the original v 9.4 files before updating to v10.

File versions prior to v 9.4 need to be updated by v 9.4 prior to updating.

# Batch Editor – Importing \*.dat Files



After files are Imported, select “Batch File Changes”. Once inside the Batch File Change Editor, use the Current File Data tab to update all the files to the v10 parameter files.

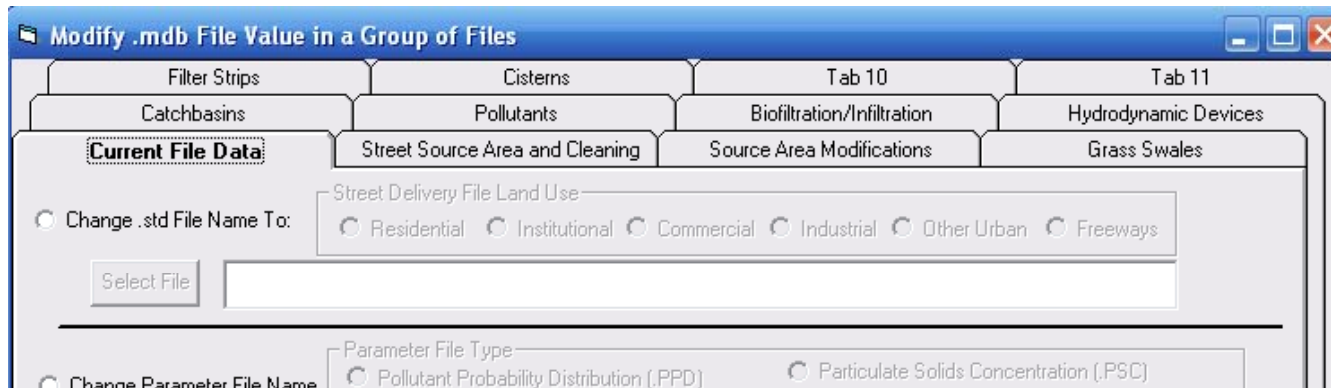
Files that need to be updated include:

- Runoff Coefficient file - \*.rsv
- Particulate Solids Concentration file - \*. pscx
- Pollutant Probability file - \*.ppdx
- Particle Size Distribution File

These files need to be updated one at a time through the Batch Editor



# Batch Editor – Importing \*.dat Files

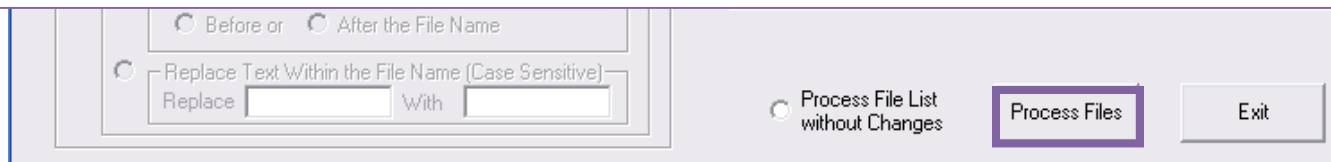


Control Practices that cannot be imported include:

- Land Use Biofilters
- Land Use Grass Swales
- Wet Detention Ponds Upstream of Biofilters

The Land Use and Source Area information will import, however the control practice data will need to be re-entered.

See the Help File (Alt F1) for more information.

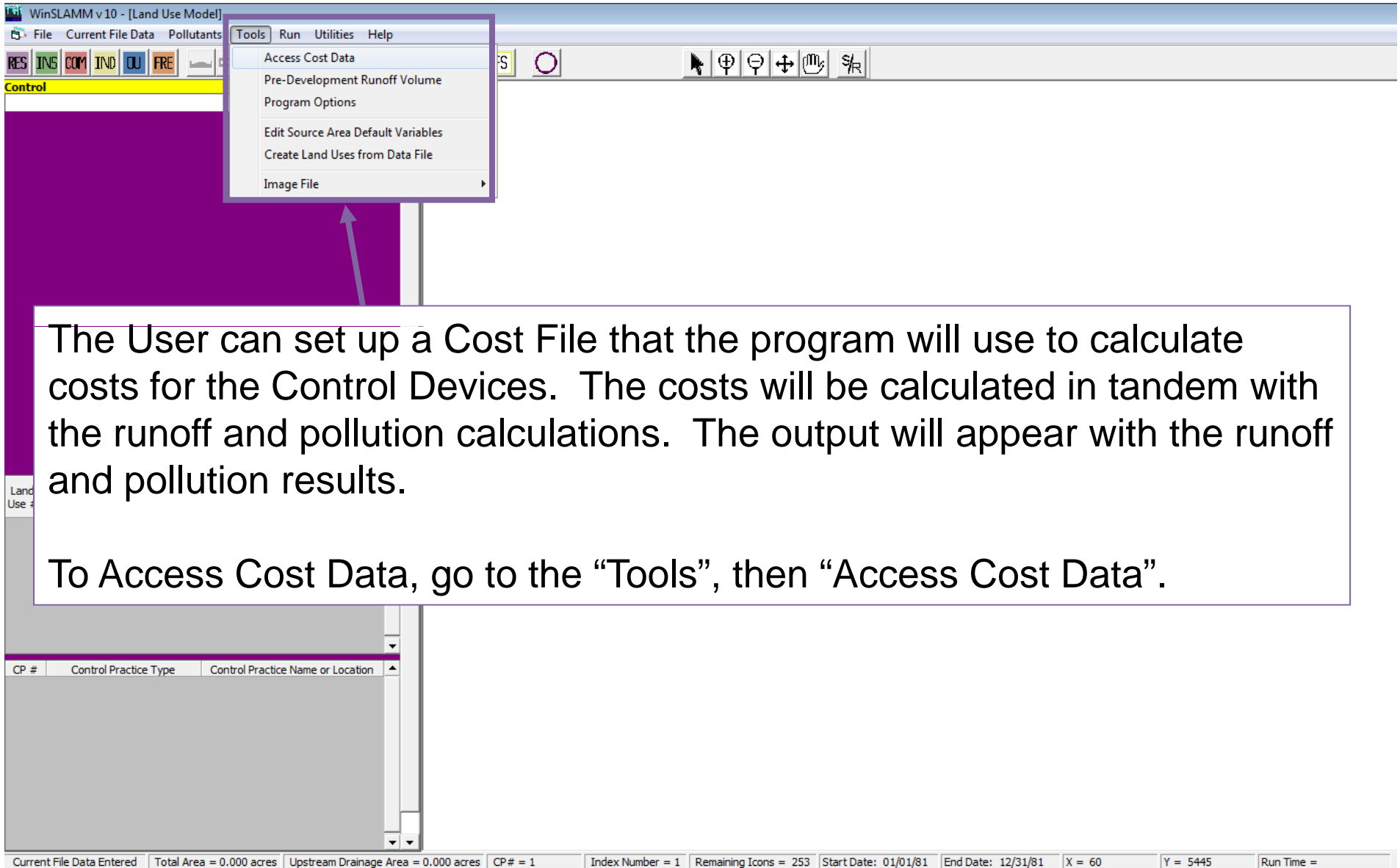


# Control Practice Cost Analysis

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.

# Control Practice Cost Analysis



The screenshot shows the WinSLAMM v10 software interface. The 'Tools' menu is open, and 'Access Cost Data' is highlighted. The interface includes a menu bar (File, Current File Data, Pollutants, Tools, Run, Utilities, Help), a toolbar with various icons, and a status bar at the bottom with fields for 'Current File Data Entered', 'Total Area = 0.000 acres', 'Upstream Drainage Area = 0.000 acres', 'CP# = 1', 'Index Number = 1', 'Remaining Icons = 253', 'Start Date: 01/01/81', 'End Date: 12/31/81', 'X = 60', 'Y = 5445', and 'Run Time ='. A table with columns 'CP #', 'Control Practice Type', and 'Control Practice Name or Location' is visible at the bottom left.

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”.

# Control Practice Cost Analysis

**Control Practice Cost Data**

Summary Data

Select File

C:\WINSLAMM FILES\COST TEMPLATE.CSV

File Description: Cost File Template for Pre-Determined Costs - National Cost Index

Save File

Interest Rate on Debt Capital 5

Project Life (Years) 20

**Open Cost Data File**

Look in: WinSLAMM Files

Example Files

Rain Files

Birmingham Cost Data.csv

Cost Data 1 National CI.csv

Cost Template.csv

File name: Cost Template.csv

Files of type: Critical Particle Size files (\*.csv)

Open

Cancel

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.



# Control Practice Cost Analysis

**Control Practice Cost Data**

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

**Summary Data**

**Select File**  
 C:\PROGRAM FILES\WINSLAMM\COST TEMPLATE.CSV

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

     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  
 City Cost Index Multiplier

Current Year Cost Index Value  
  User Defined Cost Index Multiplier

Baseline National Cost Index       Current City Cost Index

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

# Control Practice Cost Analysis

On the Summary Data tab, review 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 displays the 'Summary Data' tab of the software. At the top, there are tabs for various control practices: X8 - Upflow Filter, 9 - Grass Swales, X4 - Hydrodynamic Device, 5 - Street Cleaning, 1 - Detention Pond, X New Device, 3 - Porous Pavement, and 8 - Basin Cleaning. A callout box labeled 'Land Use Costs' points to a table titled '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

Below the table, a callout box labeled 'Interest Rate and Project Life' points to two input fields: 'Interest Rate on Debt Capital' set to 5% and 'Project Life (Years)' set to 20. Another callout box labeled 'Cost Index Selection' points to a section with two radio buttons: 'Use User Defined Cost Index Values' (unselected) and 'Use City Cost Index Values' (selected). Under the selected option, there are several input fields: 'Baseline Cost Index Value', 'Current Year Cost Index Value', 'User Defined Cost Index Multiplier', 'City Cost Index' (a dropdown menu showing 'Birmingham, AL'), 'City Cost Index Multiplier' (0.7), 'Baseline National Cost Index' (7314.74), and 'Current City Cost Index' (5135.56). At the bottom right, there is an 'Exit' button.

# Control Practice Cost Analysis

**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

Cost File Template for Pre-Determined Costs - Birmingham

%

**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 User Defined Cost Index Values     
  Use City Cost Index Values

Baseline Cost Index Value     
 City Cost Index

Current Year Cost Index Value     
  City Cost Index Multiplier

User Defined Cost Index Multiplier     
 Baseline National Cost Index      
 Current City Cost Index

**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.

# Control Practice Cost Analysis

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	340.0	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):   
 Sediment Removal Cost (\$/CY of sediment):   
 Annual Routine Maintenance Cost (\$/1000 cf):

Applicable Cost Range

Low Capital Cost  
 Medium Capital Cost  
 High Capital Cost

Land Cost Site Area Multiplier:

Exit

# Control Practice Cost Analysis

## Wet Detention Pre-Determined Costs

Pre-Determined  
Cost Table

Cost Data

Upflow Filter      9 - Grass Swales

Dynamic 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	340.0	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  
SY : Square Yards  
CY : Cubic Yards  
EA : Each

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

# Control Practice Cost Analysis

## 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	2005 Costs
30.0	19.7	40.9
40.0	21.2	44.0
50.0	22.7	47.0
60.0	24.2	50.1
70.0	25.7	53.2
80.0	27.2	56.3
90.0	28.7	59.4
100.0	30.2	62.5
110.0	31.7	65.6
120.0	33.2	68.7
130.0	34.7	71.8
140.0	36.2	74.9
150.0	37.7	78.0
160.0	39.2	81.1
170.0	40.7	84.2
180.0	42.2	87.3
190.0	43.7	90.4
200.0	45.2	93.5
210.0	46.7	96.6
220.0	48.2	99.7
230.0	49.7	102.8
240.0	51.2	105.9
250.0	52.7	109.0
260.0	54.2	112.1
270.0	55.7	115.2
280.0	57.2	118.3
290.0	58.7	121.4
300.0	60.2	124.5

**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**

**Maintenance Cost Data**

- Sediment Removal Costs
- Routine Maintenance Cost

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

Sediment Removal Frequency (yrs):   
 Sediment Removal Cost (\$/CY of sediment):   
 Annual Routine Maintenance Cost (\$/1000 cf):

Applicable Cost Range  
 Low Capital Cost  
 Medium Capital Cost

**Land Area Multiplier**

Land Cost Site Area Multiplier:

Exit

# Control Practice 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 \*.MDB files using the Batch Editor

# Control Practice Cost Analysis

Current File Data

**SLAMM Data File Name:**  
C:\Users\cburger\Documents\Projects\WinSLAMM\2015 Madison October\Presentations\Model Files\1a - No Controls Model Files.mdb

Site Descript.: No Management Condition

**Edit** Seed: -42

**Edit** Rain File: C:\WinSLAMM Files\Rain Files\WisReg - Madison Five Year Rainfall.ran

**Edit** Start Date: 01/02/80  Winter Season Range  
**Edit** End Date: 01/01/85 Start of Winter (mm/dd) 12/02 End of Winter (mm/dd) 03/12

**Edit** Pollutant Probability Distribution File: C:\WinSLAMM Files\W1\_GEO03.ppx

**Edit** Runoff Coefficient File: C:\WinSLAMM Files\W1\_SL06 Dec06.rsvx

**Edit** Particulate Solids Concentration File: C:\WinSLAMM Files\w10.1 W1\_AVG01.pscx

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

**Edit** Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv

Use Cost Estimation Option **Select Cost Data File** C:\WinSLAMM Files\Cost Template.csv

Replace Default Values with these Current File Data Values    Use Default Values    Replace all Source Area Particle Size Distribution Files with the Source Area PSD and Peak to Average Flow Ratio File Listed Above    **Cancel**    **Continue**

Enter the Cost File Name in the Current File Data form



# Control Practice Cost Analysis

Land Uses	Junctions	Control Practices	Outfall	Output Summary		
File Name: C:\WinSLAMM\Users Guide\10.0\Reference Guide.mdb						
<b>Outfall Output Summary</b>						
	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	338418		0.38	166.3	3514	
Outfall Total with Controls	157390	53.49 %	0.17	102.6	1008	71.31 %
Current File Output: Annualized Total After Outfall Controls		159134	Years in Model Run:	0.99	1019	
Print Output Summary to Text File		Total Area Modeled (ac)		8.440		
<b>Total Control Practice Costs</b>			<b>Receiving Water Impacts Due To Stormwater Runoff</b> (CWP Impervious Cover Model)			
Capital Cost	\$ 486065			Calculated Rv	Approximate Urban Stream Classification	
Land Cost	\$ 19399			Without Controls	0.38	Poor
Annual Maintenance Cost	\$ 28991			With Controls	0.17	Fair
Present Value of All Costs	\$ 866768					
Annualized Value of All Costs	\$ 69551					
			Perform Outfall Flow Duration Curve Calculations			

This shows the Cost Output on the Output Summary screen for an individual model run.

# Control Practice Cost Analysis

**File Selection for .mdb/.dat Set Model Run**

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

Double-Click on File Name to Move One File

Add All Listed Files to Run List ↑

Remove All Files From Run List ↓

.mdb File Batch

**Run List**

**5 .mdb Files Selected for Model Run**

LID Example No Management Condition.mdb  
LID Example with Practices.mdb  
No Management Condition.mdb  
Retrofit Example No Management Condition.mdb  
Retrofit Example With Management Condition.mdb

Current Directory: [Select Directory]

Include Cost Estimates    Select Cost Data File    C:\WinSLAMM Files\Cost Template.csv    Exit

The User can also enter the Cost File by checking the box and pressing the 'Select Cost Data File' Window in the Batch Editor.

# Control Practice Cost Analysis

The output with Cost Data can be viewed through the program, or the \*.csv file can be loaded into a program such as Microsoft Excel.

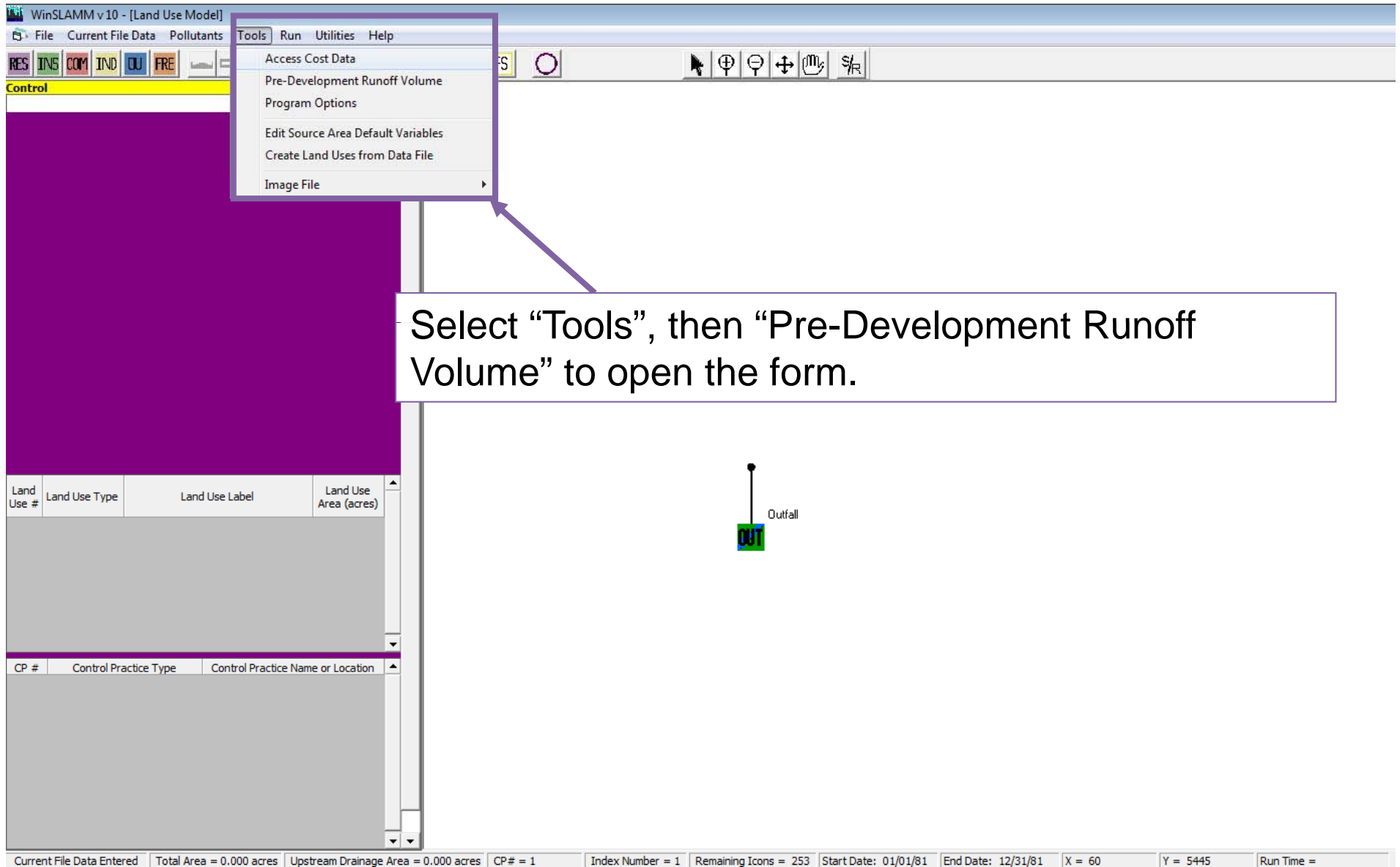
Cost Output for each model file →

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

# Pre-Development Runoff Quantities

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



The screenshot shows the WinSLAMM v10 software interface. The 'Tools' menu is open, and 'Pre-Development Runoff Volume' is selected. A callout box points to this menu item with the instruction: 'Select "Tools", then "Pre-Development Runoff Volume" to open the form.' The interface includes a menu bar (File, Current File Data, Pollutants, Tools, Run, Utilities, Help), a toolbar, a 'Control' panel, a map area with an 'Outfall' icon, and a status bar at the bottom.

Current File Data Entered | Total Area = 0.000 acres | Upstream Drainage Area = 0.000 acres | CP# = 1 | Index Number = 1 | Remaining Icons = 253 | Start Date: 01/01/81 | End Date: 12/31/81 | X = 60 | Y = 5445 | Run Time =

# Pre-Development Runoff Quantities

Enter a Description, the Area in acres, and CN value for each of the land use or source area type that you want to calculate the pre-development runoff for.

Description	Area (ac)	CN
1 Row Crop	1.00	68
2	0.00	0
3	0.00	0
4	0.00	0
5	0.00	0
6	0.00	0
<b>Total Area (ac)</b>	<b>1.00</b>	
<b>Composite CN</b>		<b>68</b>

Total Model Area (ac): 1.00

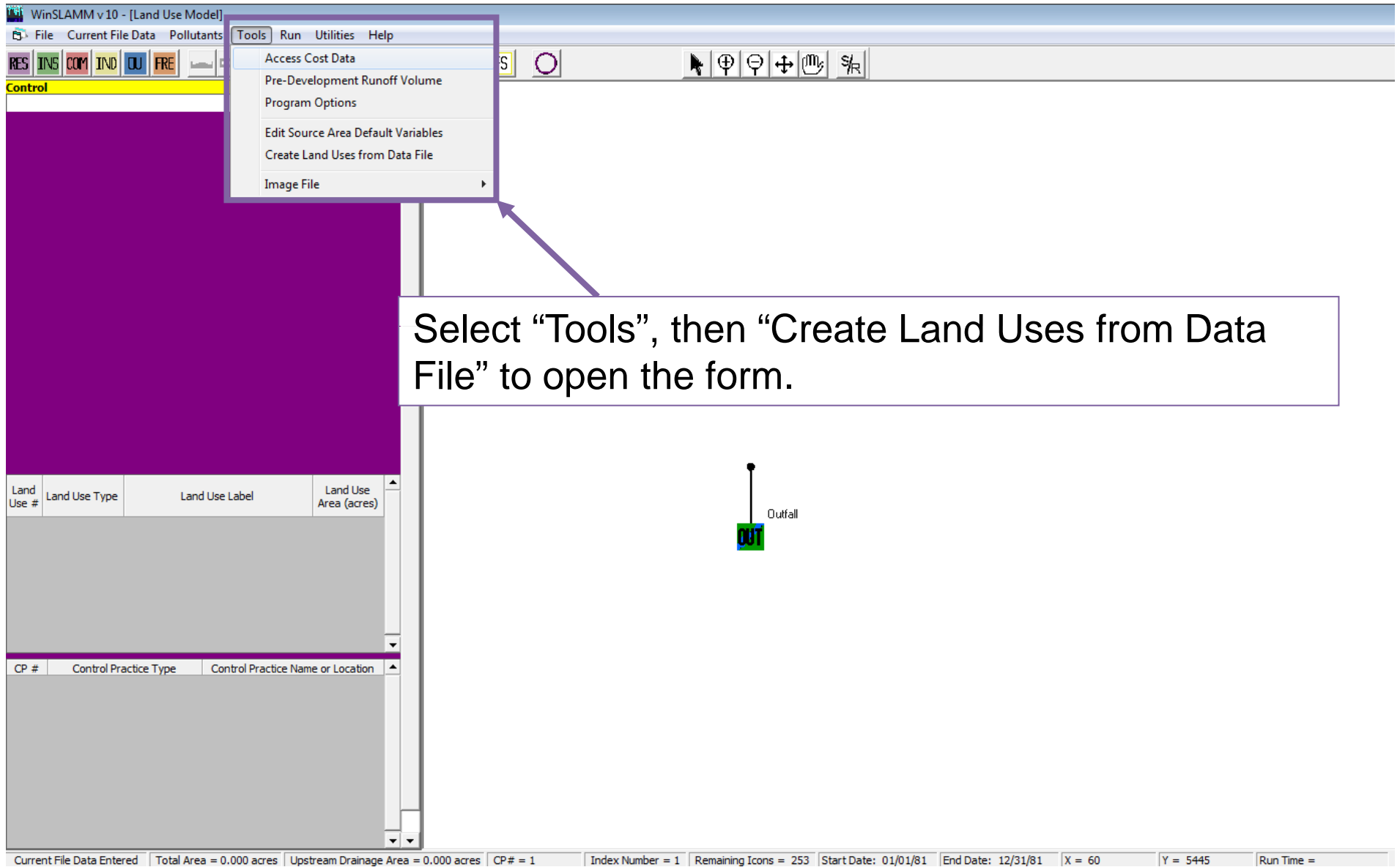
Buttons: Clear, Cancel, Continue

Note: 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.

## Creating a Model File from a Data File

The program can create a model file from a Data File. A Data File will generally be created from GIS data collected for larger watersheds or municipal-wide analysis. The Data File accesses the Standard Land Uses to create the model file.

# Create Model File from a Data File



The screenshot shows the WinSLAMM v10 software interface. The 'Tools' menu is open, and the option 'Create Land Uses from Data File' is highlighted. A purple arrow points from this menu item to a text box. The interface includes a menu bar (File, Current File Data, Pollutants, Tools, Run, Utilities, Help), a toolbar with various icons, and a main workspace area. The workspace contains a purple rectangular area and a small diagram labeled 'Outfall' with a green box containing 'OUT'. The status bar at the bottom displays various parameters: Current File Data Entered, Total Area = 0.000 acres, Upstream Drainage Area = 0.000 acres, CP# = 1, Index Number = 1, Remaining Icons = 253, Start Date: 01/01/81, End Date: 12/31/81, X = 60, Y = 5445, and Run Time =.

Select "Tools", then "Create Land Uses from Data File" to open the form.



# Create Model File from a Data File

The screenshot shows the WinSLAMM v10 software interface. A file selection dialog box is open, titled "Select a Land Use Data File". The dialog box shows the file "Example Data File.csv" selected. A text box overlay says "Select the Data File and select 'Open'".

The background interface shows a table with the following data:

Land Use #	Land Use Type
1	Commercial

At the bottom of the software window, the status bar displays the following information:

Current File Data Entered	Total Area = 7.290 acres	Upstream Drainage Area = 0.000 acres	Icon Number	Index Number =	Icons Left =	Start Date: 01/06/91	End Date: 12/30/91
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# Create Model File from a Data File

The screenshot shows the WinSLAMM software interface. The main window displays a data table on the left and a network diagram on the right. The status bar at the bottom provides summary information.

Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
<b>Roofs</b>					
1	Roofs 1	1.500	Entered	--	--
2	Roofs 2				
3	Roofs 3				
4	Roofs 4				
5	Roofs 5				
6	Roofs 6				
7	Roofs 7				
8	Roofs 8				
9	Roofs 9				
10	Roofs 10				
11	Roofs 11				
12	Roofs 12				
<b>Parking</b>					
13	Paved Parking 1	1.065	Entered	--	--
14	Asphalt Parking 1				

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Residential	Res 1	45.000
2	Residential	Res 2	30.000
3	Residential	Res 3	40.000
4	Commercial	Com A	125.000
5	Commercial	Com B	100.000
6	Industrial	Indus Park	30.000
7	Industrial	Indus Site	85.000
8	Institutional	East High	10.000

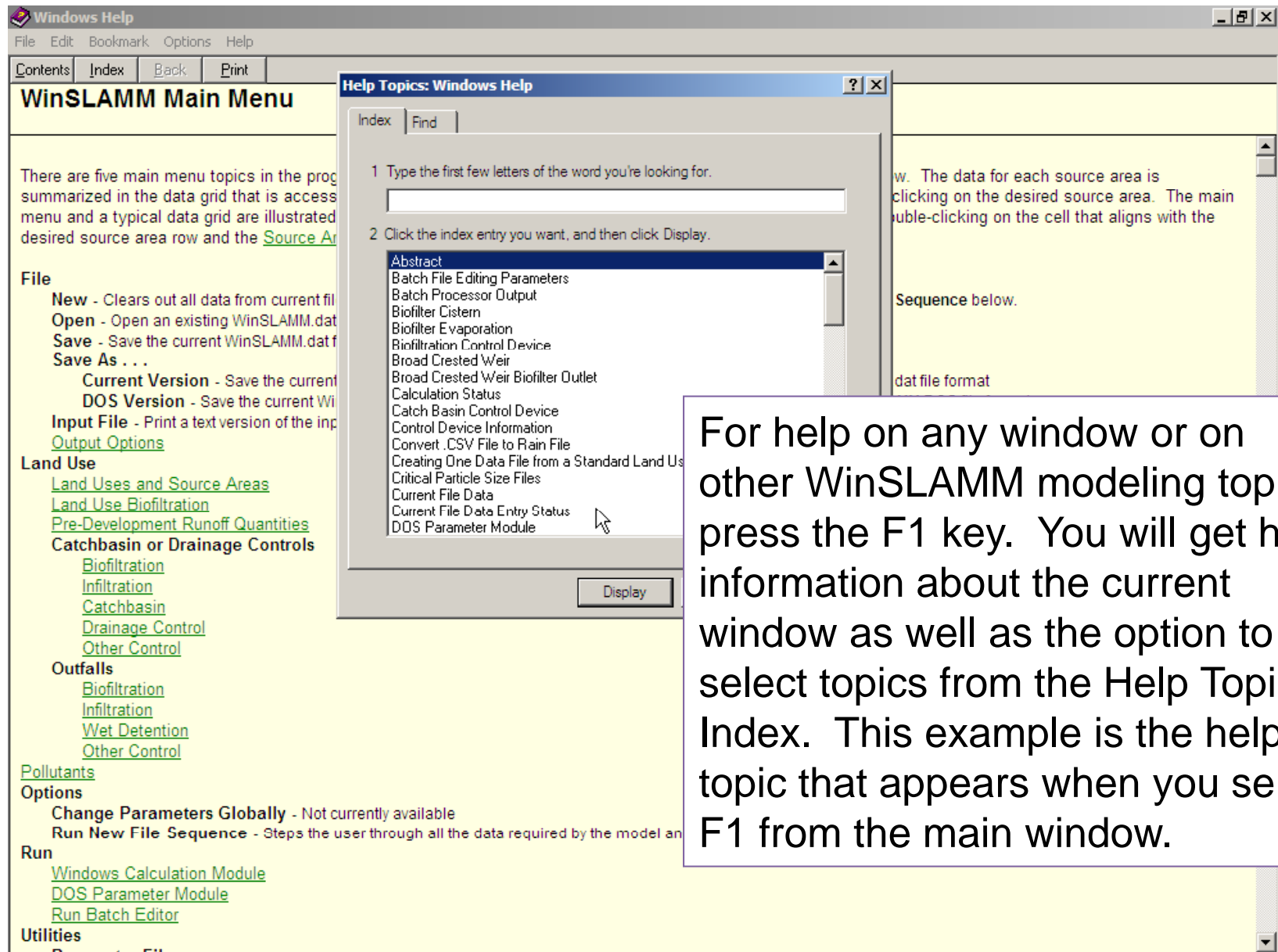
CP #	Control Practice Type	Control Practice Name or Location

The network diagram on the right shows a flow from various source areas (RES, COM, IND, FRE) to an outfall point labeled 'OUT'. The status bar at the bottom indicates: Check Current File Status | Total Area = 465.000 acres | Upstream Drainage Area = | Icon Number | Index Number = | Icons Left = | Start Date: 01/01/

The Program will create the Land Use icons and populate them with the pro-rate Standard Land Use area for each soil type. The user must then connect the network and enter the control practice data. An ArcGIS extension is under development that will further automate this process.

For Additional Information  
See . . .

# The Context-Sensitive Help in the Program



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



# Questions?

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