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

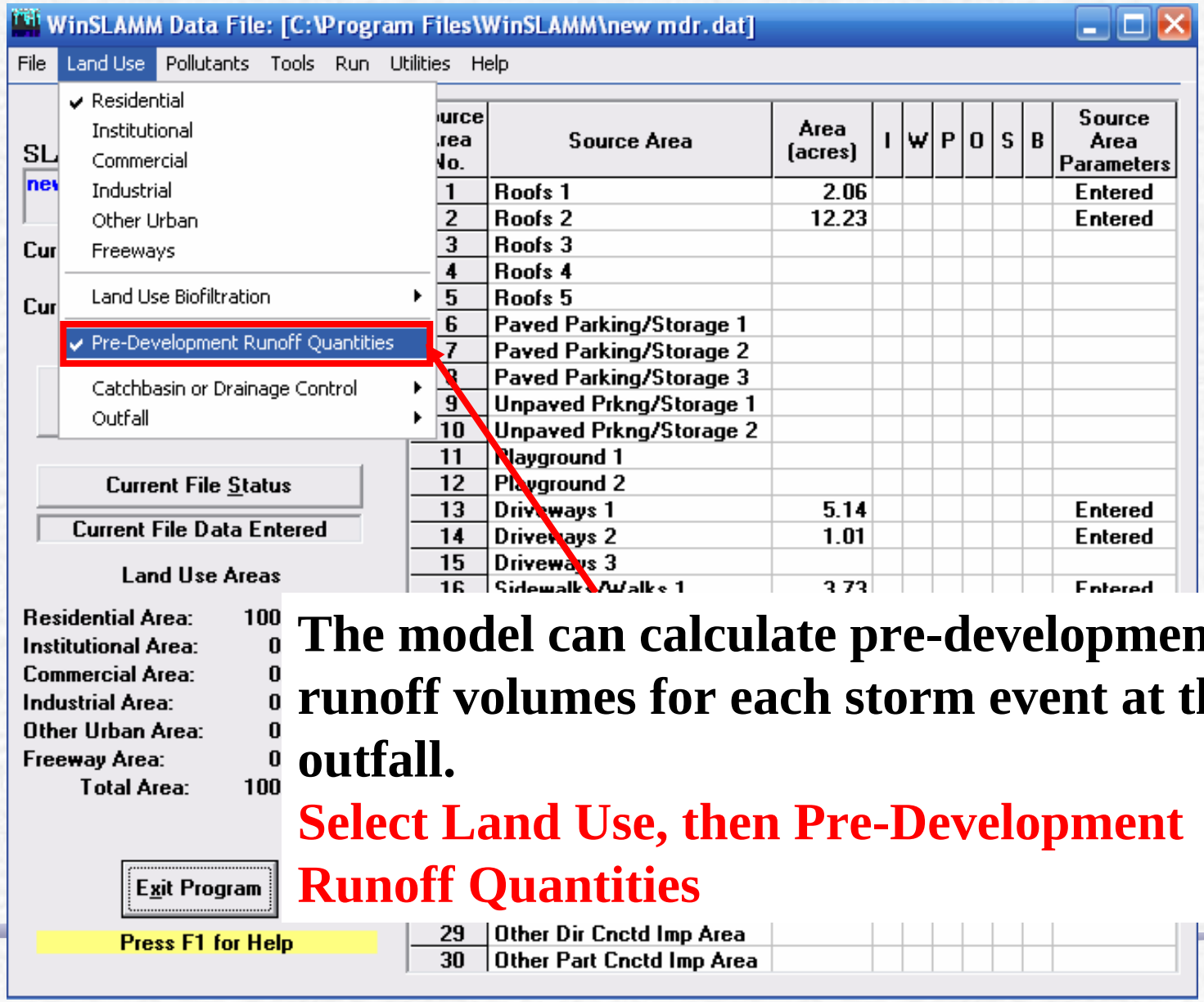
This section of the User's Guide explains various Advanced Features of the program. Features include:

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 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.

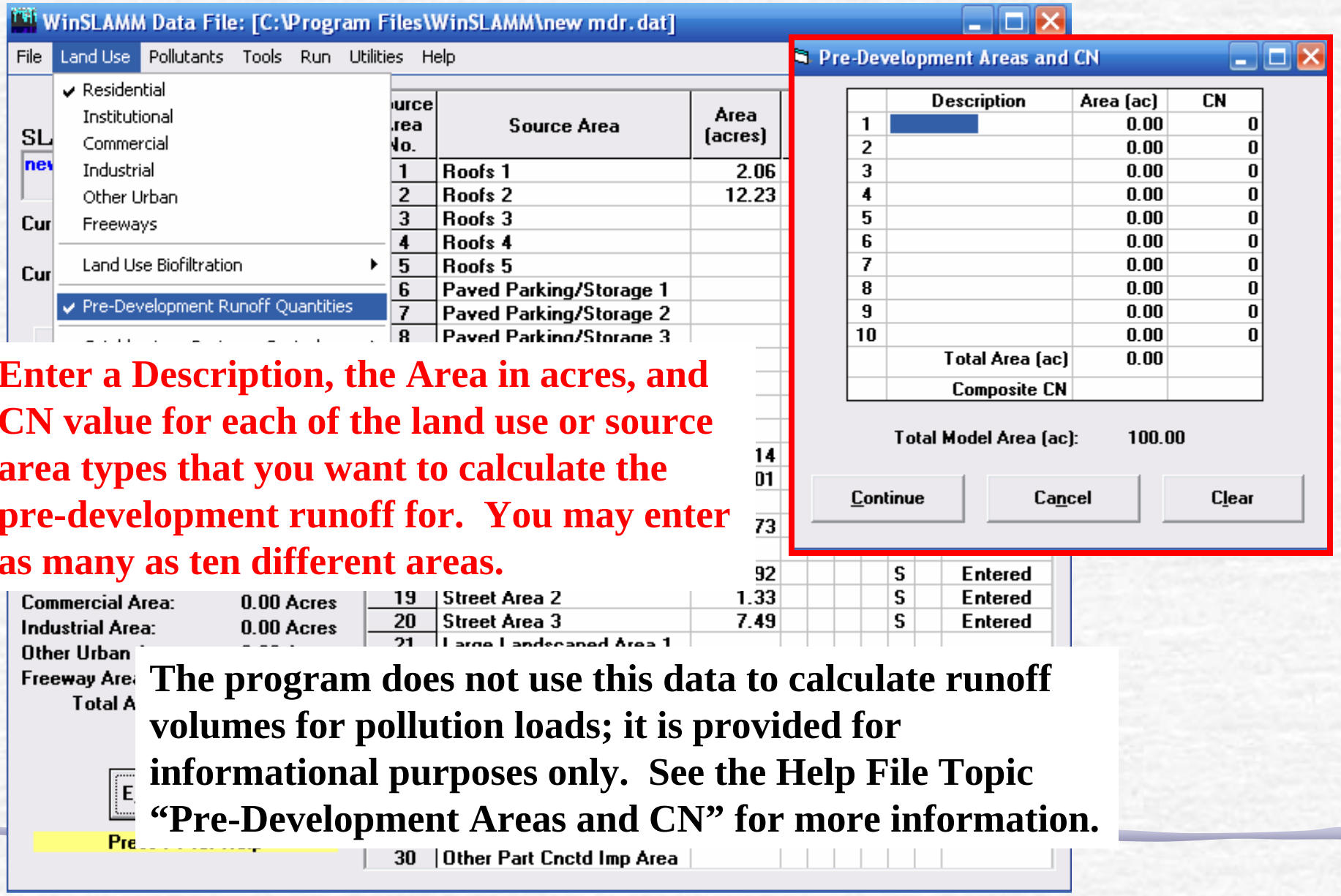
Pre-Development Runoff Quantities



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



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.

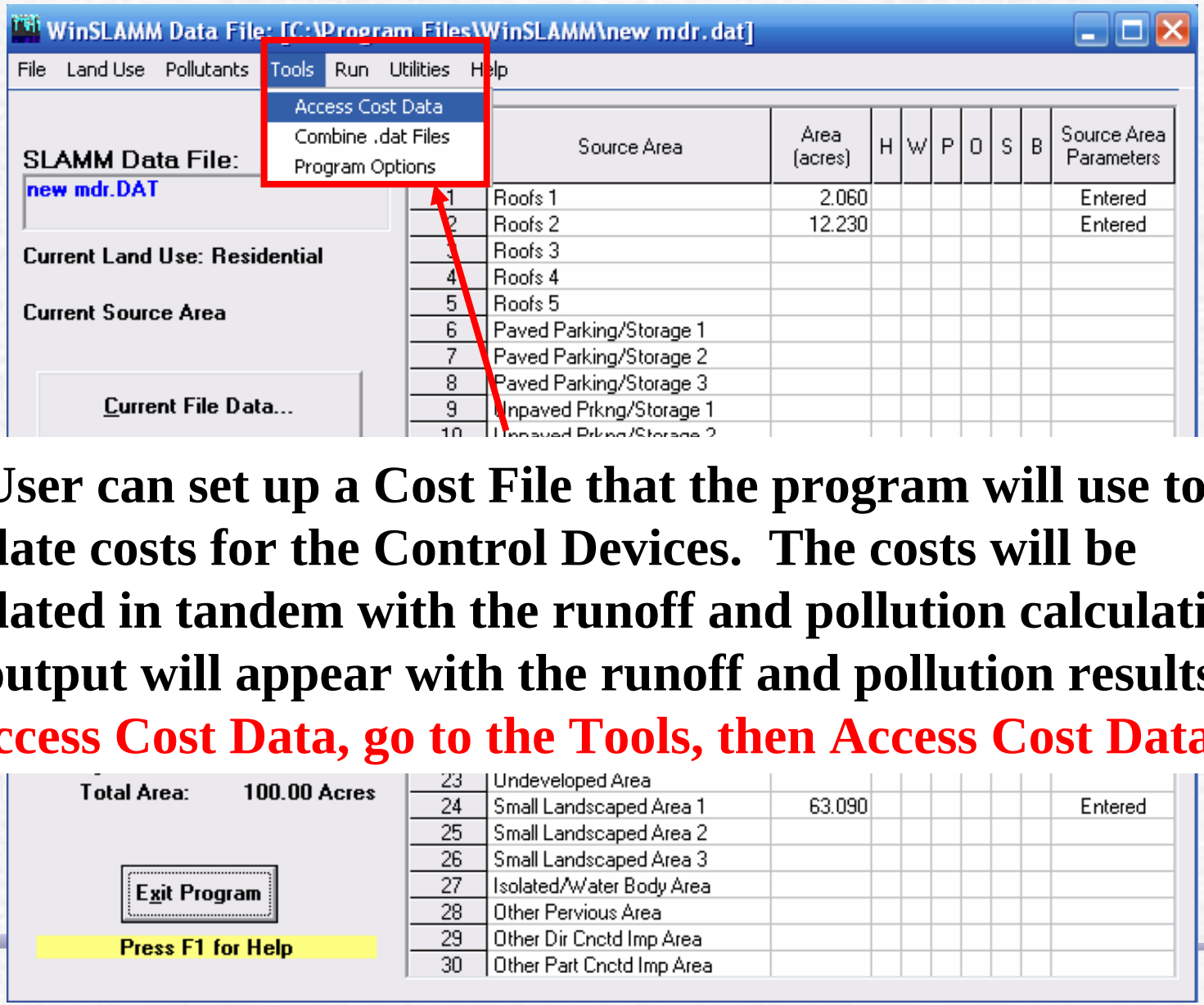
The program does not use this data to calculate runoff volumes for pollution loads; it is provided for informational purposes only. See the Help File Topic "Pre-Development Areas and CN" for more information.

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.

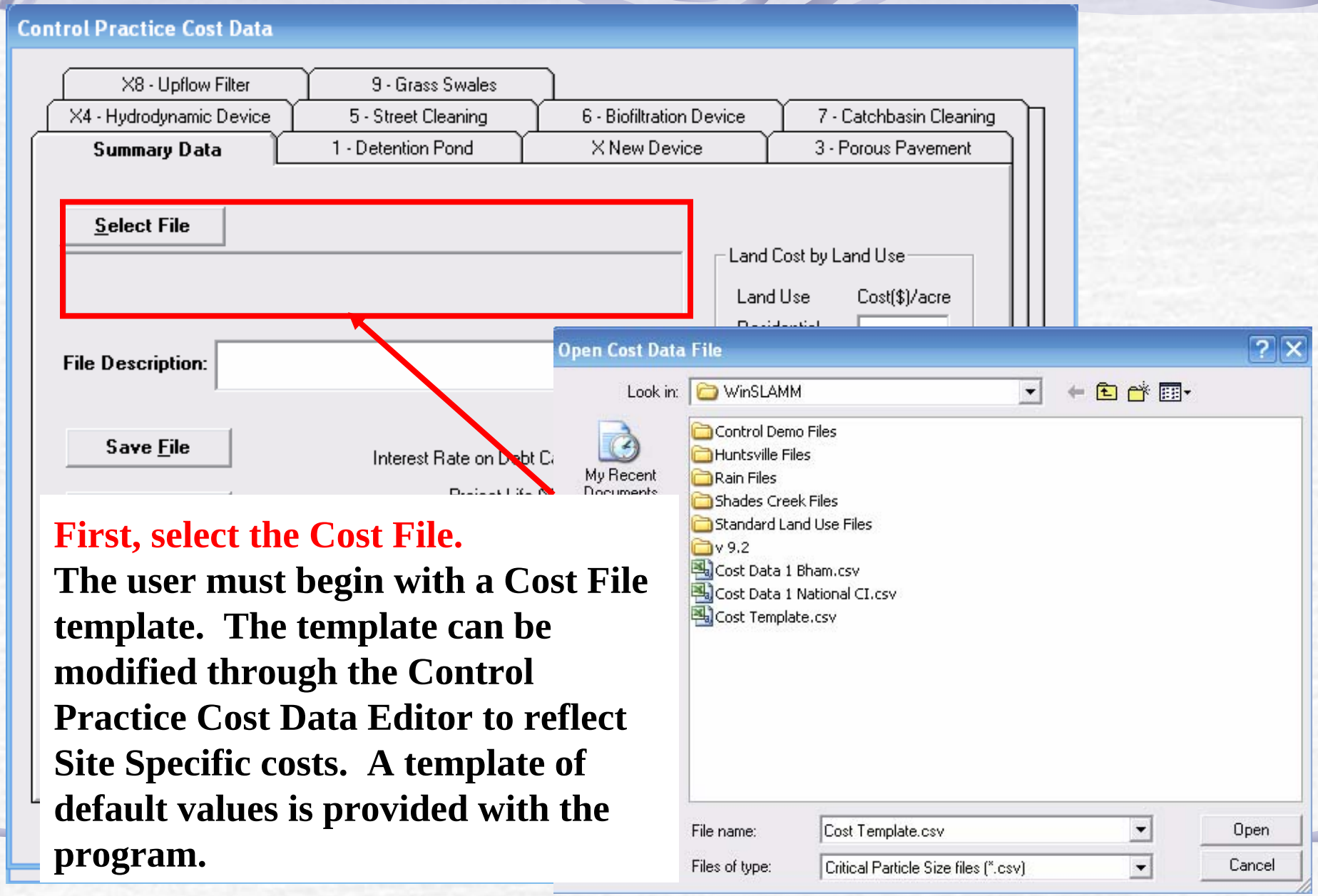
Access Cost Data



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.

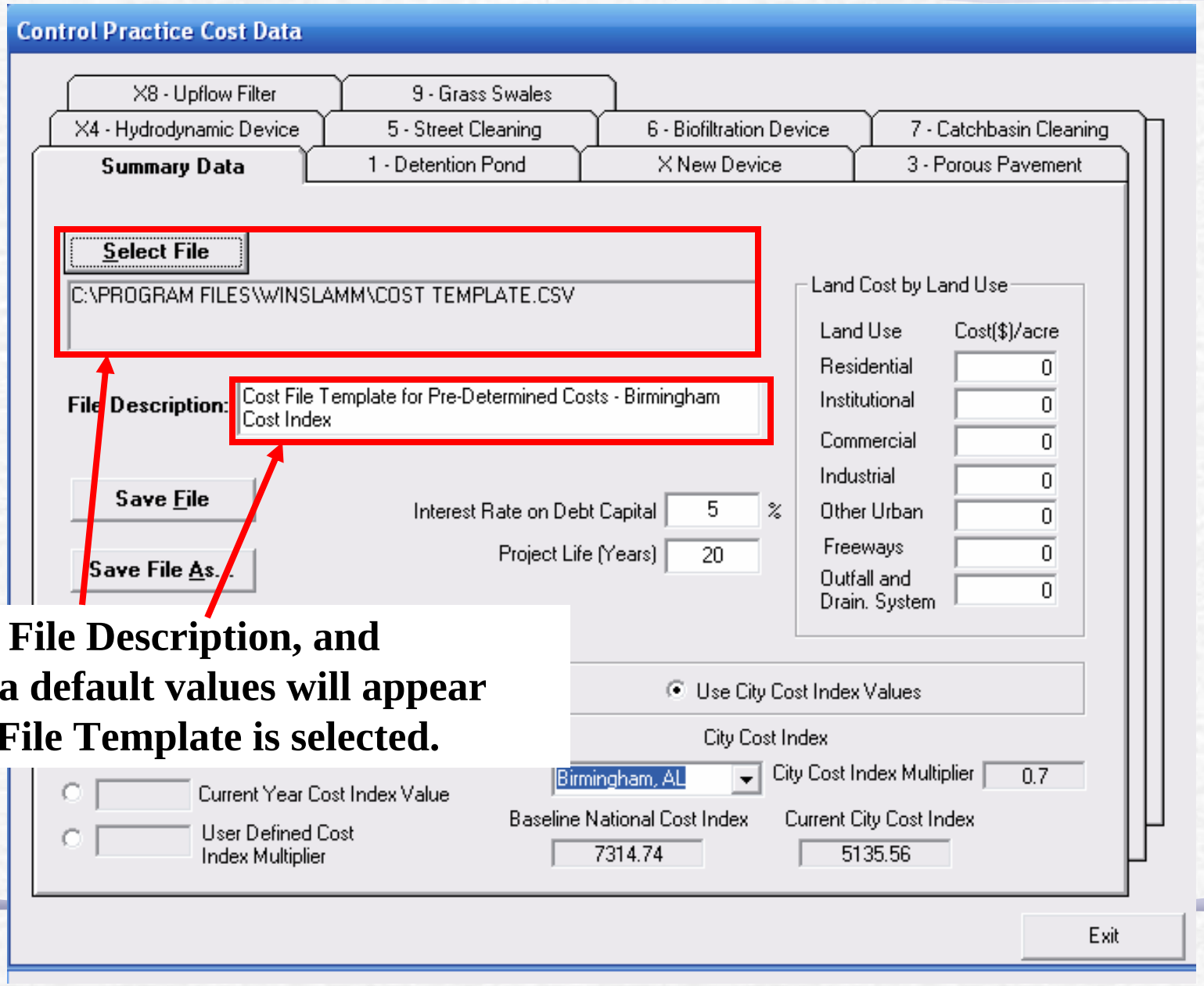
Access Cost Data



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.

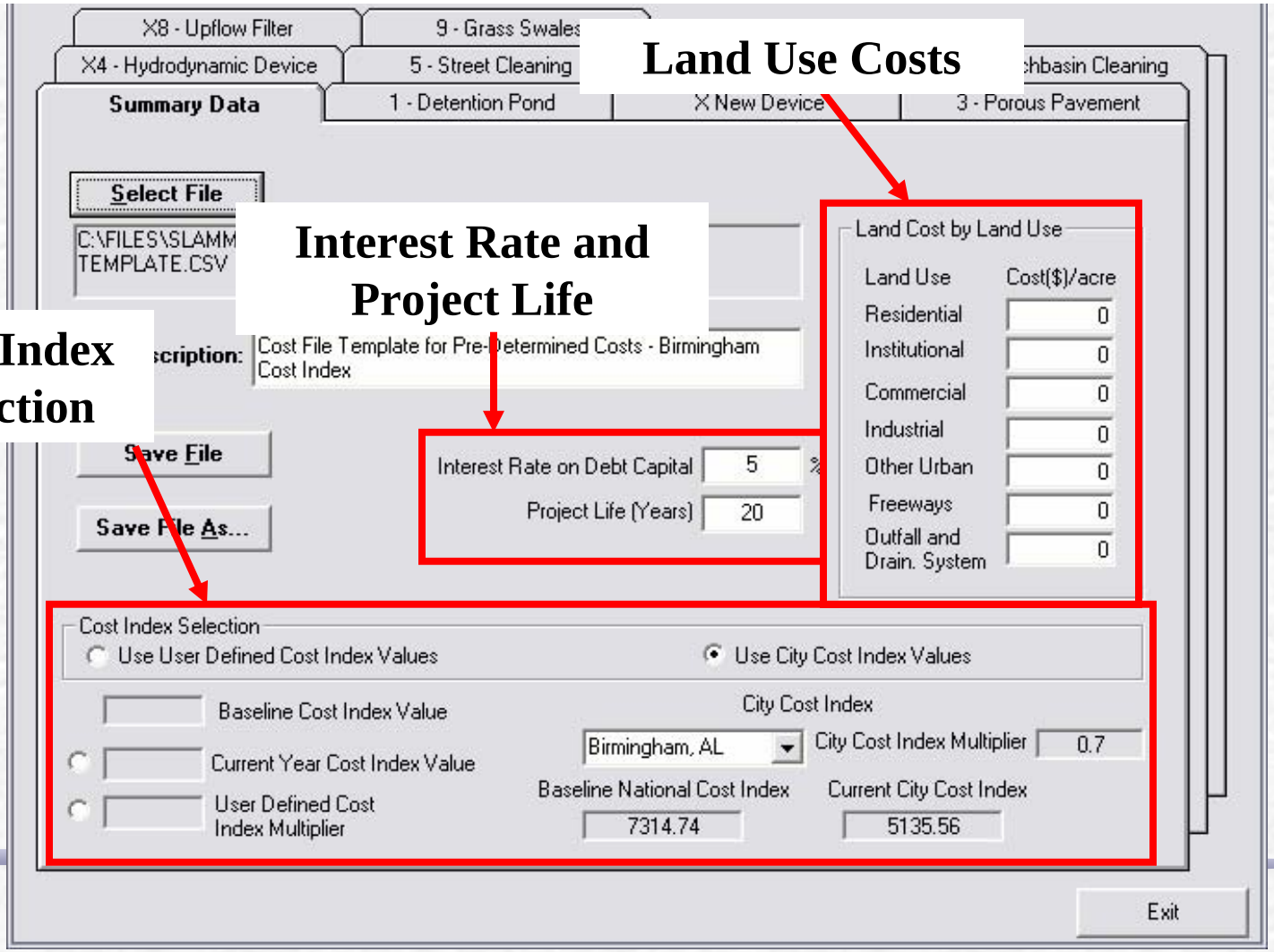
Access Cost Data



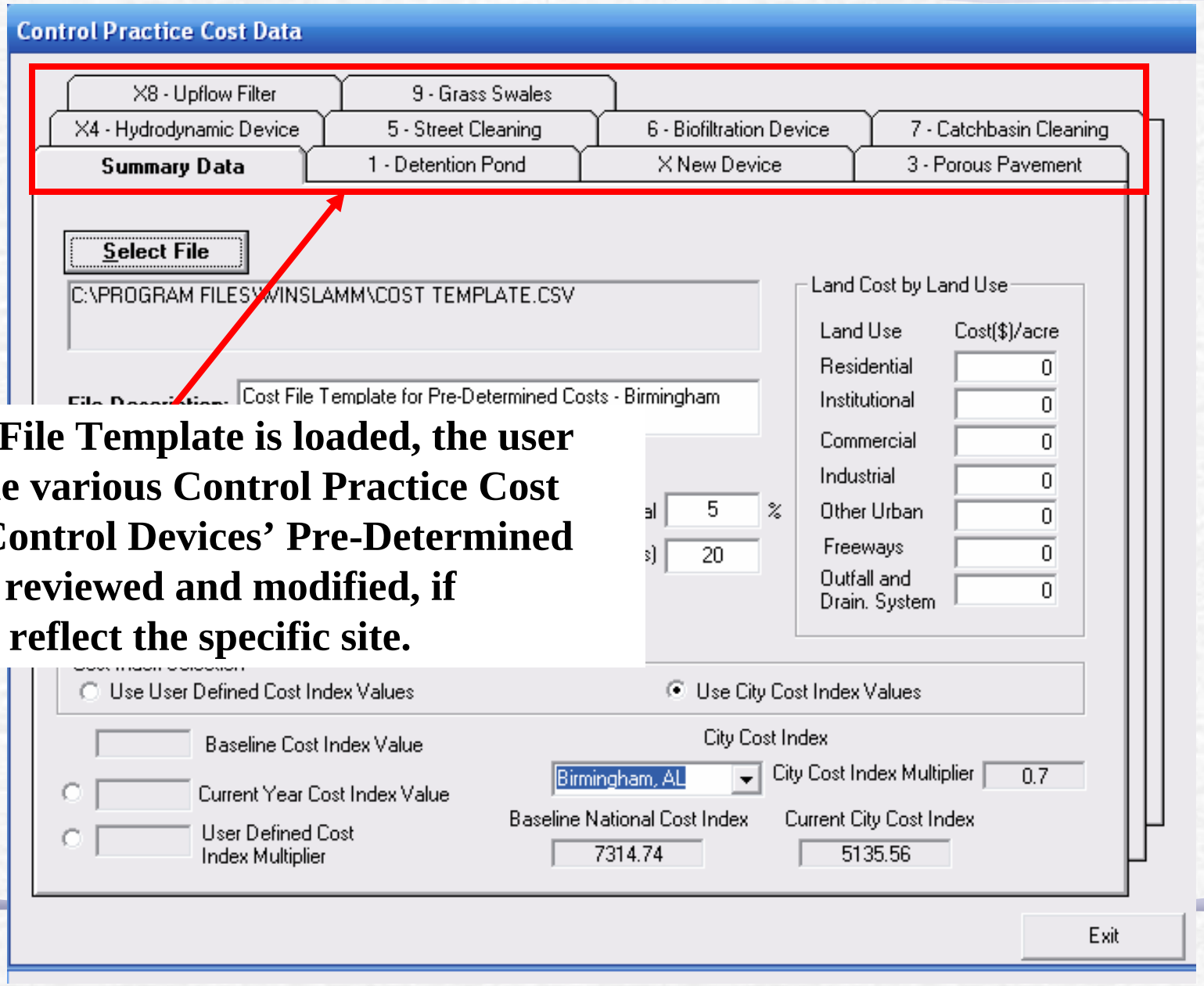
The File Path, File Description, and Summary Data default values will appear once the Cost File Template is selected.

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.



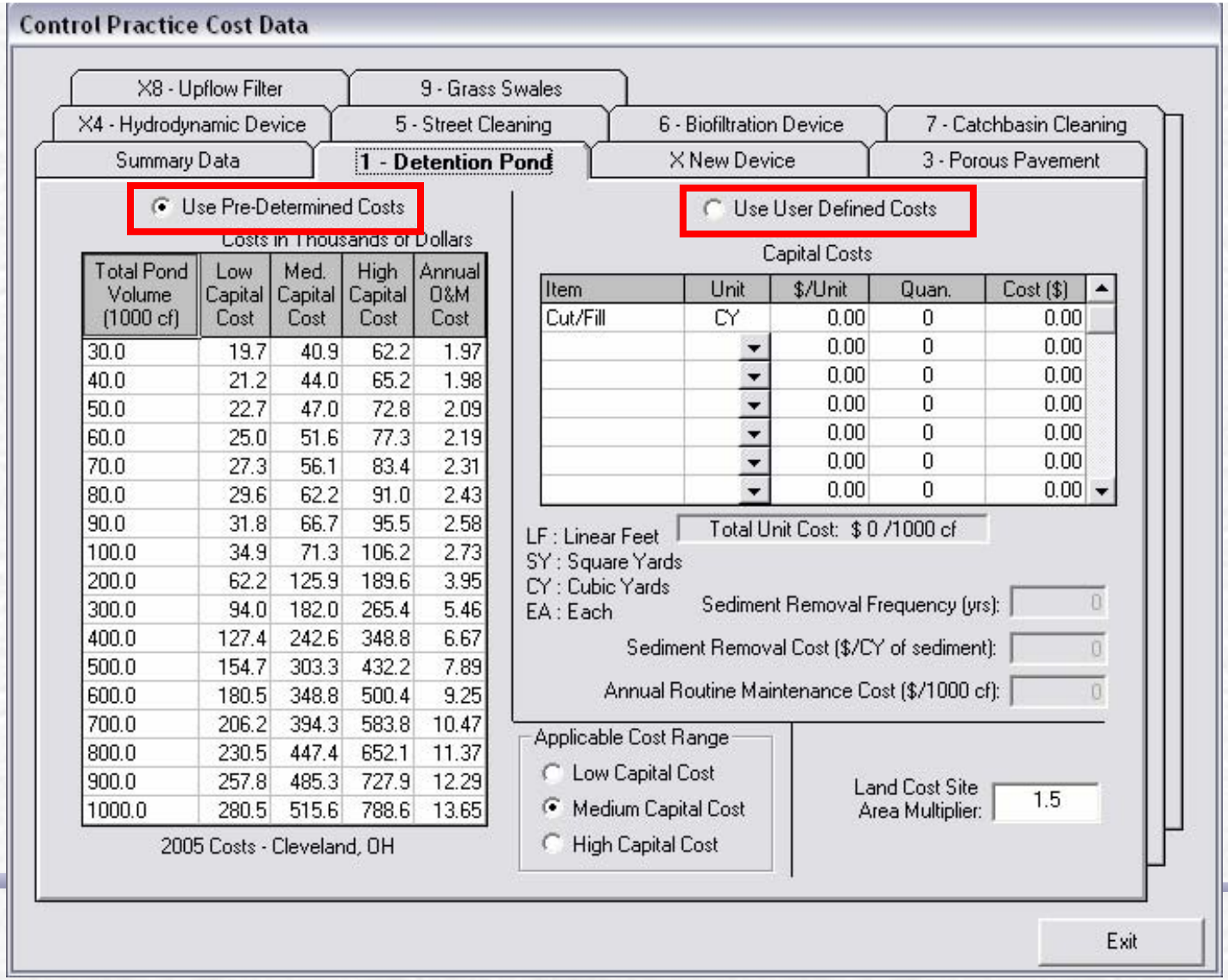
Access Cost Data



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

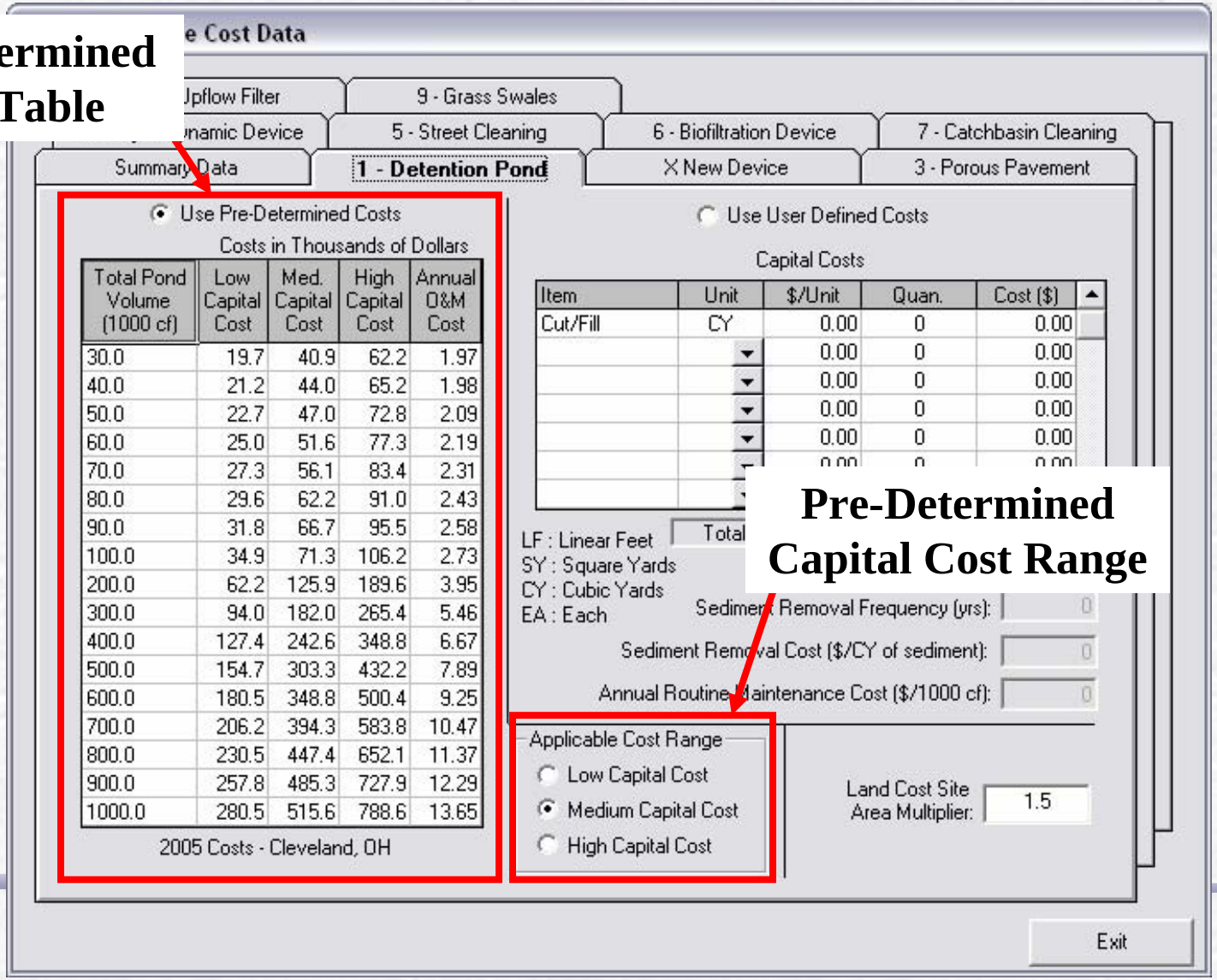
For each Control Practice, select the Use Pre-Determined Costs or Use User Defined Costs.



Access Cost Data

Wet Detention Pre-Determined Costs

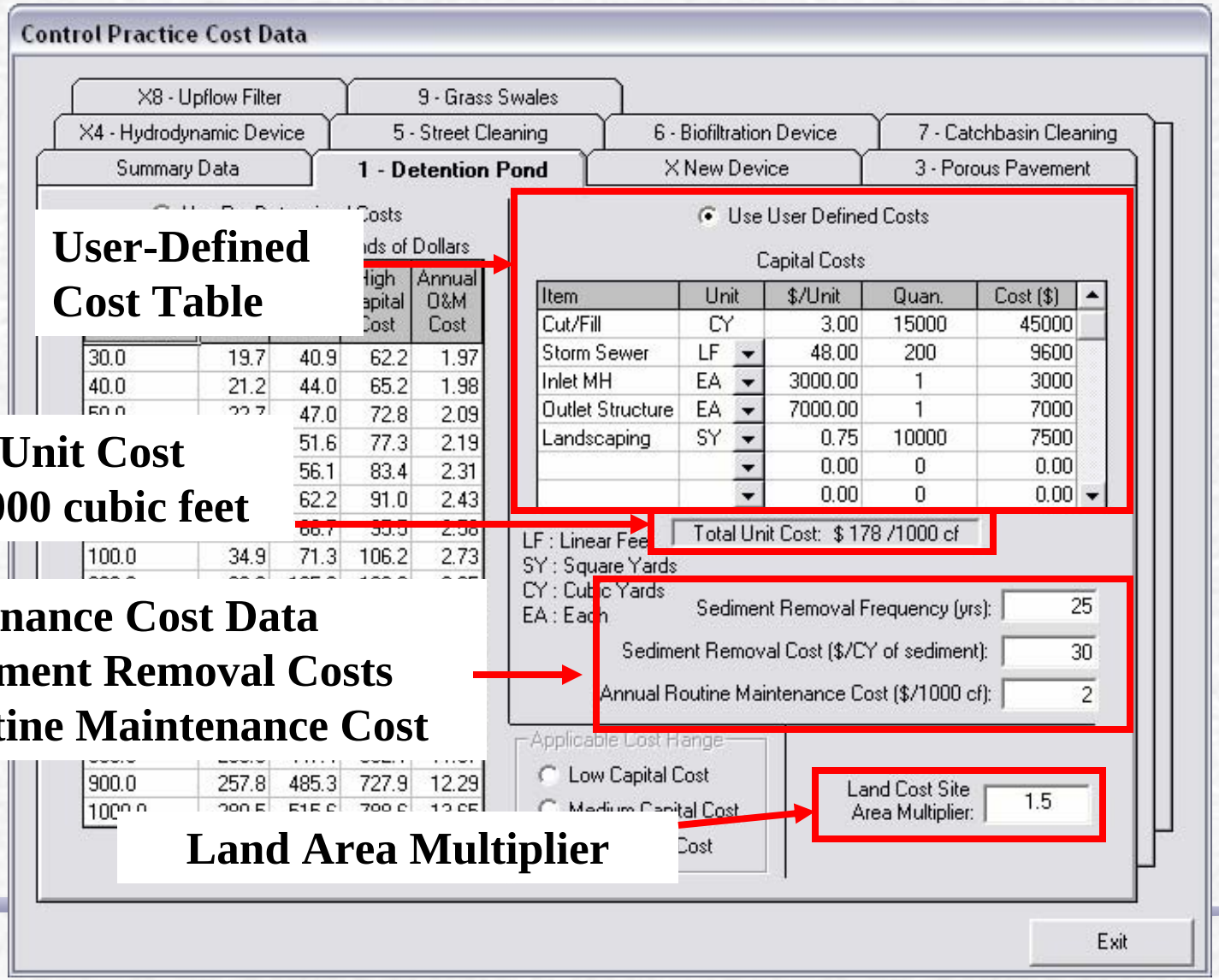
Pre-Determined Cost Table



Pre-Determined Capital Cost Range

Access Cost Data

Wet Detention User Defined Costs



User-Defined Cost Table

Total Unit Cost per 1000 cubic feet

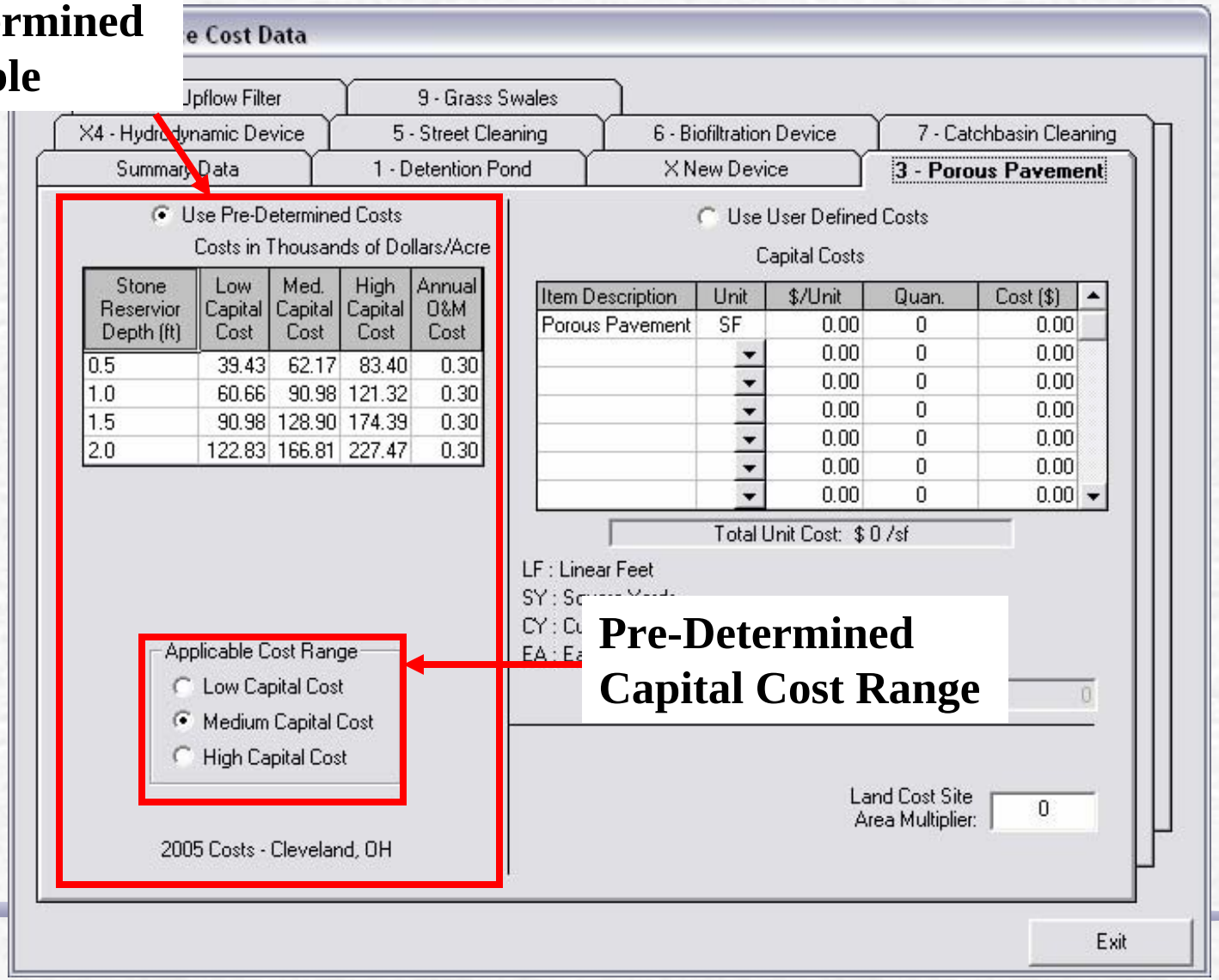
Maintenance Cost Data
- **Sediment Removal Costs**
- **Routine Maintenance Cost**

Land Area Multiplier

Access Cost Data

Porous Pavement Pre-Determined Costs

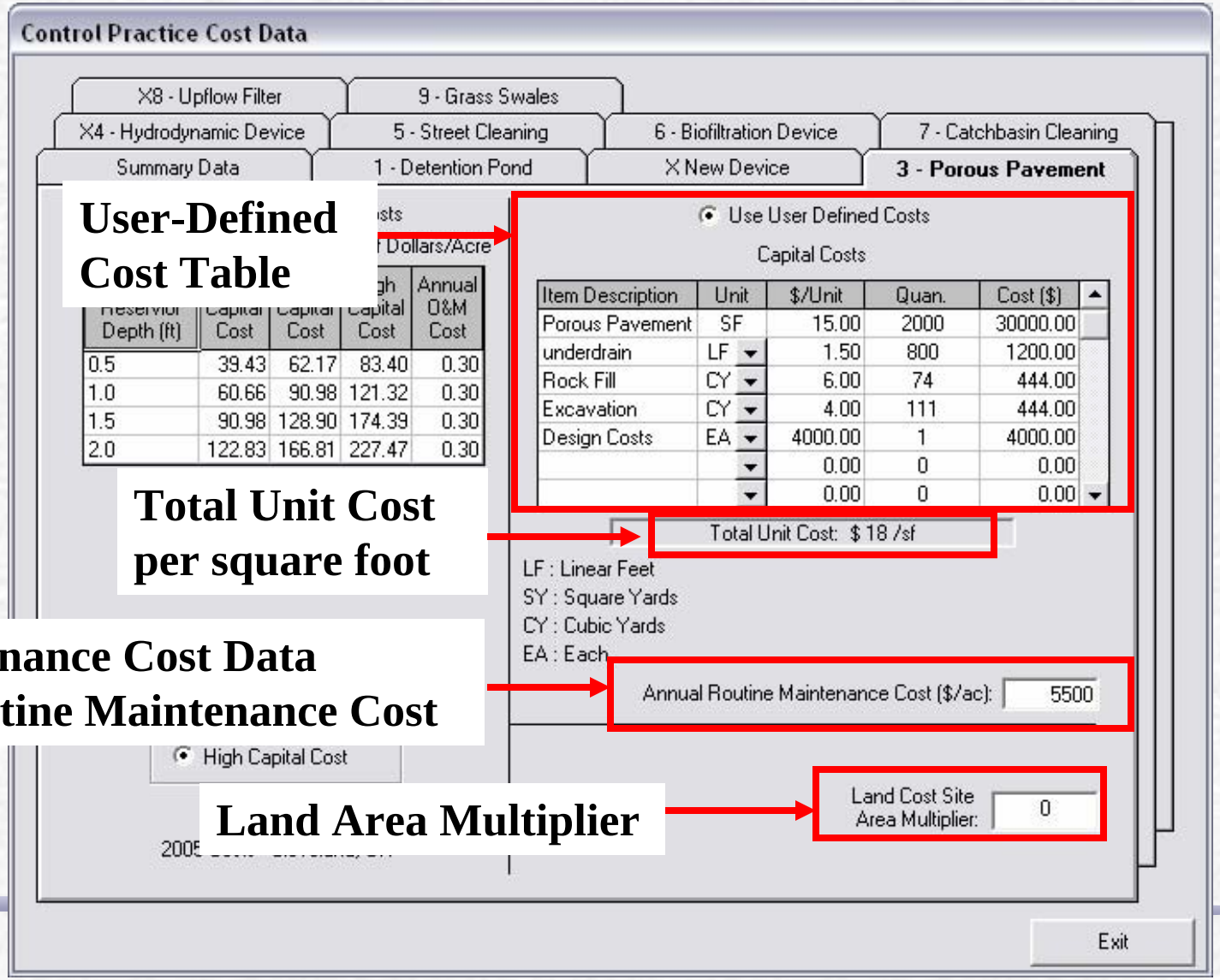
Pre-Determined Cost Table



Pre-Determined Capital Cost Range

Access Cost Data

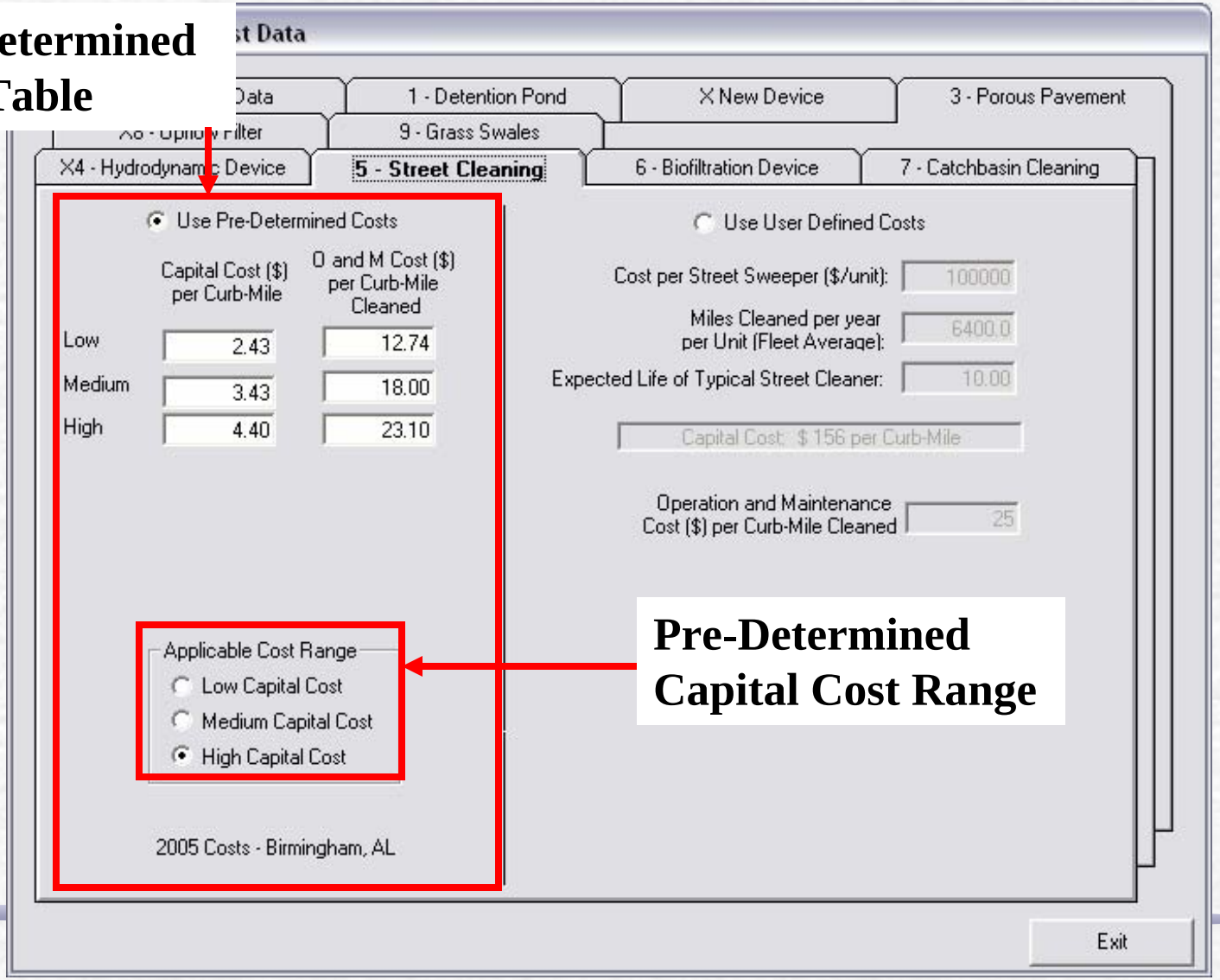
Porous Pavement User Defined Cost Data



Access Cost Data

Street Cleaning Pre-Determined Cost Data

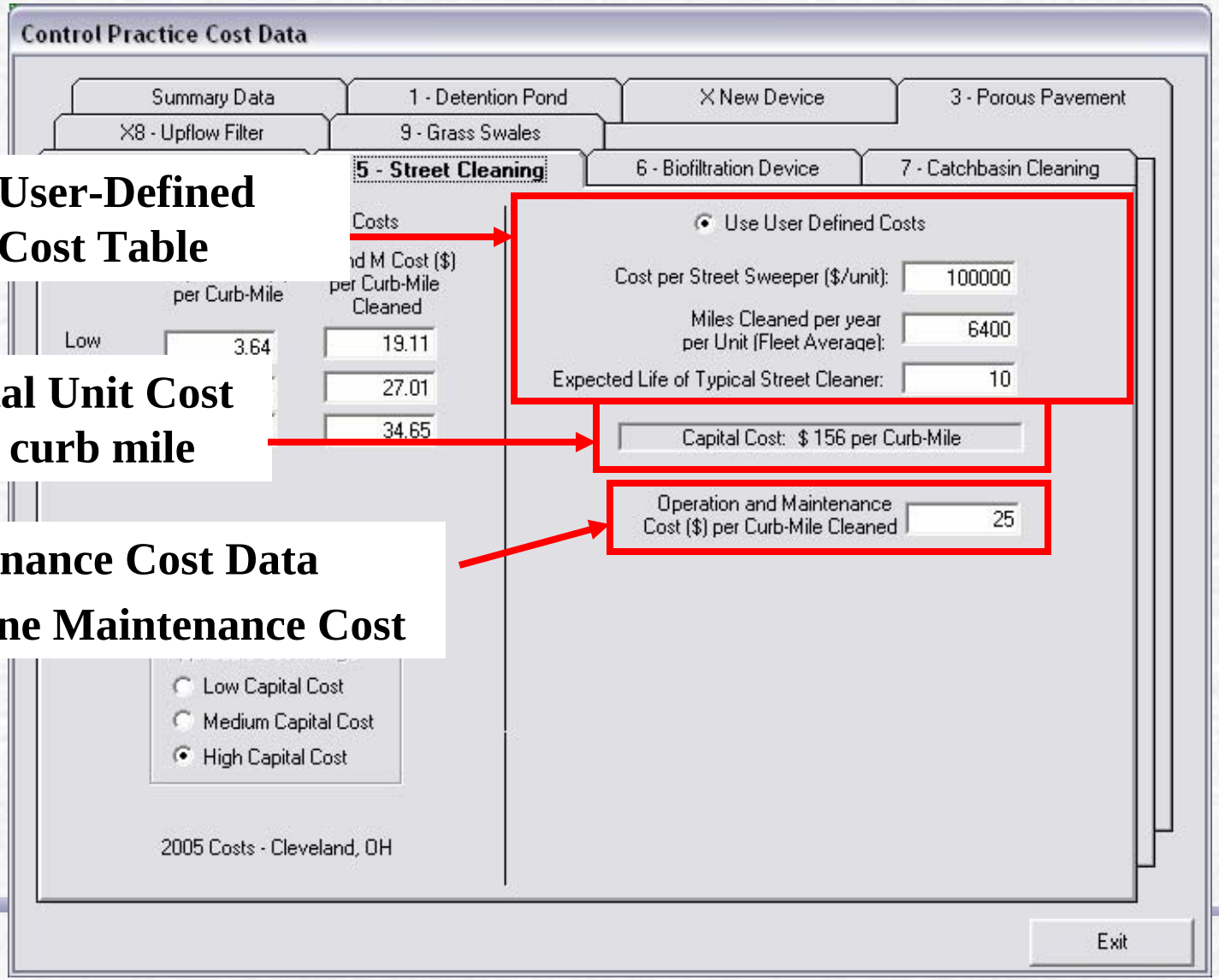
Pre-Determined Cost Table



Pre-Determined Capital Cost Range

Access Cost Data

Street Cleaning User Defined Cost Data



User-Defined Cost Table

Total Unit Cost per curb mile

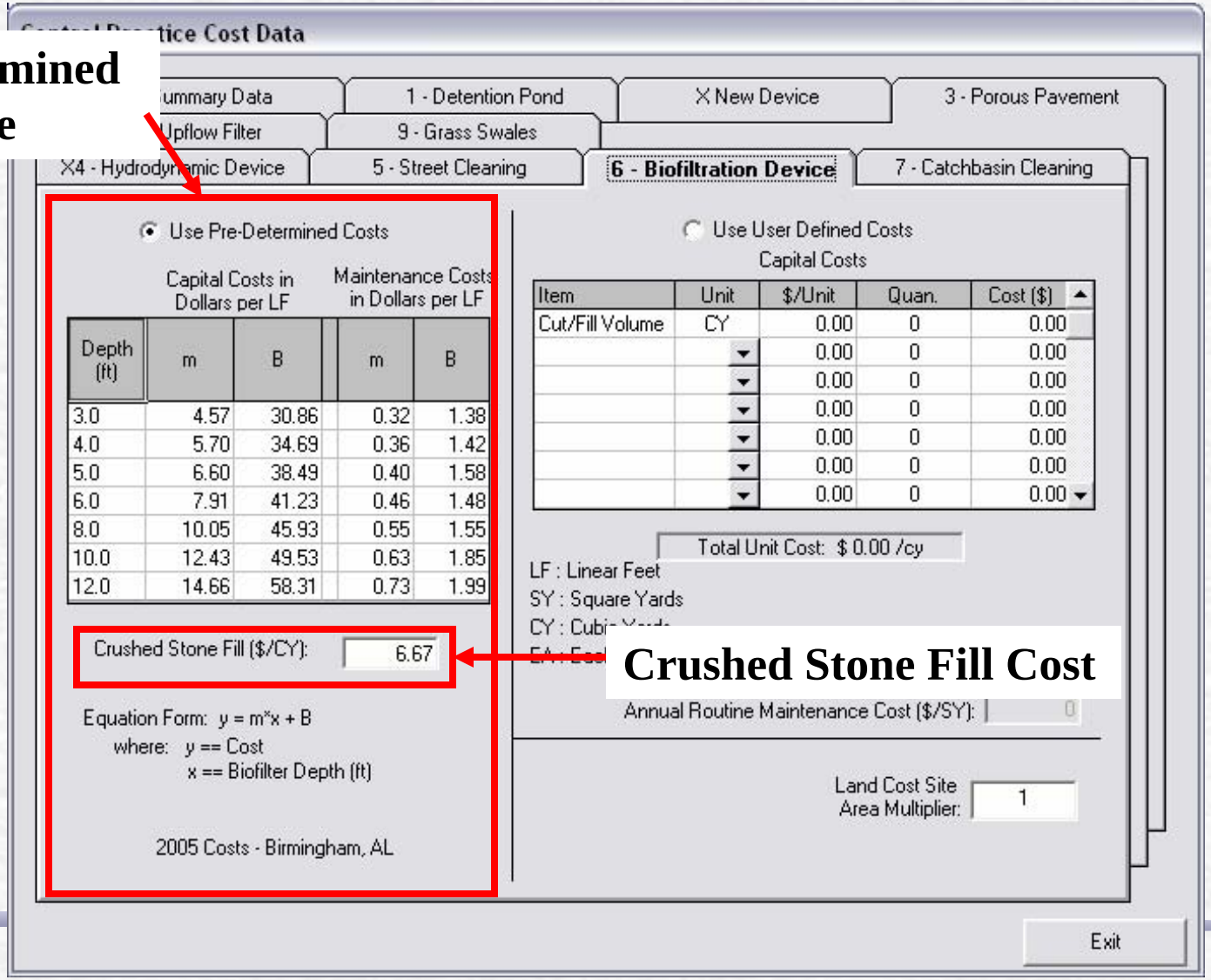
Maintenance Cost Data

- Routine Maintenance Cost

Access Cost Data

Biofiltration Pre-Determined Cost Data

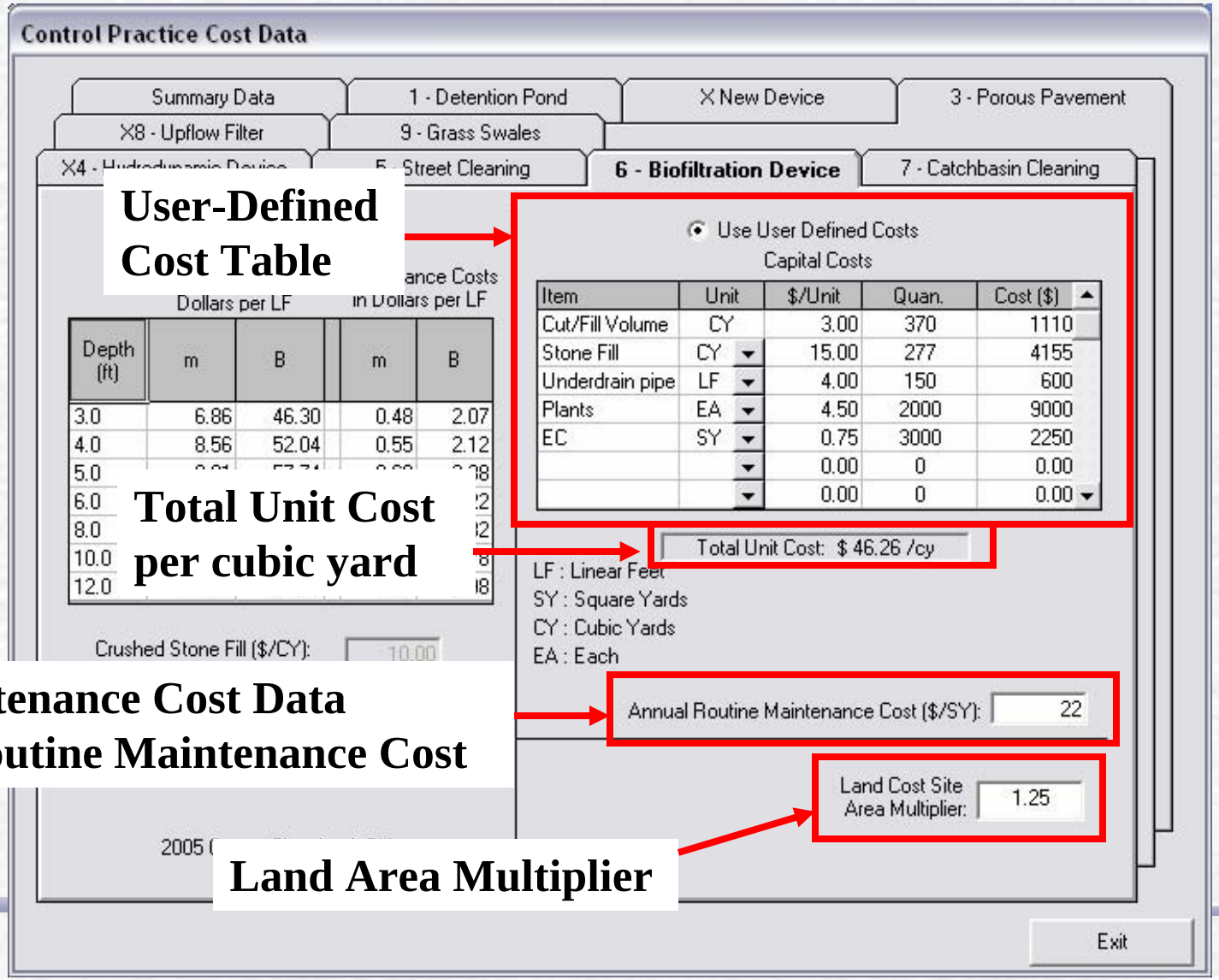
Pre-Determined Cost Table



Crushed Stone Fill Cost

Access Cost Data

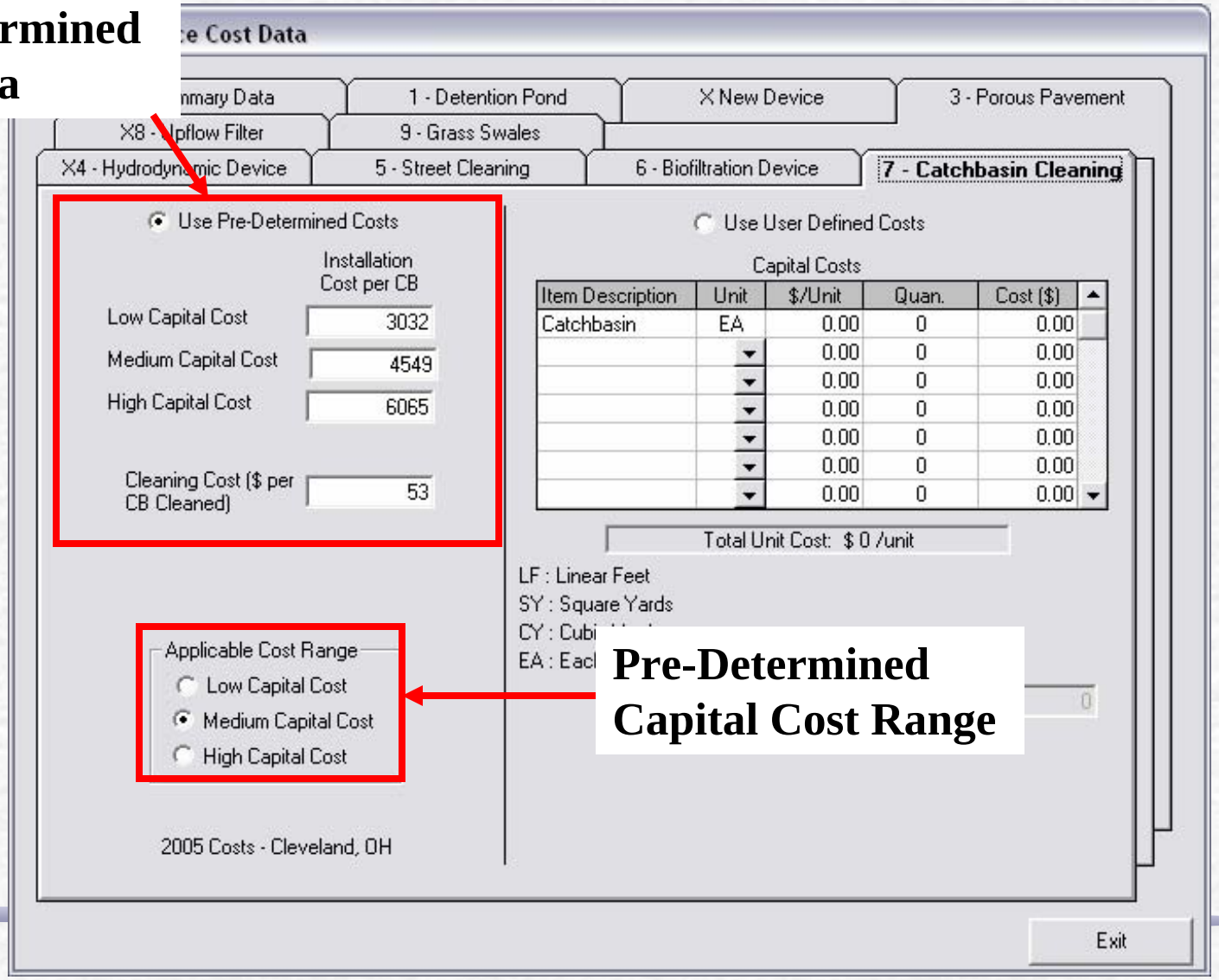
Biofiltration User Defined Cost Data



Access Cost Data

Catchbasin Cleaning Pre-Determined Cost Data

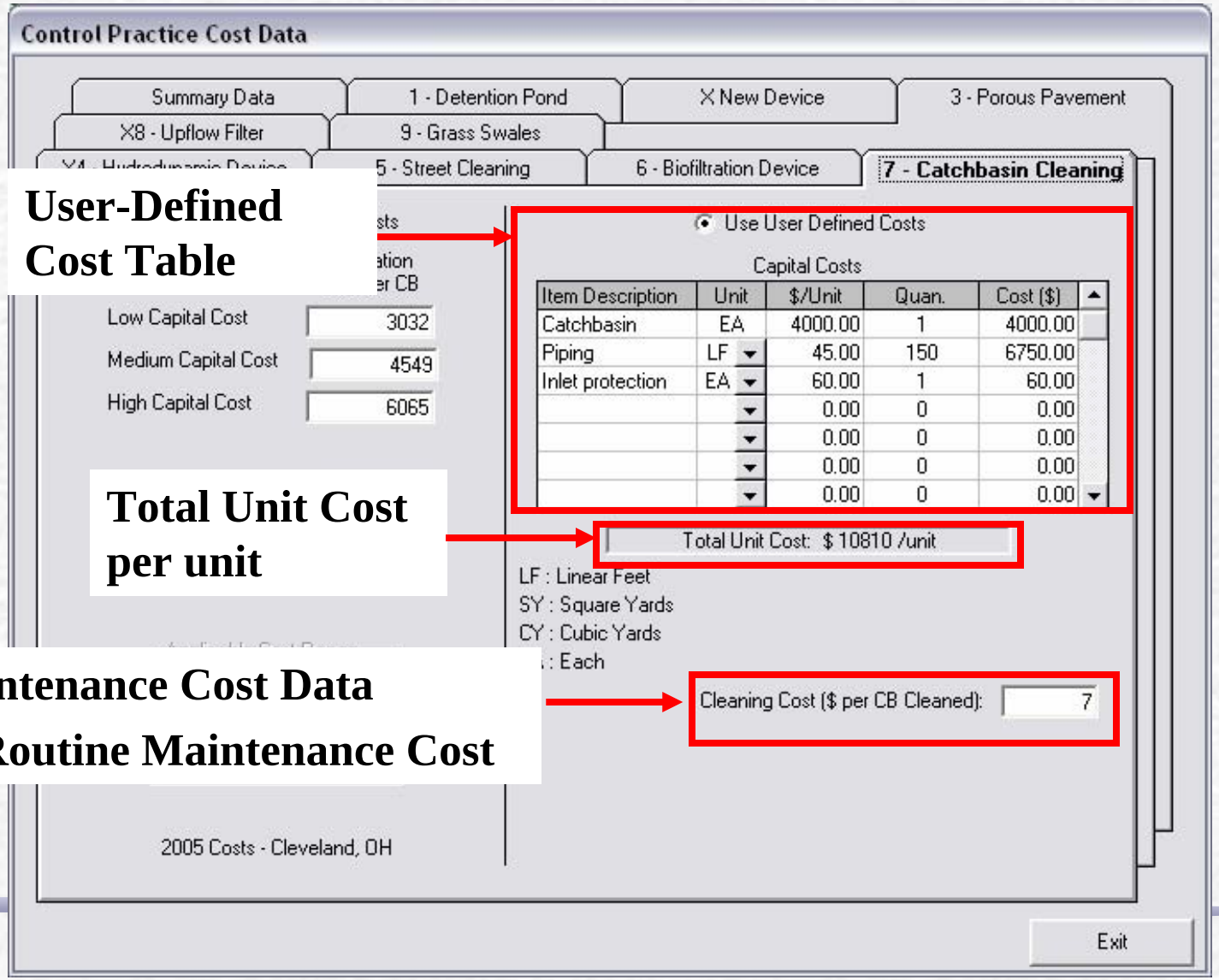
Pre-Determined Cost Data



Pre-Determined Capital Cost Range

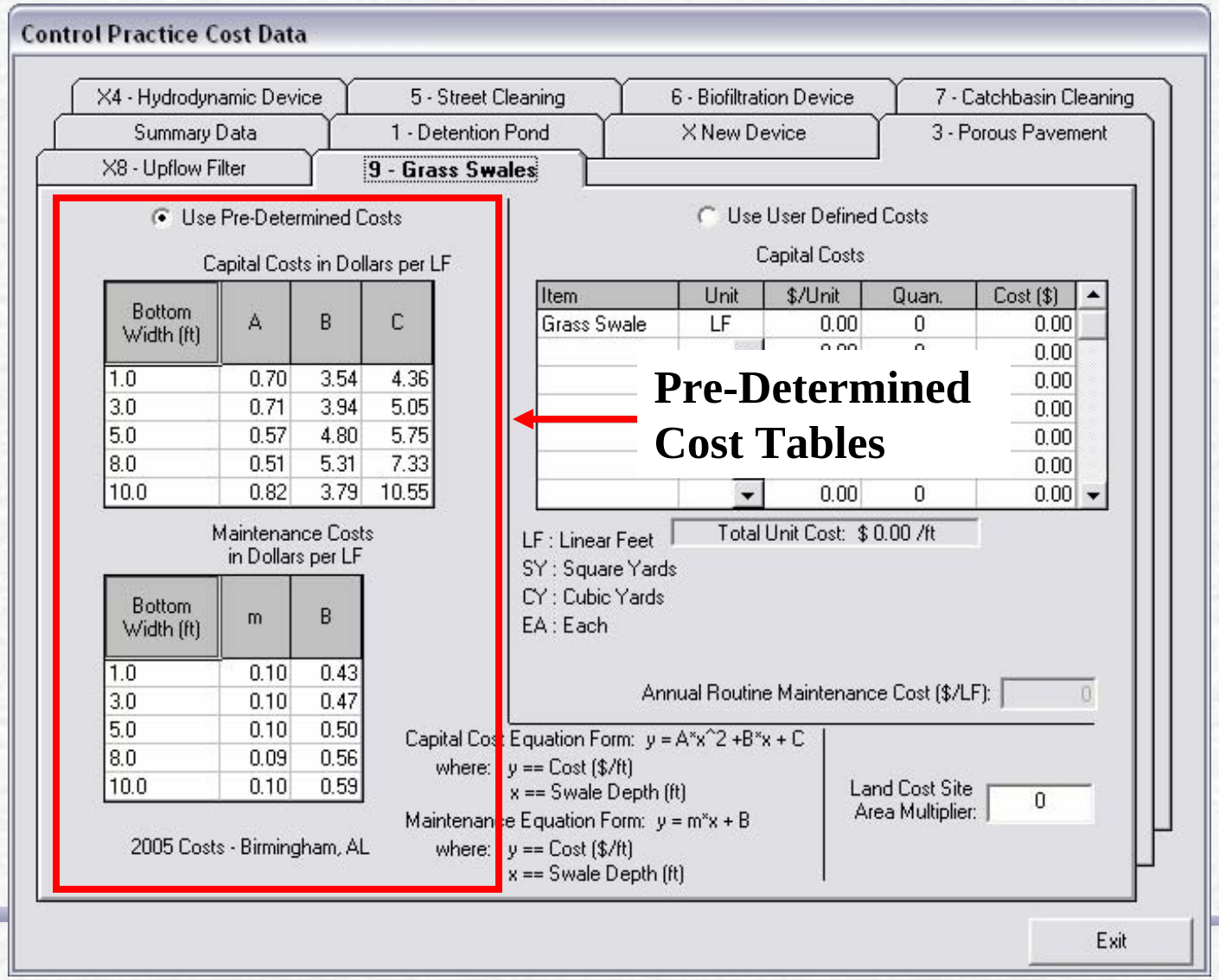
Access Cost Data

Catchbasin Cleaning User Defined Cost Data



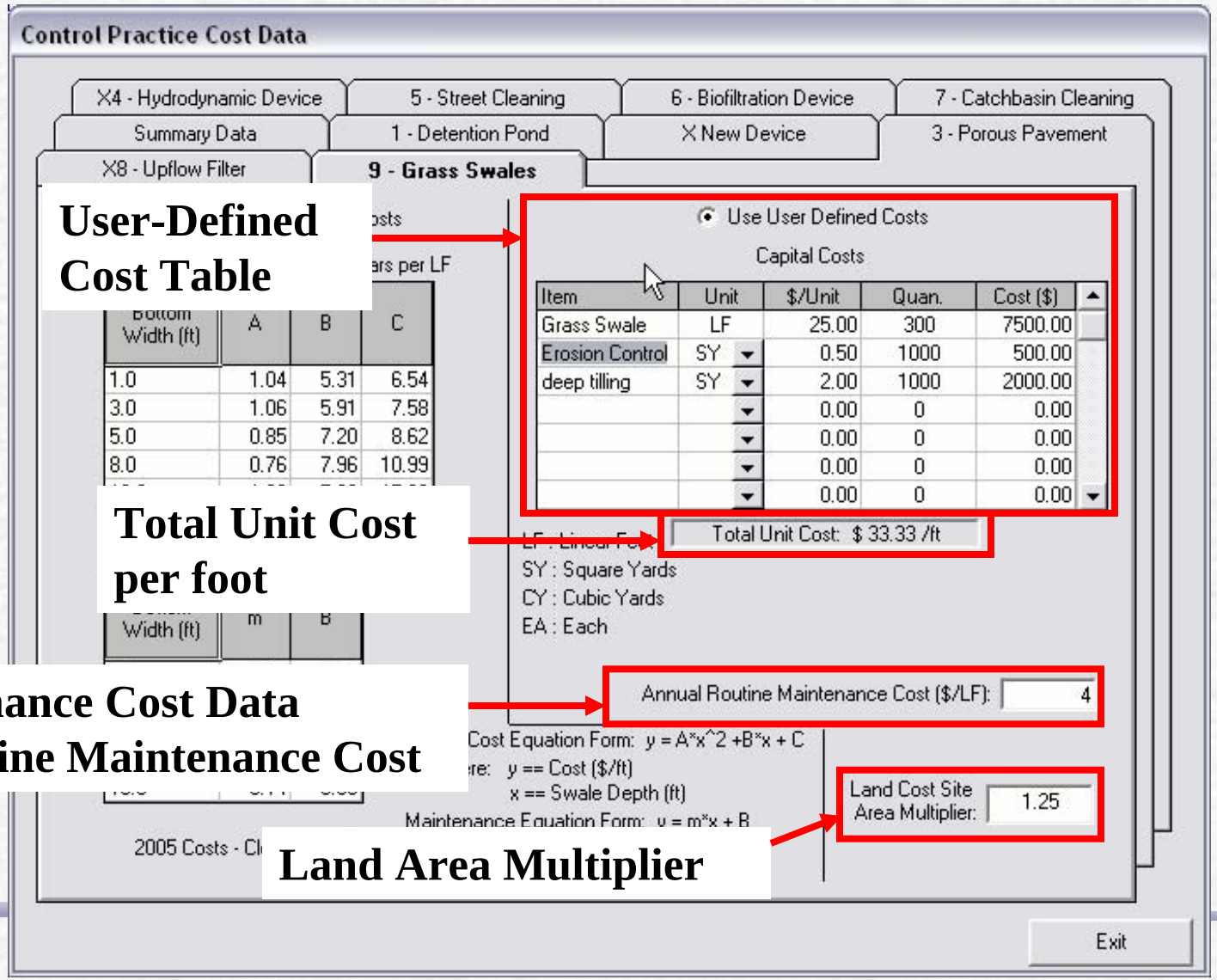
Access Cost Data

Grass Swale Pre-Determined Cost Data



Access Cost Data

Grass Swale User Defined Cost Data

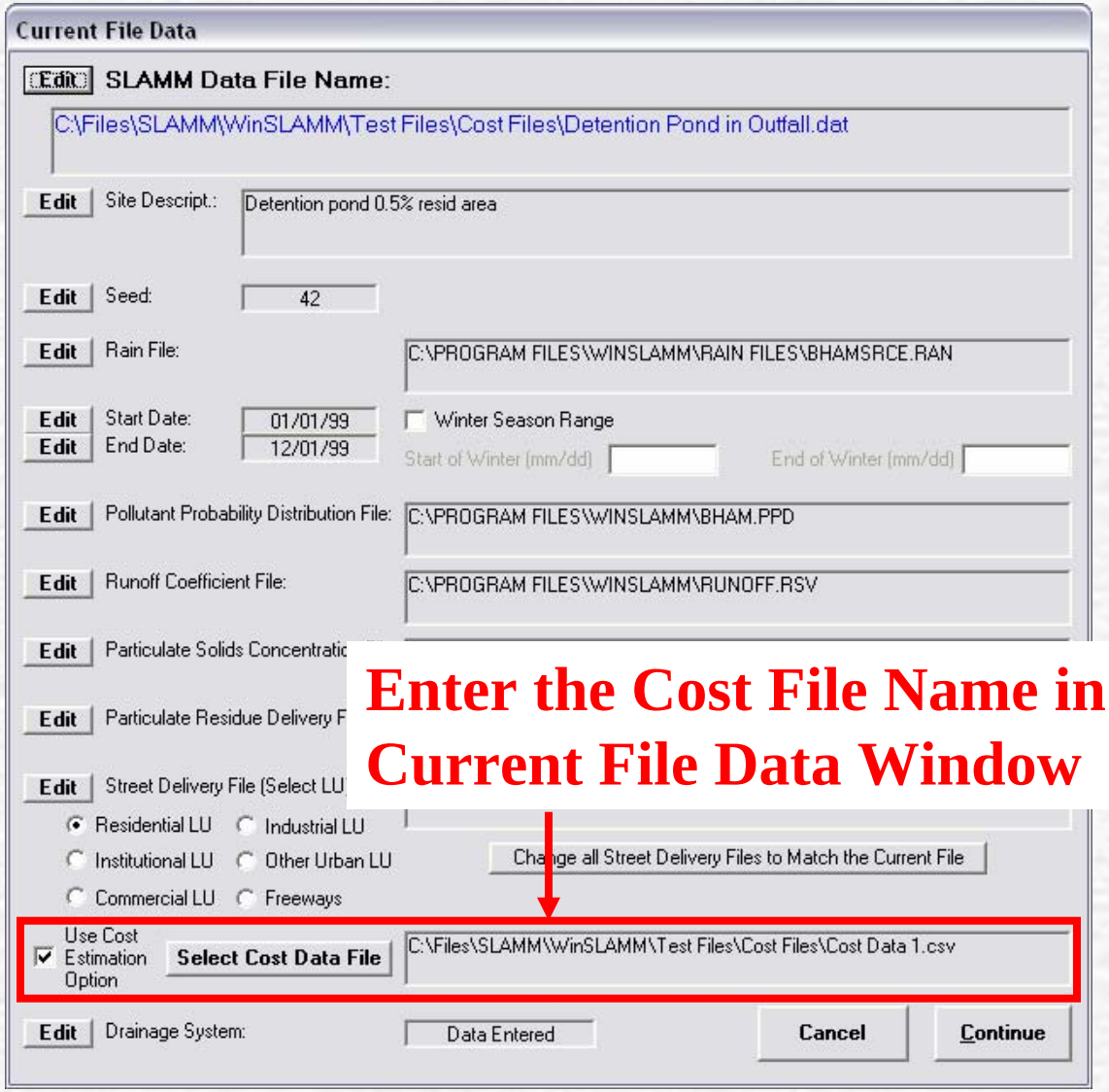


Perform a Cost Analysis

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

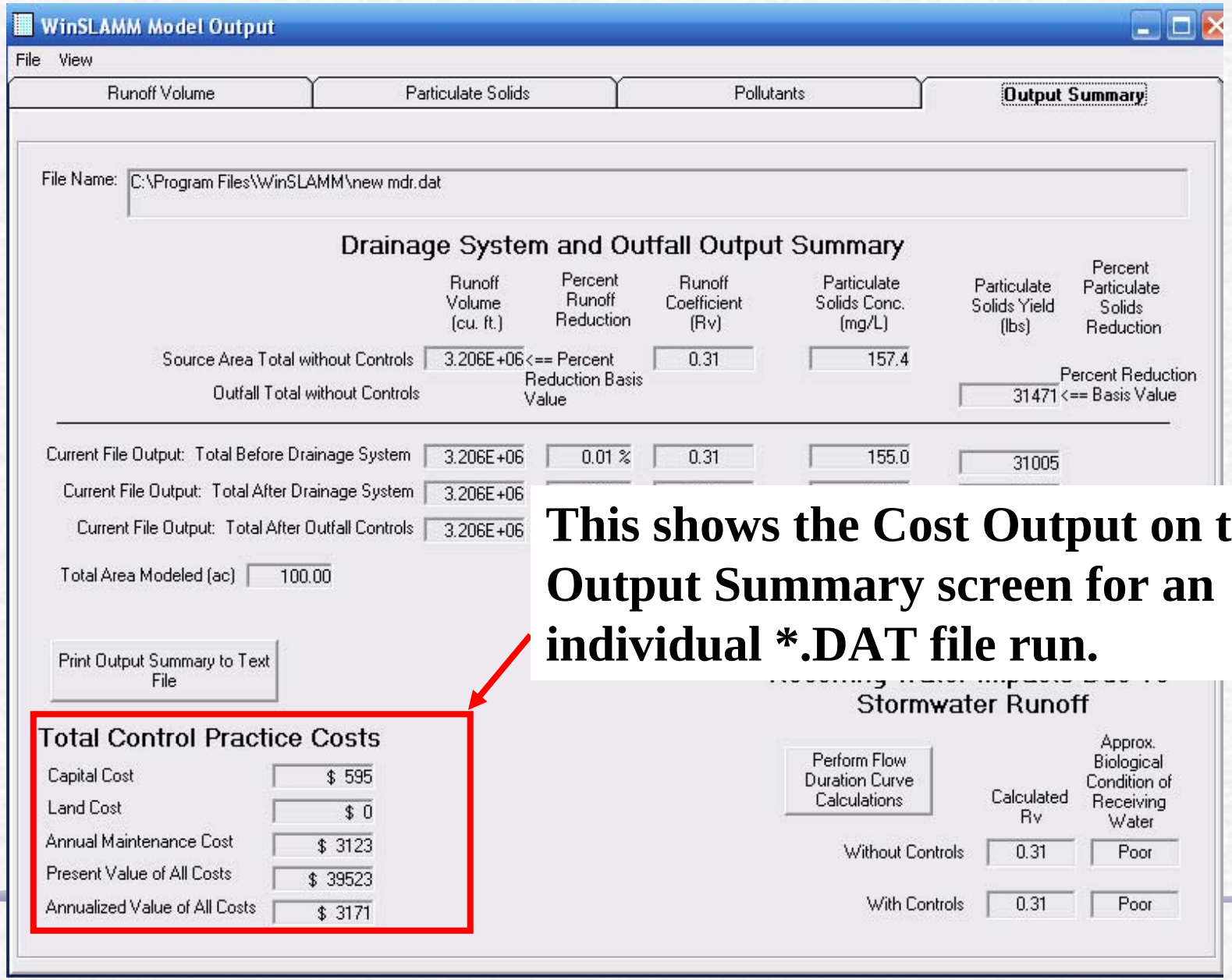
1. **The Summary Tab of an individual WinSLAMM Model Run**
2. **The Output File when you run a set of *.DAT files using the Batch Editor**

Perform a Cost Analysis



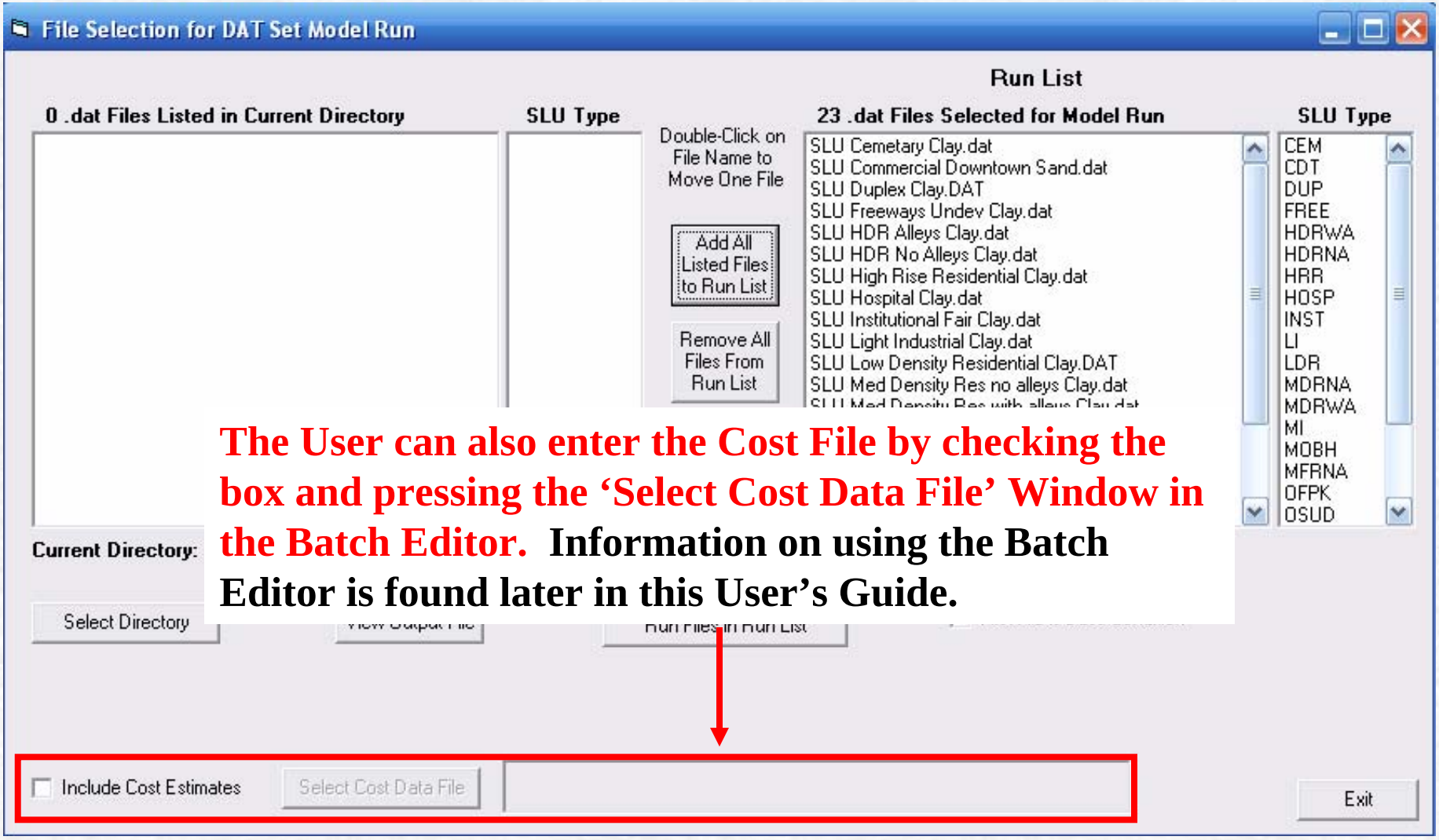
Enter the Cost File Name in the Current File Data Window

Perform a Cost Analysis



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

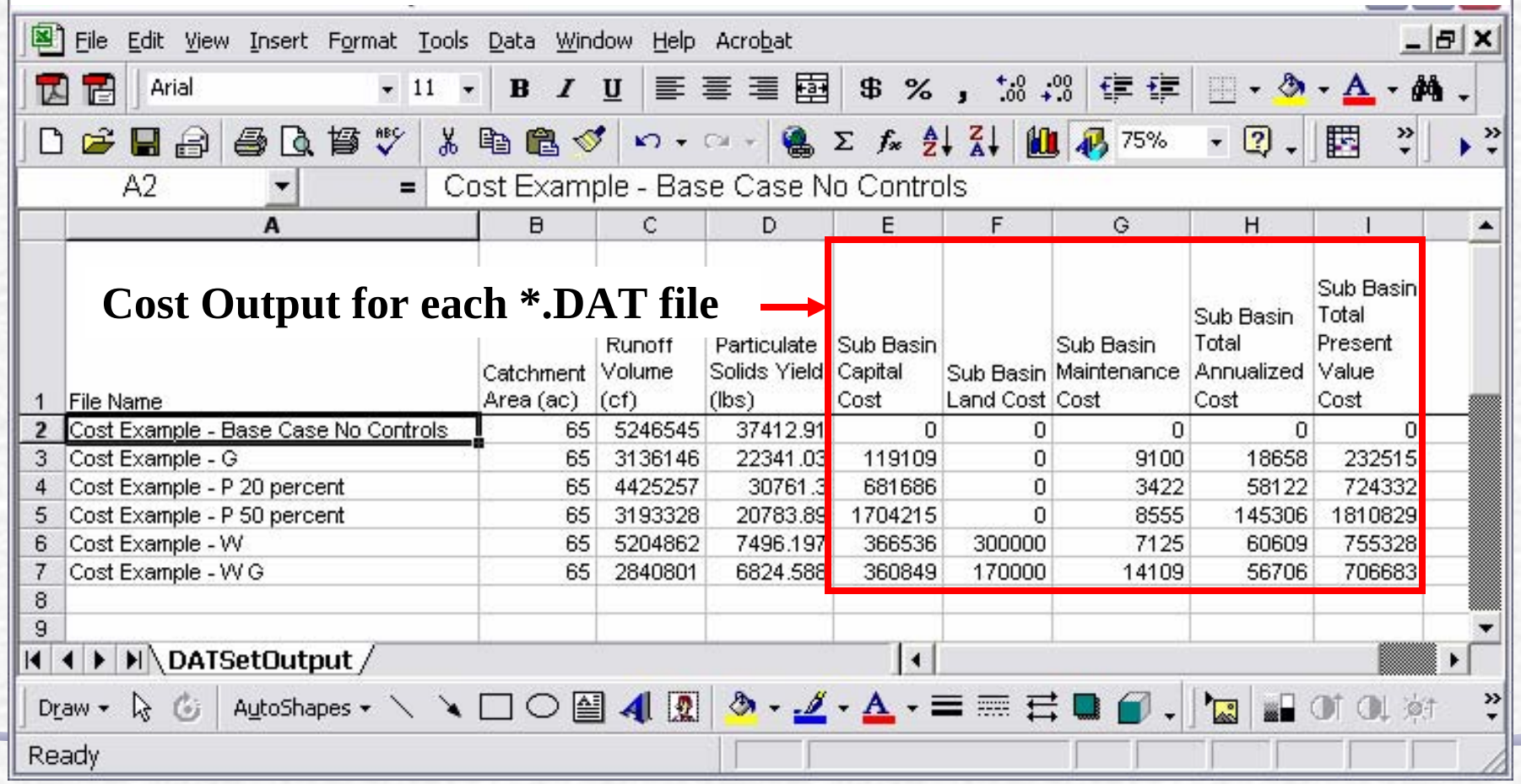
Perform a Cost Analysis



The User can also enter the Cost File by checking the box and pressing the 'Select Cost Data File' Window in the Batch Editor. **Information on using the Batch Editor is found later in this User's Guide.**

Perform a Cost Analysis

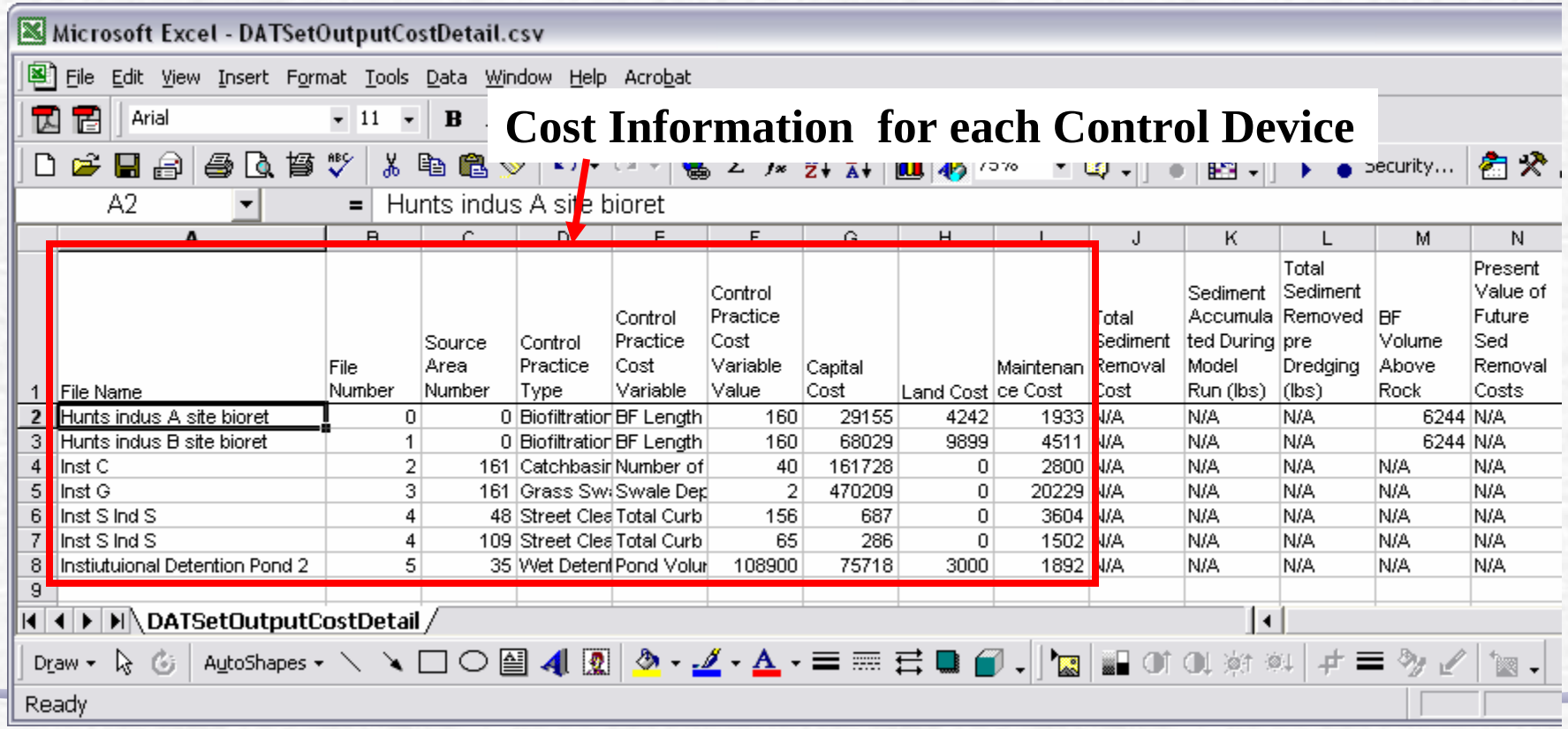
The shows the output for each *.DAT file when the Cost File is run through the Batch Editor. Import the output file 'DATSetOutput.CSV' into Excel to view the Output File.



1 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
2 Cost Example - Base Case No Controls	65	5246545	37412.91	0	0	0	0	0
3 Cost Example - G	65	3136146	22341.03	119109	0	9100	18658	232515
4 Cost Example - P 20 percent	65	4425257	30761.3	681686	0	3422	58122	724332
5 Cost Example - P 50 percent	65	3193328	20783.89	1704215	0	8555	145306	1810829
6 Cost Example - W	65	5204862	7496.197	366536	300000	7125	60609	755328
7 Cost Example - W G	65	2840801	6824.588	360849	170000	14109	56706	706683
8								
9								

Perform a Cost Analysis

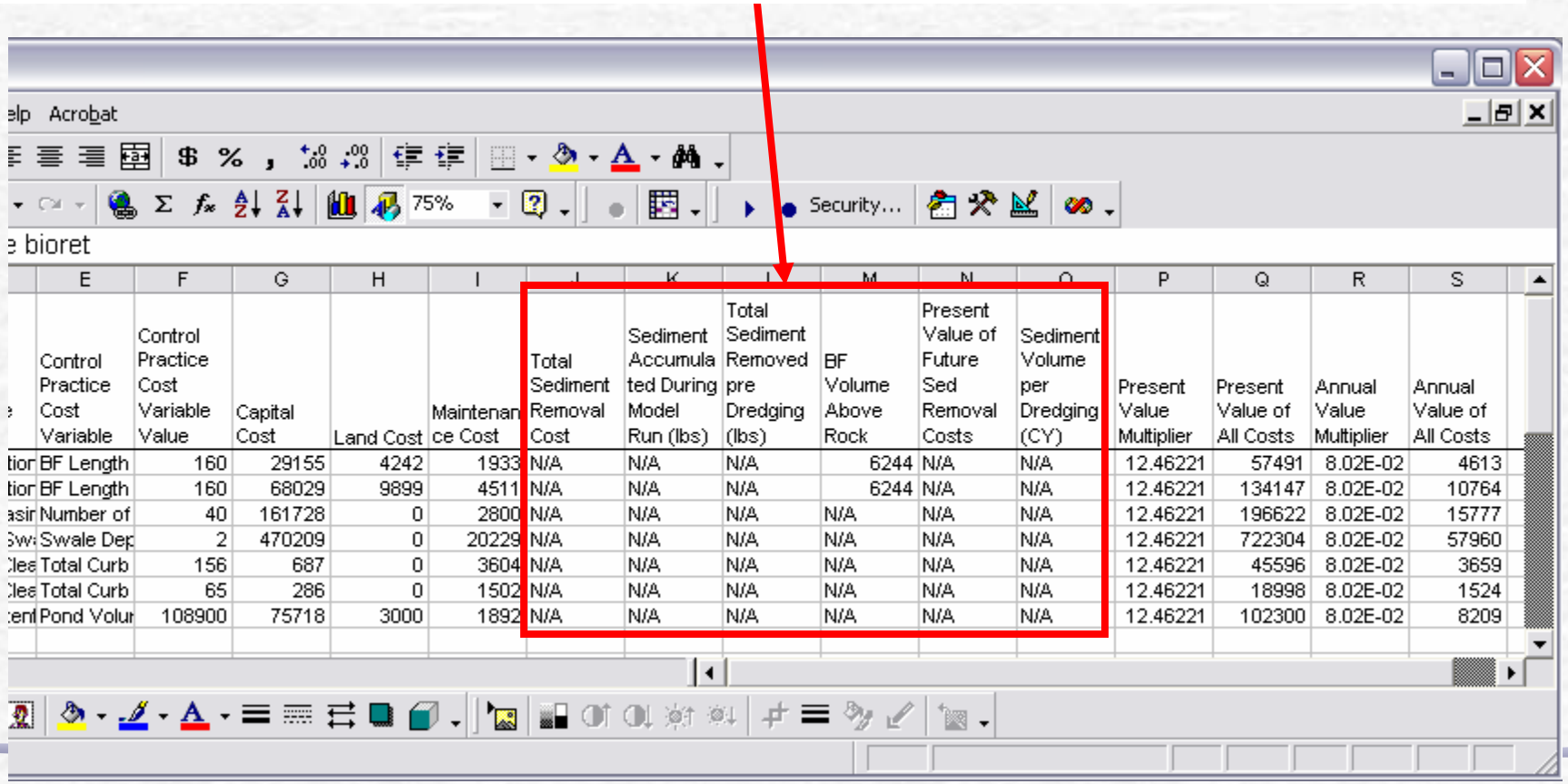
The shows the output for each Control Device when the Cost File is run through the Batch Editor. Import the output file 'DATSetOutputCostDetail.CSV' into Microsoft Excel.



	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
2	Hunts indus A site bioret	0	0	Biofiltration	BF Length	160	29155	4242	1933	N/A	N/A	N/A	6244	N/A
3	Hunts indus B site bioret	1	0	Biofiltration	BF Length	160	68029	9899	4511	N/A	N/A	N/A	6244	N/A
4	Inst C	2	161	Catchbasin	Number of	40	161728	0	2800	N/A	N/A	N/A	N/A	N/A
5	Inst G	3	161	Grass Sw	Swale Dep	2	470209	0	20229	N/A	N/A	N/A	N/A	N/A
6	Inst S Ind S	4	48	Street Clea	Total Curb	156	687	0	3604	N/A	N/A	N/A	N/A	N/A
7	Inst S Ind S	4	109	Street Clea	Total Curb	65	286	0	1502	N/A	N/A	N/A	N/A	N/A
8	Instiutuional Detention Pond 2	5	35	Wet Detent	Pond Volur	108900	75718	3000	1892	N/A	N/A	N/A	N/A	N/A
9														

Perform a Cost Analysis

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



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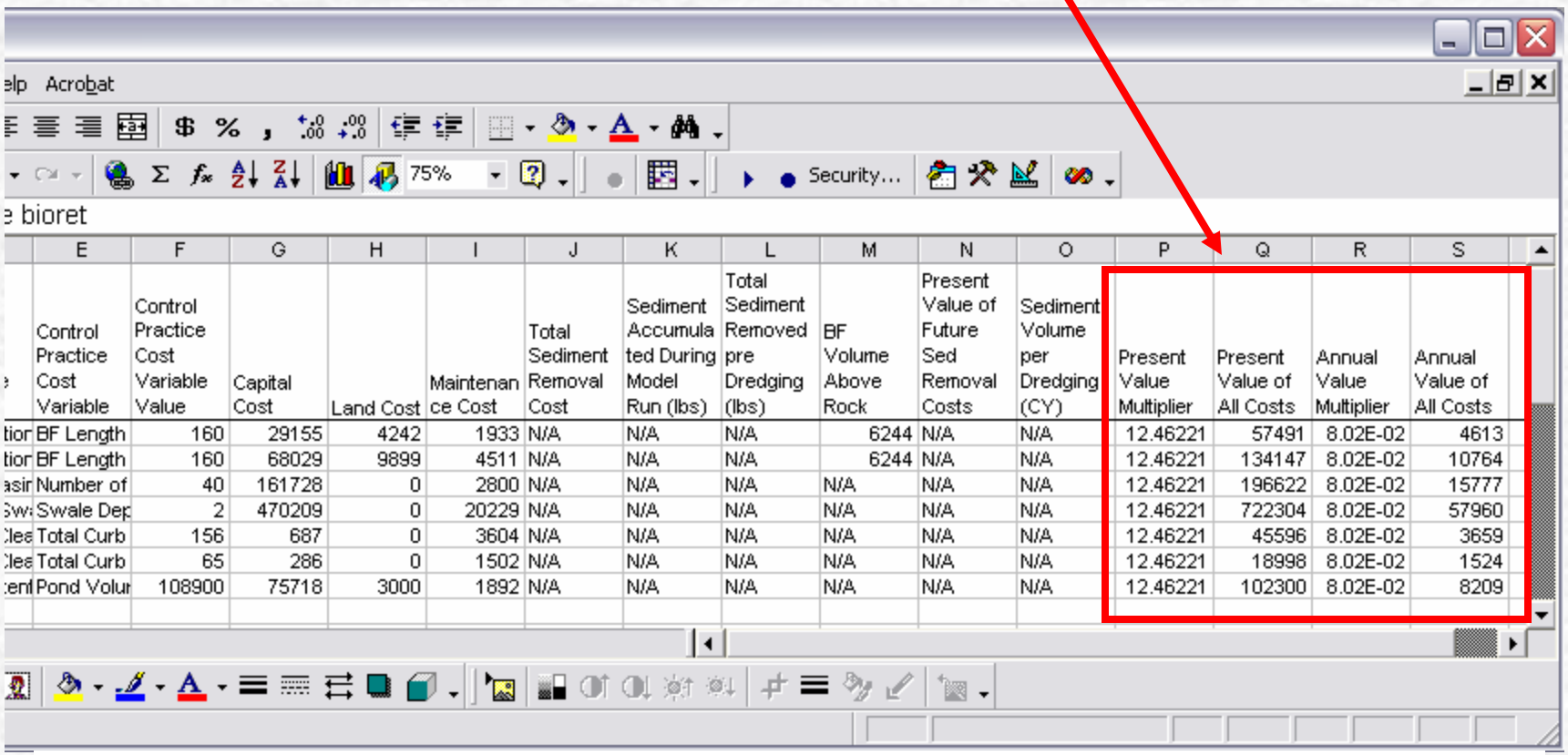
	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	Control Practice Cost Variable	Control Practice Cost Variable Value	Capital Cost	Land Cost	Maintenance Cost	Total Sediment Removal Cost	Sediment Accumulated During Model Run (lbs)	Total Sediment Removed pre Dredging (lbs)	BF Volume Above Rock	Present Value of Future Sed Removal Costs	Sediment Volume per Dredging (CY)	Present Value Multiplier	Present Value of All Costs	Annual Value Multiplier	Annual Value of All Costs
tior	BF Length	160	29155	4242	1933	N/A	N/A	N/A	6244	N/A	N/A	12.46221	57491	8.02E-02	4613
tior	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
Swa	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
Clea	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
Clea	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
cent	Pond Volur	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



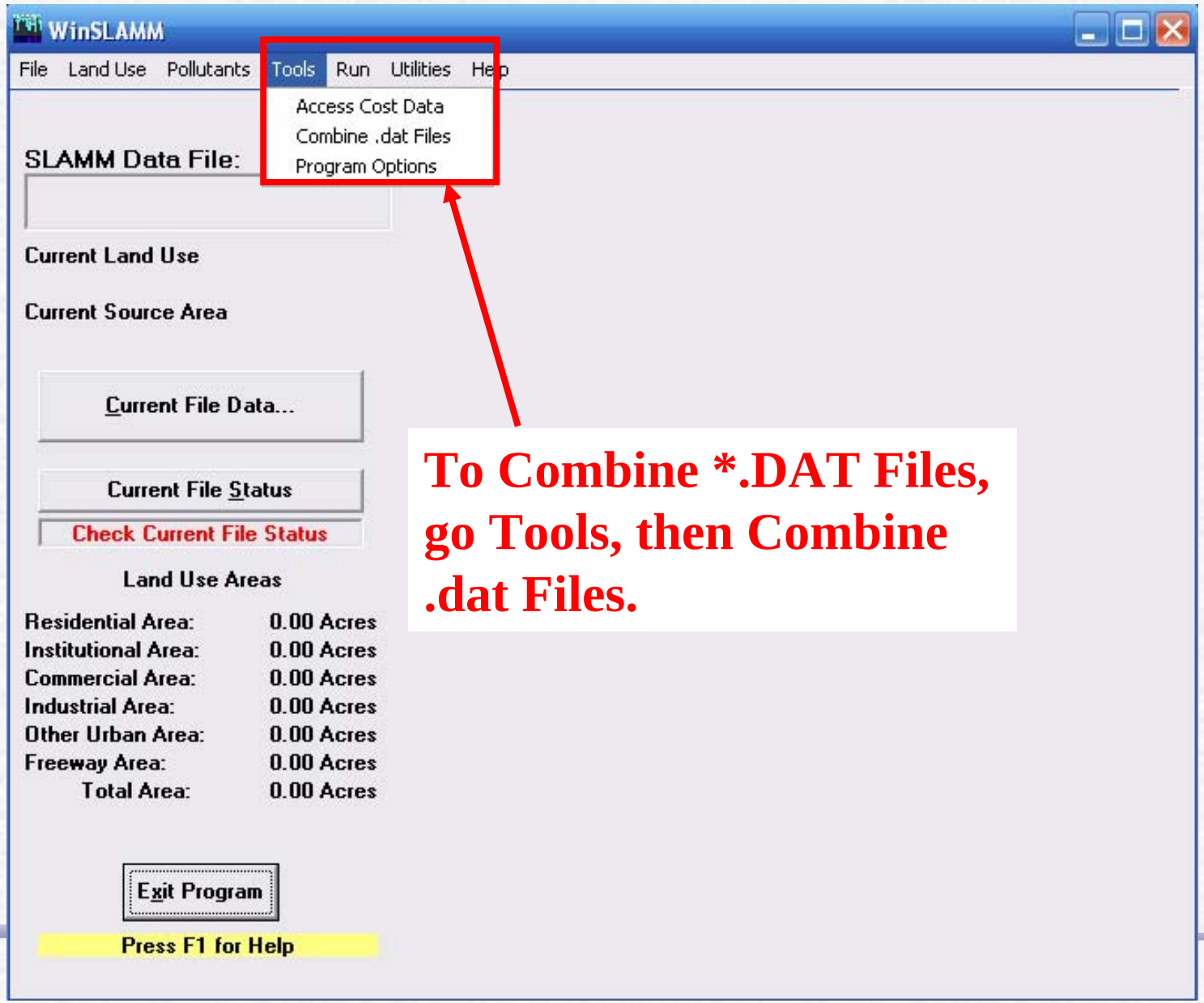
	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	Control Practice Cost Variable	Control Practice Cost Variable Value	Capital Cost	Land Cost	Maintenance Cost	Total Sediment Removal Cost	Sediment Accumulated During Model Run (lbs)	Total Sediment Removed pre Dredging (lbs)	BF Volume Above Rock	Present Value of Future Sed Removal Costs	Sediment Volume per Dredging (CY)	Present Value Multiplier	Present Value of All Costs	Annual Value Multiplier	Annual Value of All Costs
tior	BF Length	160	29155	4242	1933	N/A	N/A	N/A	6244	N/A	N/A	12.46221	57491	8.02E-02	4613
tior	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
Swa	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
Clea	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
Clea	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
cent	Pond Volur	108900	75718	3000	1892	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.

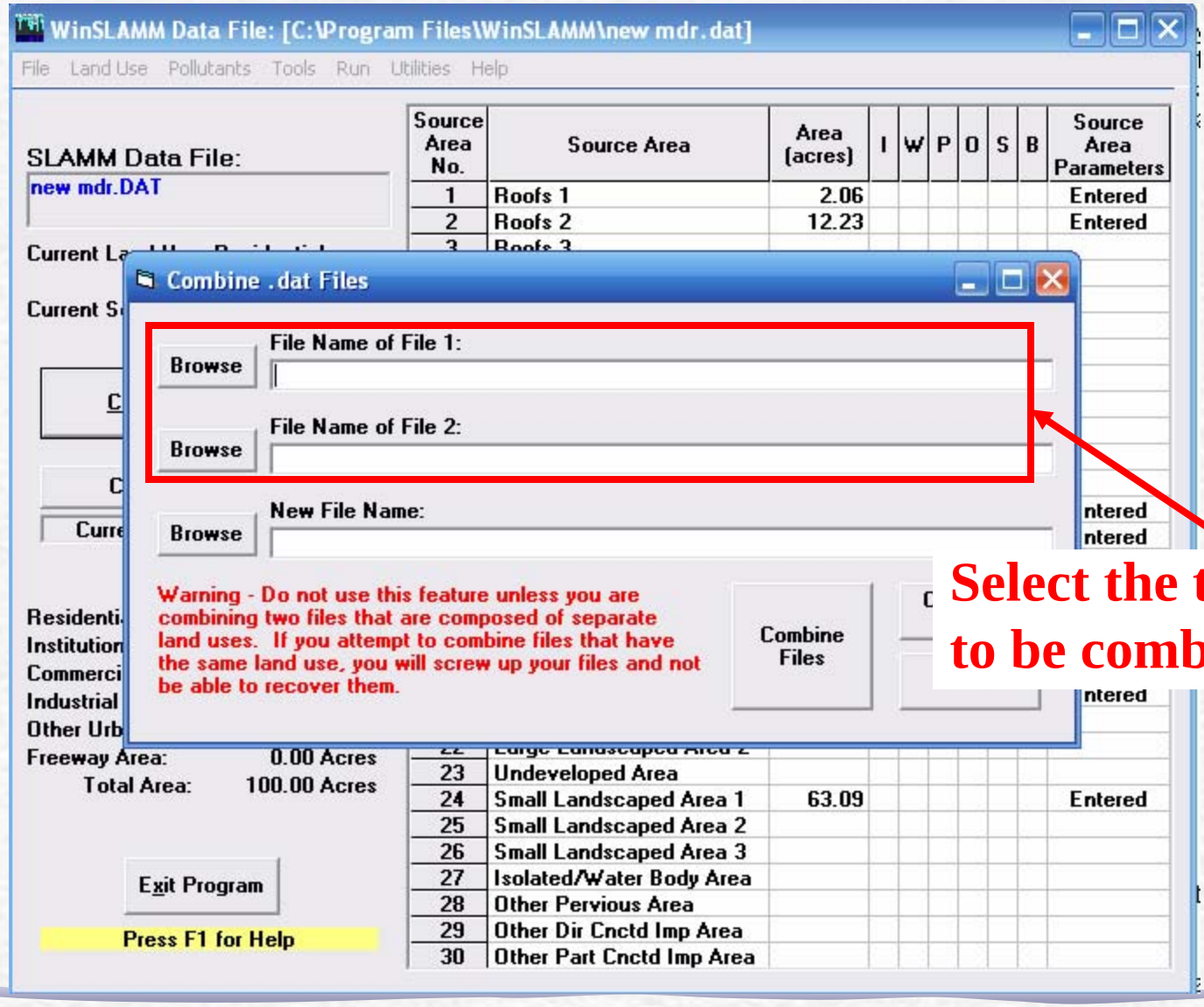
Combining Two *.DAT Files Overview

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

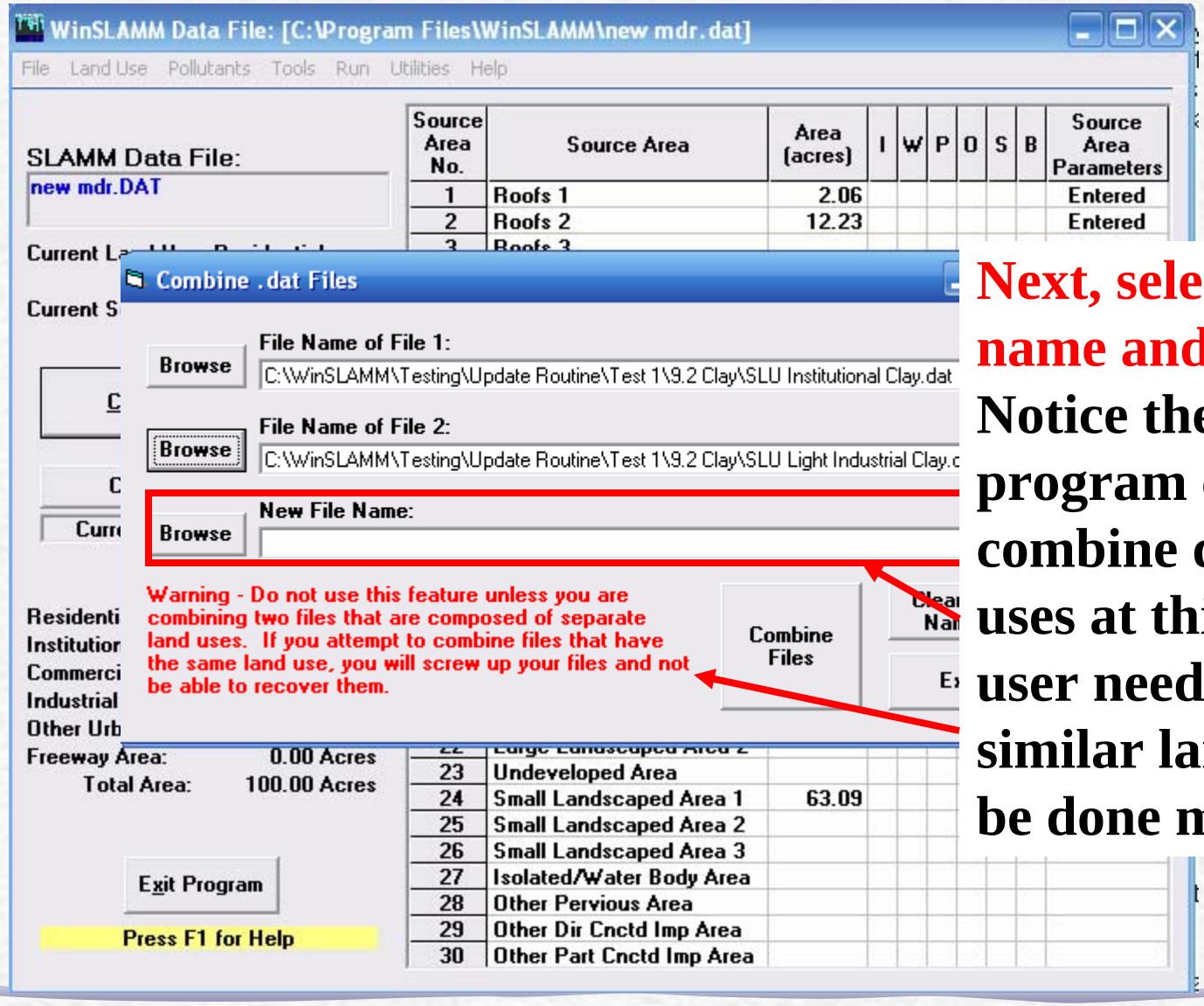
Combining Two *.DAT Files



Combining Two *.DAT Files



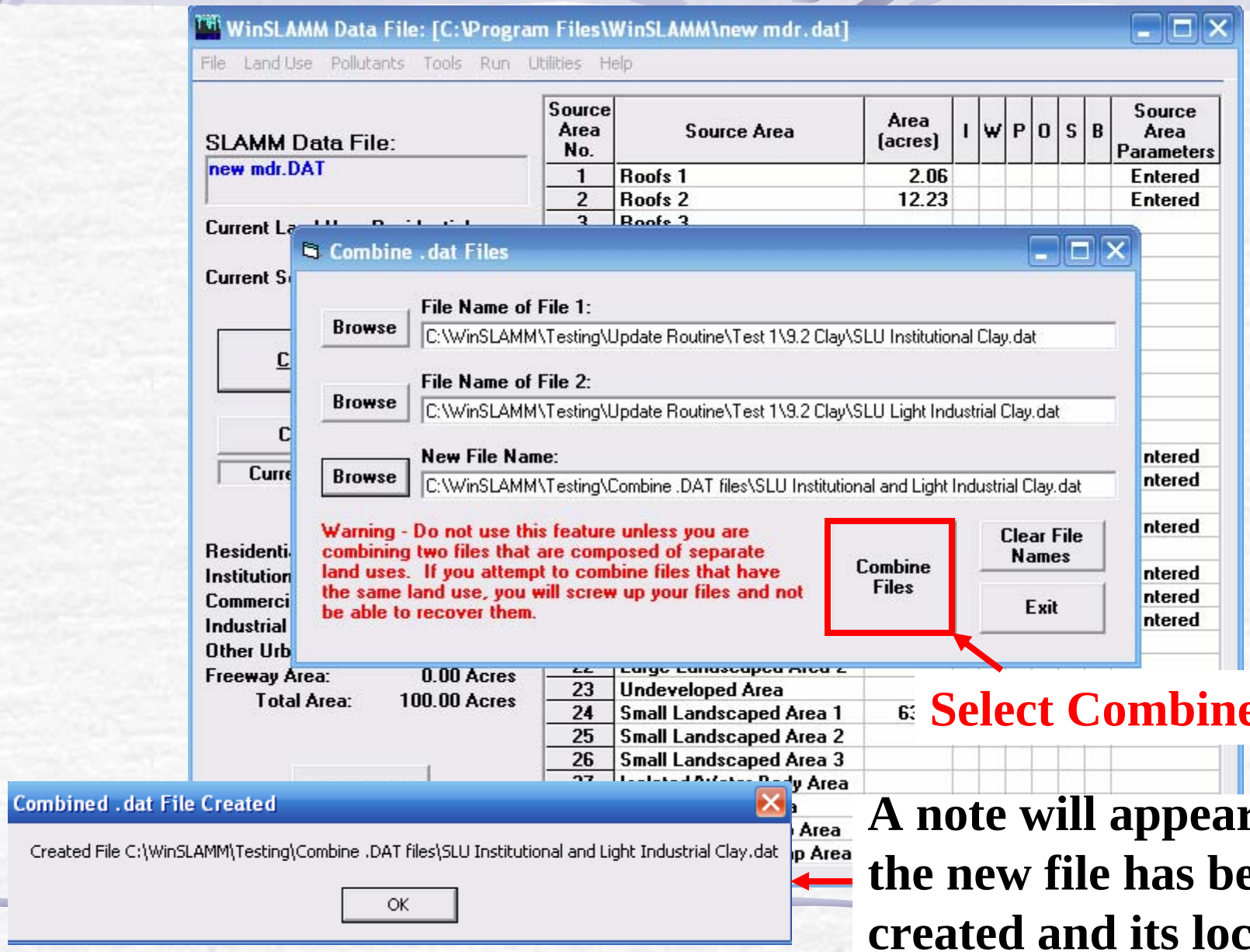
Combining Two *.DAT Files



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



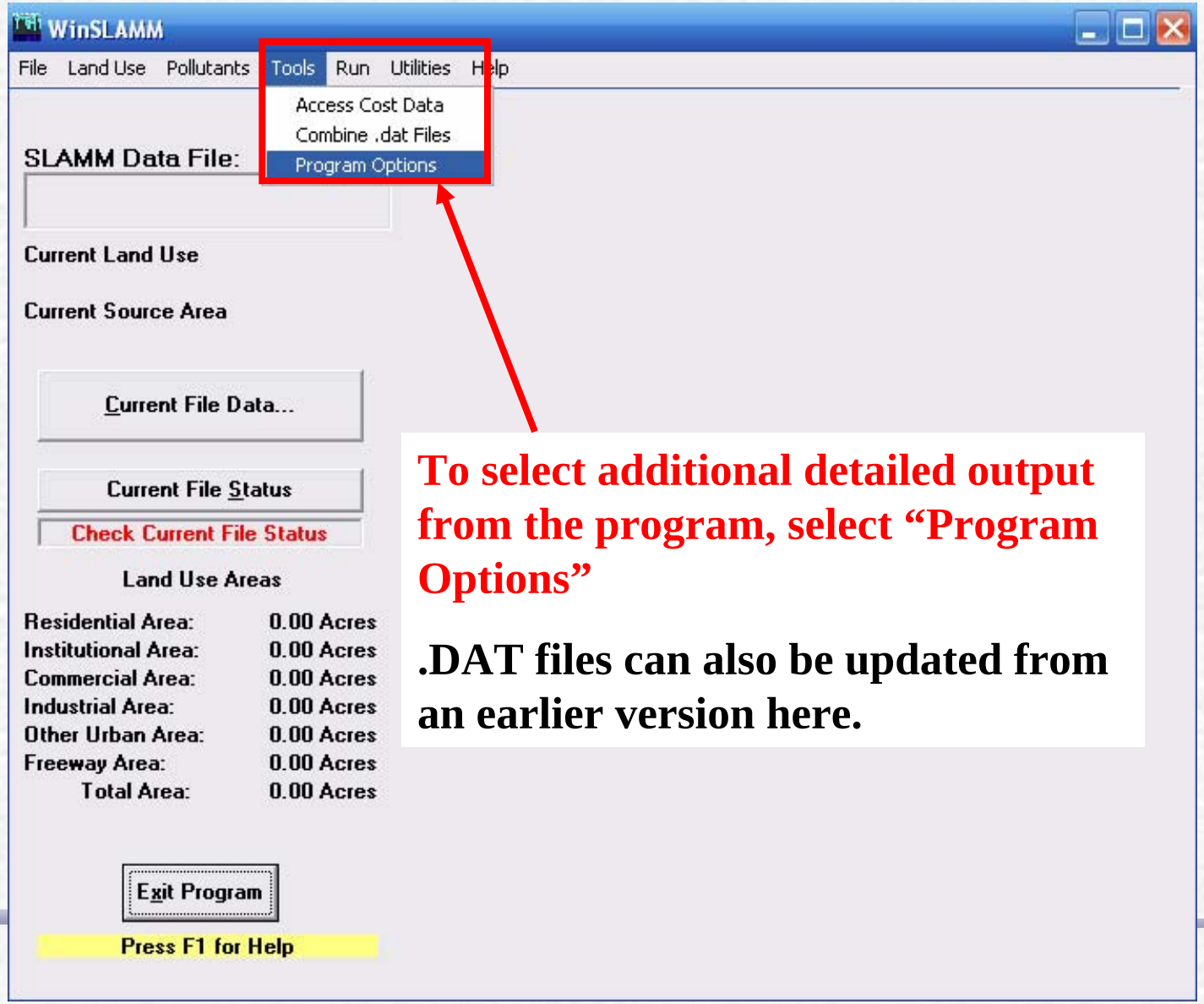
Select Combine Files.

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

Detailed Output Options 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.

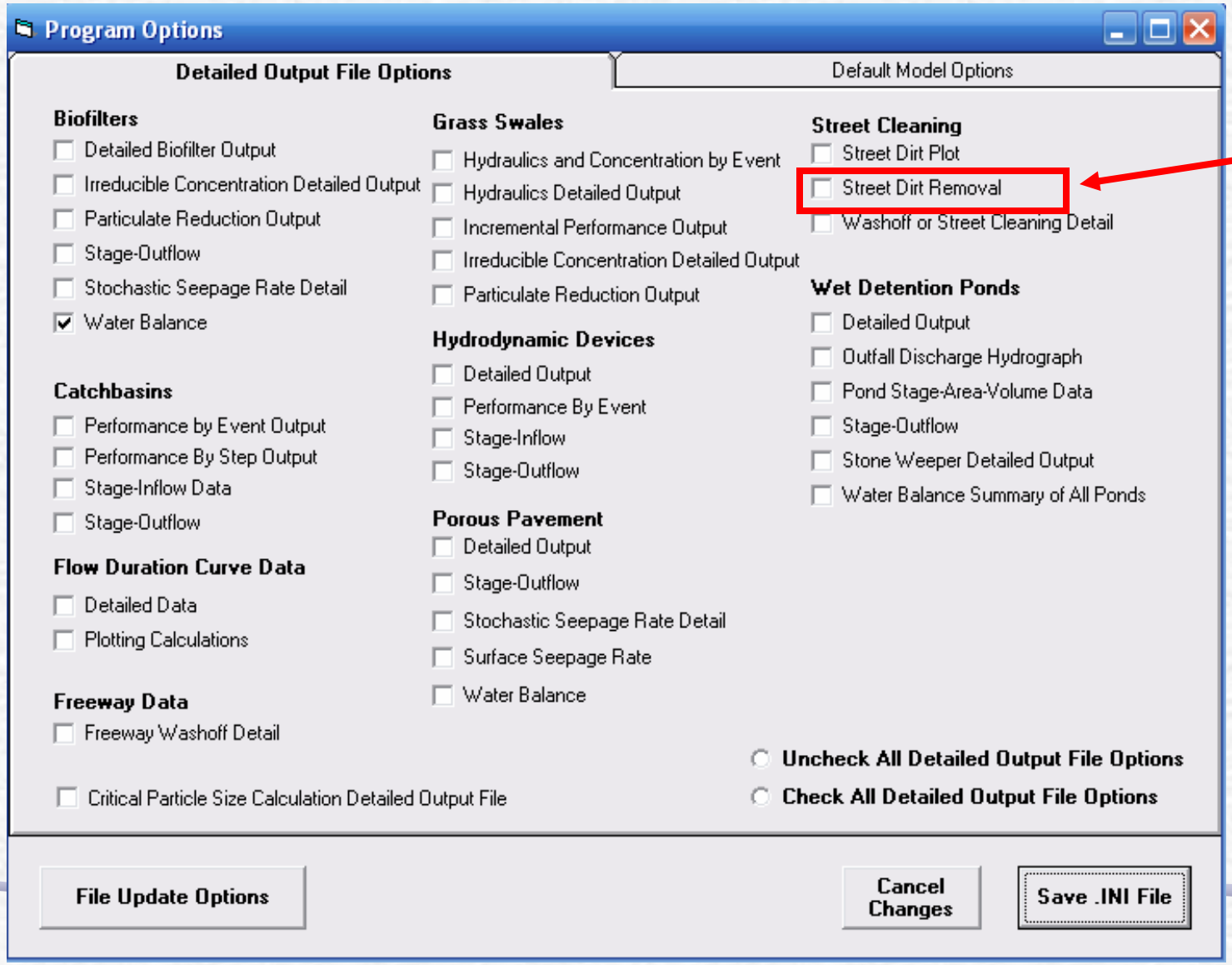
Detailed Output Options for Control Devices



To select additional detailed output from the program, select "Program Options"

.DAT files can also be updated from an earlier version here.

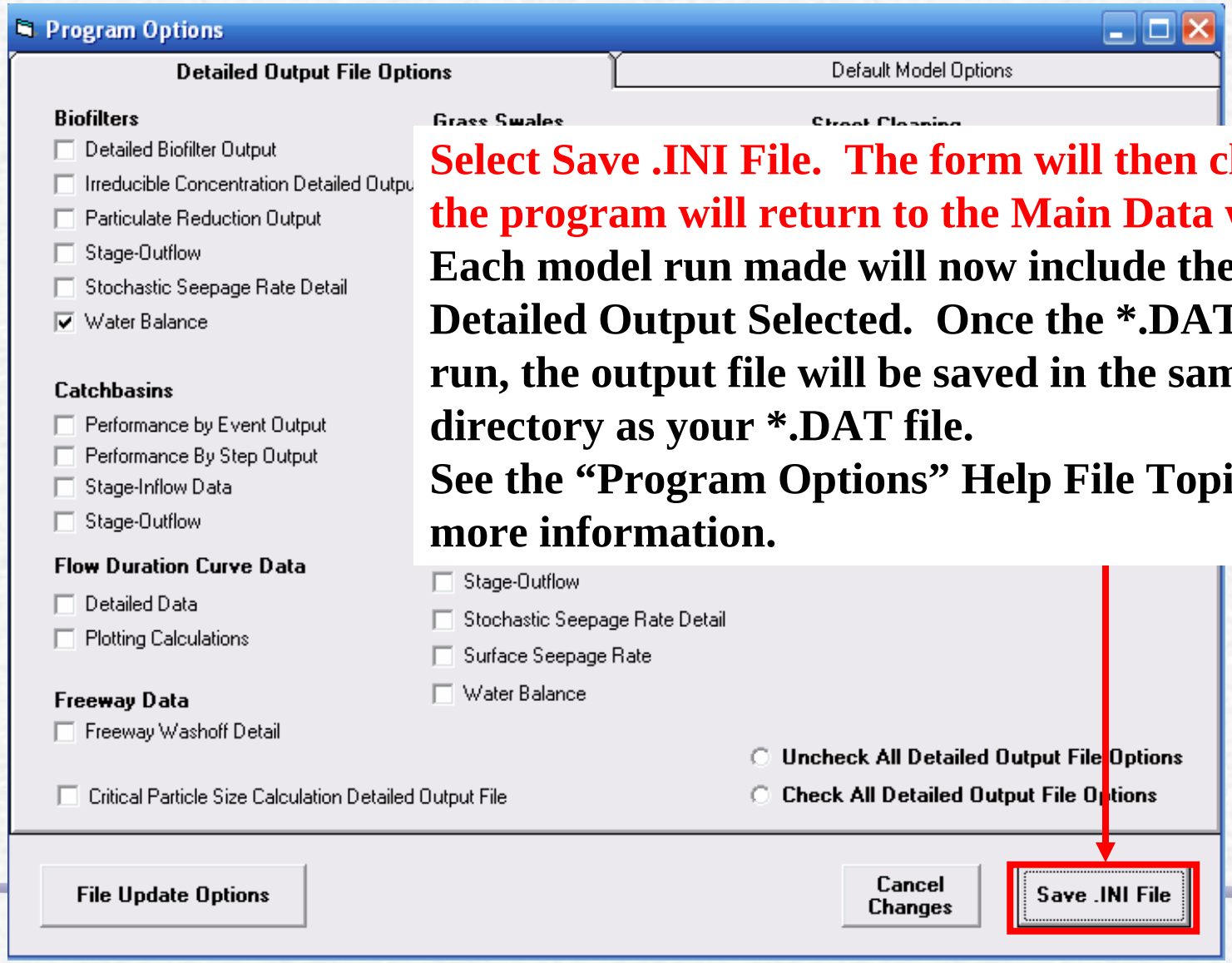
Detailed Output Options for Control Devices



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

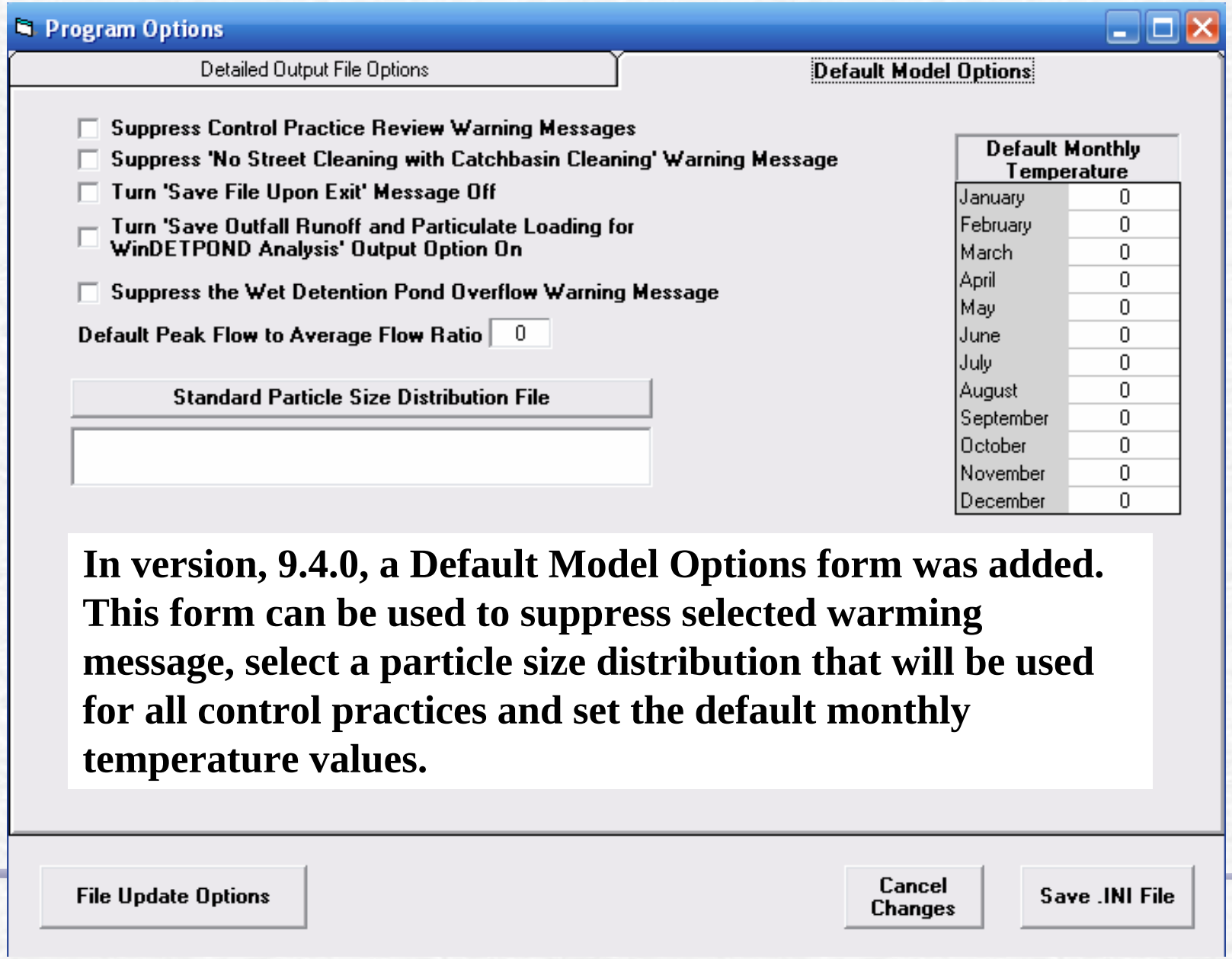


Select Save .INI File. The form will then close and the program will return to the Main Data window.

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.

Default Model Options

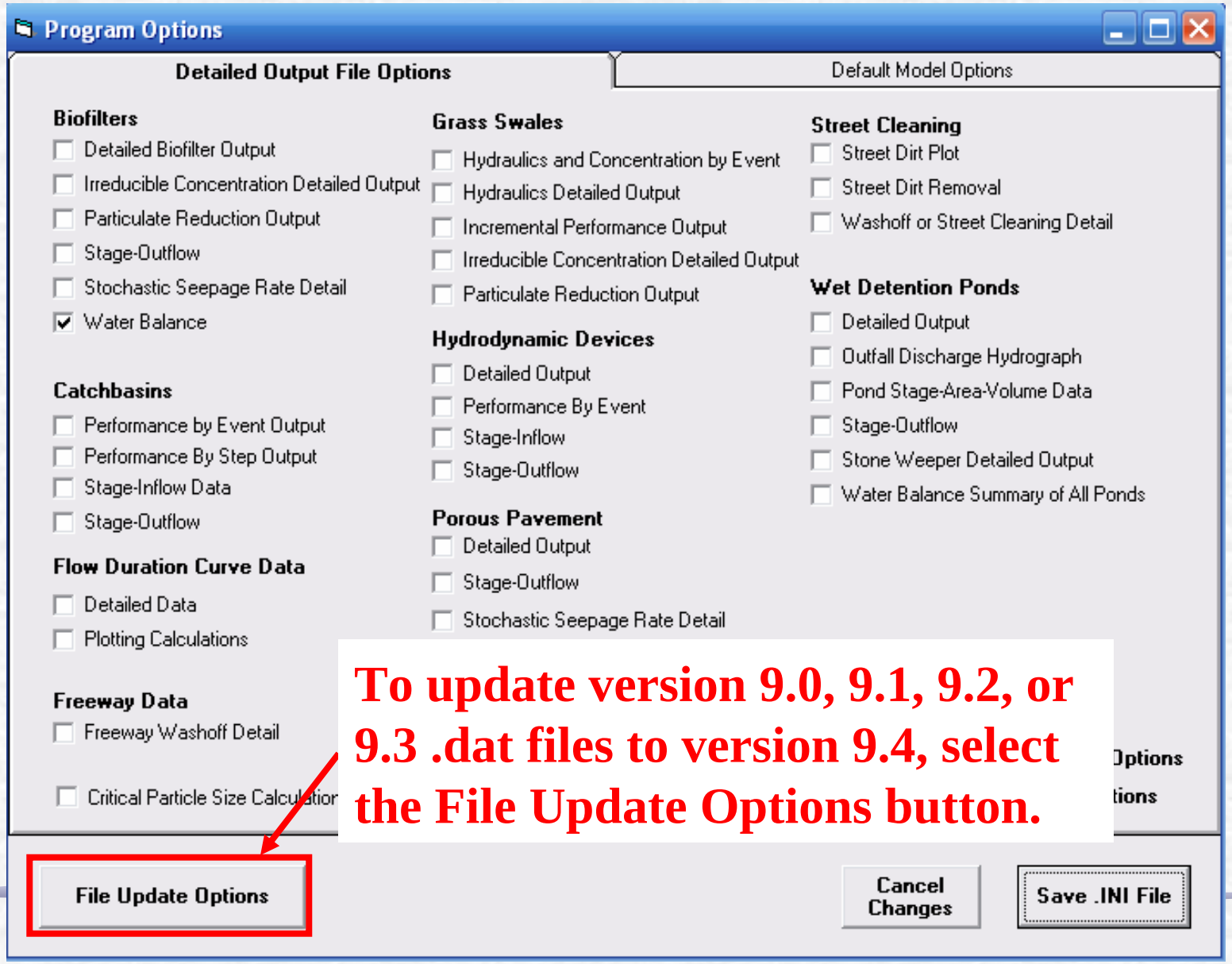


In version, 9.4.0, a Default Model Options form was added. This form can be used to suppress selected warming message, select a particle size distribution that will be used for all control practices and set the default monthly temperature values.

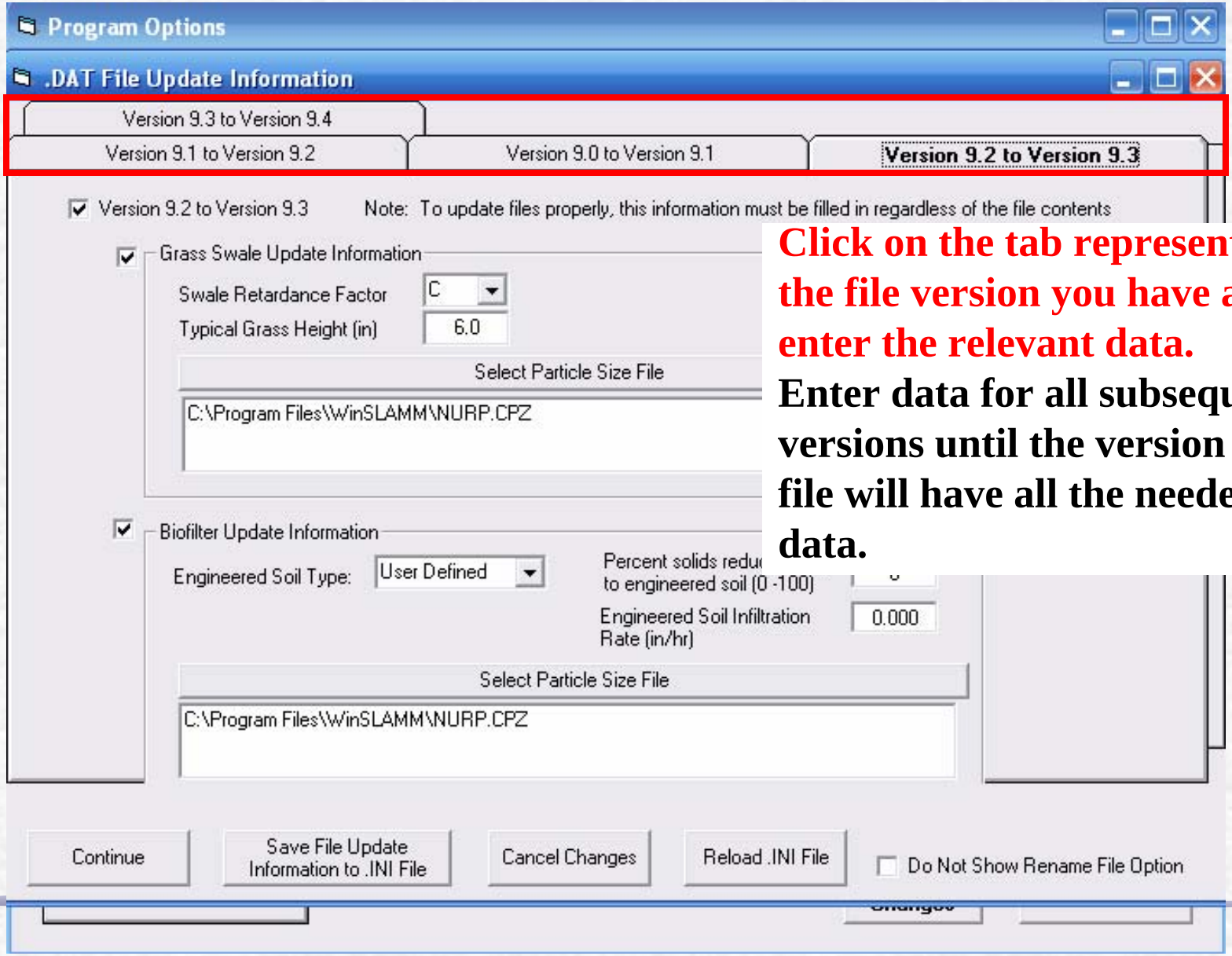
Updated File Update Options Overview Updated

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.

File Update Options



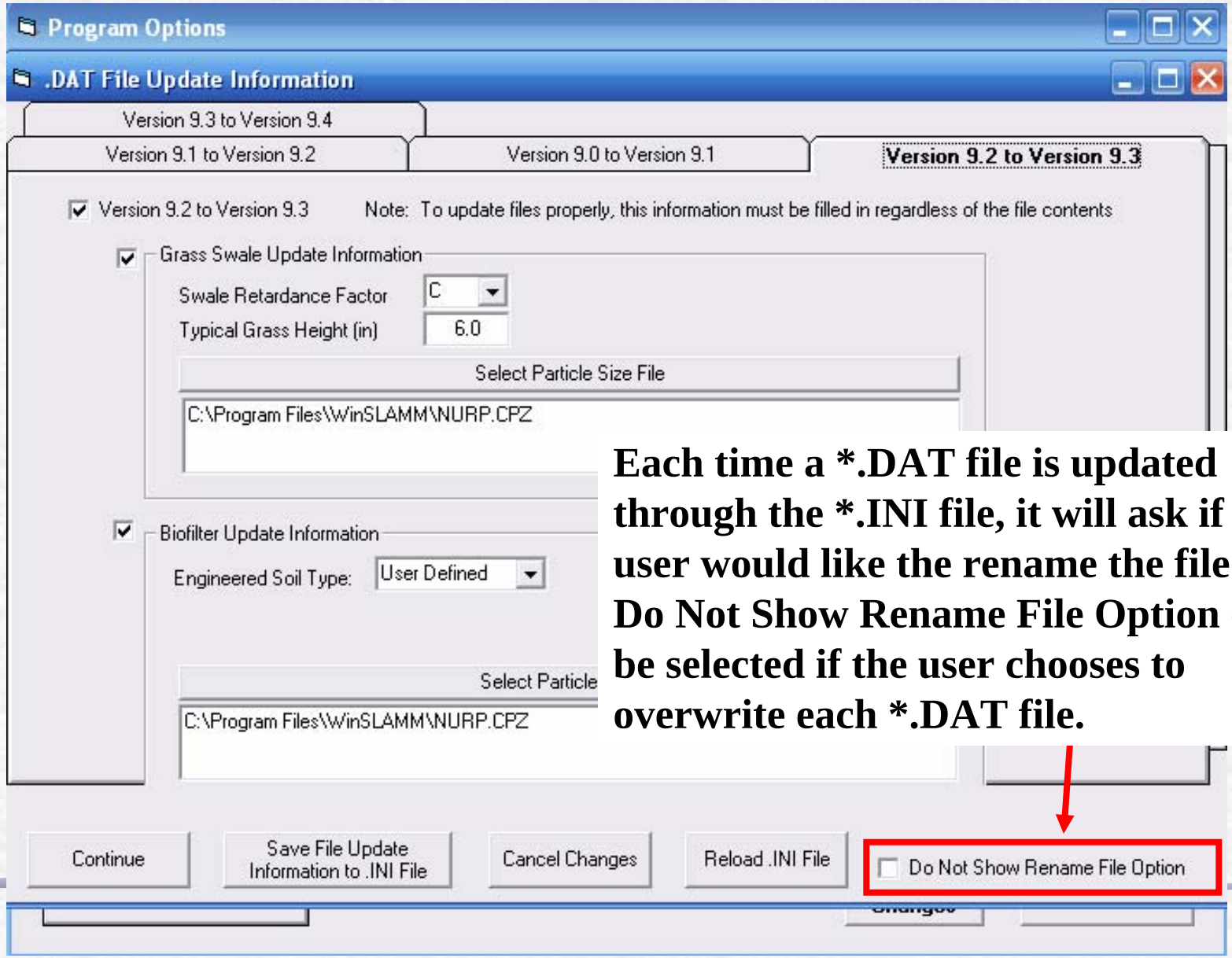
File Update Options



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

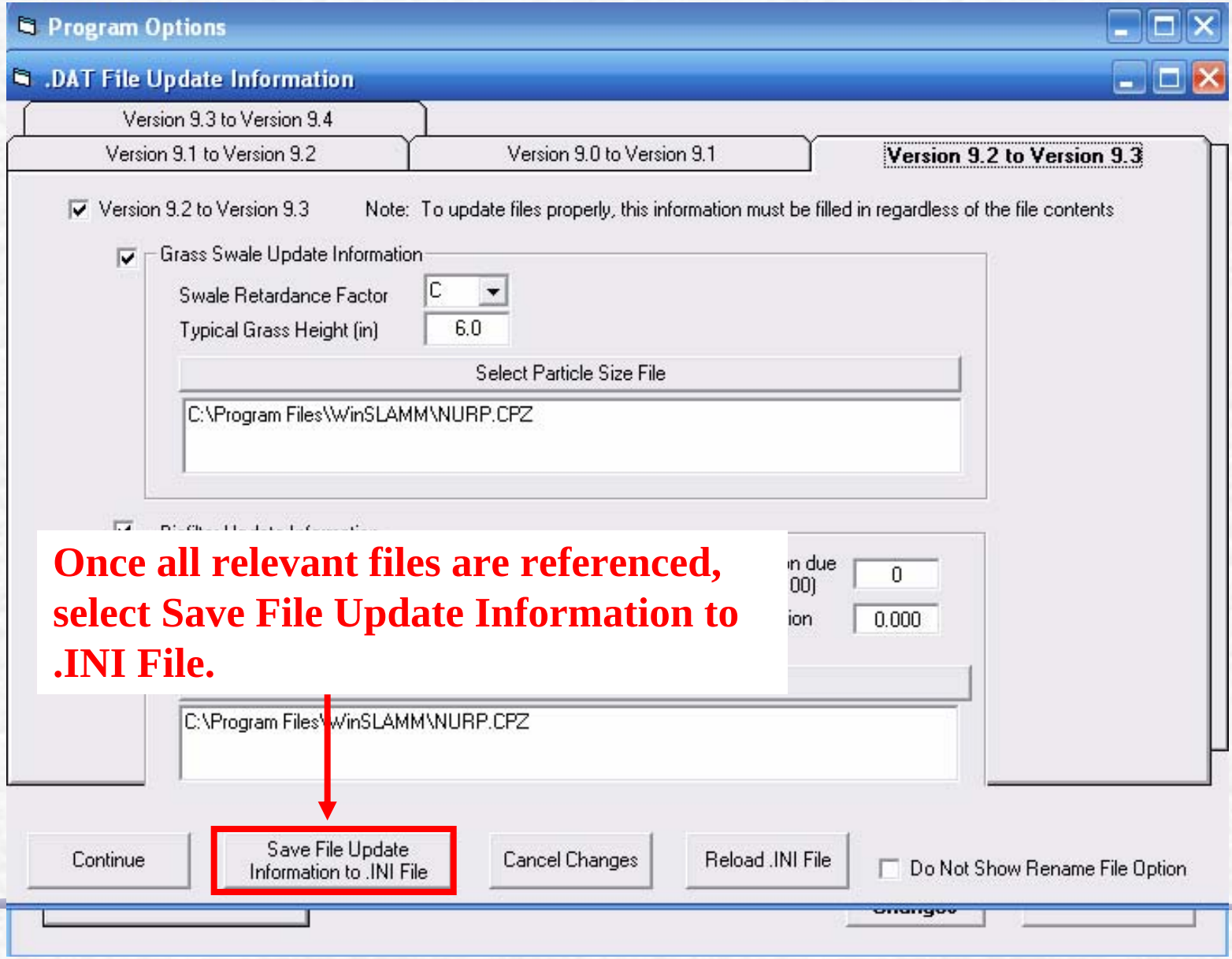
Enter data for all subsequent versions until the version 9.4 file will have all the needed data.

File Update Options

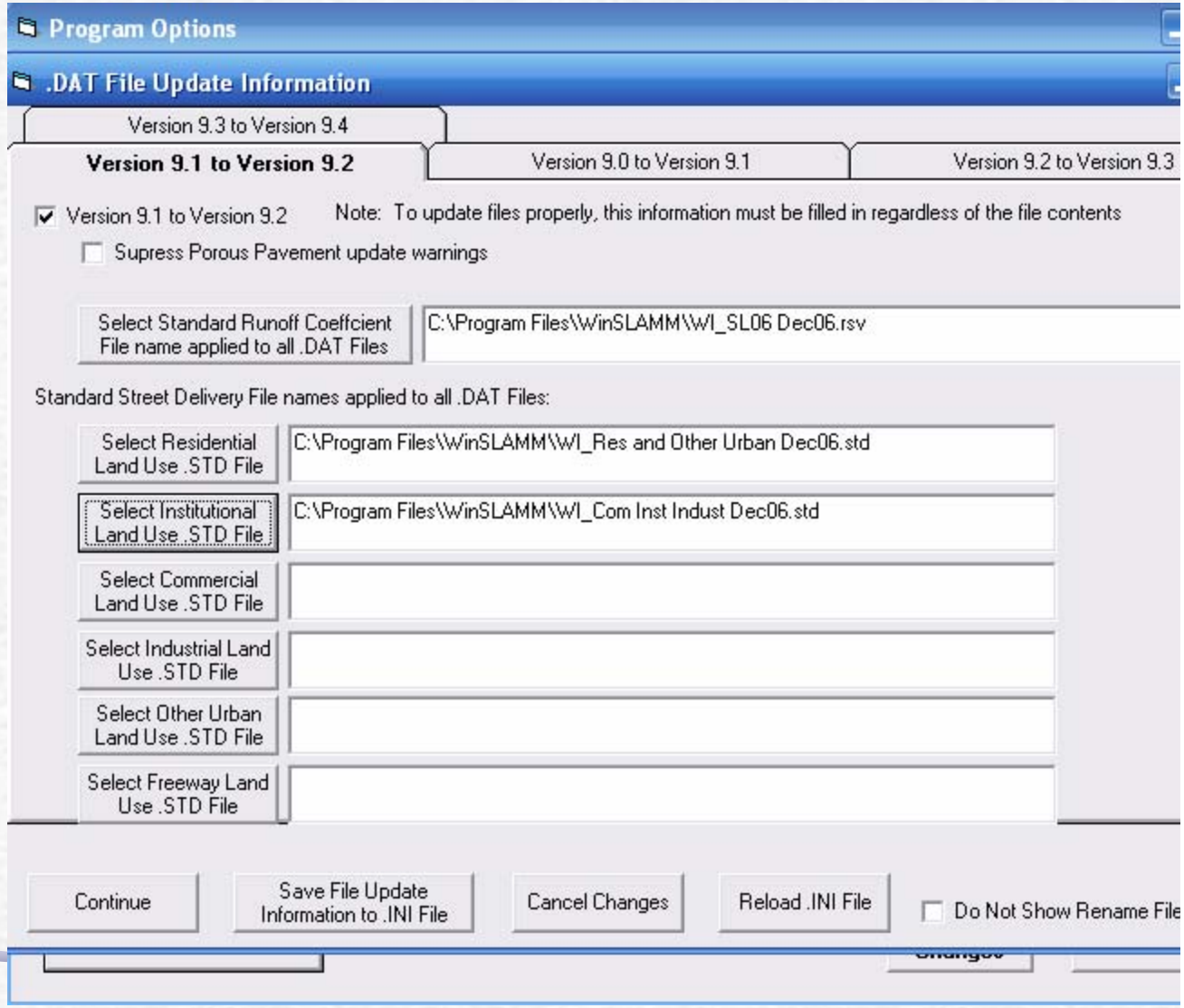


Each time a *.DAT file is updated through the *.INI file, it will ask if the user would like the rename the file. The Do Not Show Rename File Option can be selected if the user chooses to overwrite each *.DAT file.

File Update Options



File Update Options



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.

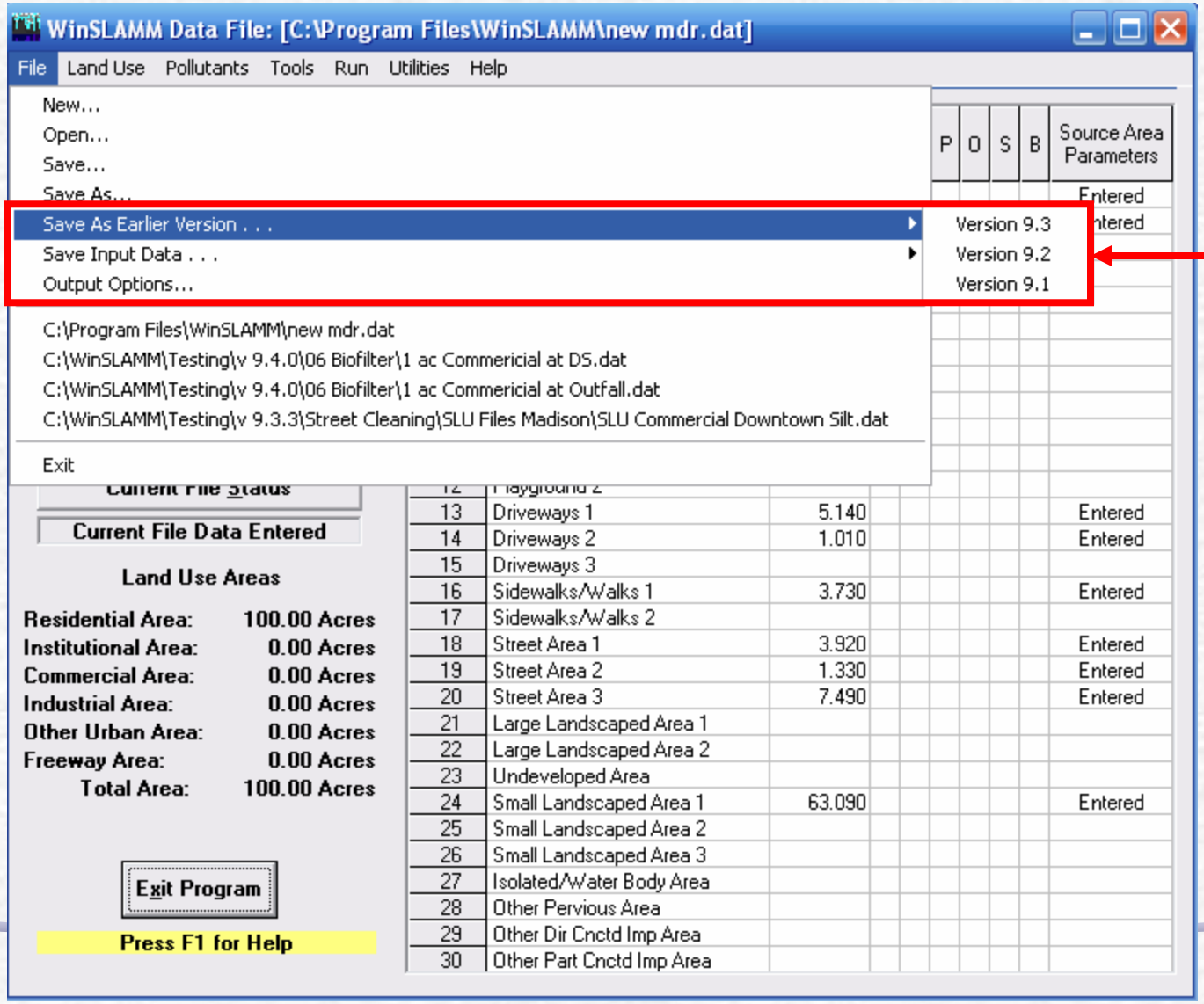
New

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.

Saving Down to an Earlier Version



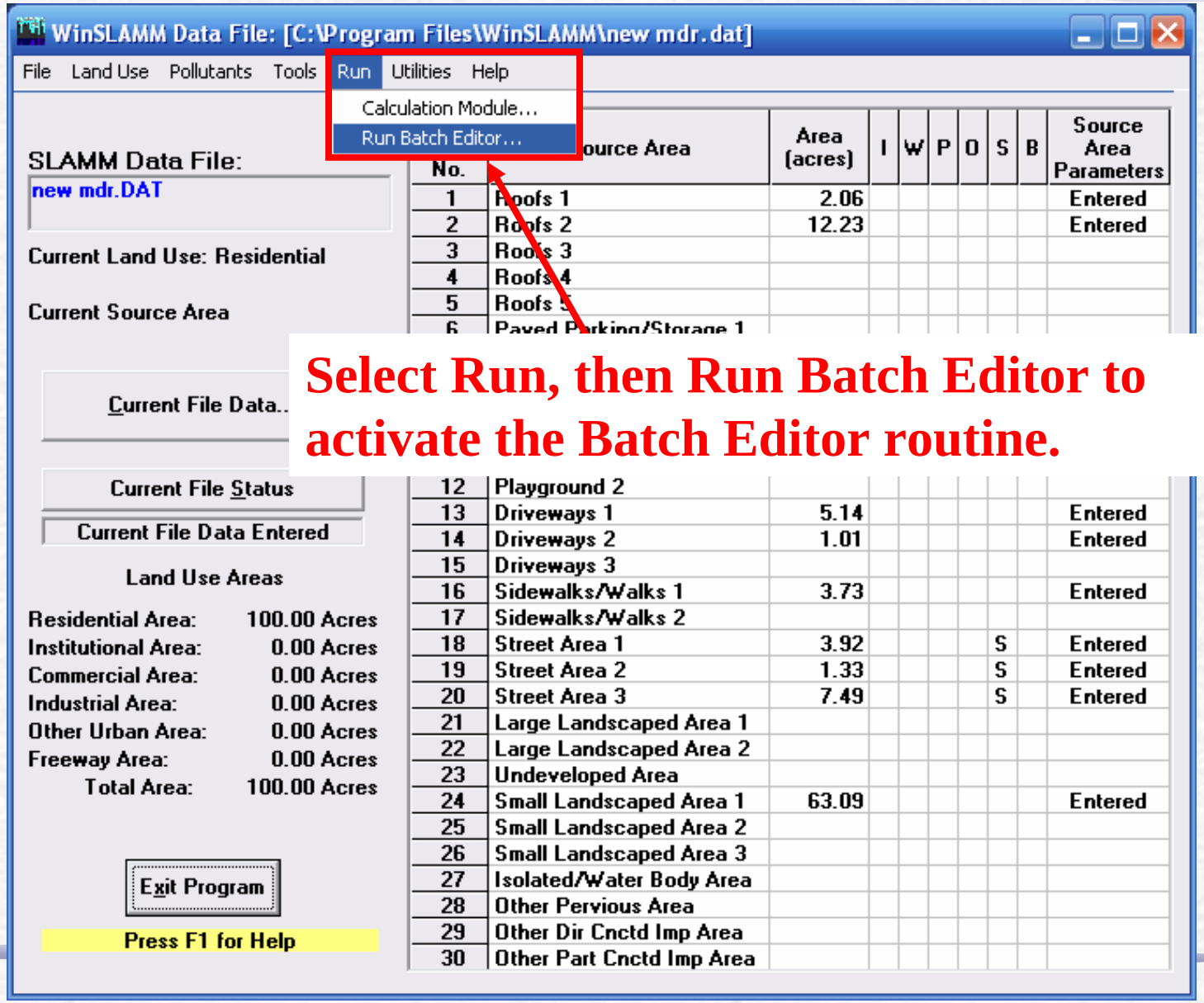
To save a version 9.4 file to an earlier version, select "File", then "Save As Earlier Version", then select the desired version.

Batch Editor Overview

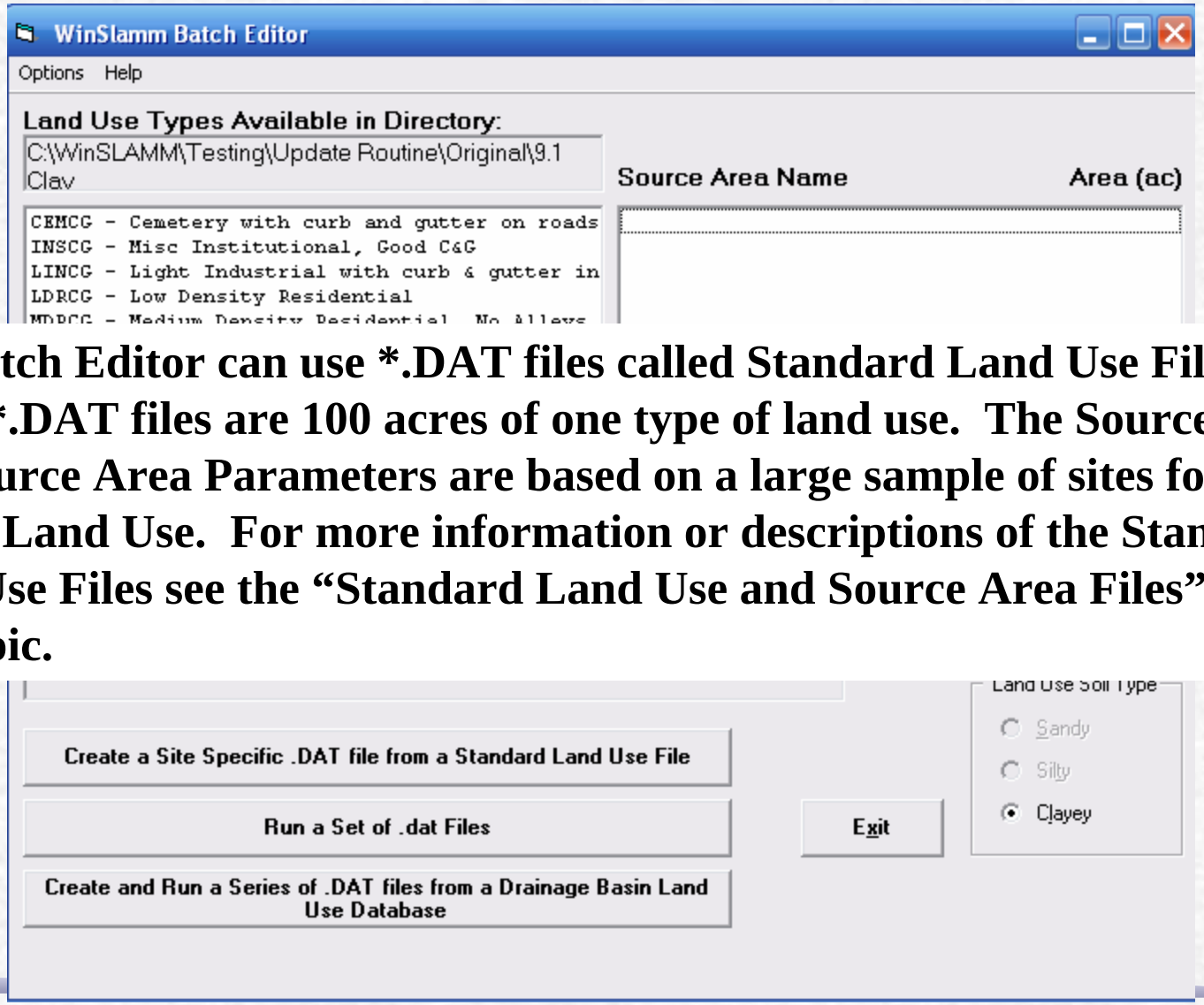
The Batch Editor can be used to perform three functions. The three functions are:

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

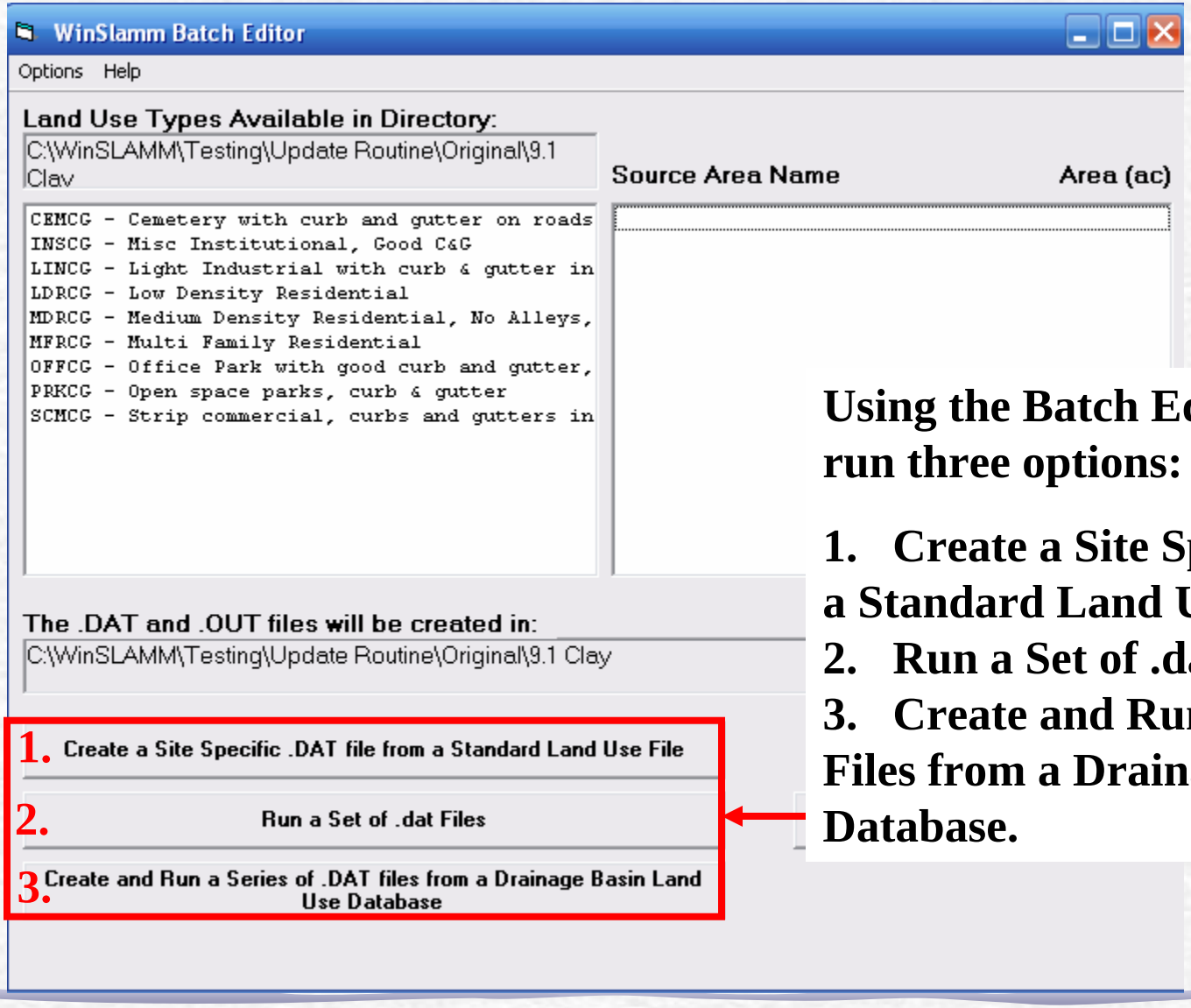


Batch Editor



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.

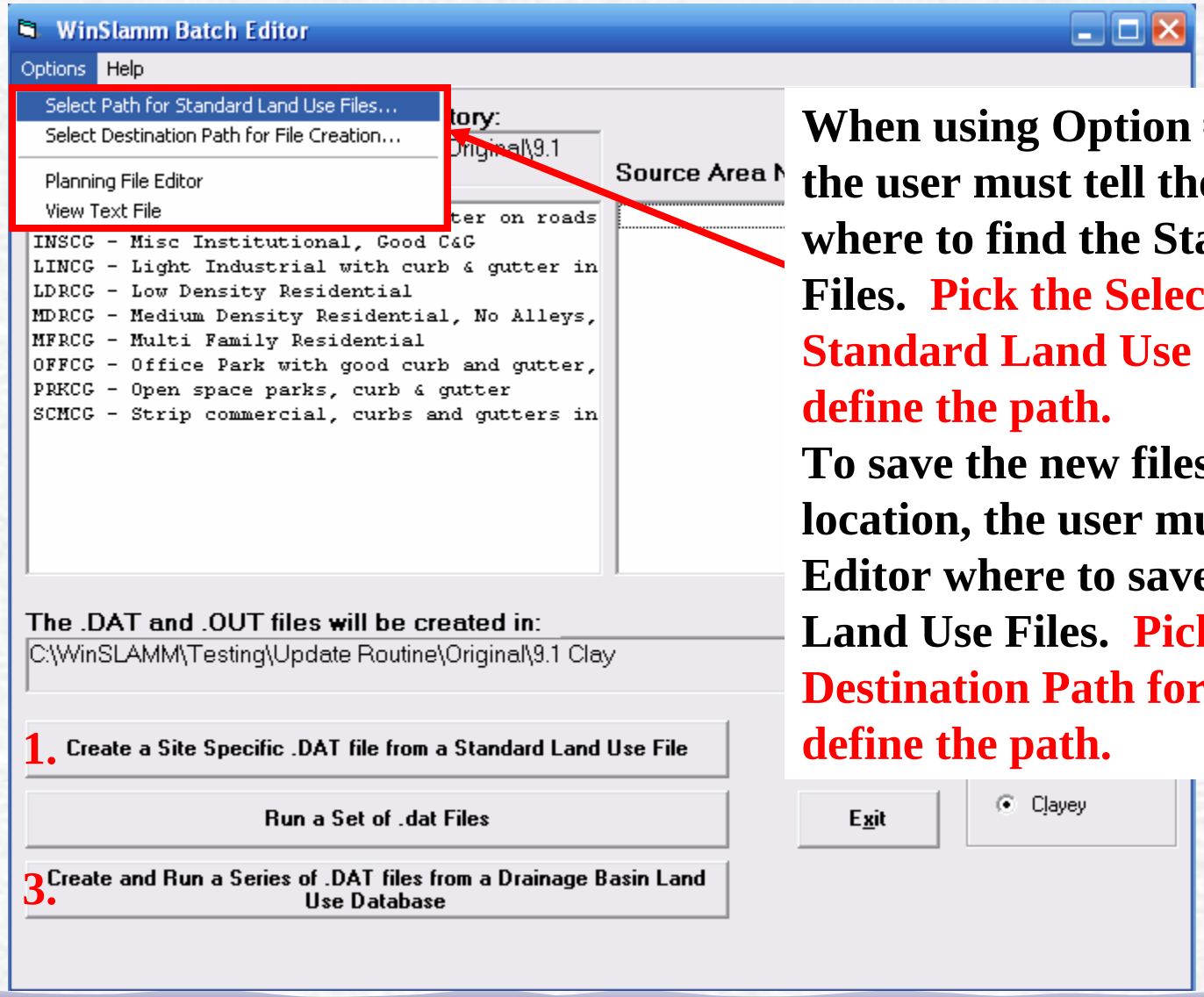
Batch Editor



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.**

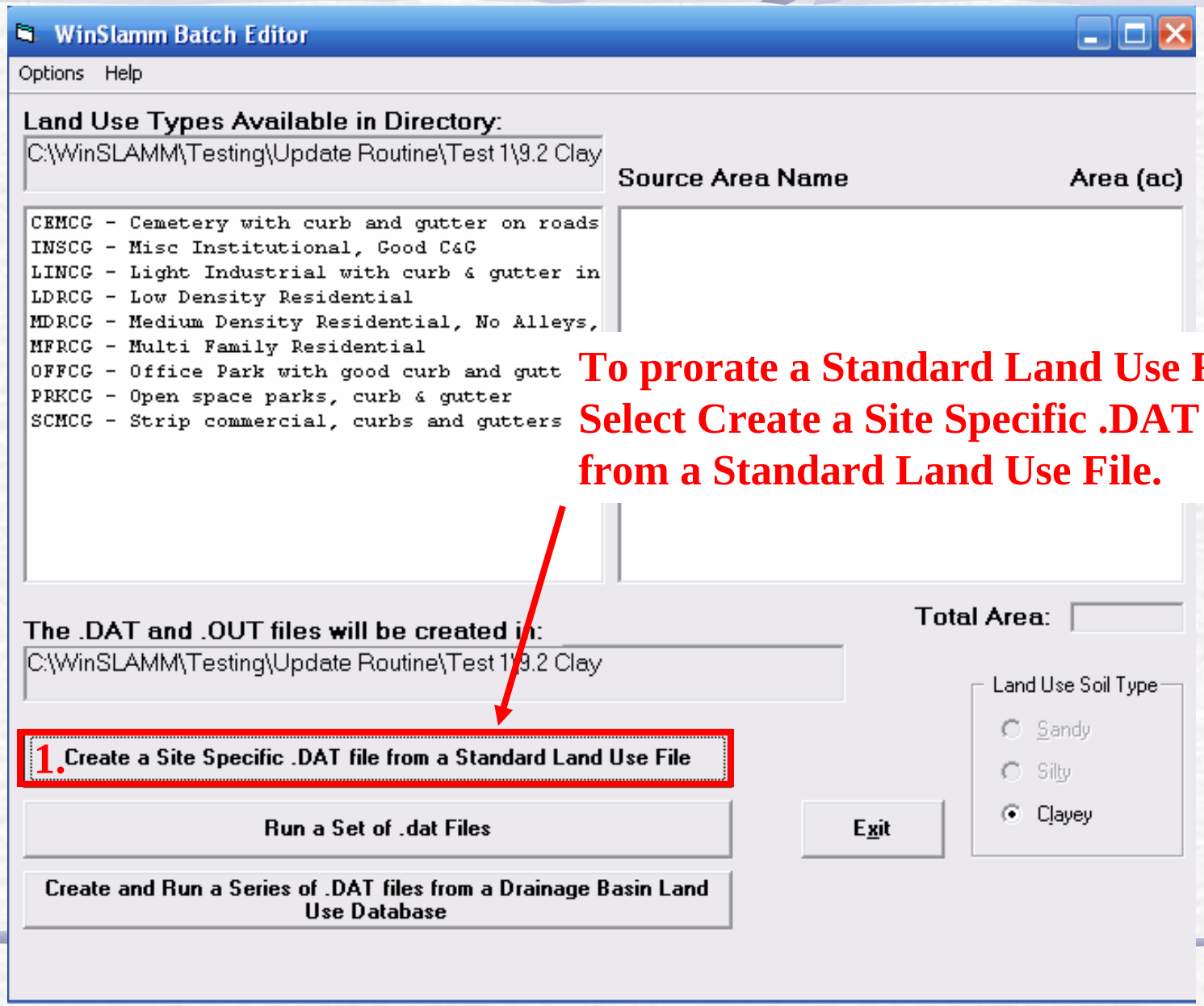
Batch Editor



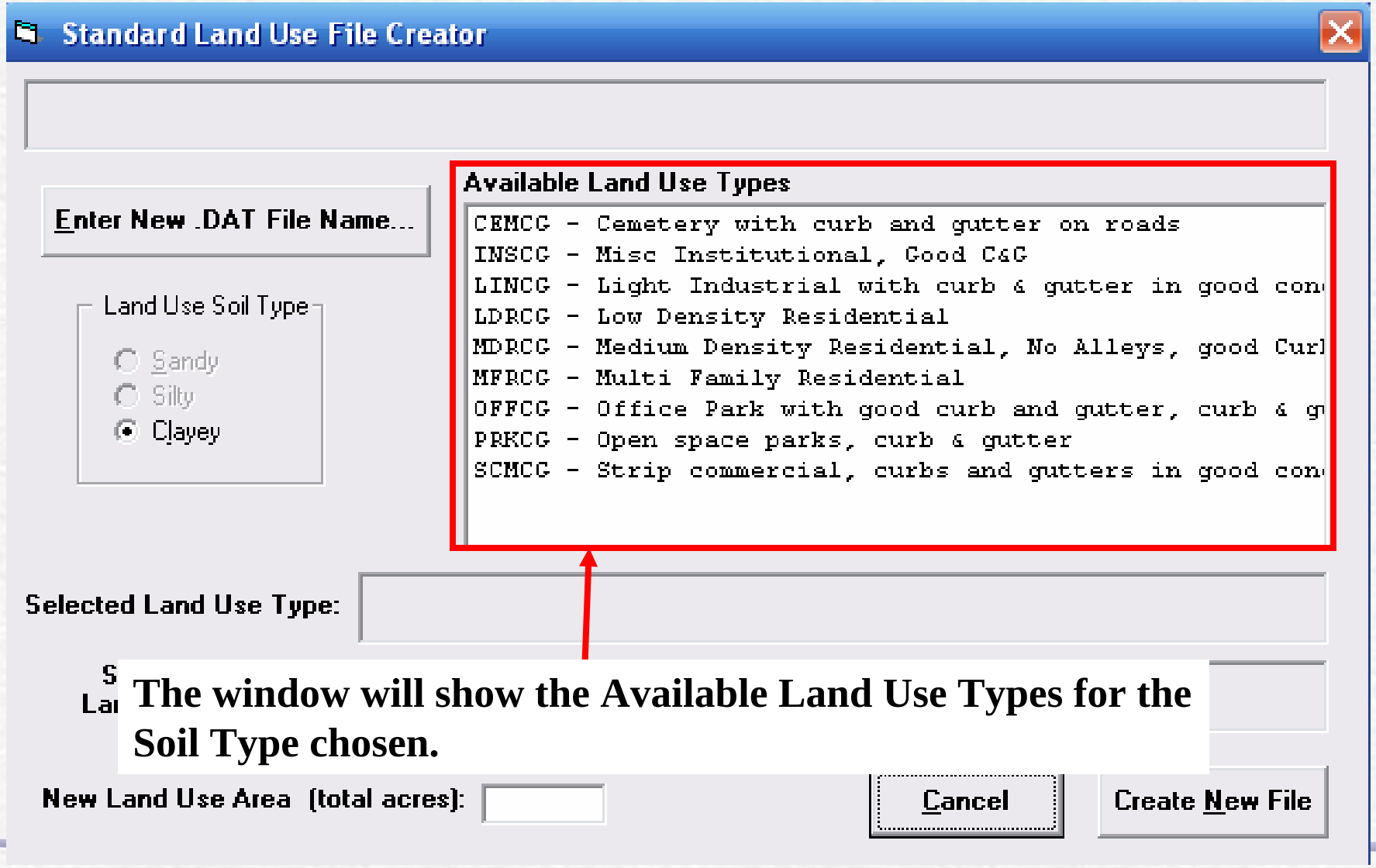
When using Option #1 or Option #3, the user must tell the Batch Editor where to find the Standard Land Use Files. **Pick the Select Path for Standard Land Use Files menu item to define the path.**

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.**

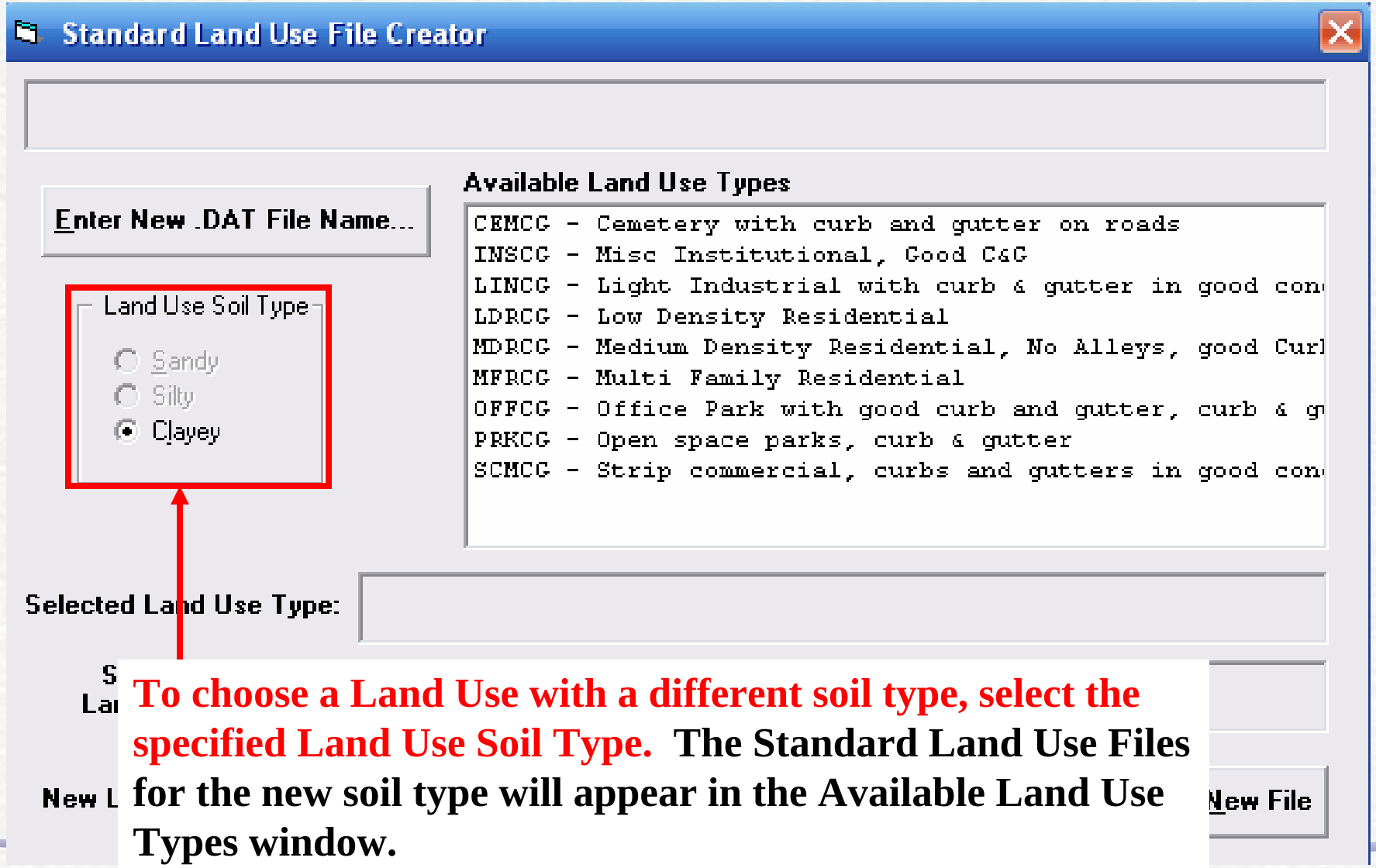
Batch Editor



Batch Editor

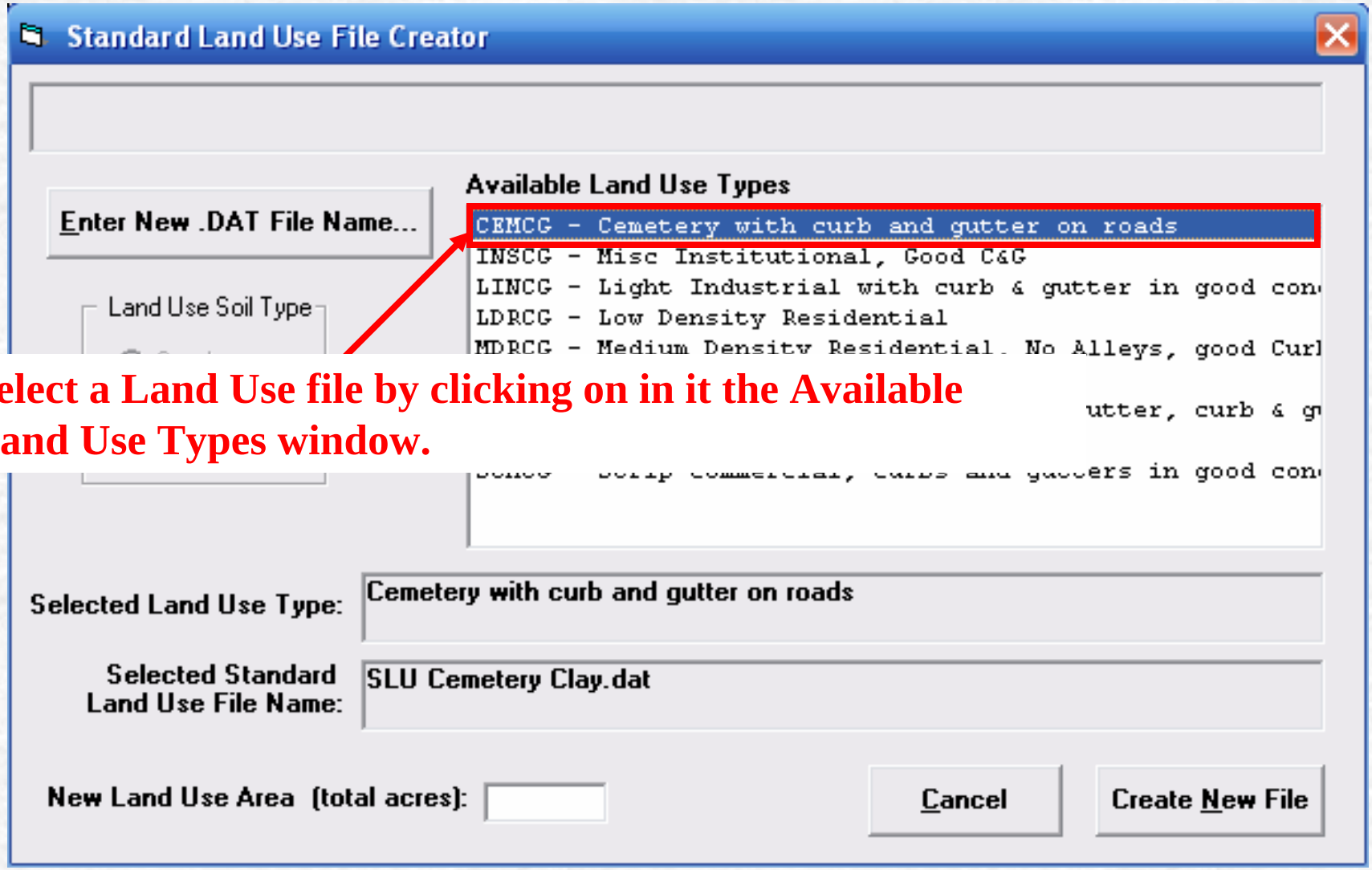


Batch Editor



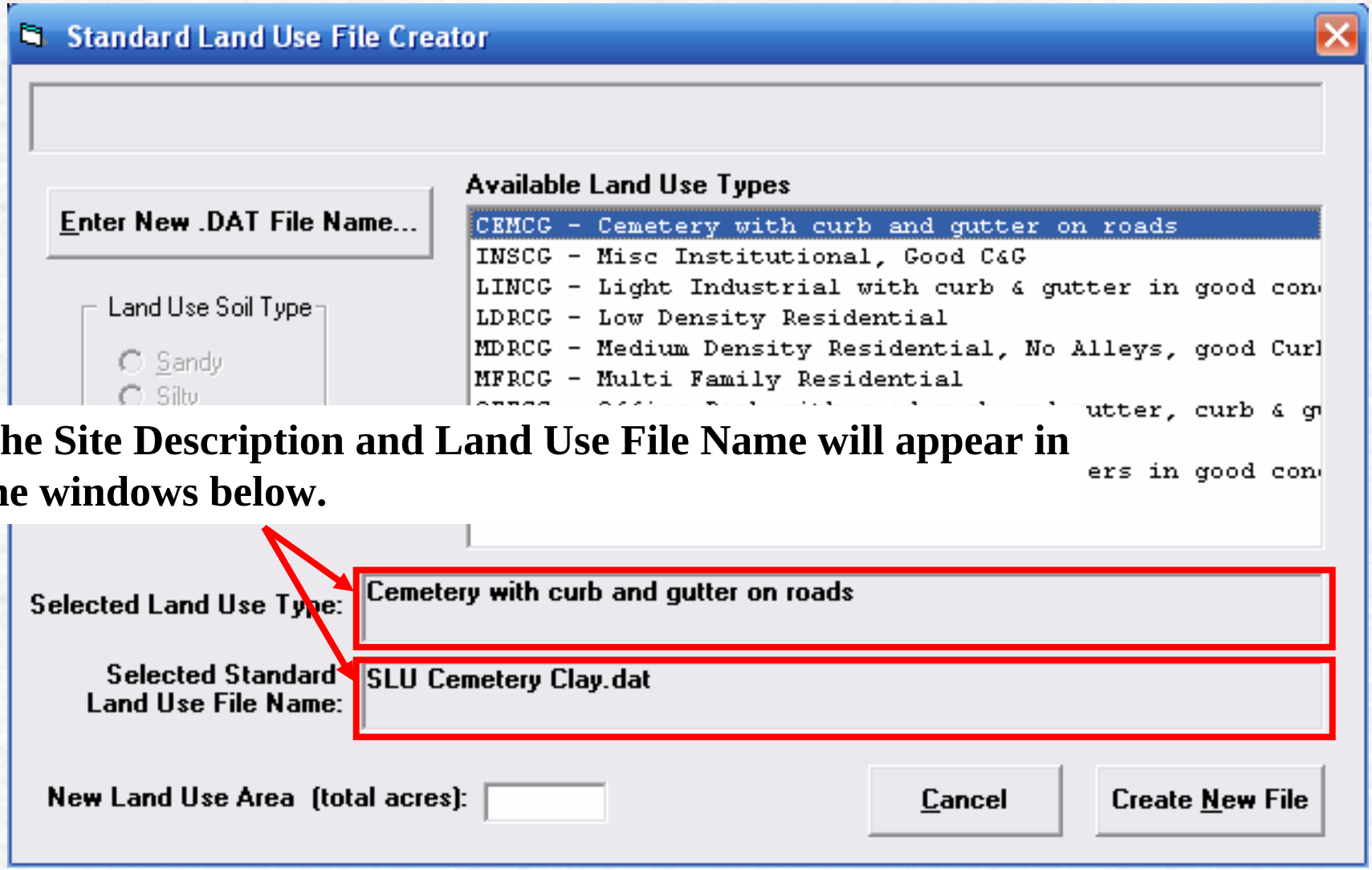
To choose a Land Use with a different soil type, select the specified Land Use Soil Type. The Standard Land Use Files for the new soil type will appear in the Available Land Use Types window.

Batch Editor

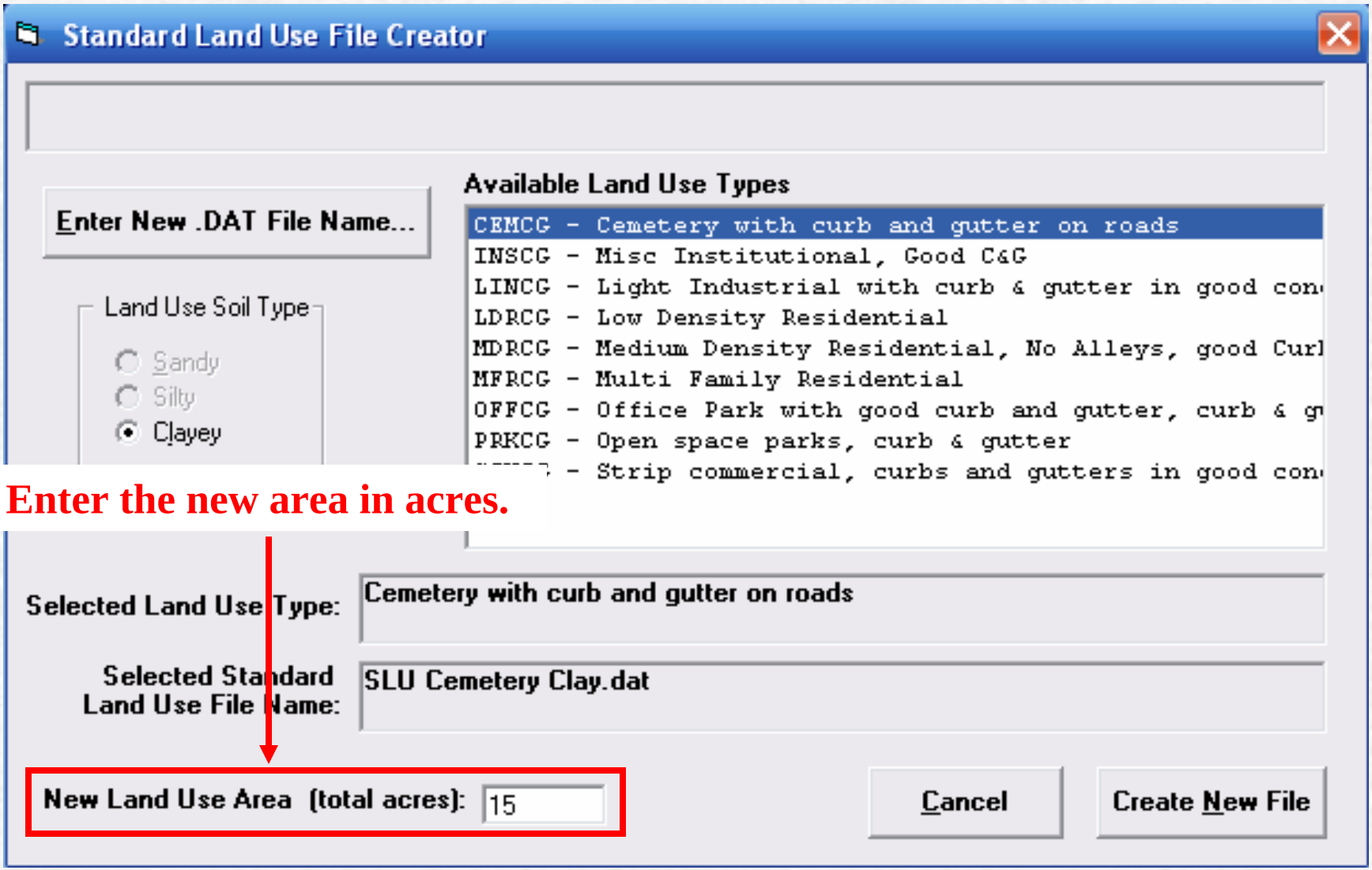


Select a Land Use file by clicking on in it the Available Land Use Types window.

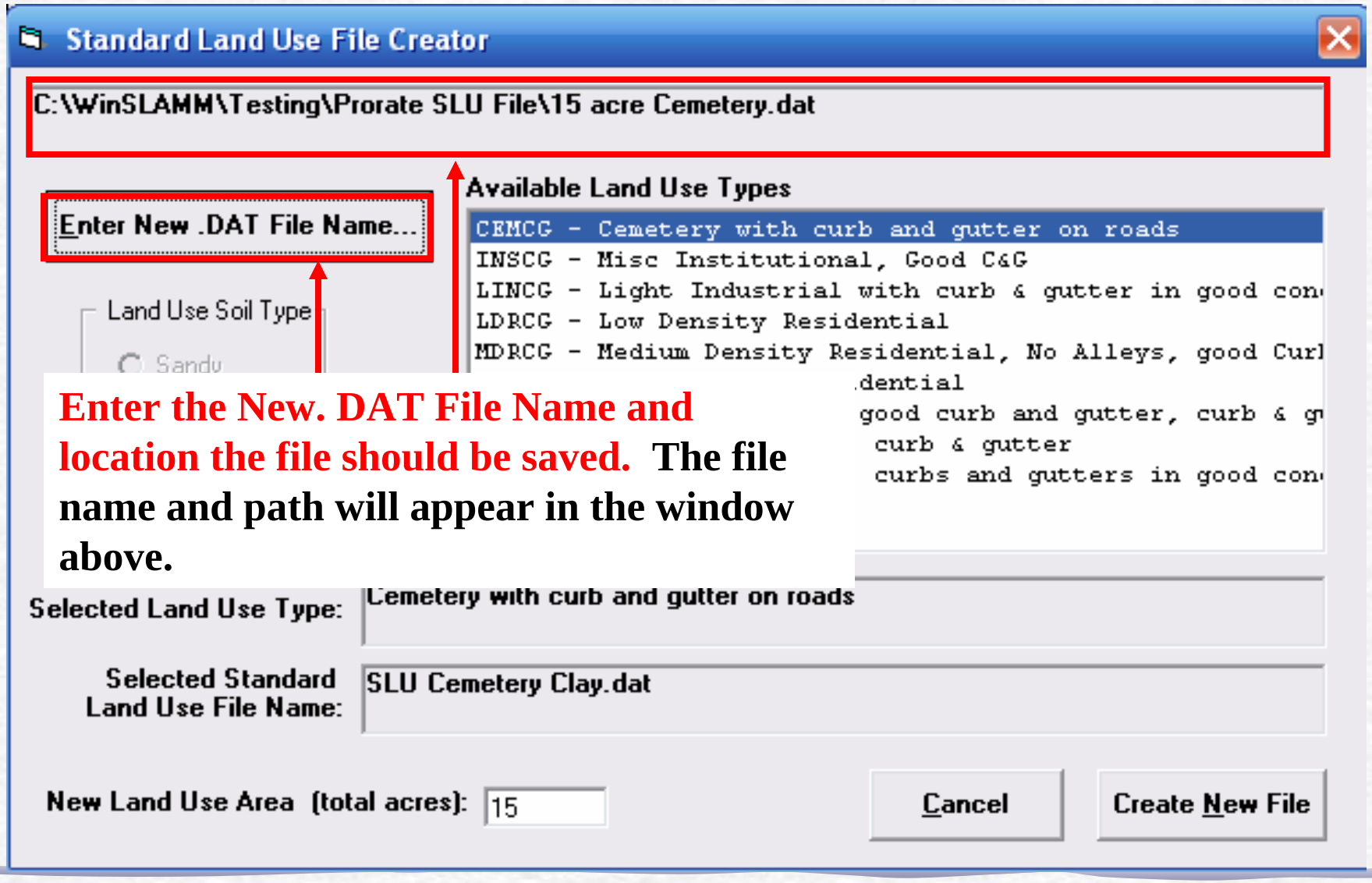
Batch Editor



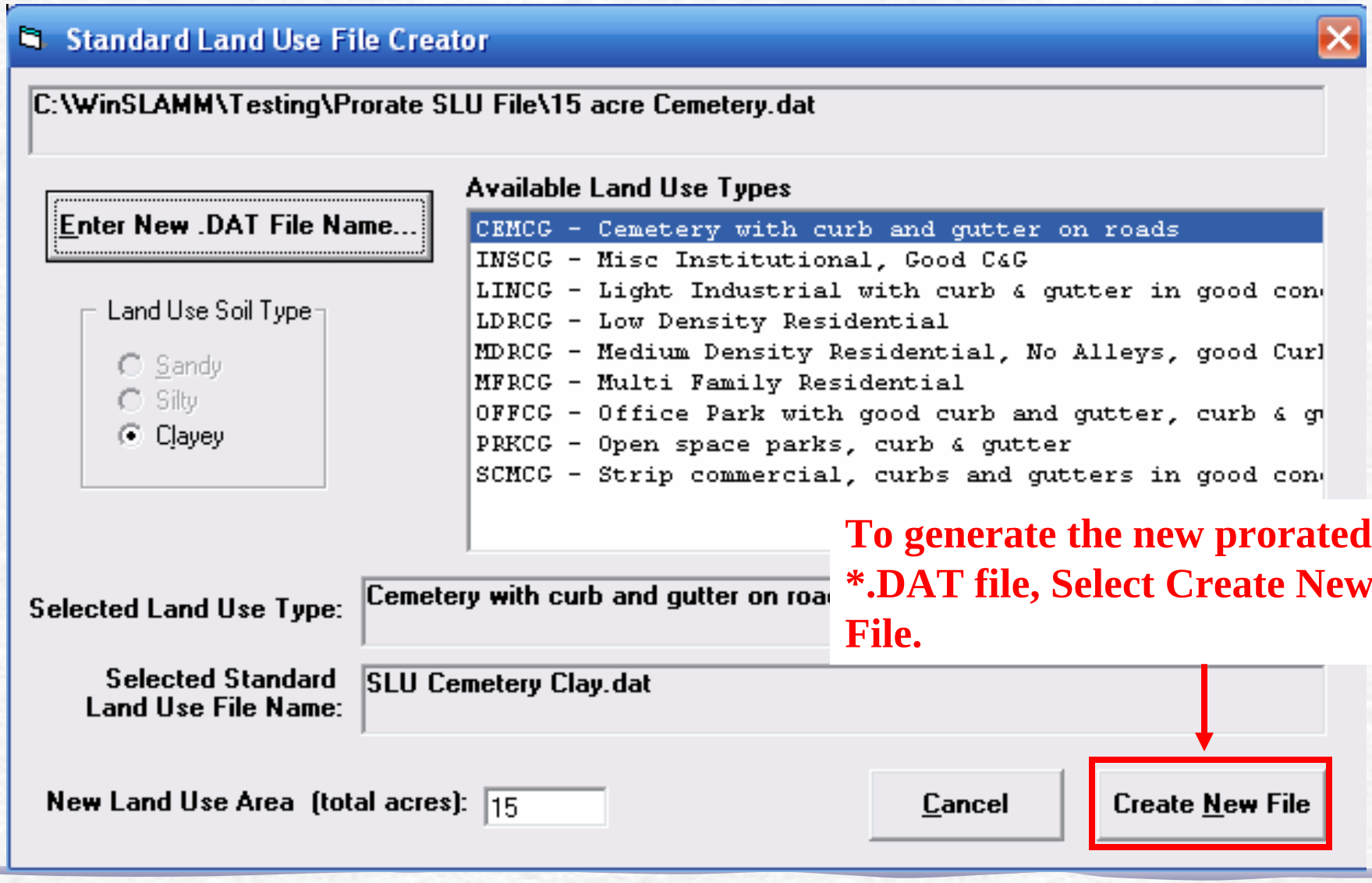
Batch Editor



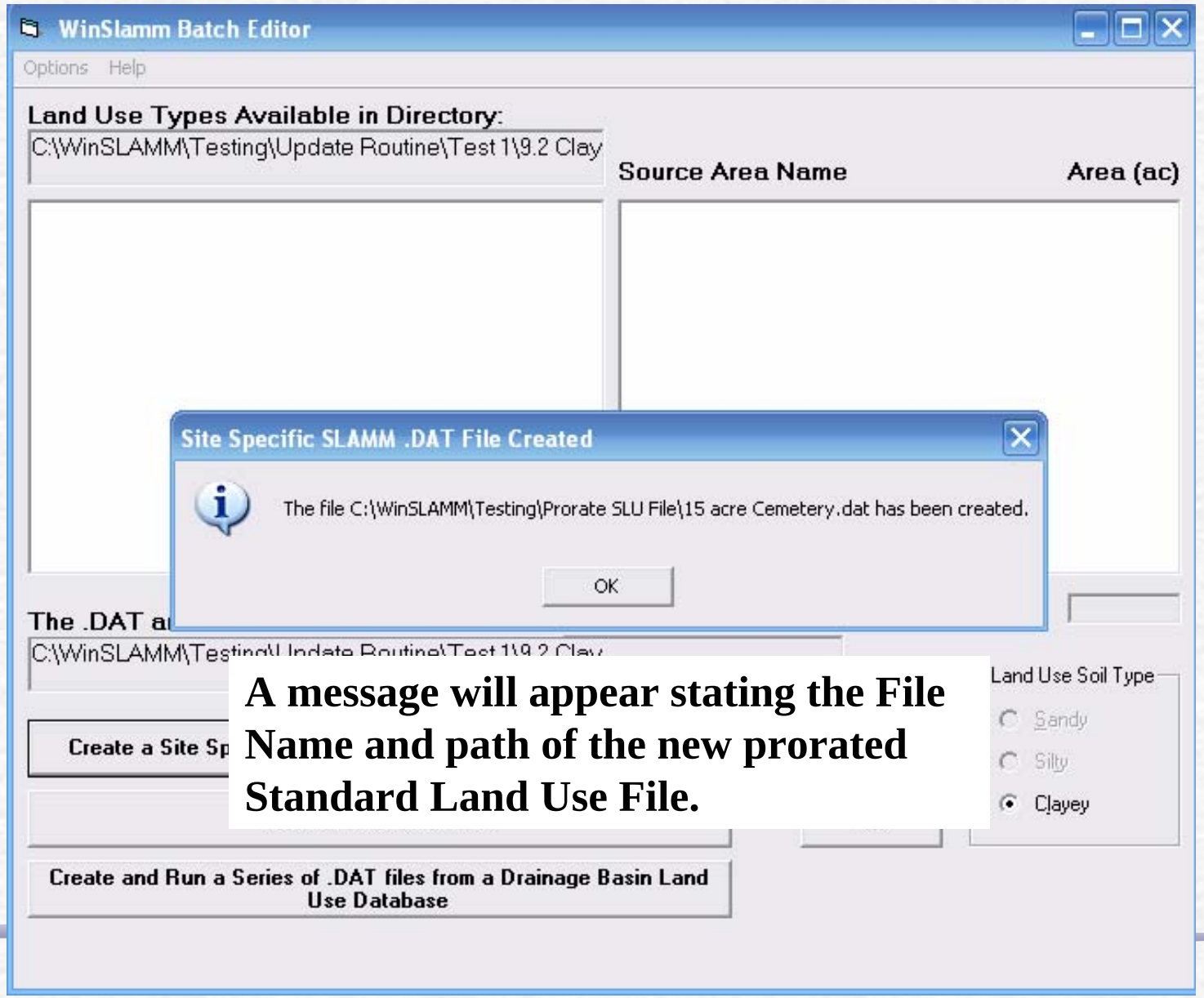
Batch Editor



Batch Editor

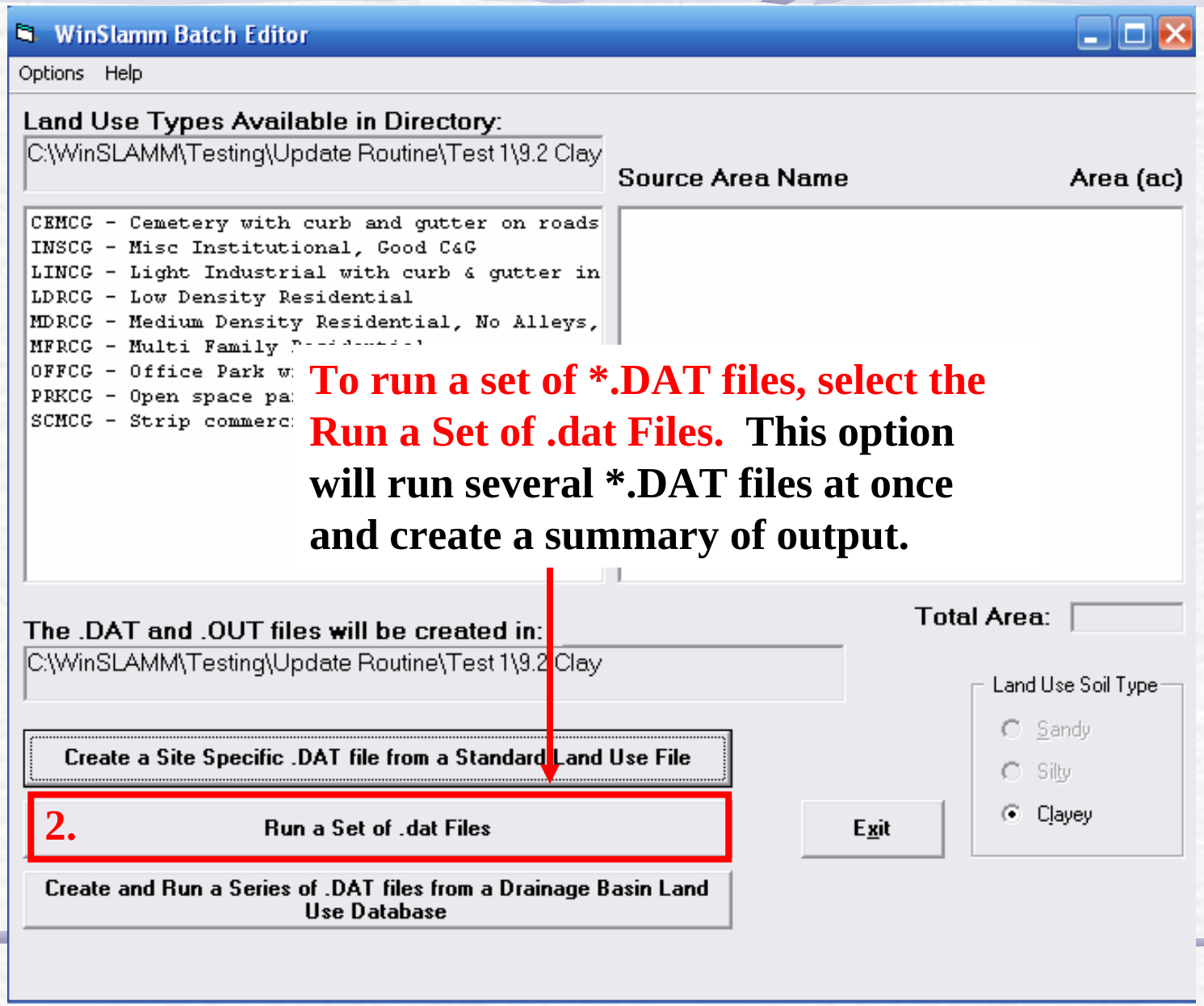


Batch Editor

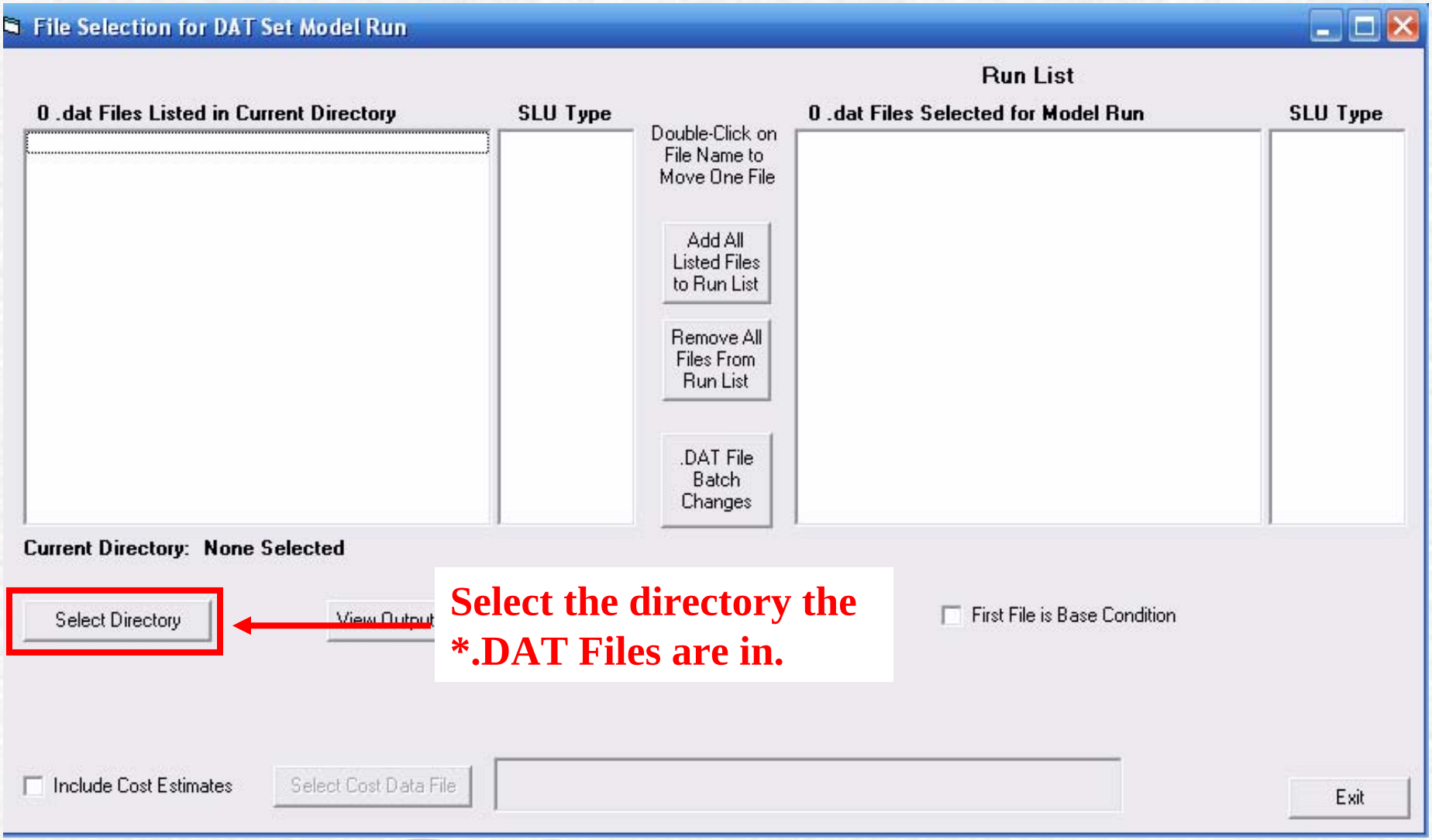


A message will appear stating the File Name and path of the new prorated Standard Land Use File.

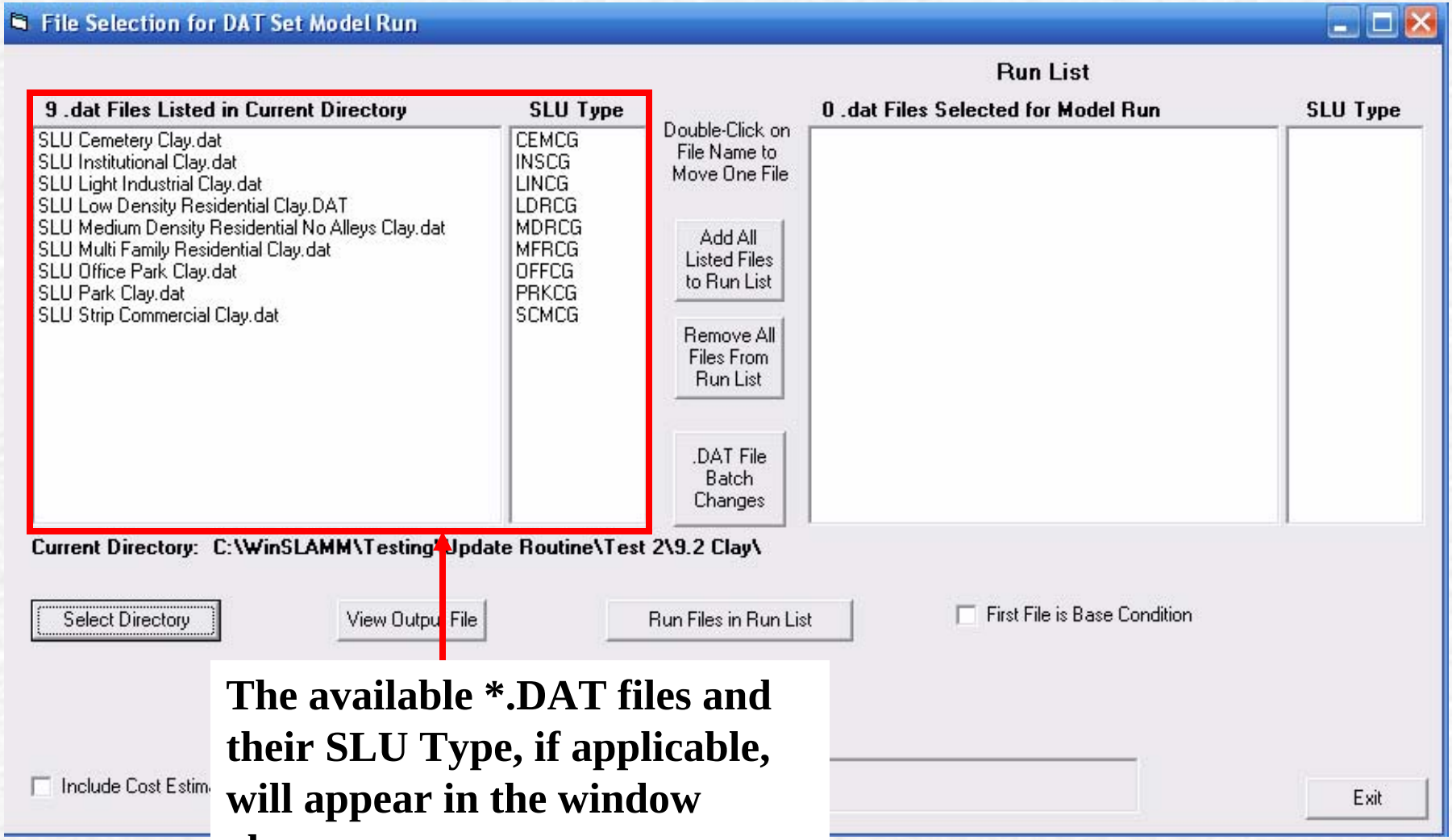
Batch Editor



Batch Editor

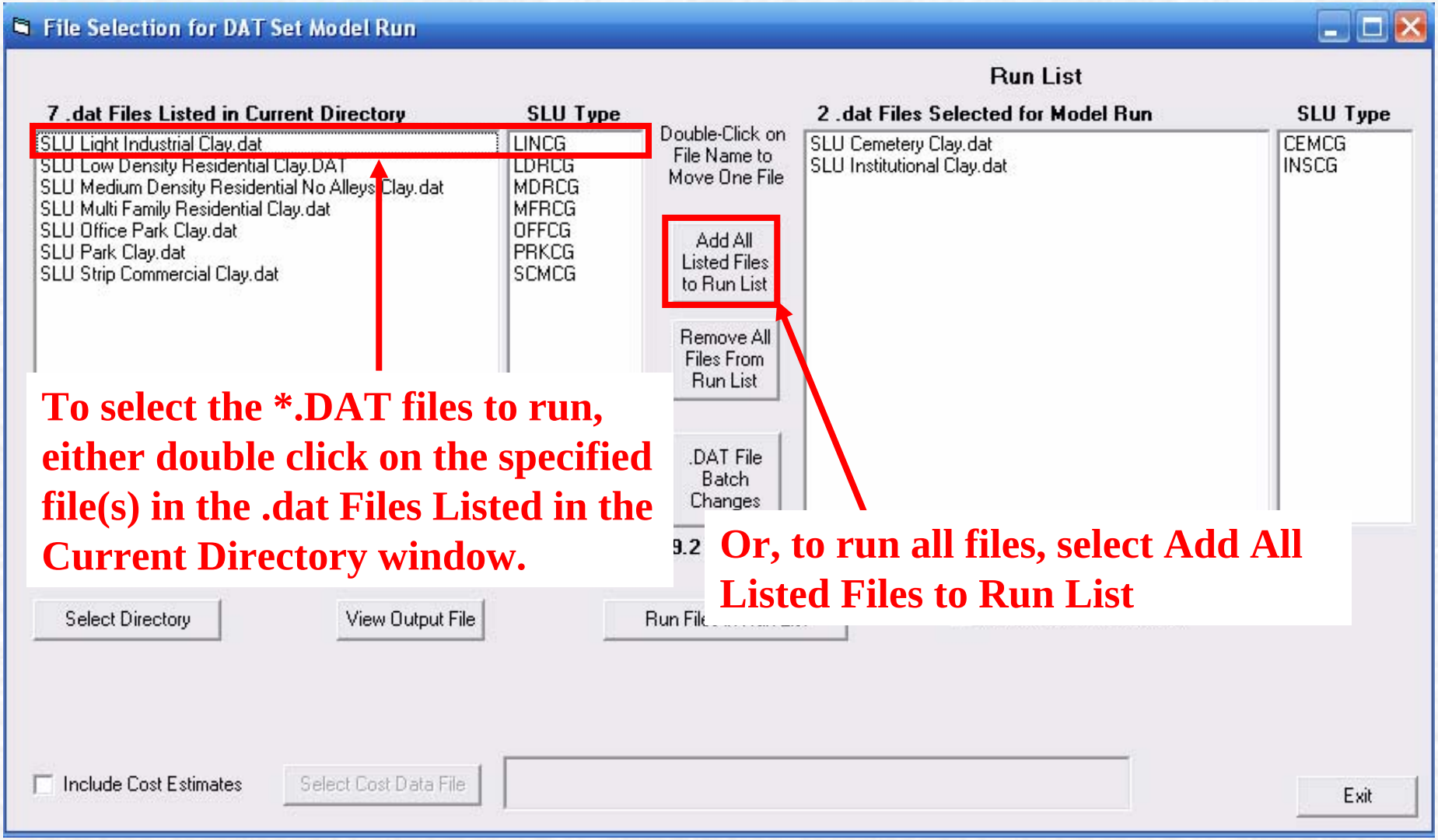


Batch Editor

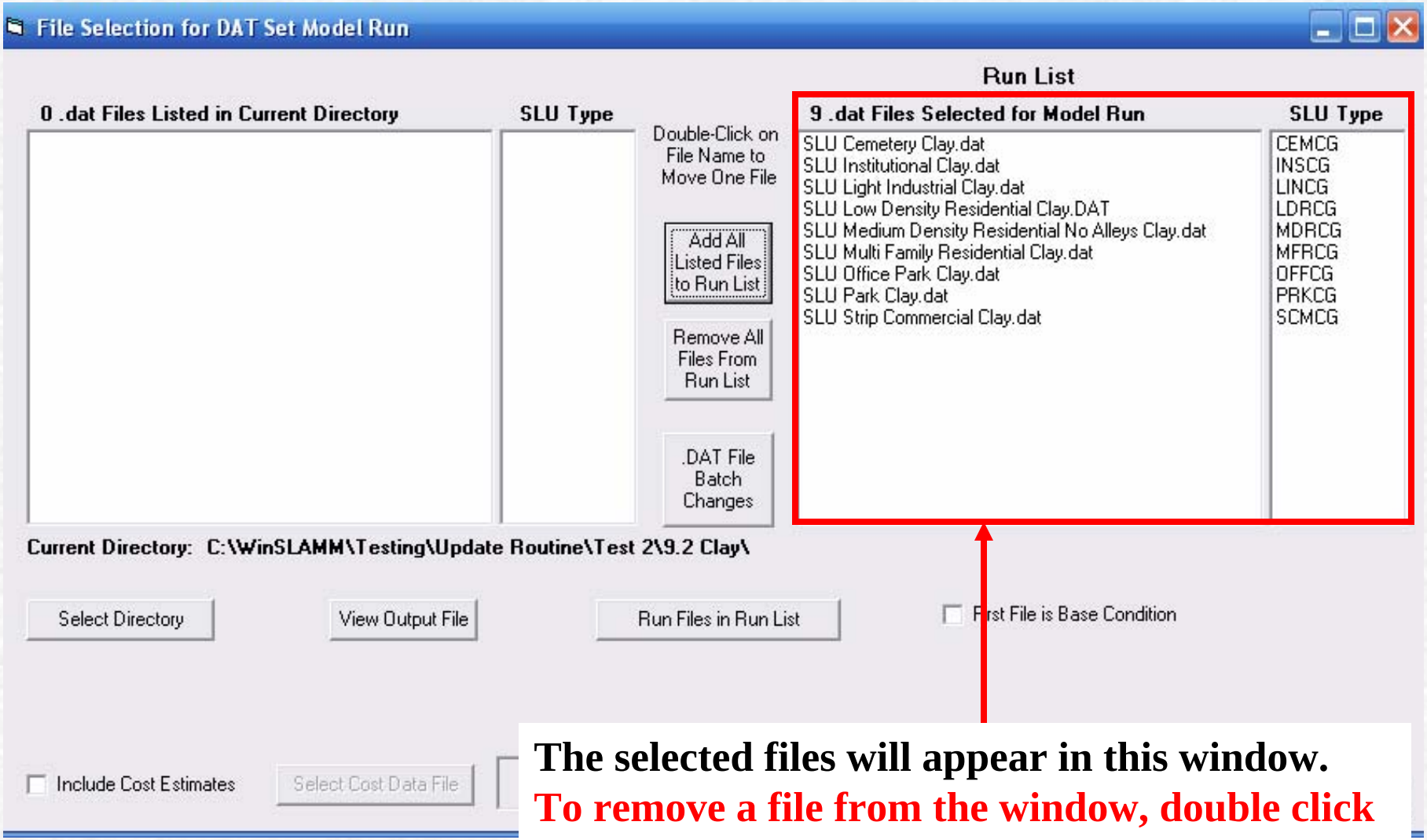


The available *.DAT files and their SLU Type, if applicable, will appear in the window above.

Batch Editor



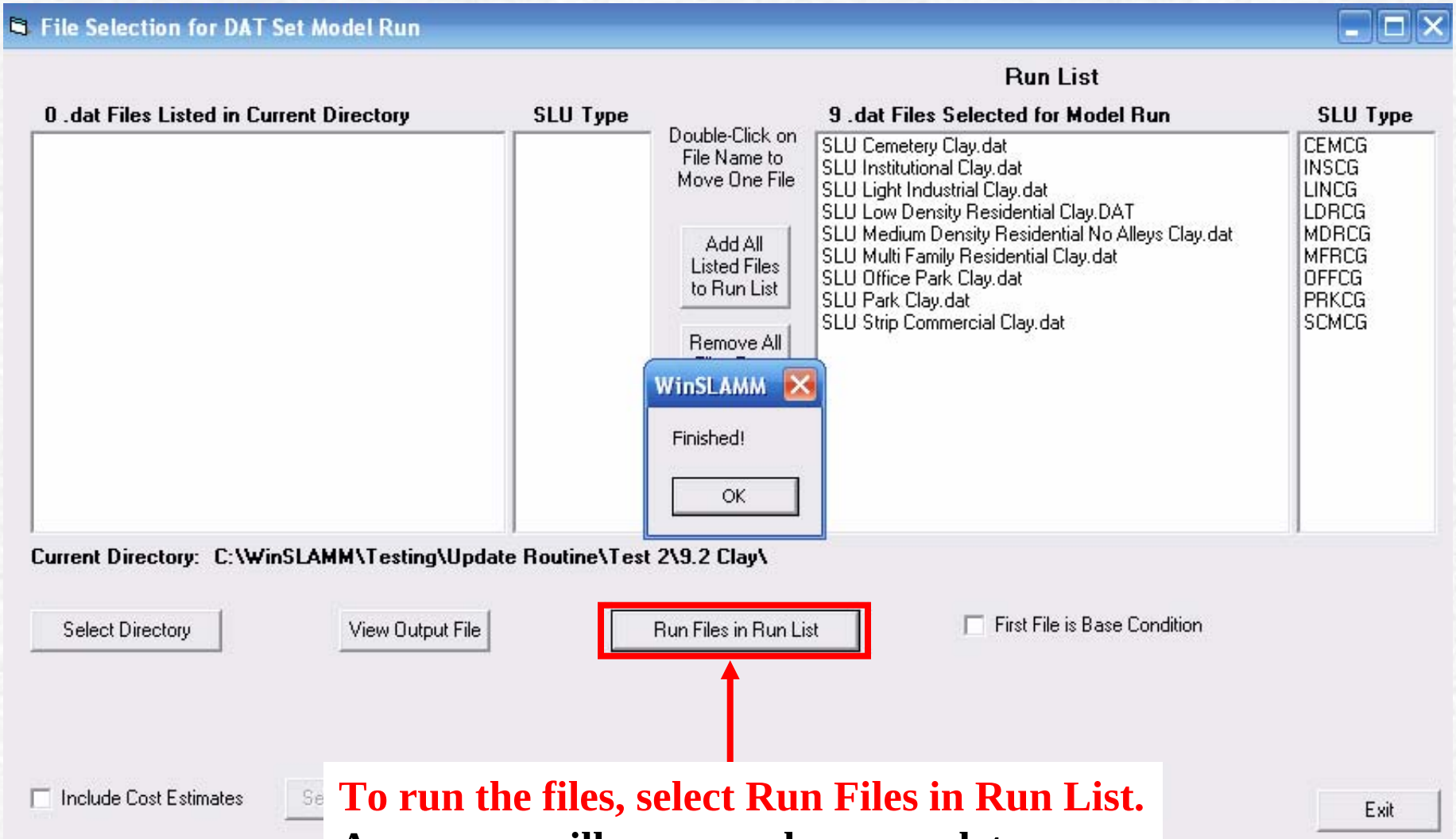
Batch Editor



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.

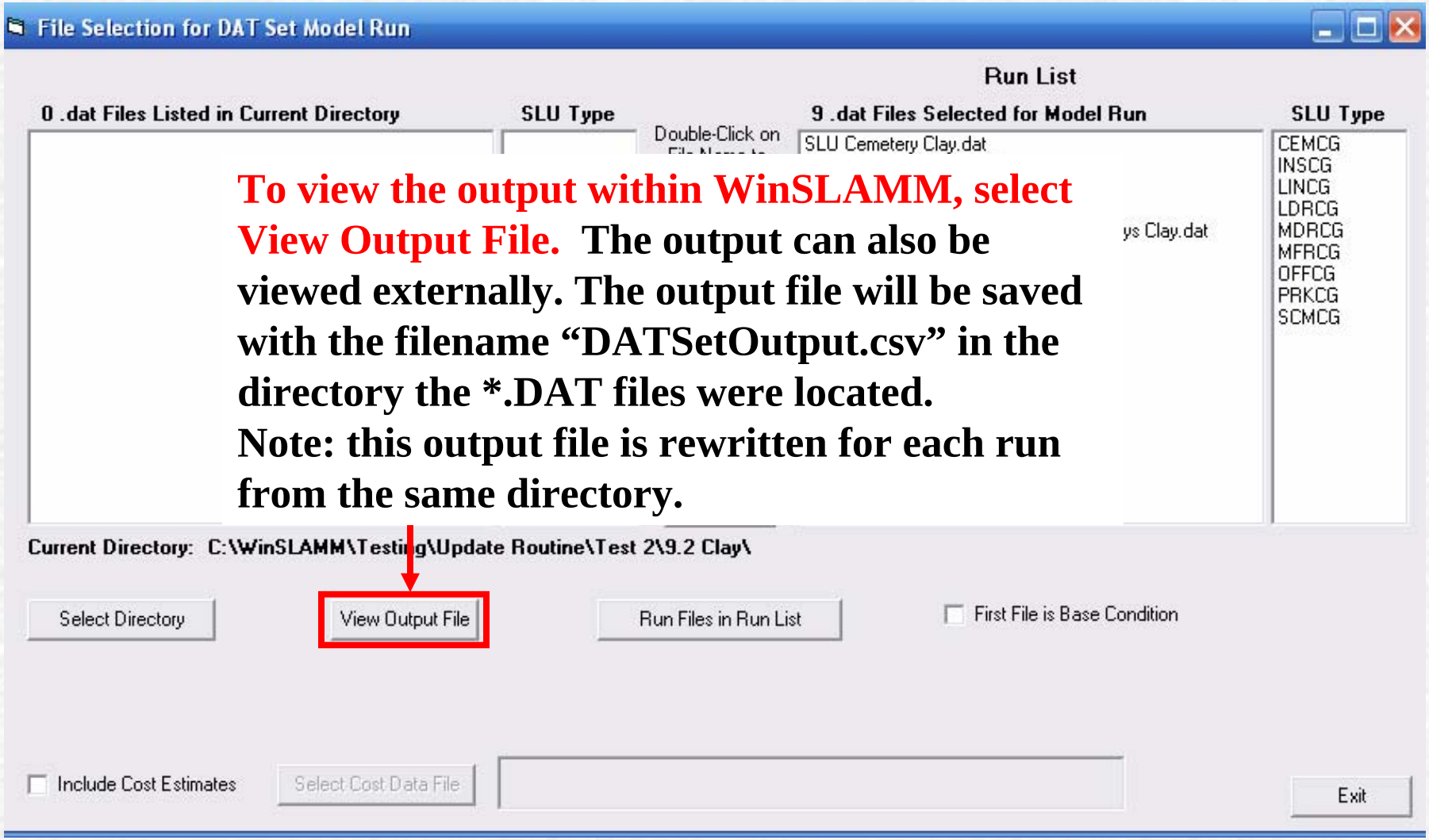
Batch Editor



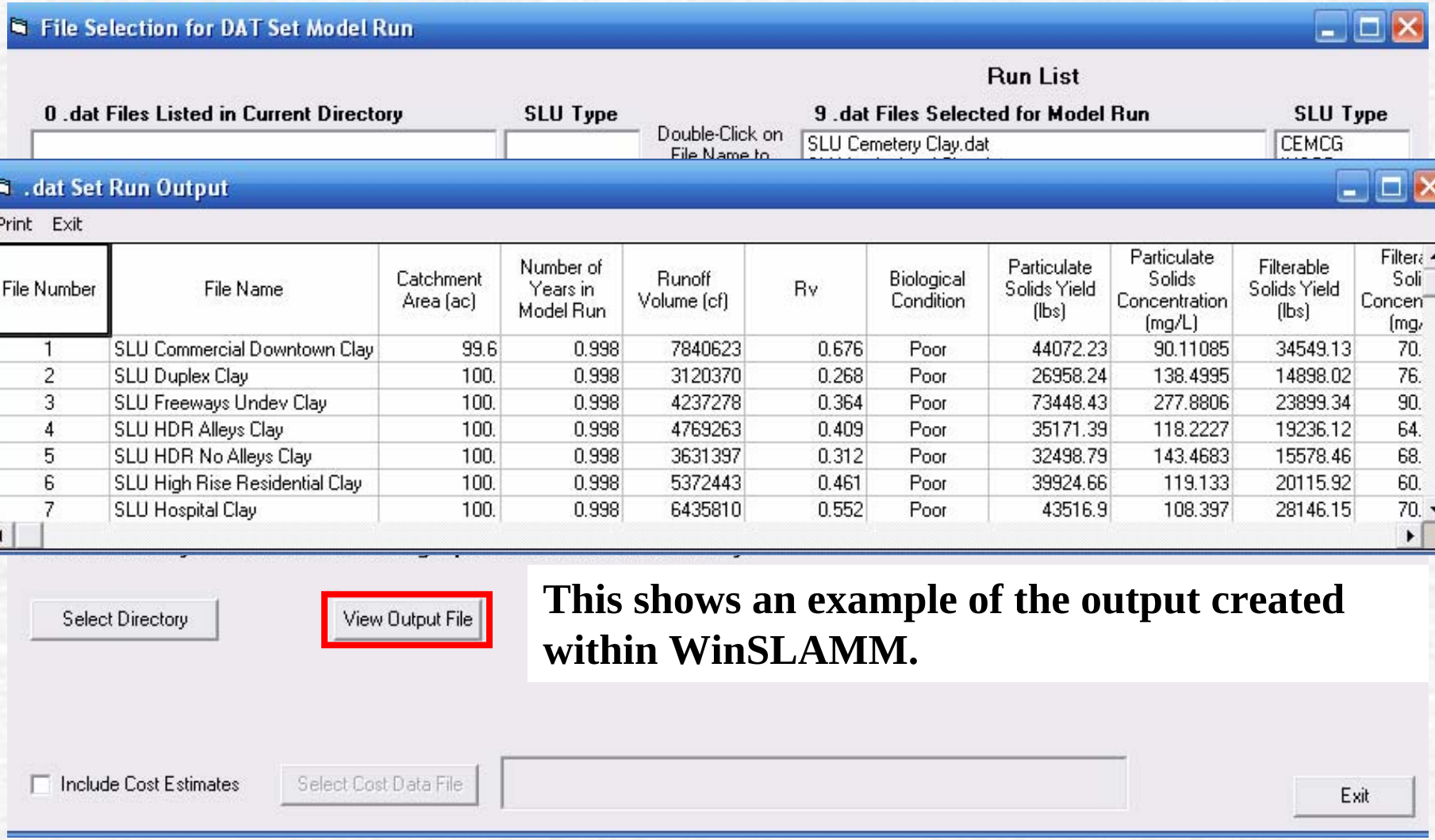
To run the files, select Run Files in Run List.

A message will appear when complete.

Batch Editor



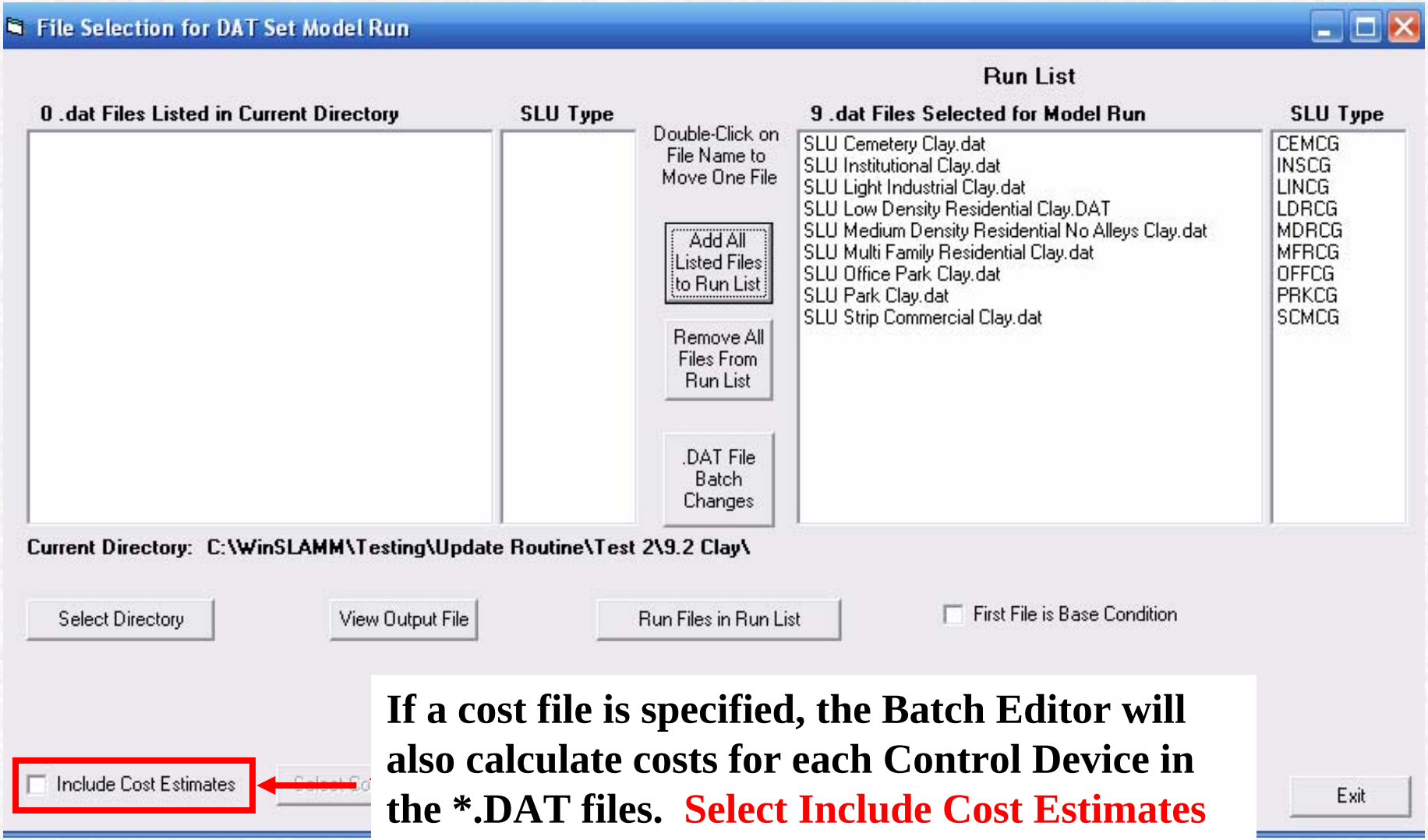
Batch Editor



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)	Filtera Soli Concen (mg/
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.

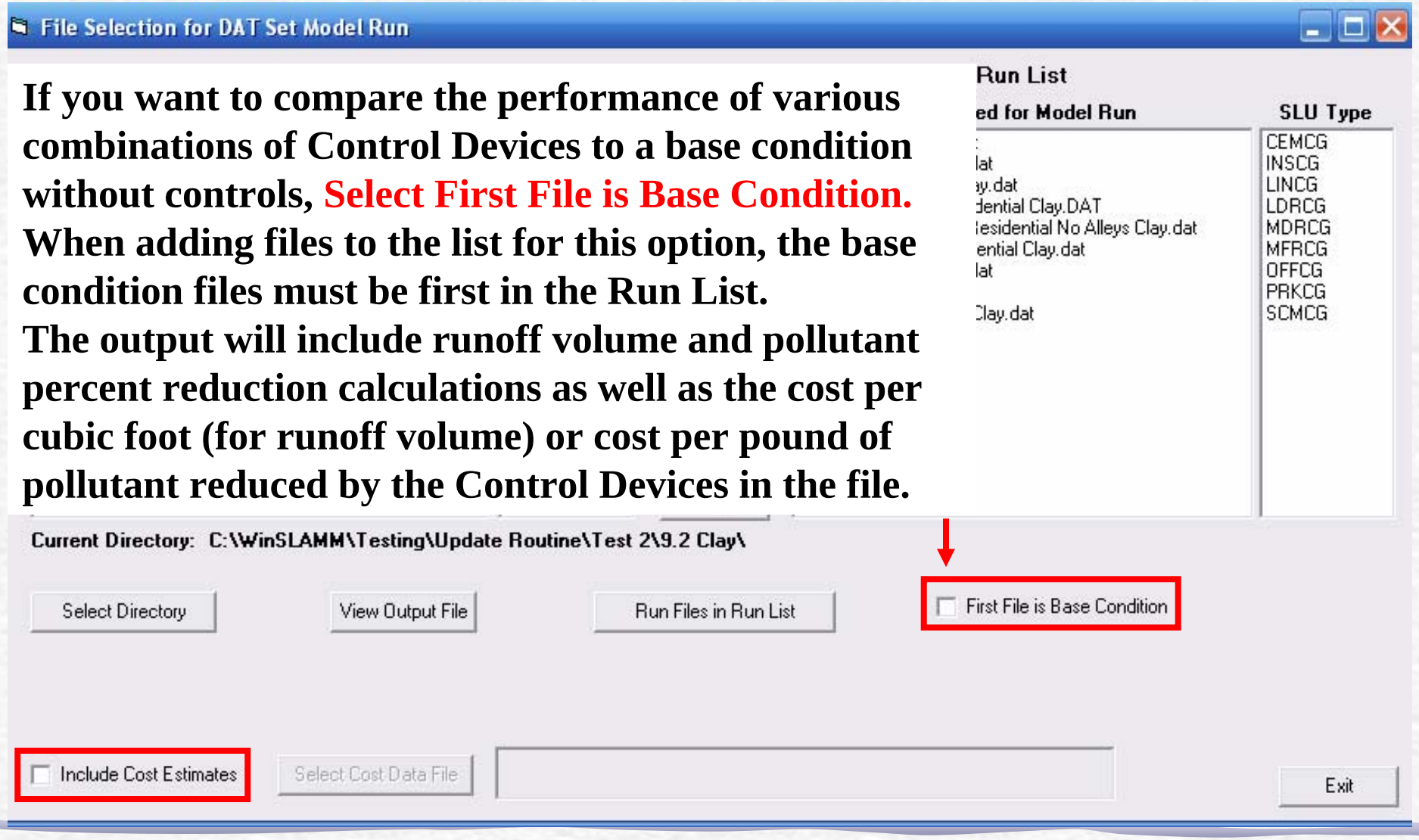
This shows an example of the output created within WinSLAMM.

Batch Editor



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.

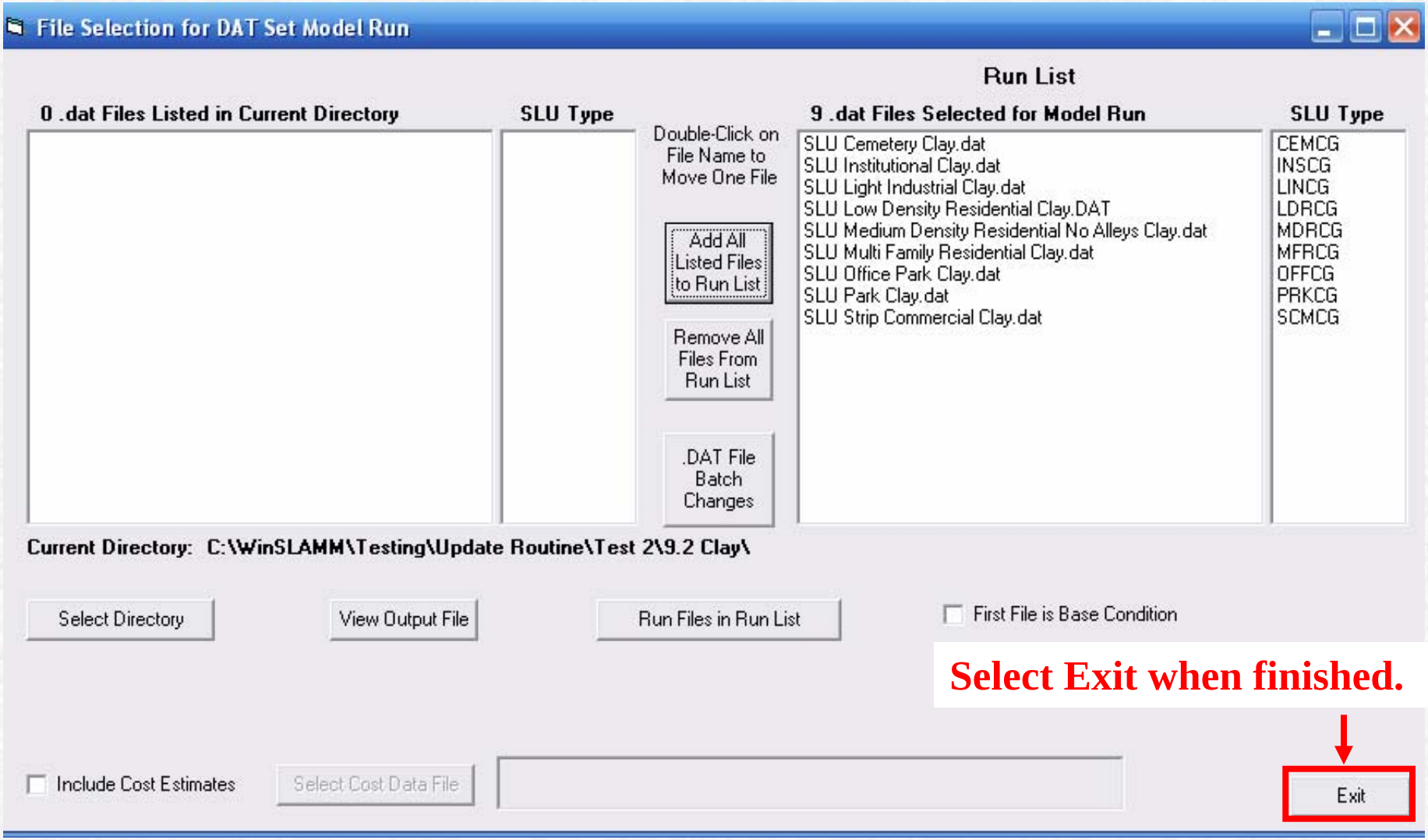
Batch Editor



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.

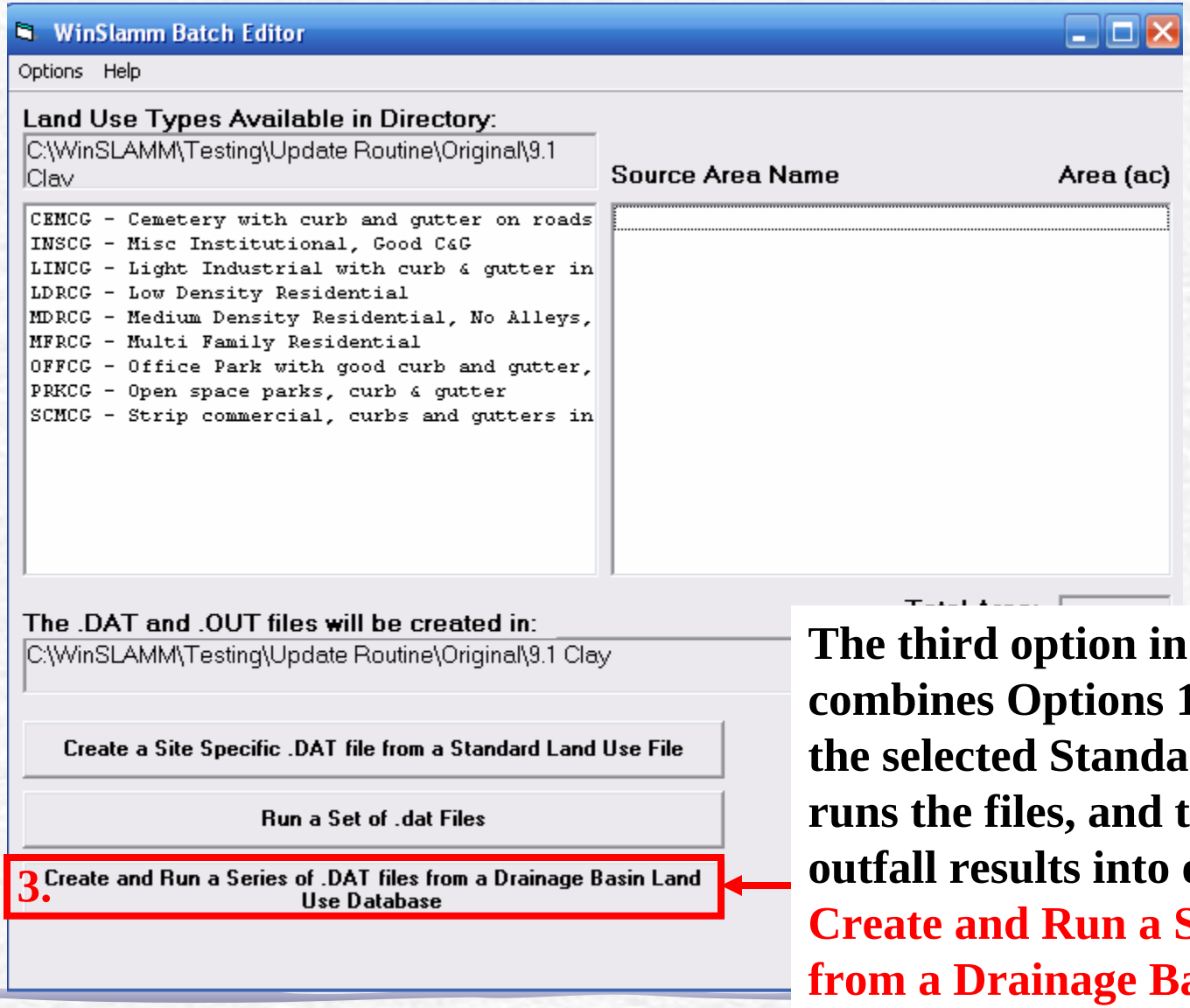
The output will include runoff volume and pollutant percent reduction calculations as well as the cost per cubic foot (for runoff volume) or cost per pound of pollutant reduced by the Control Devices in the file.

Batch Editor



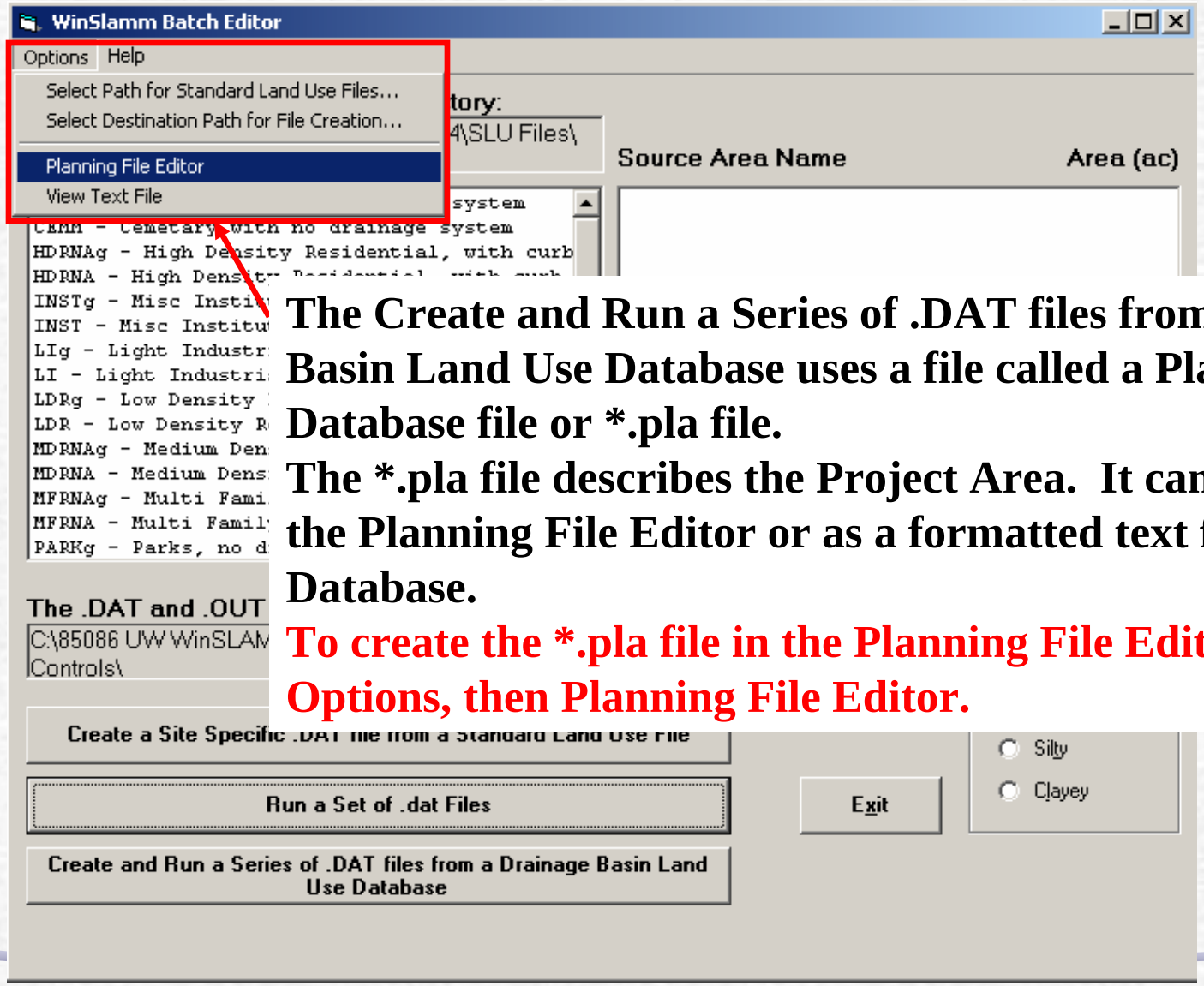
Select Exit when finished.

Batch Editor



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

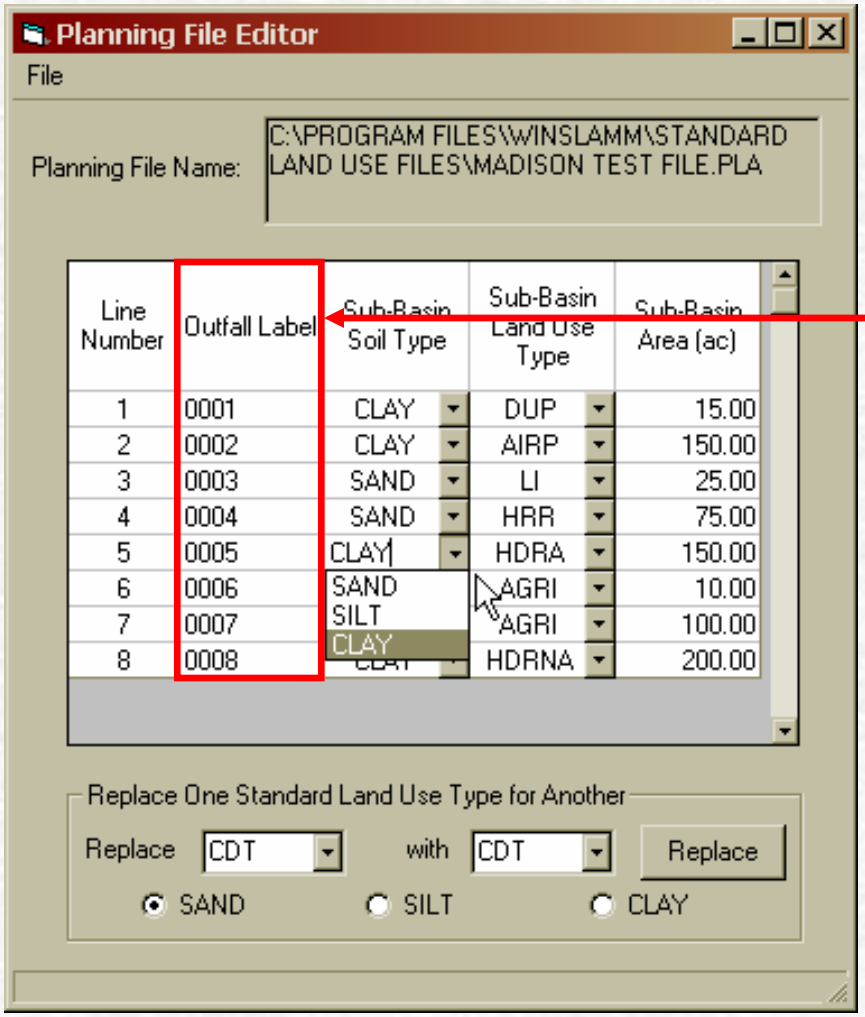


The Create and Run a Series of .DAT files from a Drainage Basin Land Use Database uses a file called a Planning Agency Database file or *.pla file.

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.

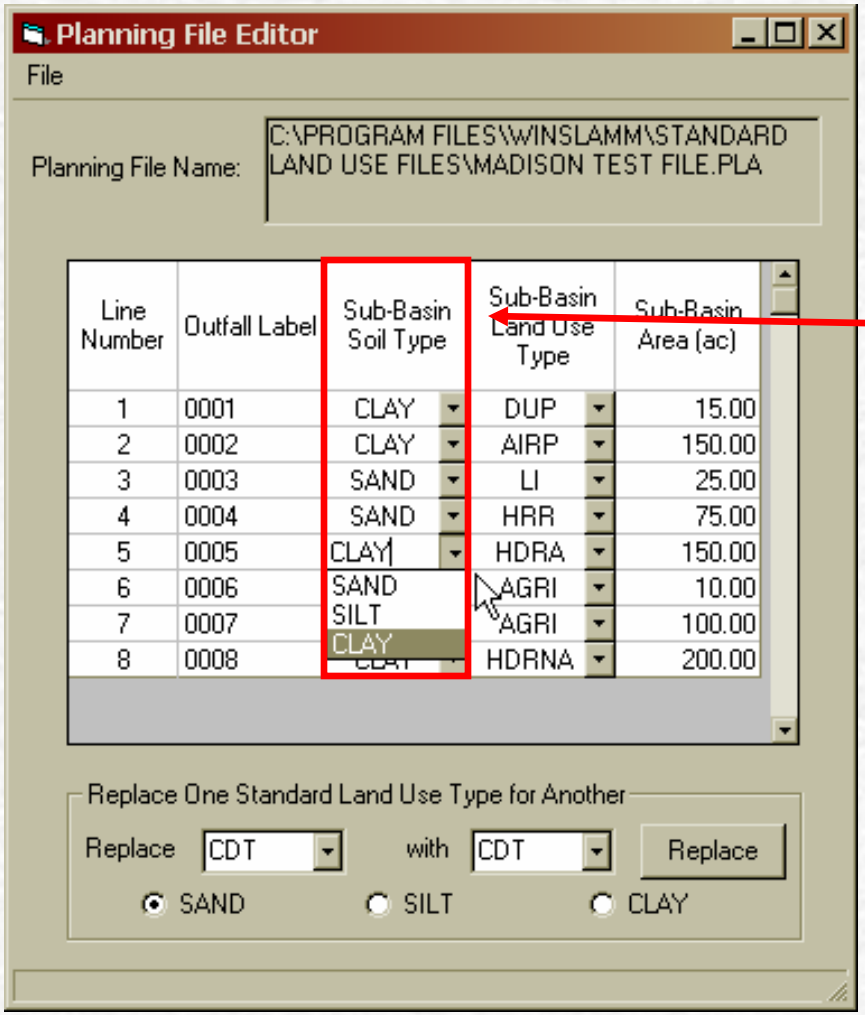
To create the *.pla file in the Planning File Editor, select Options, then Planning File Editor.

Batch Editor



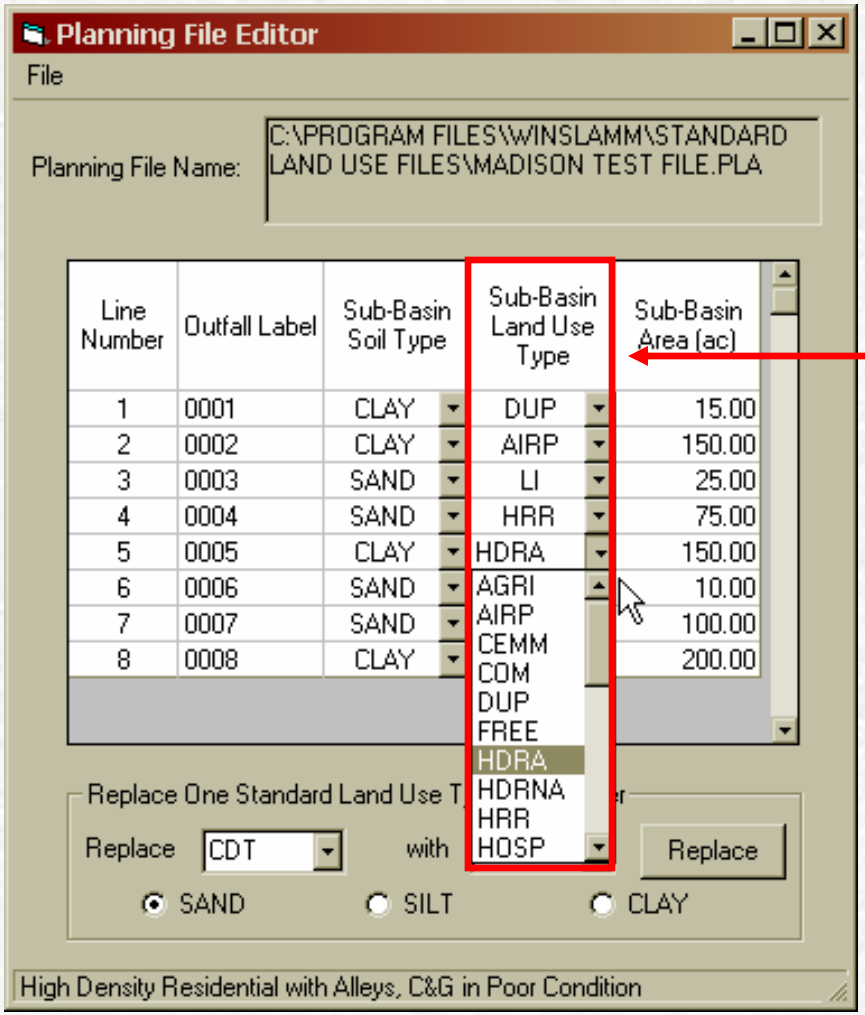
In the Planning File Editor, enter the Outfall Label. The Outfall Label nomenclature is based upon how you describe your drainage basin system.

Batch Editor



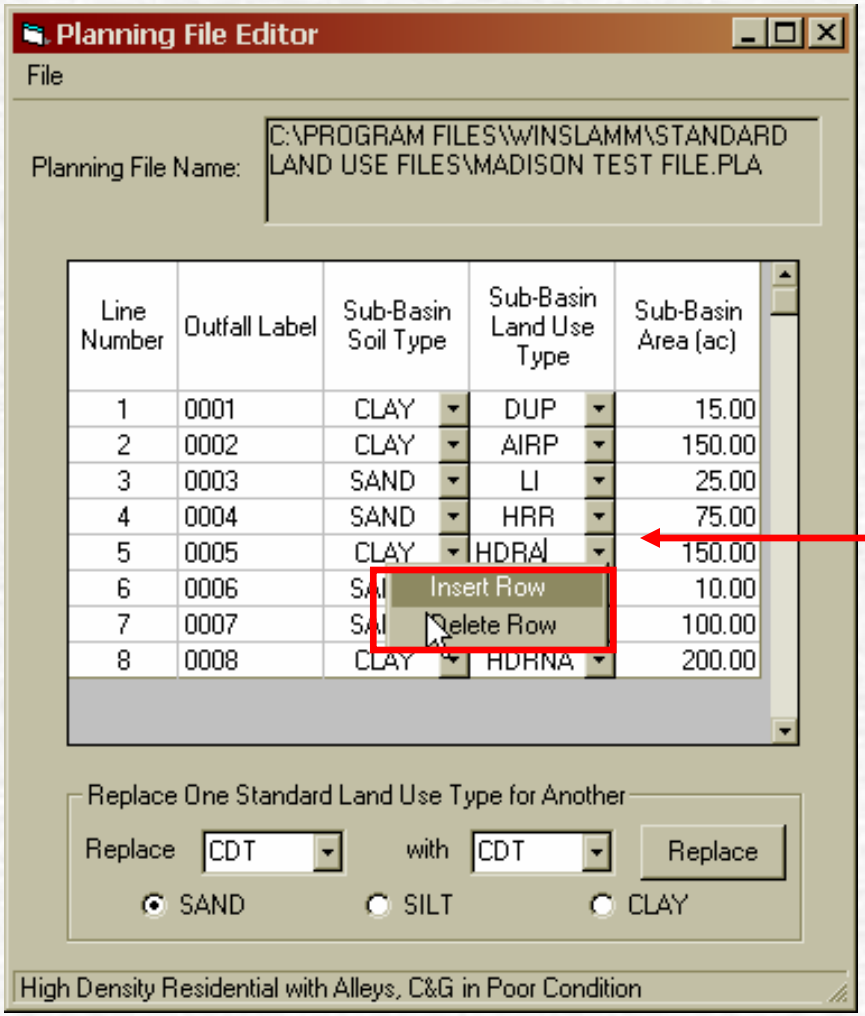
Then use the pull-down menu to select the Subbasin Soil Type.

Batch Editor



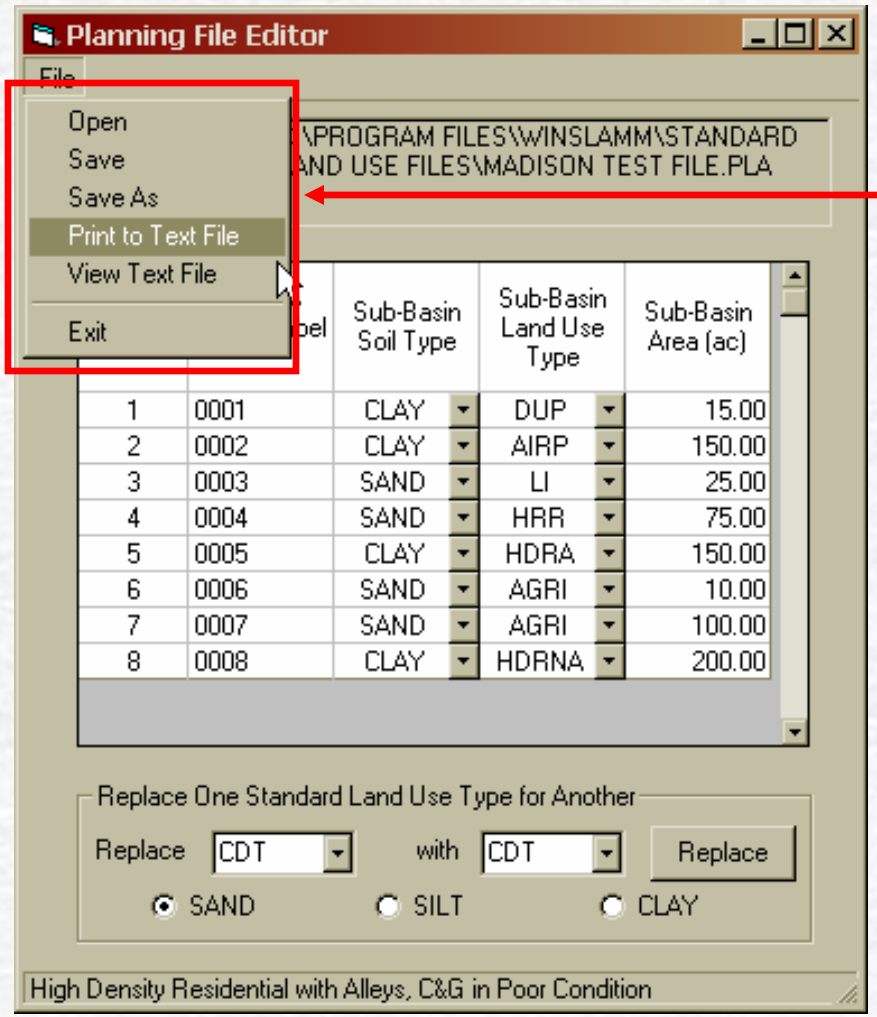
Use the Pull-Down Menu to Select Subbasin Land Use Type. **The land uses are referenced from the folder that was originally selected in the Main Window of the Batch Editor.**

Batch Editor



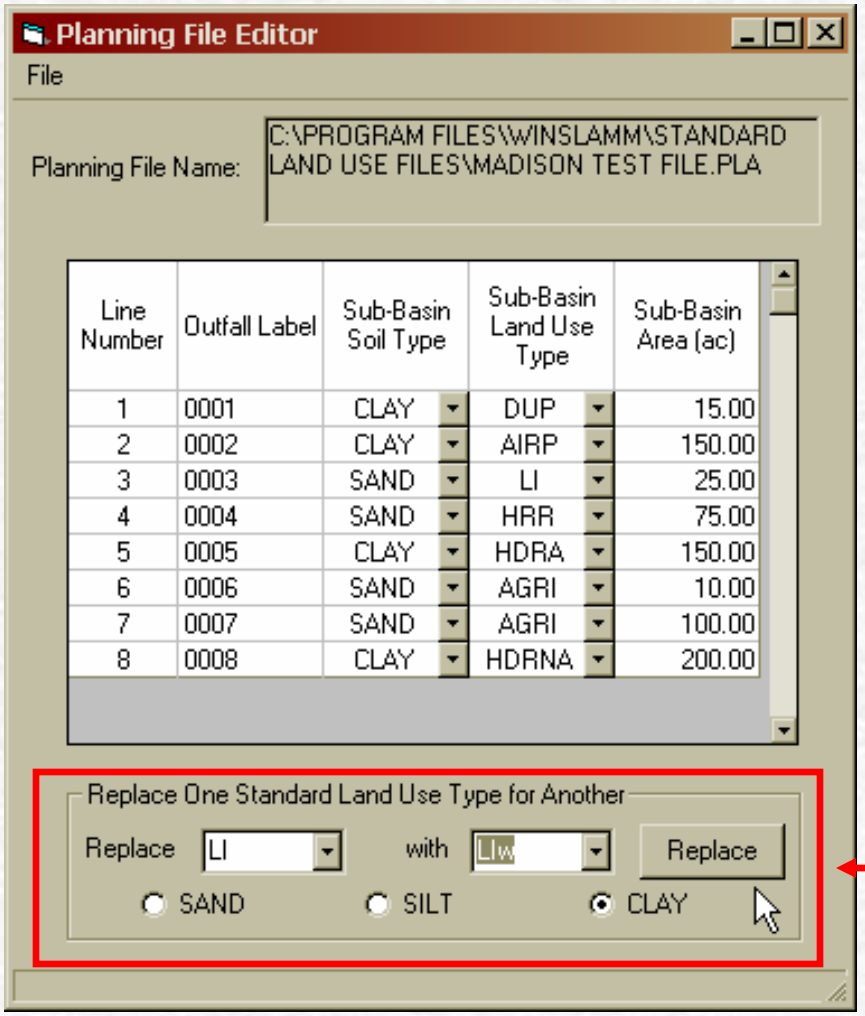
Right-mouse click to Insert or Delete a Row

Batch Editor



Menu Options for the Planning File Editor

Batch Editor



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

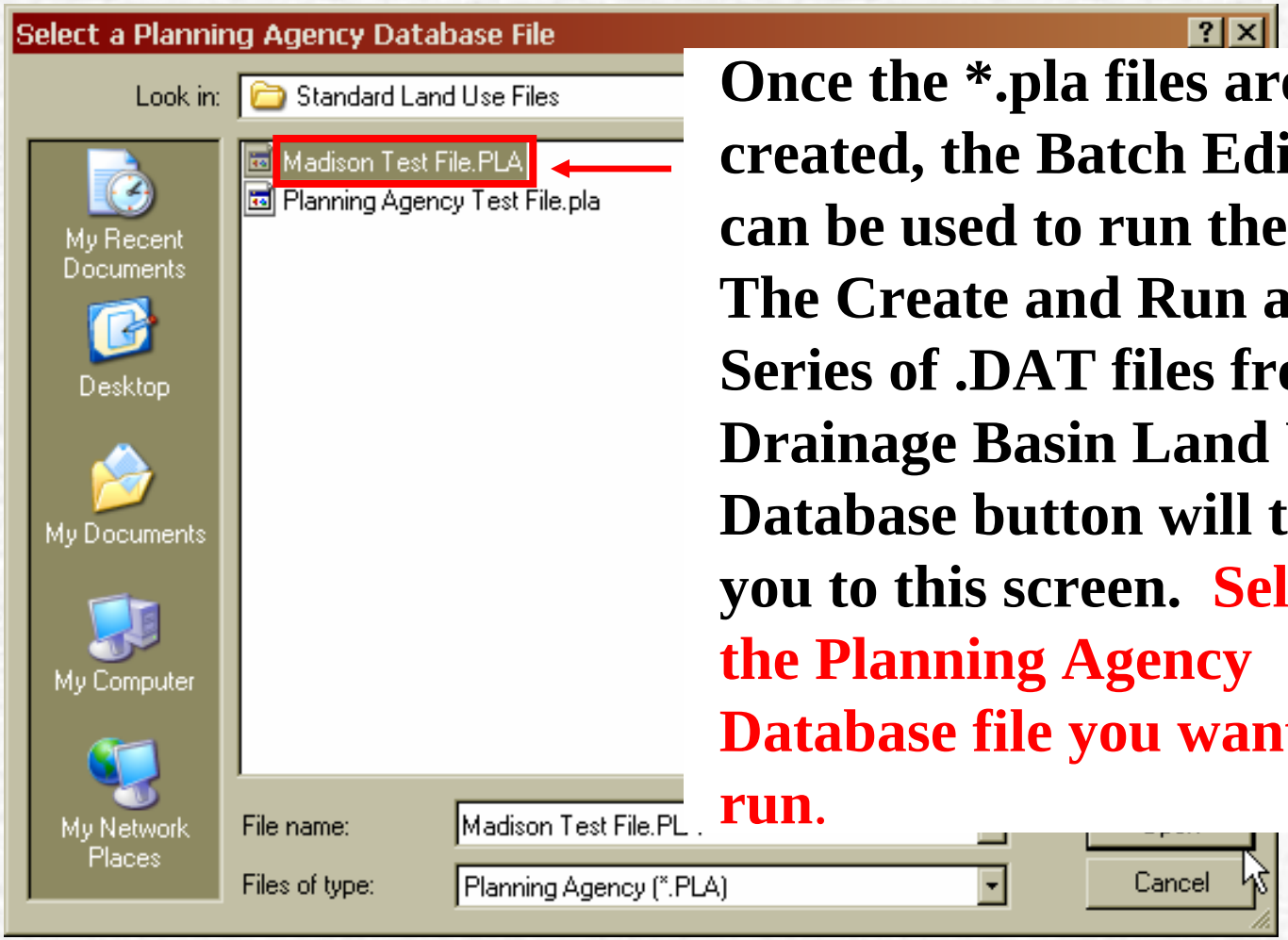
A Planning File can also be created directly from a GIS Database

- **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:

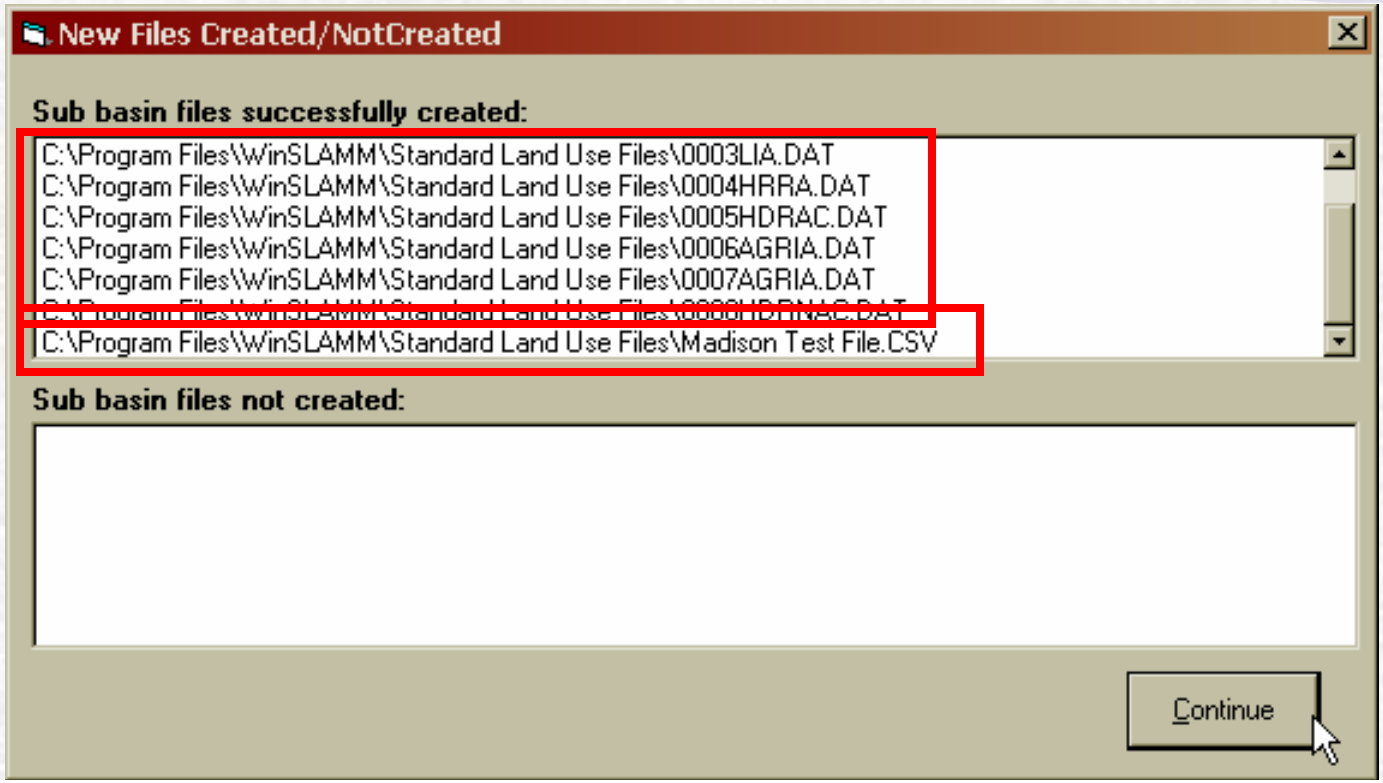
```
"W101","CLAY","FREE",52.6
"W101","CLAY","OSUD",82.7
"W101","CLAY","LDR",26.1
"W101","CLAY","MDRNA",361.2
"W101","CLAY","MFRNA",30.4
"W101","CLAY","OFPK",166.2
"W101","CLAY","PARK",5.2
"W101","CLAY","SHOP",62.8
"W101","CLAY","SCOM",27.4
"W107","CLAY","FREE",51.9
"W107","CLAY","OSUD",3.5
"W107","SILT","OSUD",3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

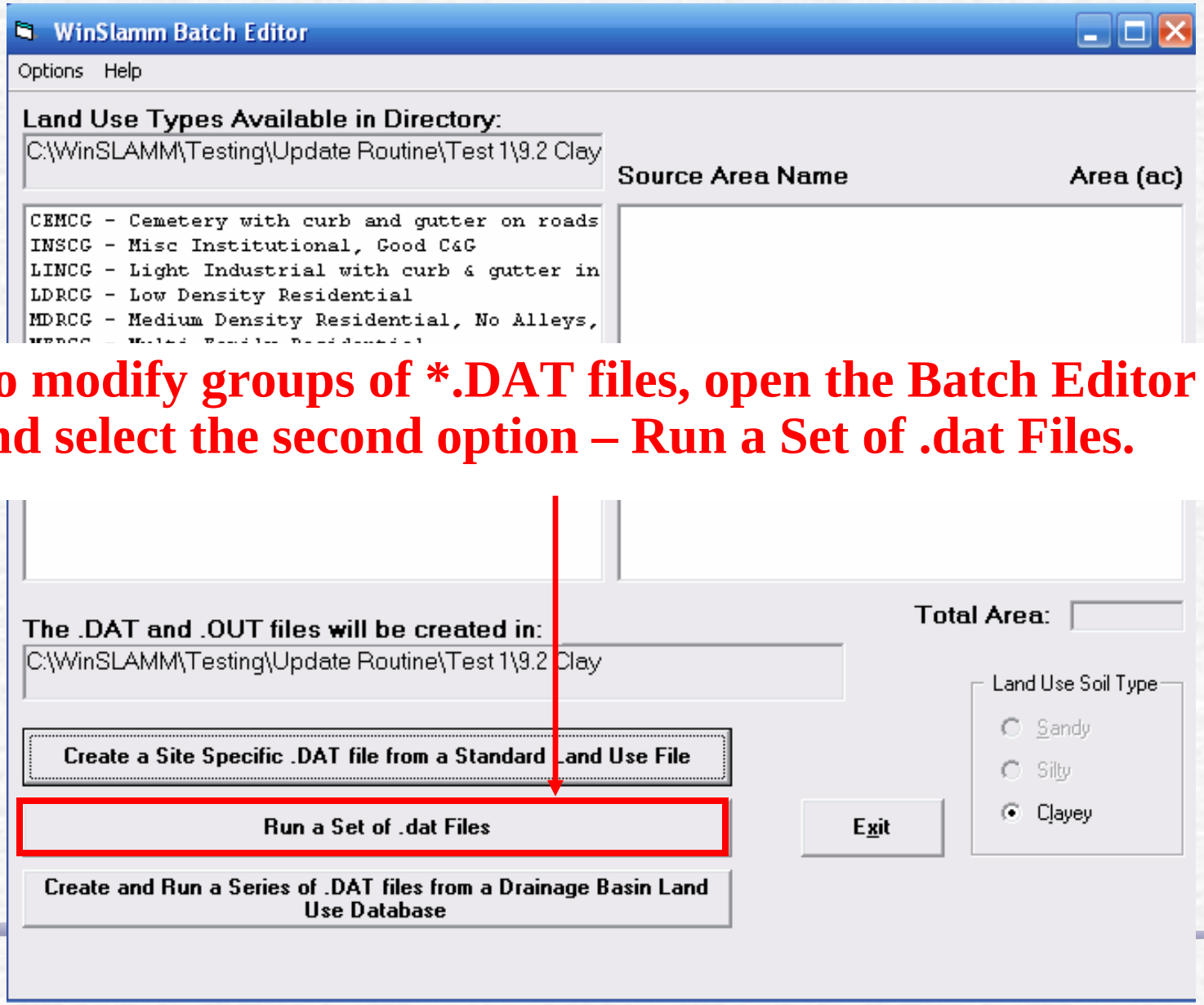


When the Batch Editor is finished running the files, this screen will appear. The top window shows each *.DAT file that was created and the comma-separated-value file (.csv) with the outfall summaries for each subcatchment. This *.csv file can be imported into Microsoft Excel for analysis.
The bottom 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.

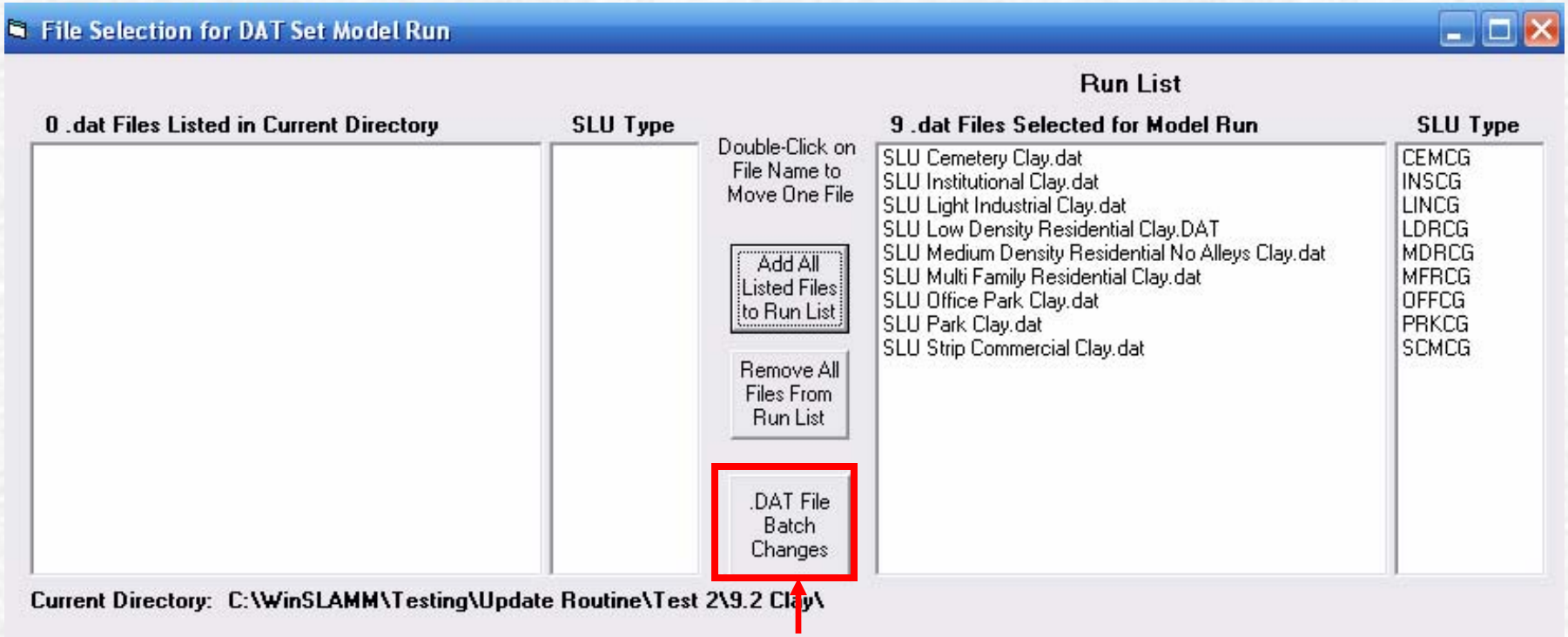
Modifying Groups of *.DAT Files Overview

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

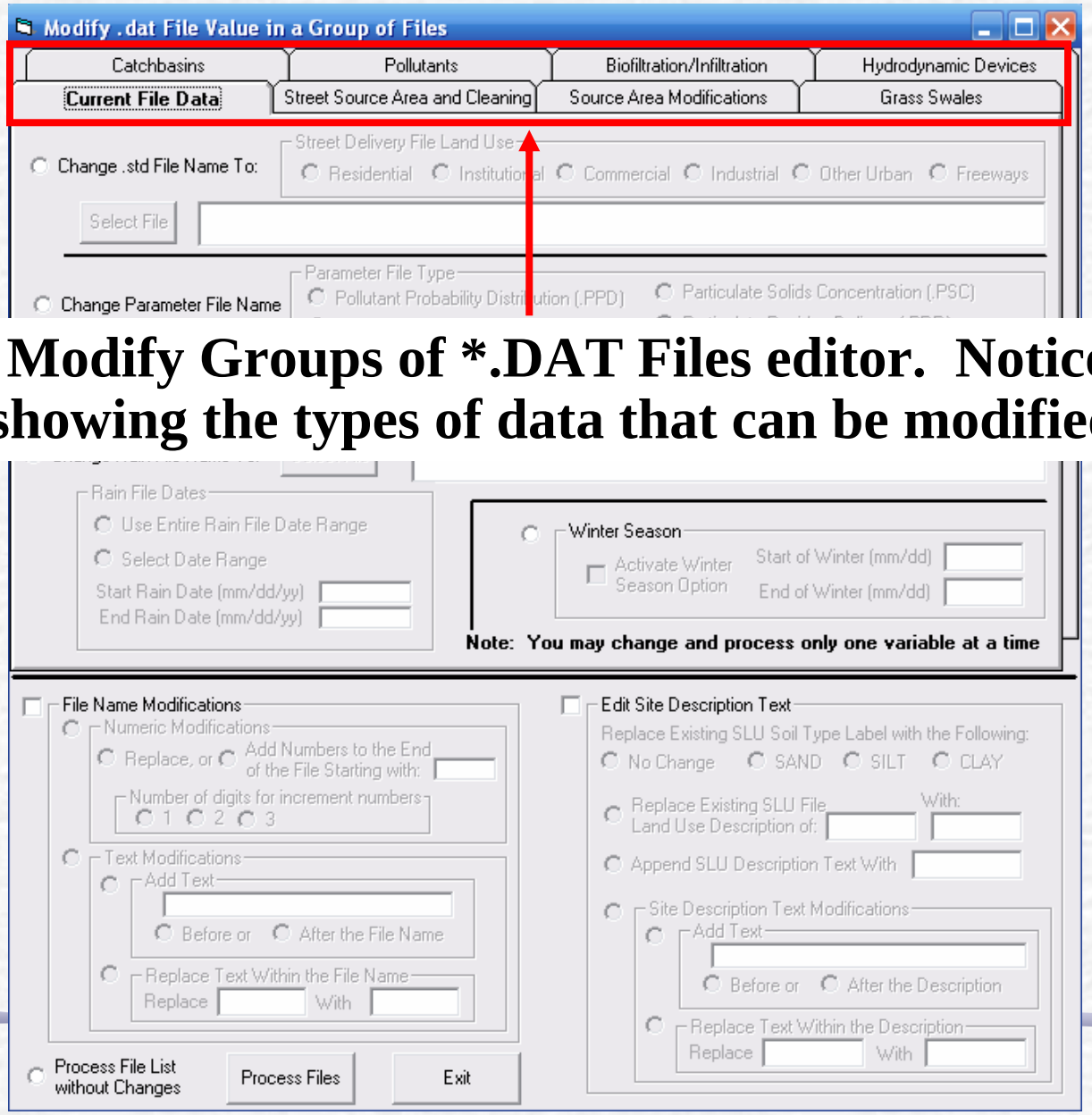


Modifying Groups of *.DAT Files



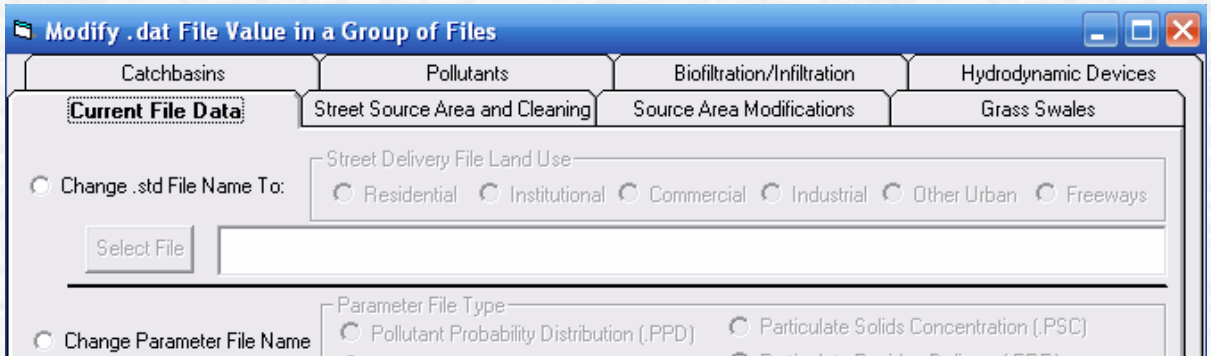
As with the Run a Set of *.DAT Files feature, the user must select the directory the files are stored and add the files the user wants modified to the run list (Refer the to Batch Editor section of the Advanced Features User's Guide to review this). Once the files are in the Run List, select the .DAT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

Modifying Groups of *.DAT Files



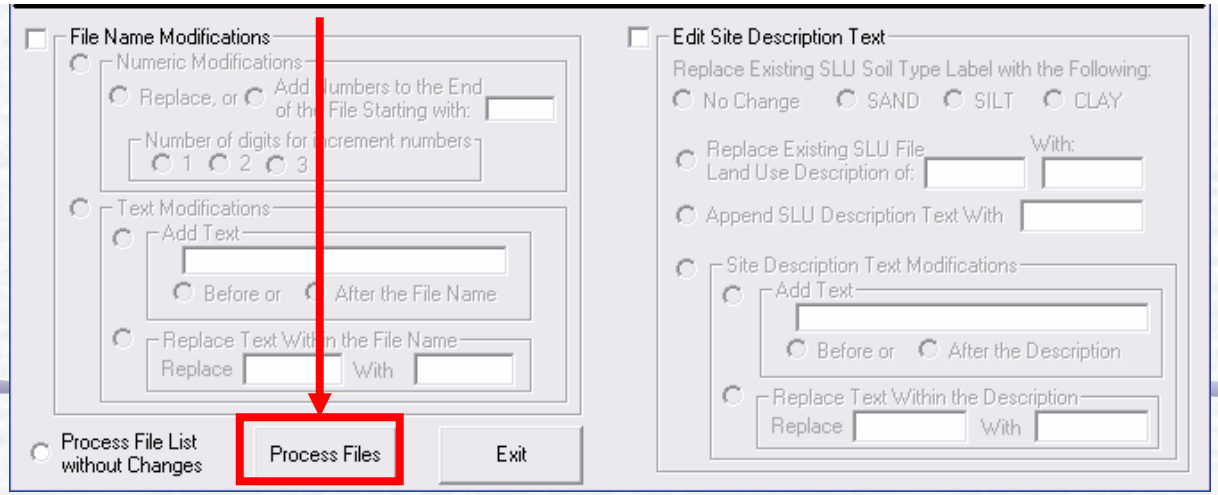
This is the Modify Groups of *.DAT Files editor. Notice the tabs at the top showing the types of data that can be modified.

Modifying Groups of *.DAT Files

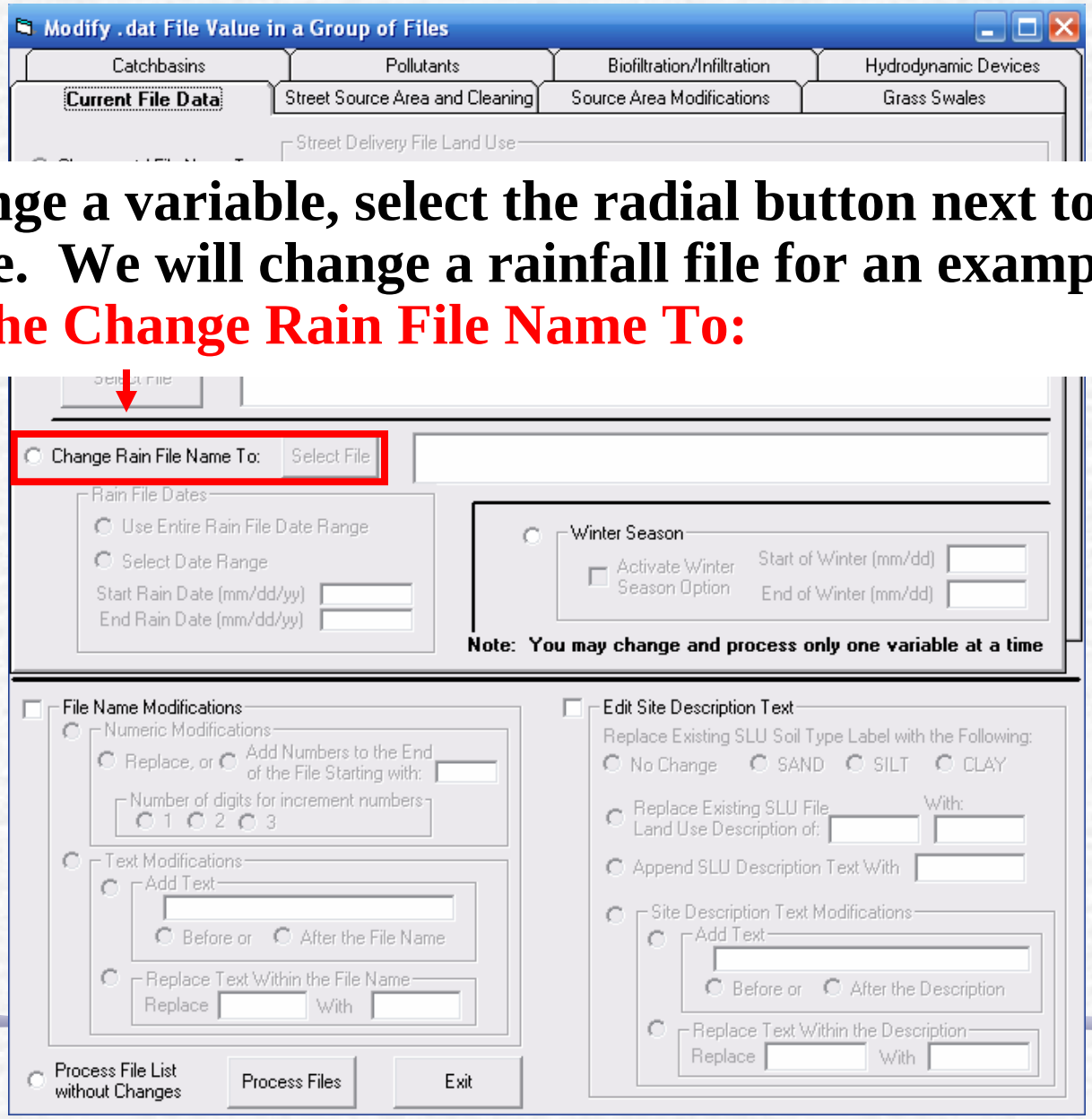


Note: the user can only change one variable at a time, unless a control practice is being added to a *.DAT file.

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.



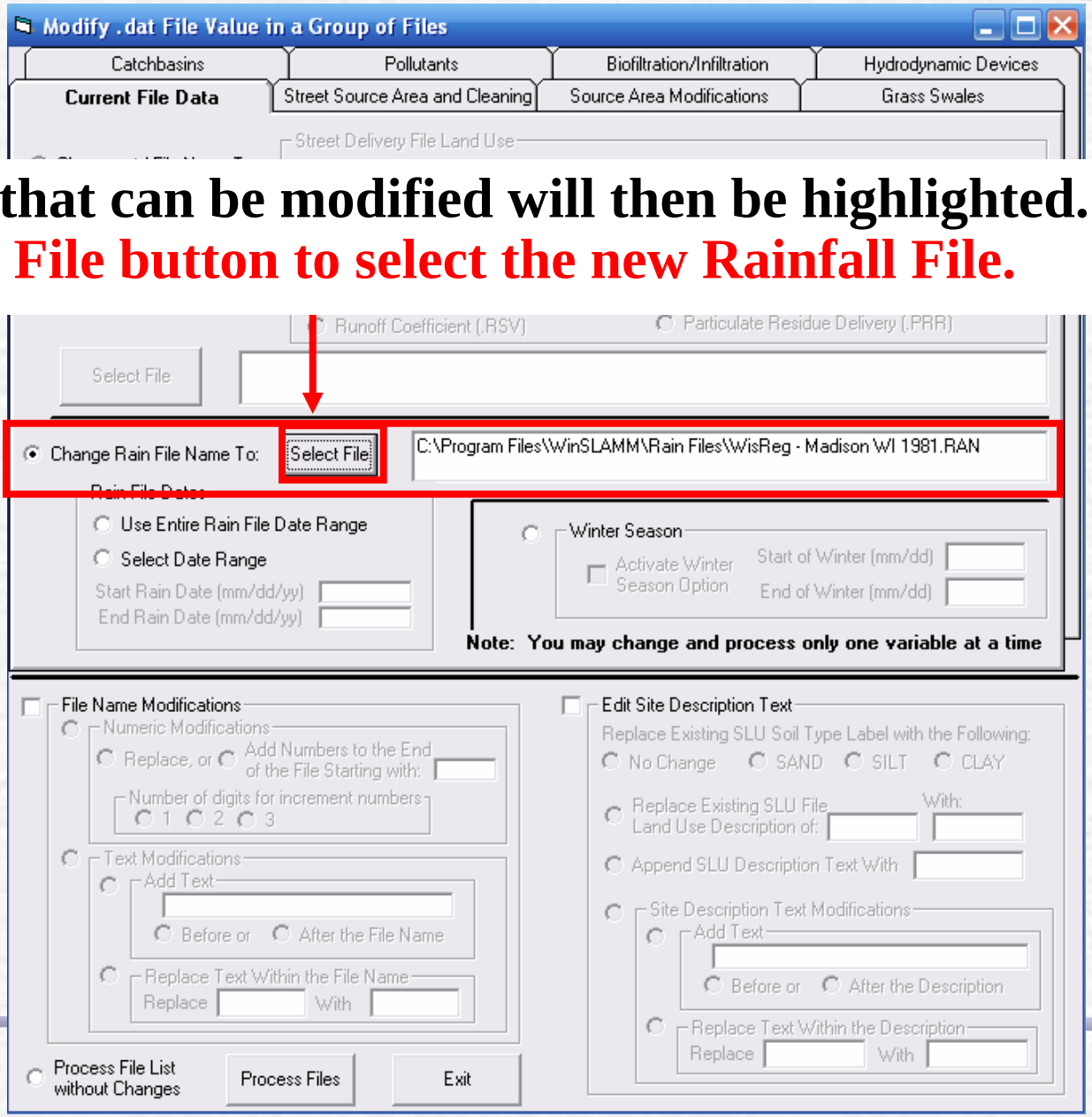
Modifying Groups of *.DAT Files



To change a variable, select the radial button next to the variable. We will change a rainfall file for an example.

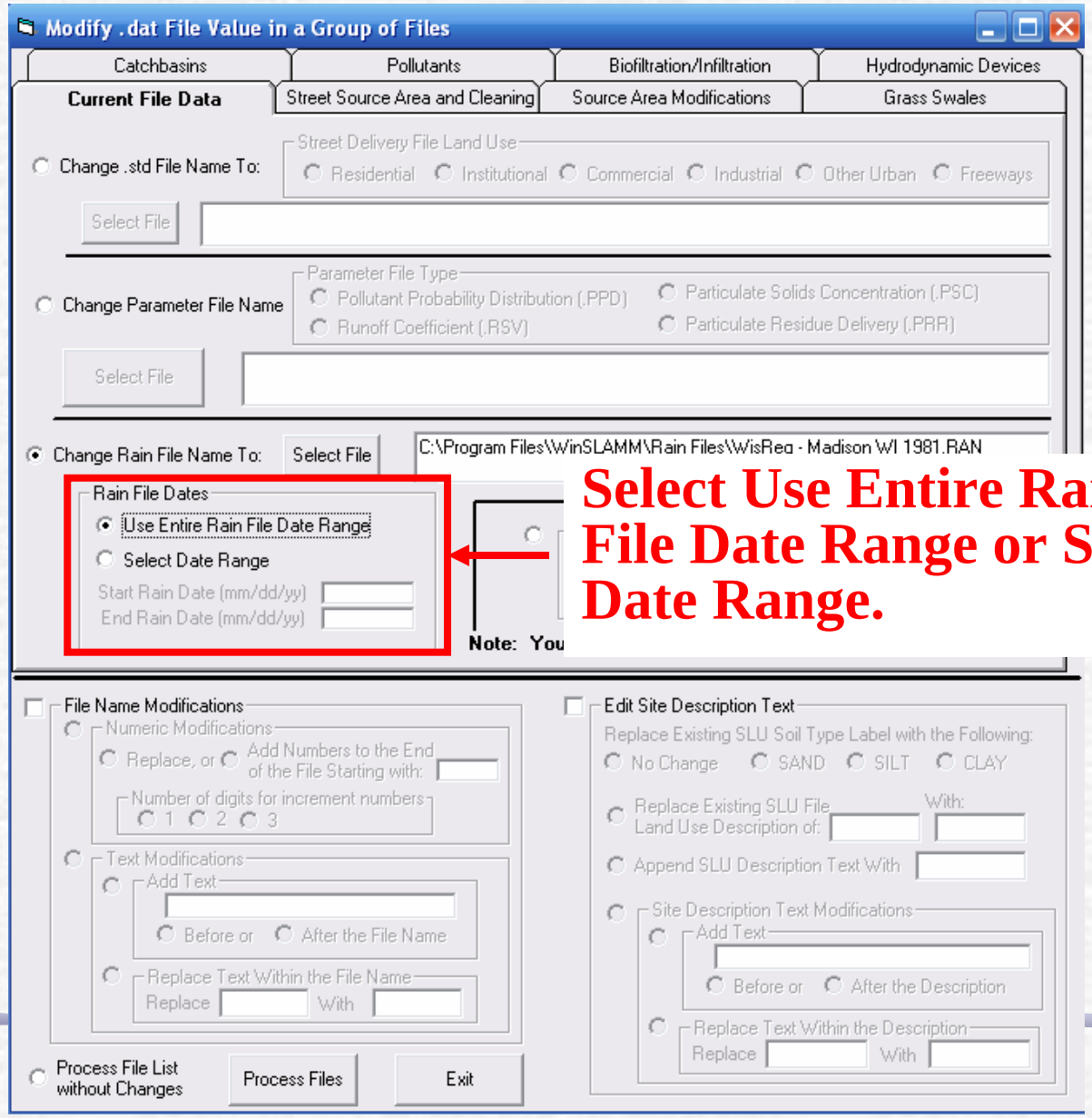
Select the Change Rain File Name To:

Modifying Groups of *.DAT Files



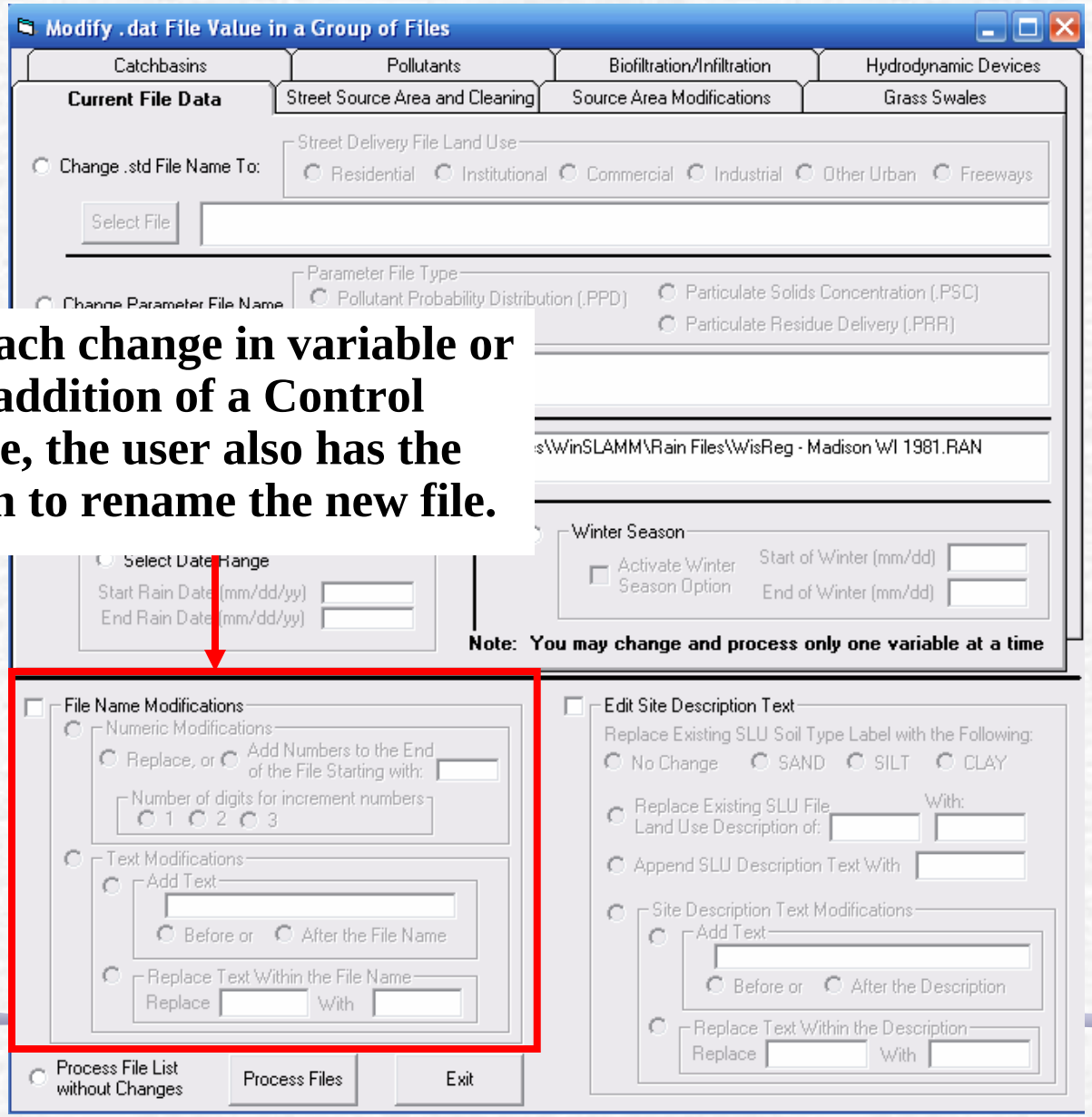
The data that can be modified will then be highlighted. Choose the Select File button to select the new Rainfall File.

Modifying Groups of *.DAT Files



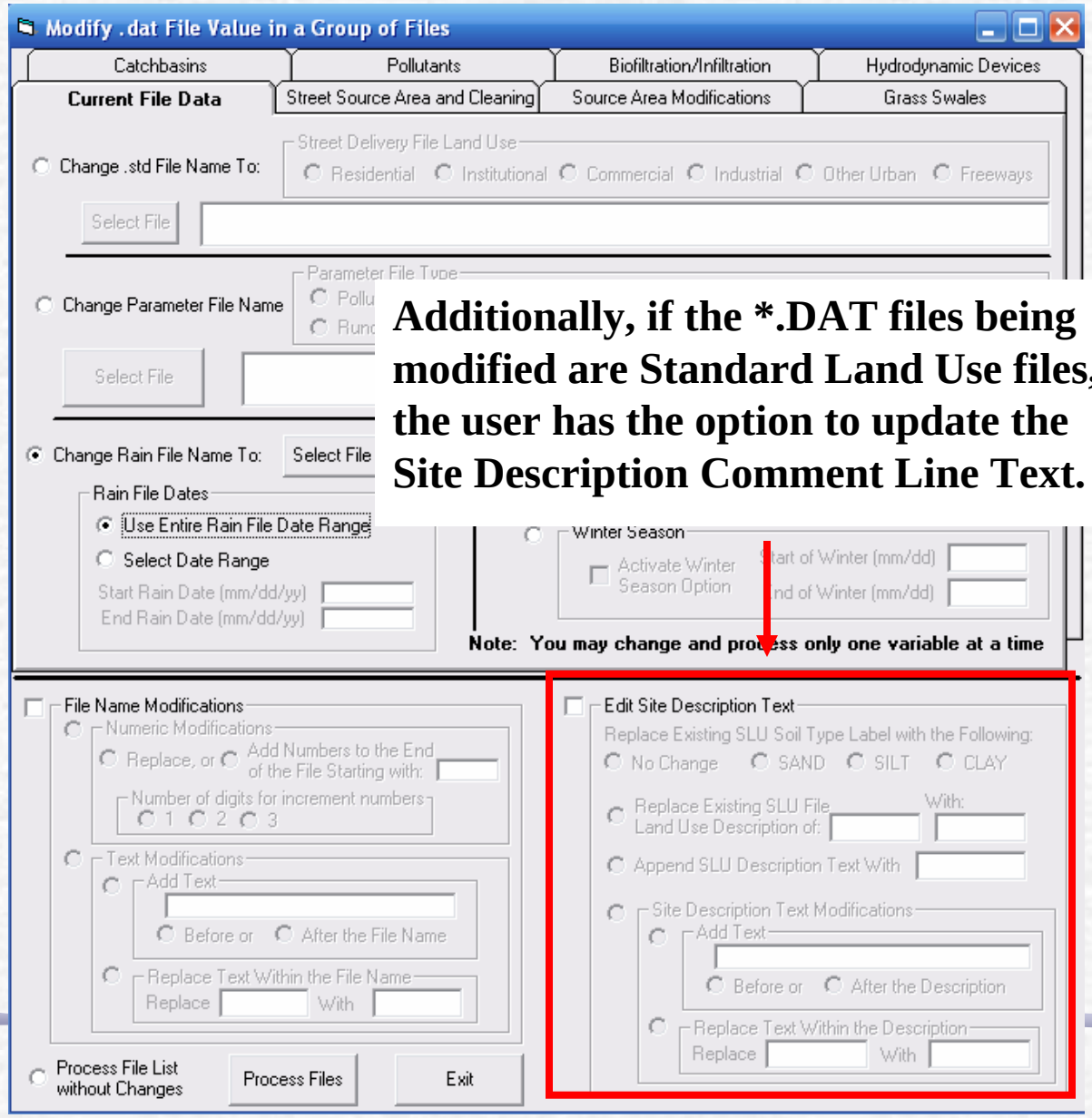
Select Use Entire Rain File Date Range or Select Date Range.

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.

Modifying Groups of *.DAT Files



Additionally, if the *.DAT files being modified are Standard Land Use files, the user has the option to update the Site Description Comment Line Text.

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**

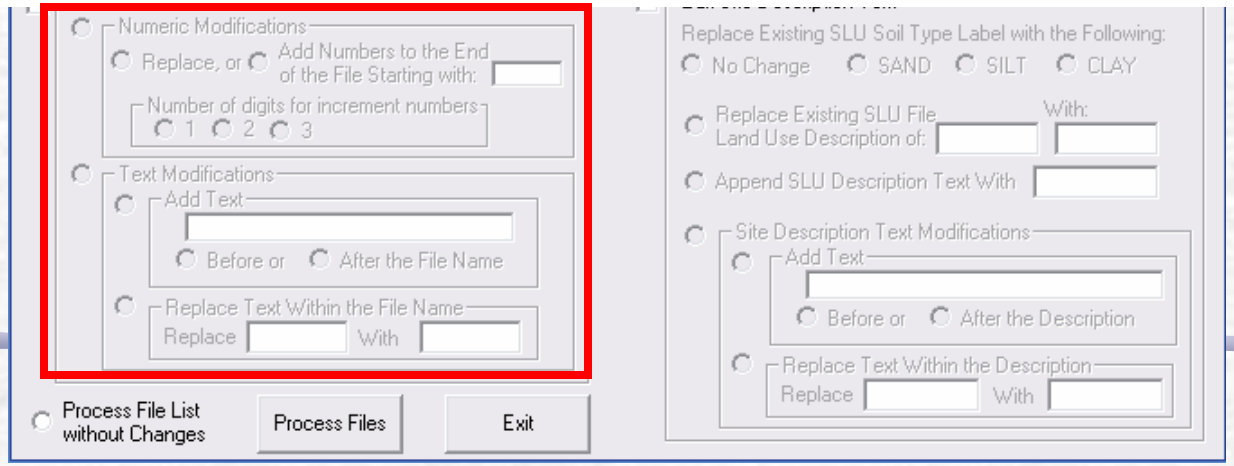
  The user can also just Add Numbers to the End of the File by selecting the radial button next to the option and enter the number to start with. The program will replace or add numbers incrementally by 1 whole number.

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

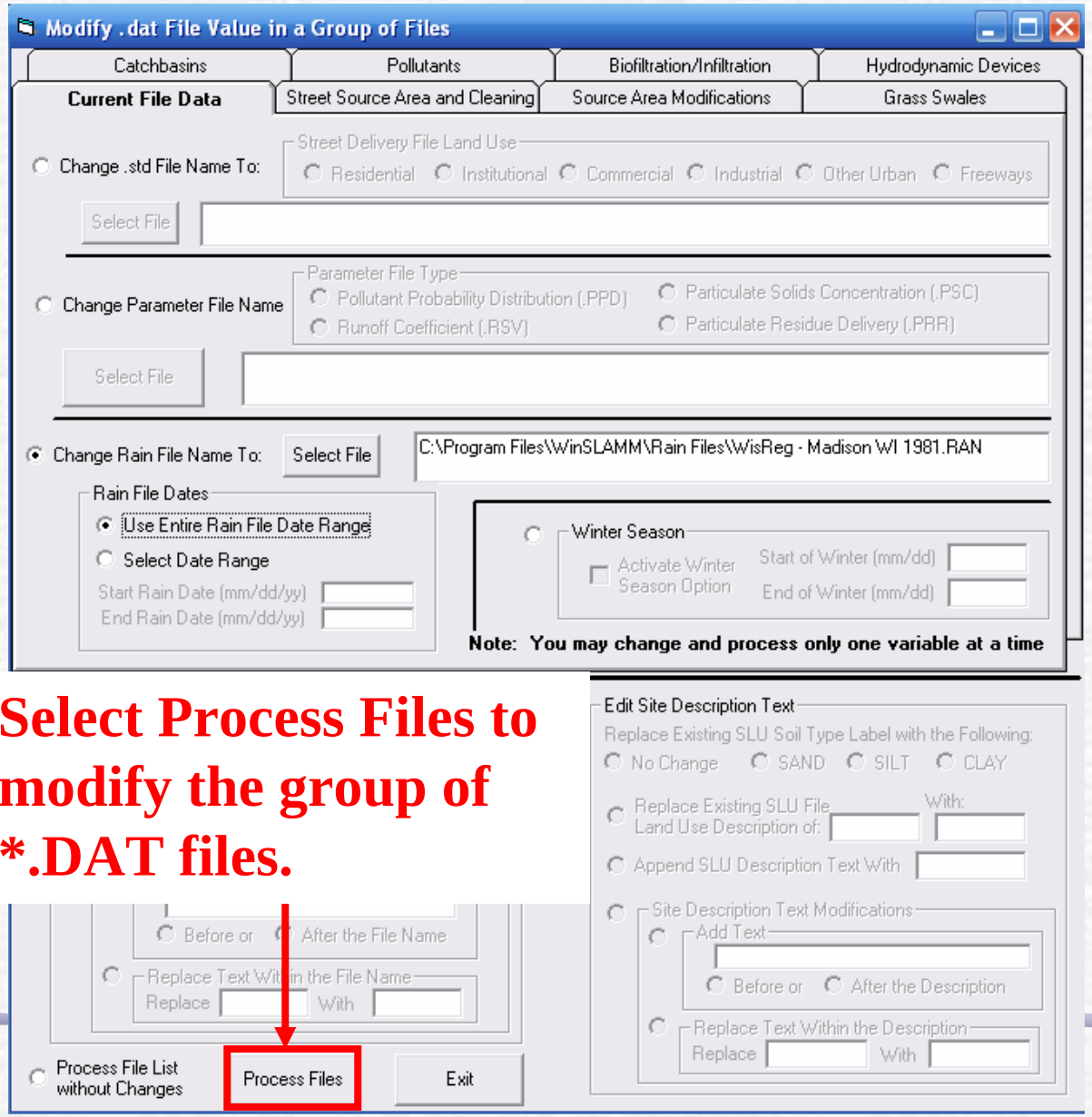
  This example Adds Text to File Names by entering the text in the Text Box and choosing the radial button next to After the File Name.

- **Replace Test 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.

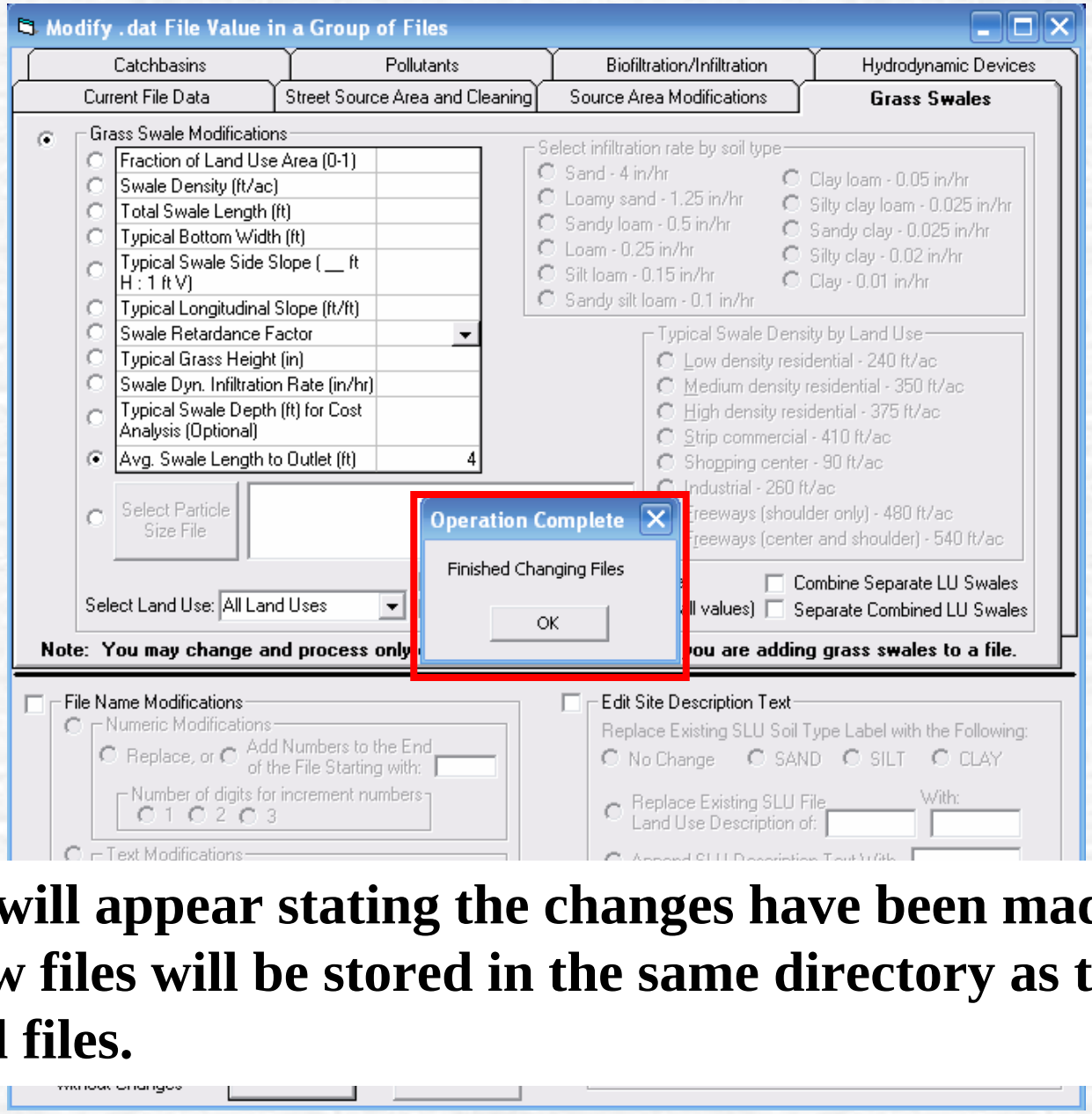


Modifying Groups of *.DAT Files



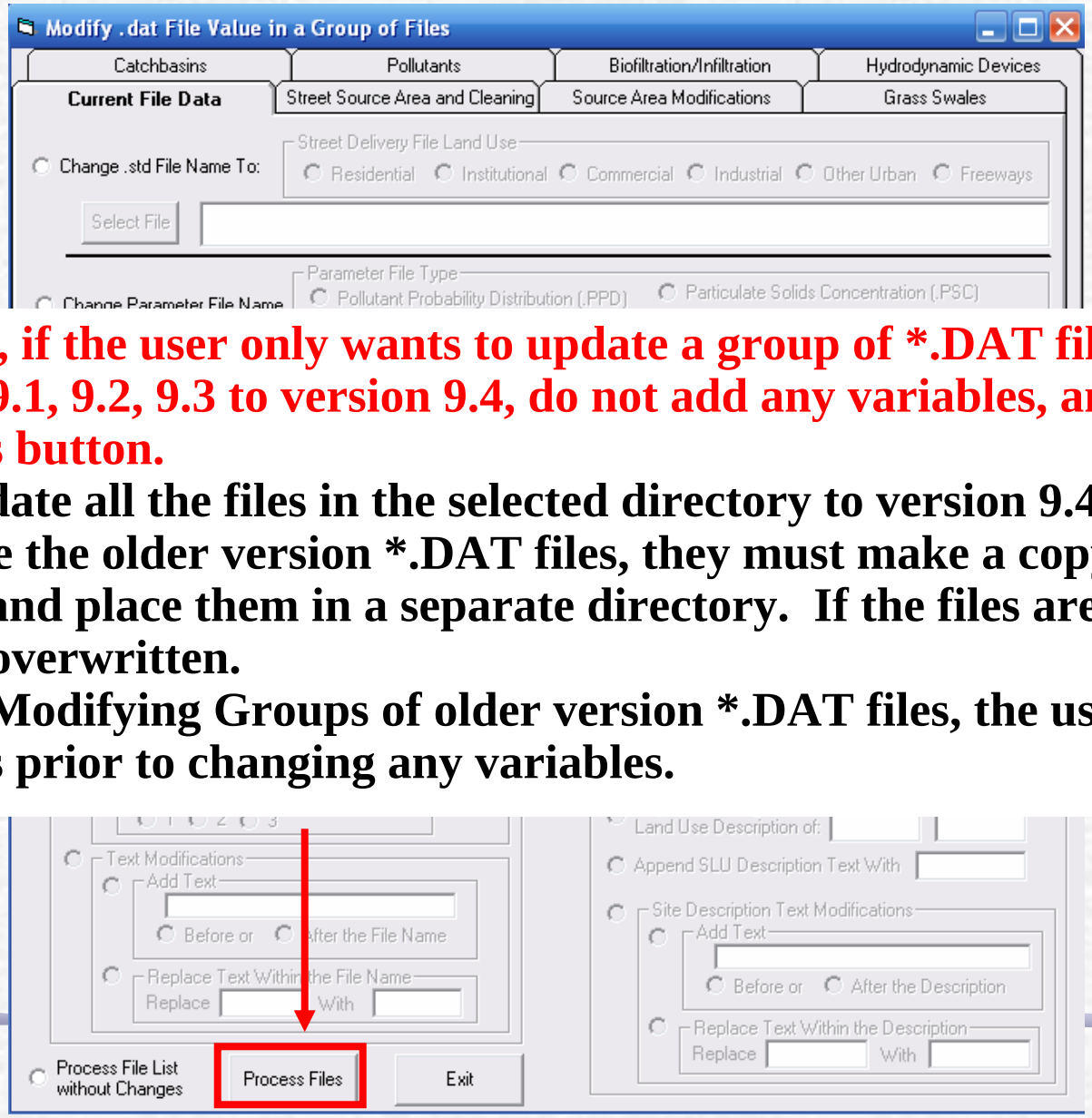
Select Process Files to modify the group of *.DAT files.

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

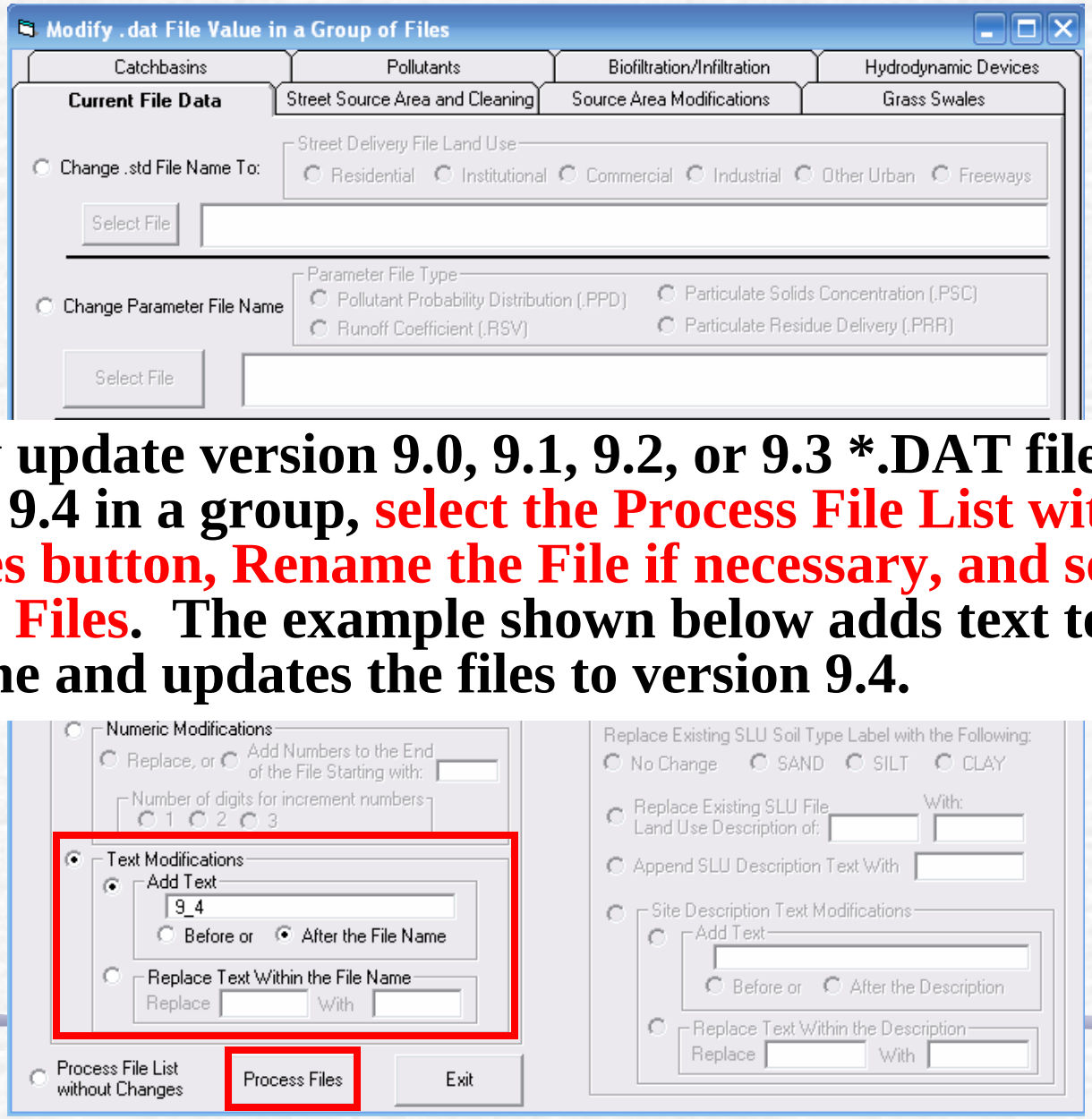


Additionally, if the user only wants to update a group of *.DAT files from version 9.0, 9.1, 9.2, 9.3 to version 9.4, do not add any variables, and select the Process Files button.

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.

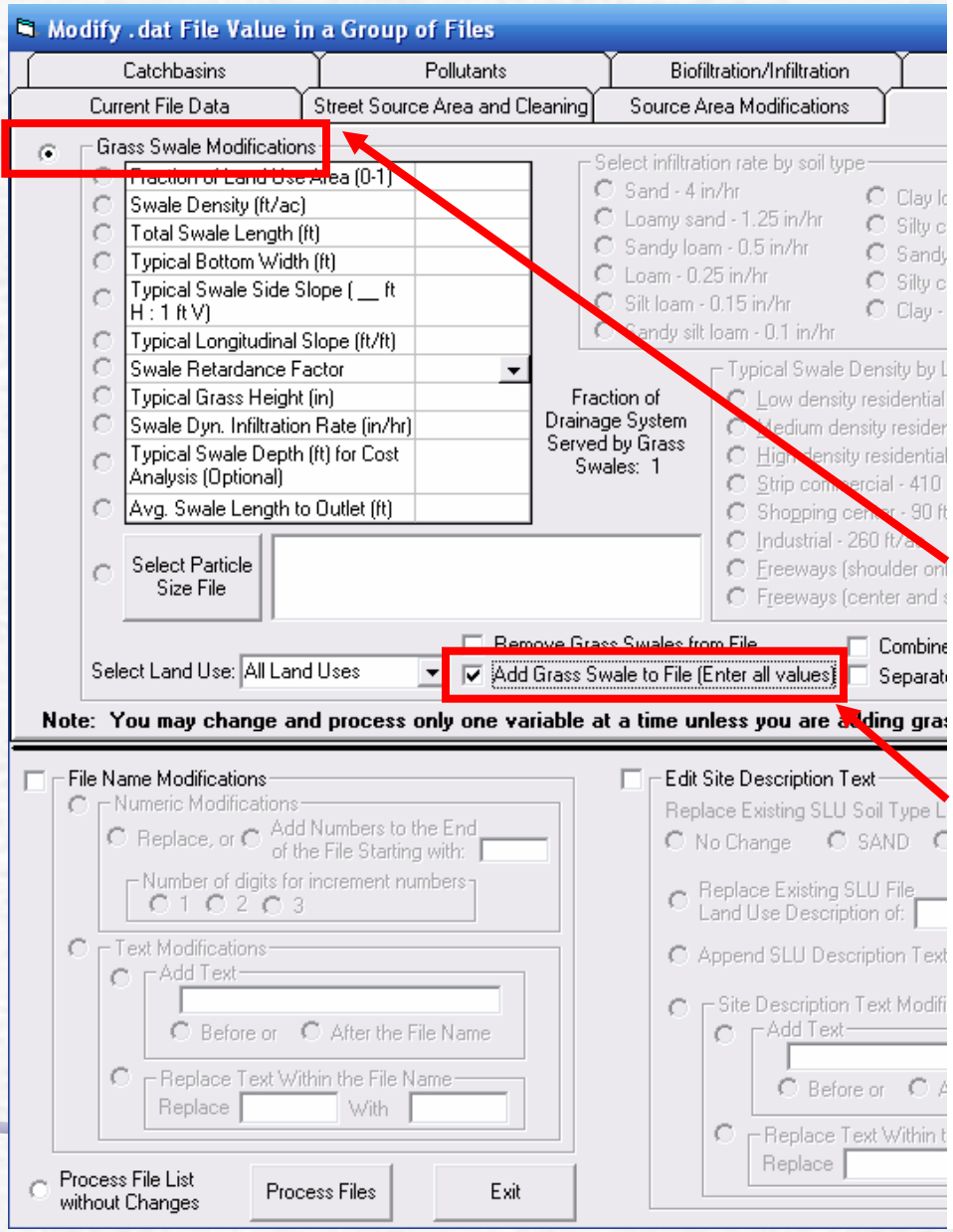
Note: when Modifying Groups of older version *.DAT files, the user must select Process Files prior to changing any variables.

Modifying Groups of *.DAT Files



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.

Modifying Groups of *.DAT Files

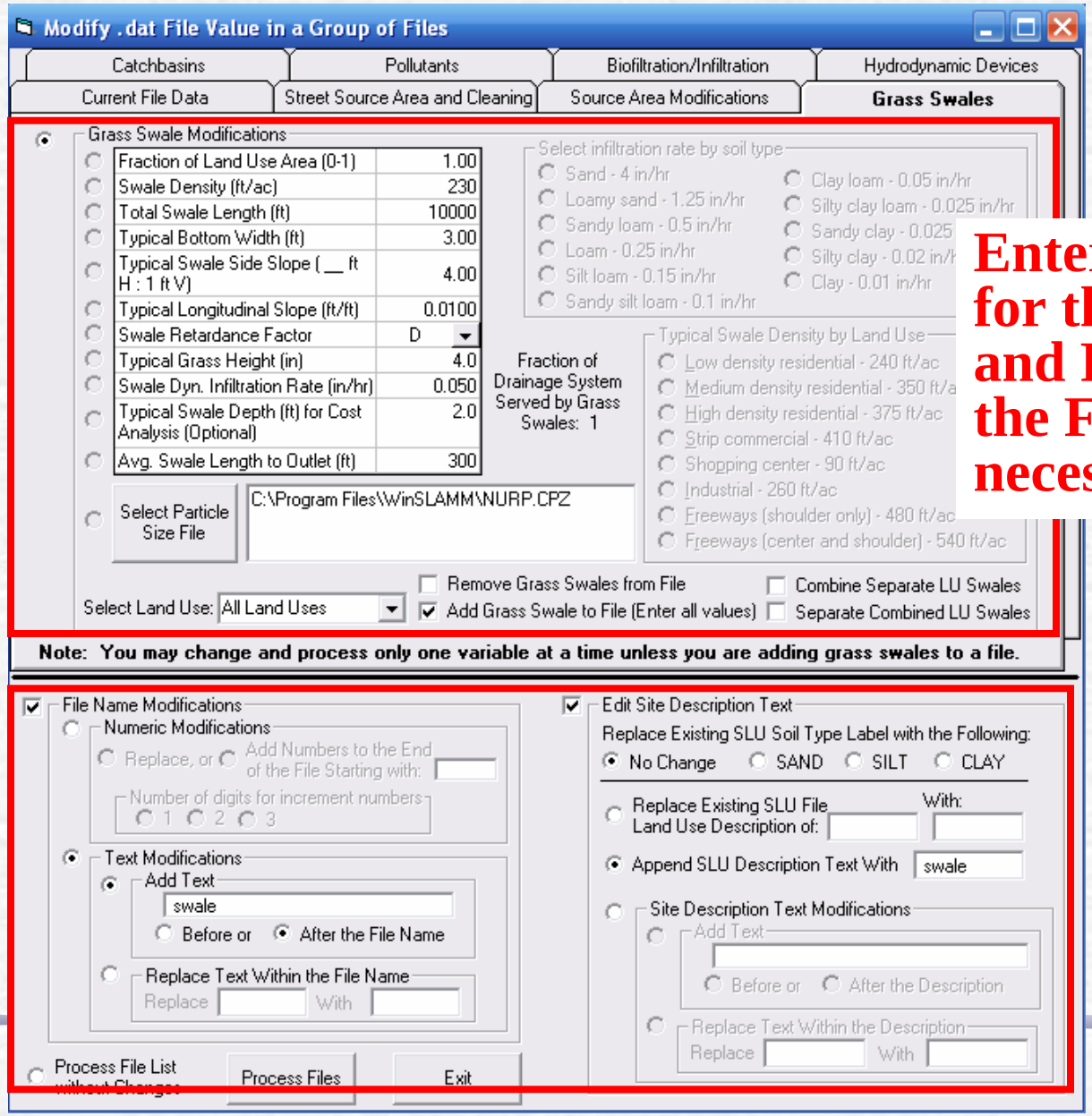


Various Control Devices can be added to *.DAT files in a batch. This example will show adding Grass Swales to a *.DAT file.

- **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.**

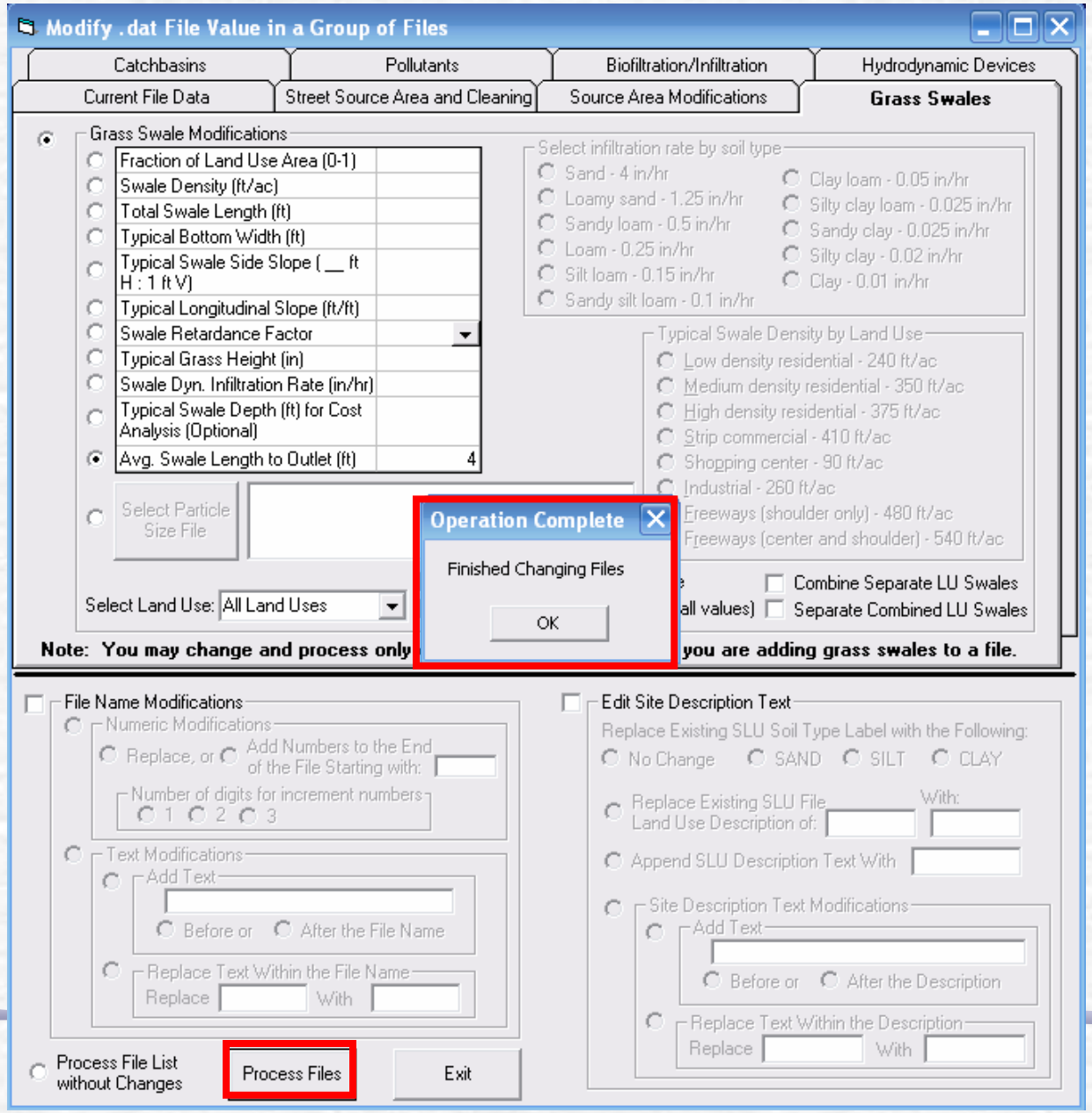
All the needed variables for the Grass Swale will be highlighted once the Add Grass Swale to File box is selected.

Modifying Groups of *.DAT Files

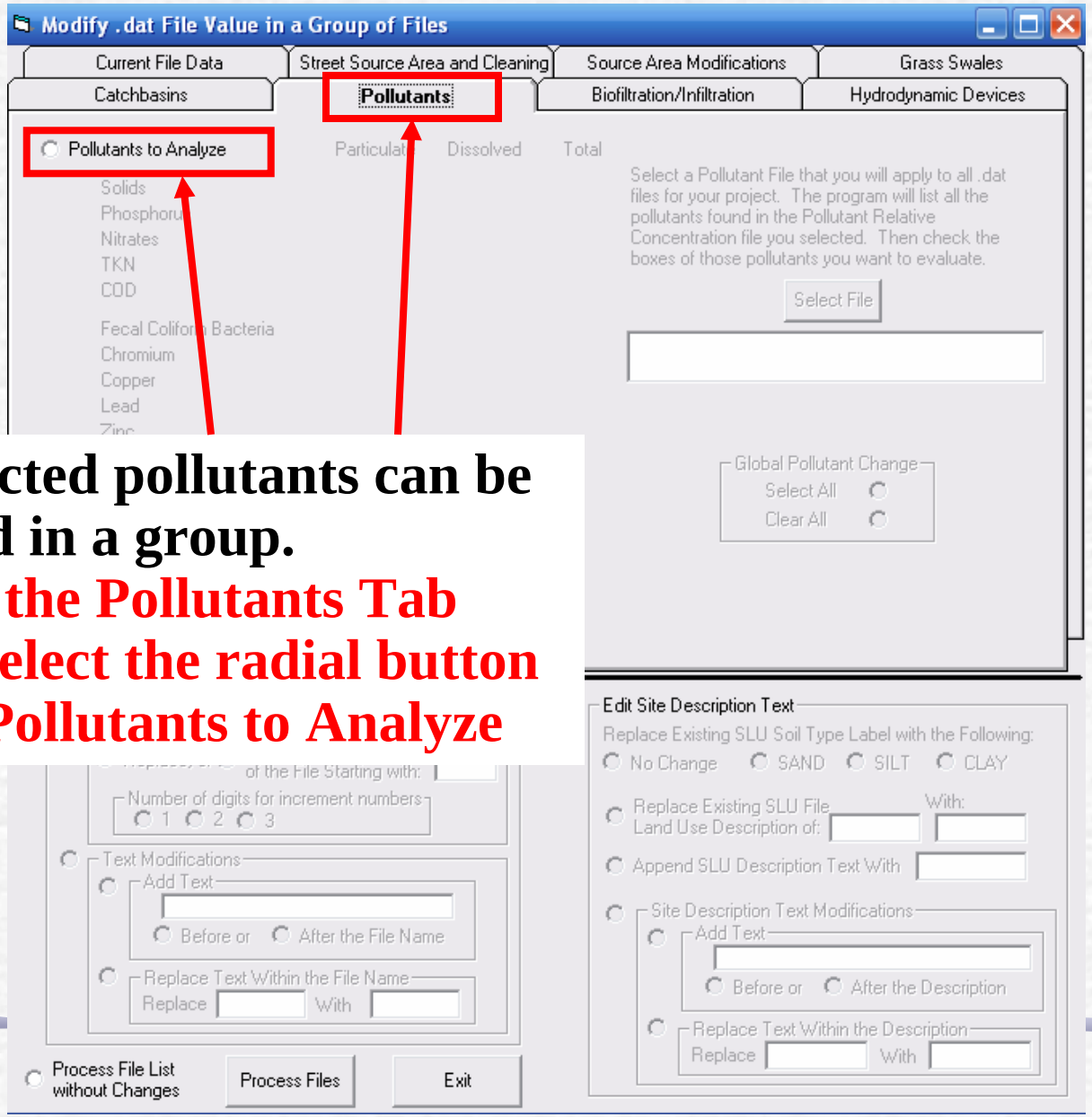


Enter the data for the swale and Rename the File if necessary.

Modifying Groups of *.DAT Files



Modifying Groups of *.DAT Files



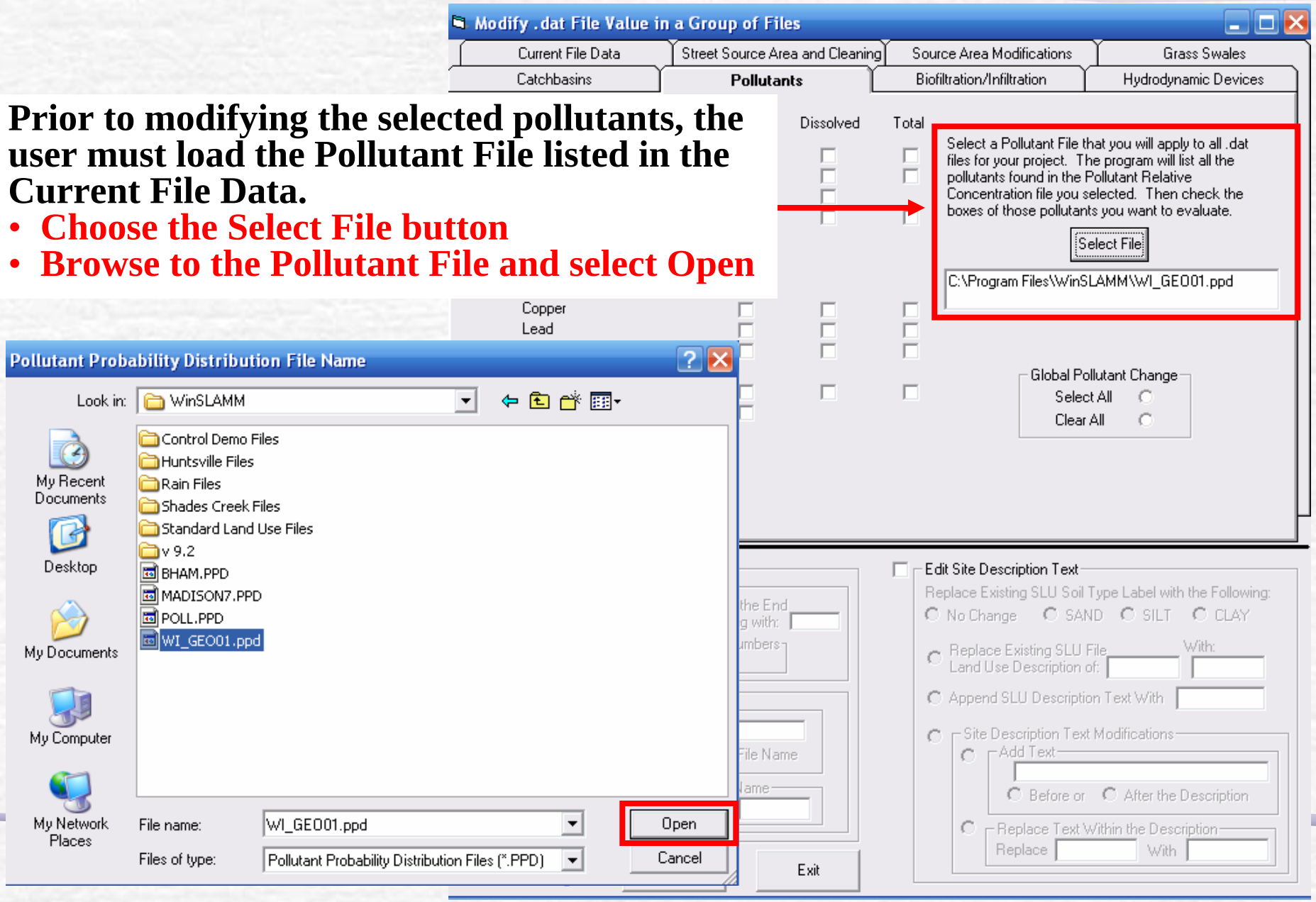
The selected pollutants can be modified in a group.

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

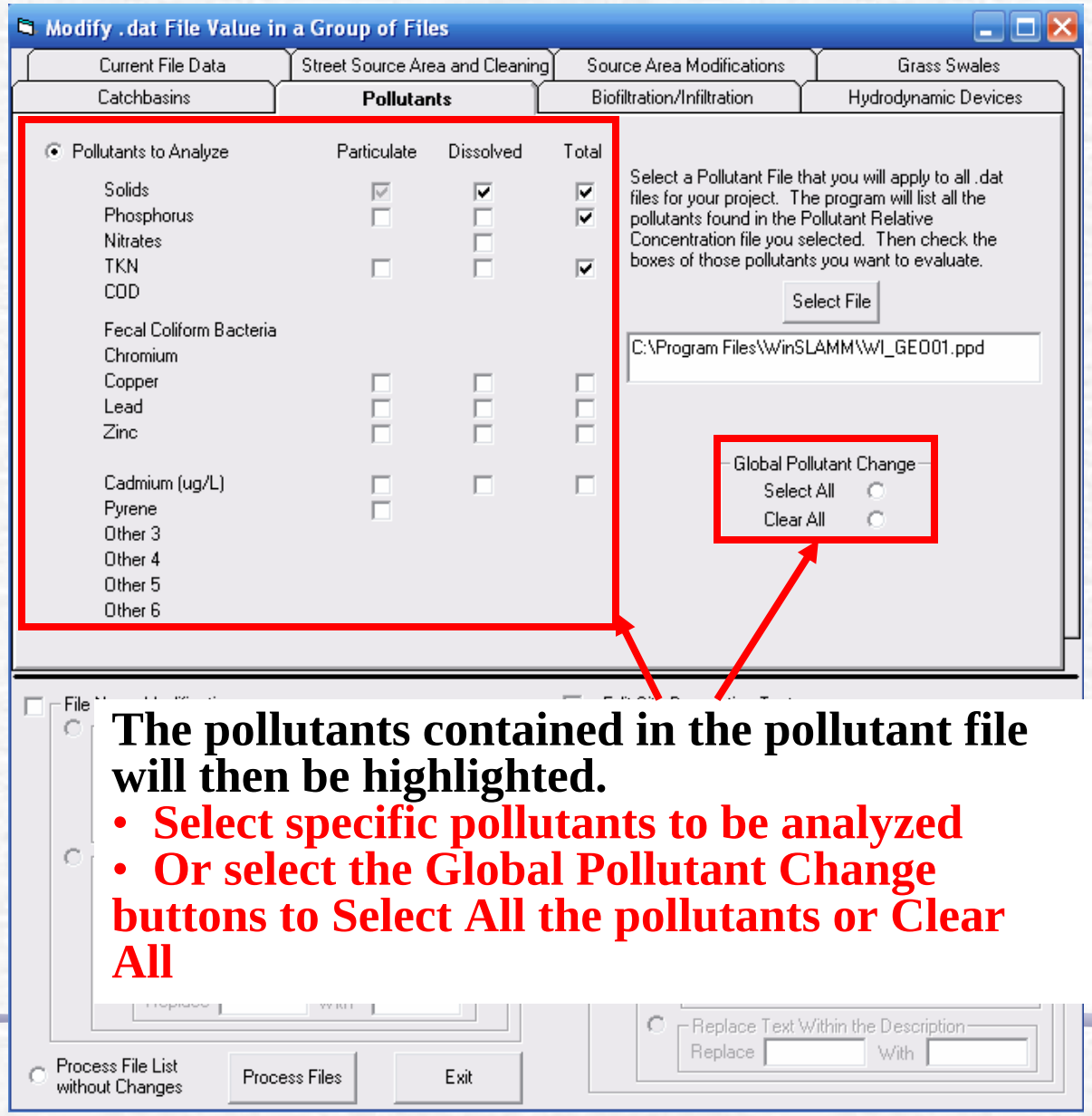
Modifying Groups of *.DAT Files

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**



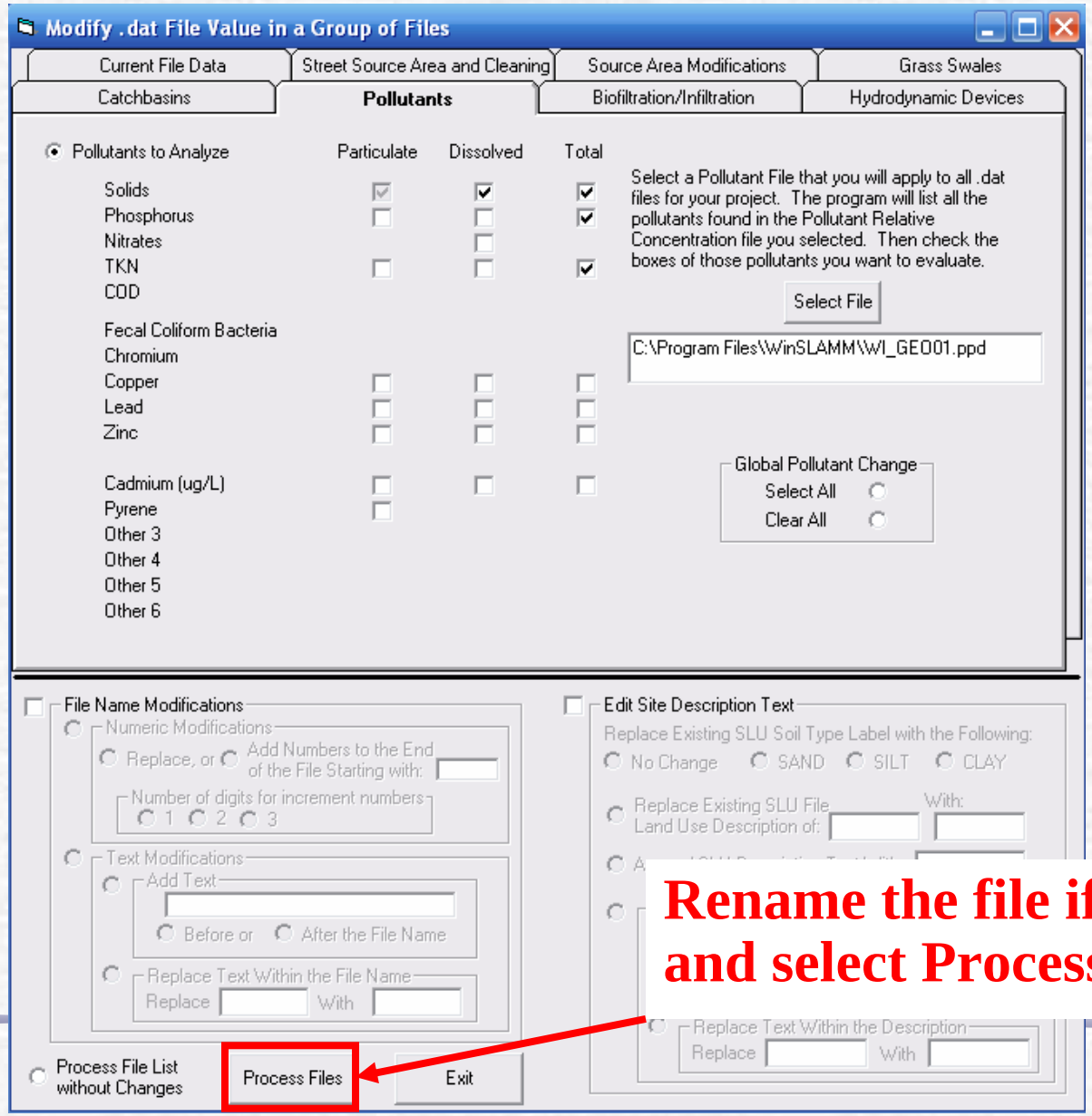
Modifying Groups of *.DAT Files



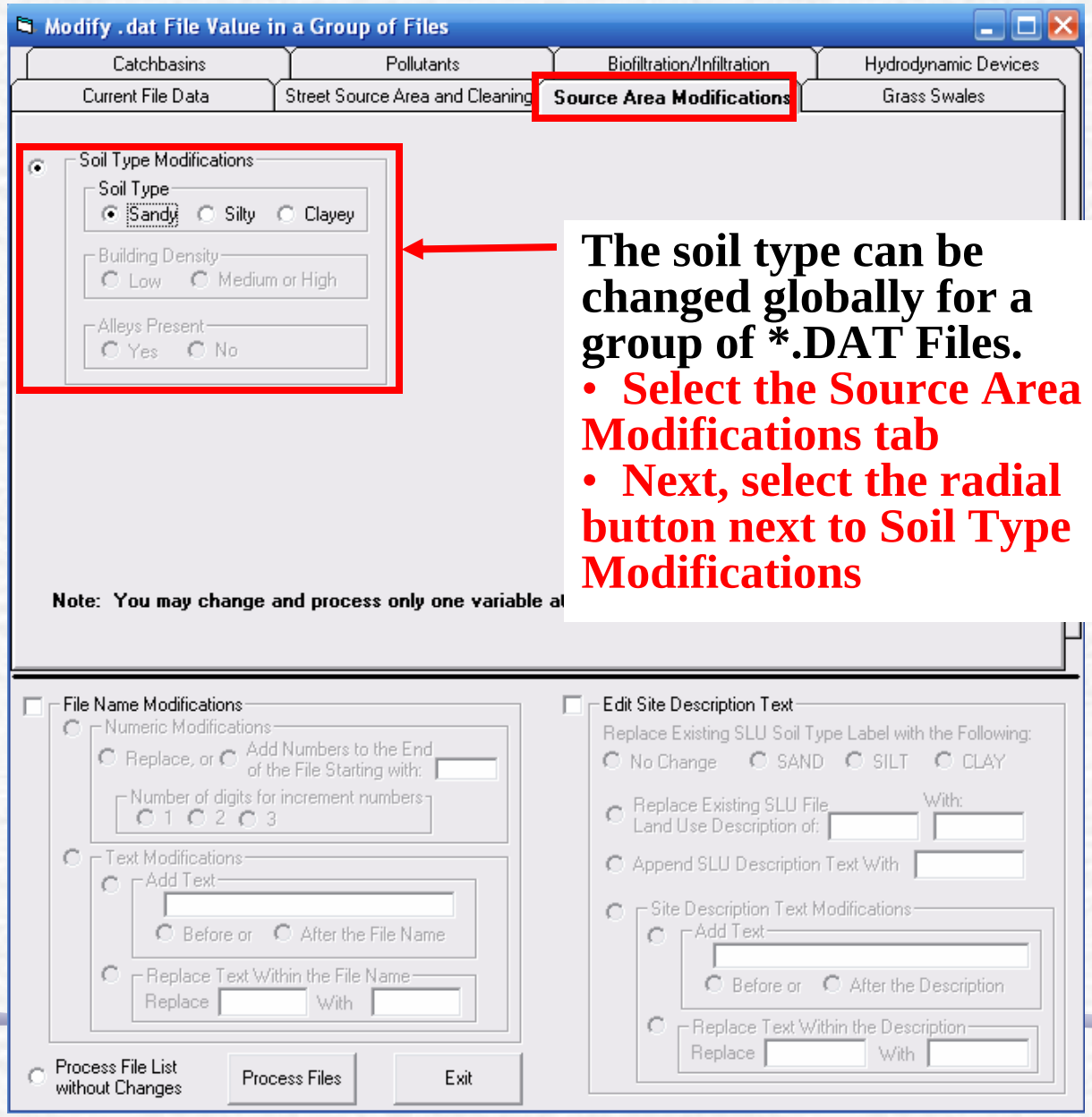
The pollutants contained in the pollutant file will then be highlighted.

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

Modifying Groups of *.DAT Files



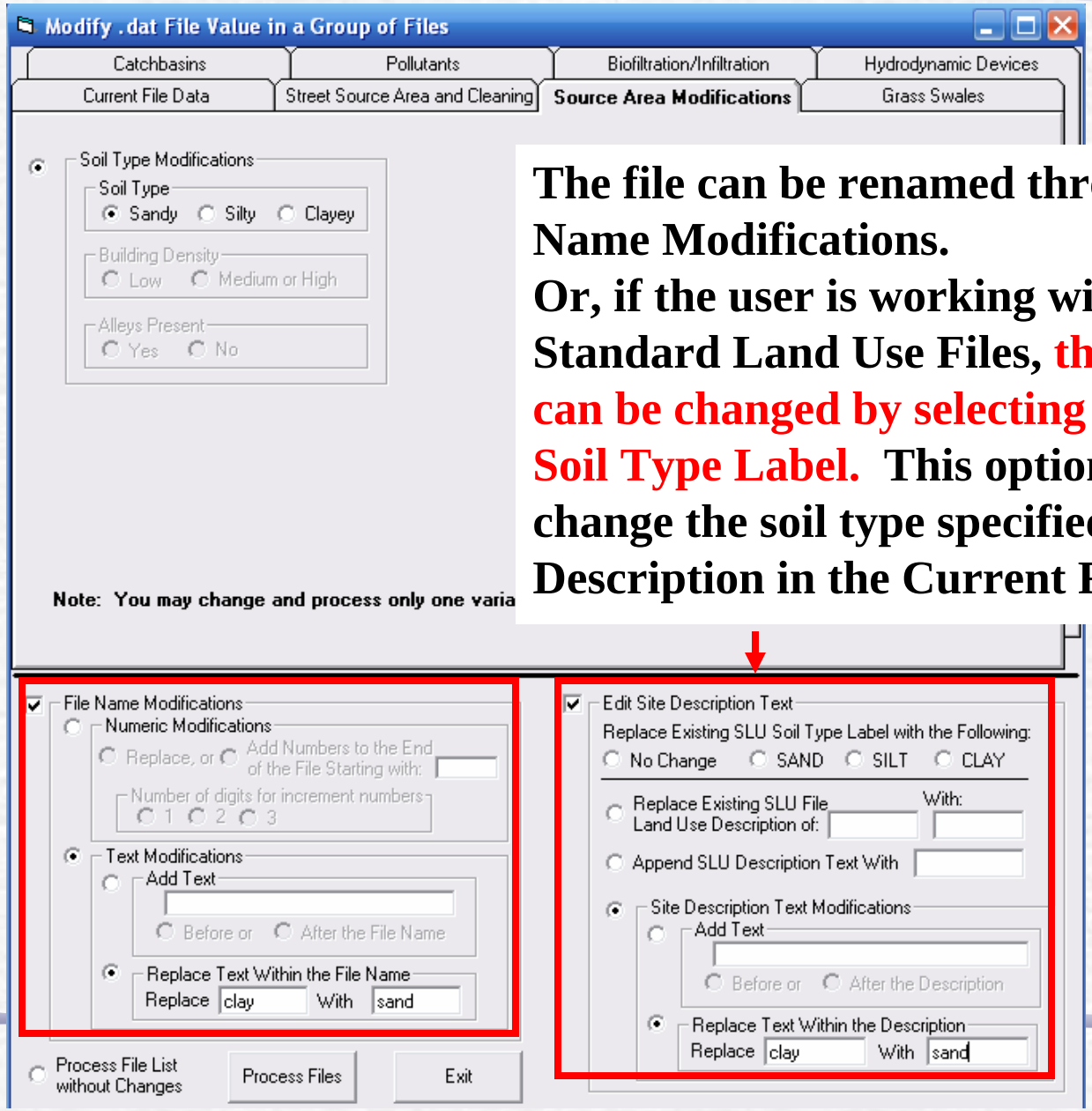
Modifying Groups of *.DAT Files



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**

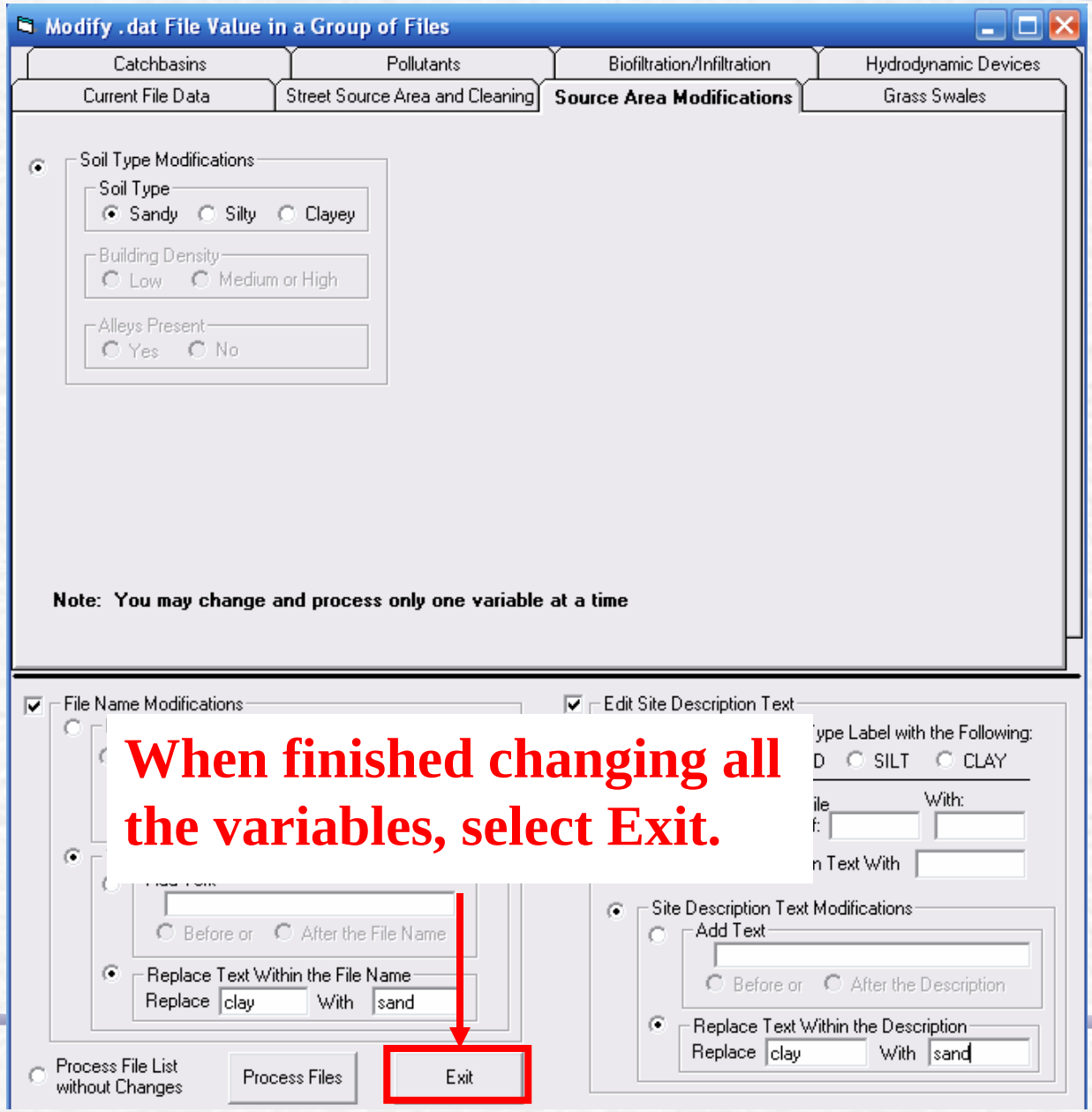
Modifying Groups of *.DAT Files



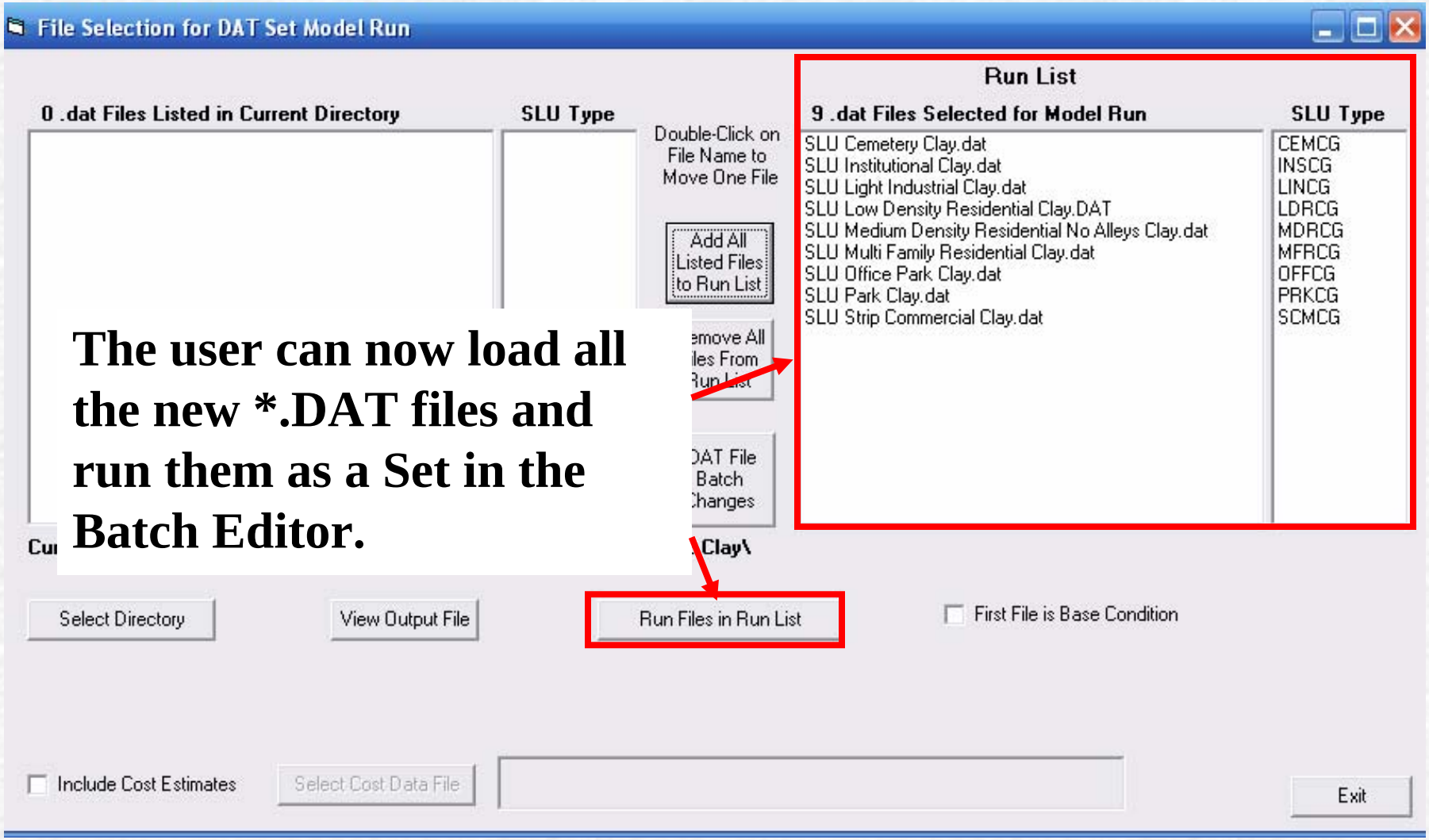
The file can be renamed through File Name Modifications.

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



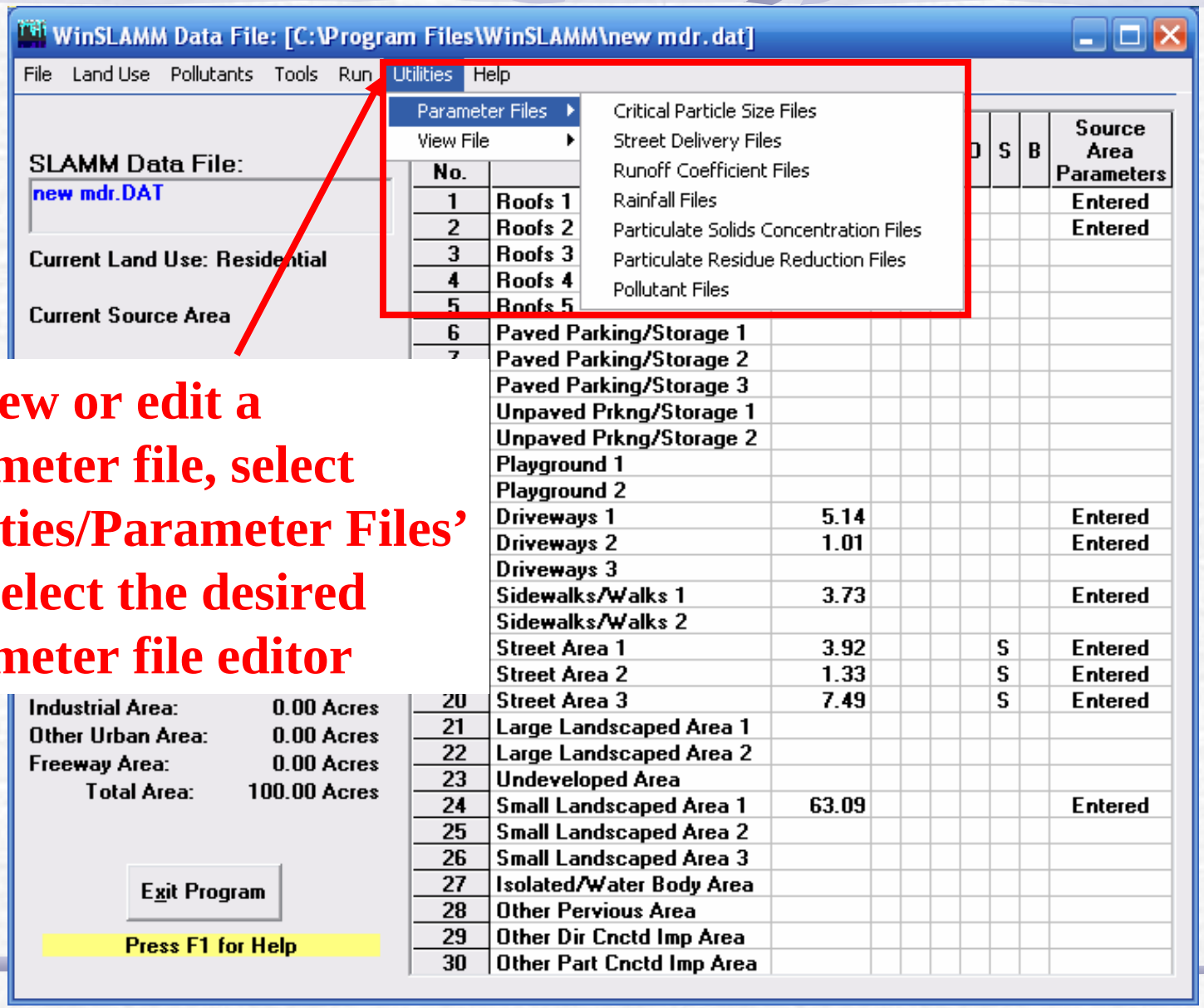
Modifying Groups of *.DAT Files



Parameter File Editor Overview

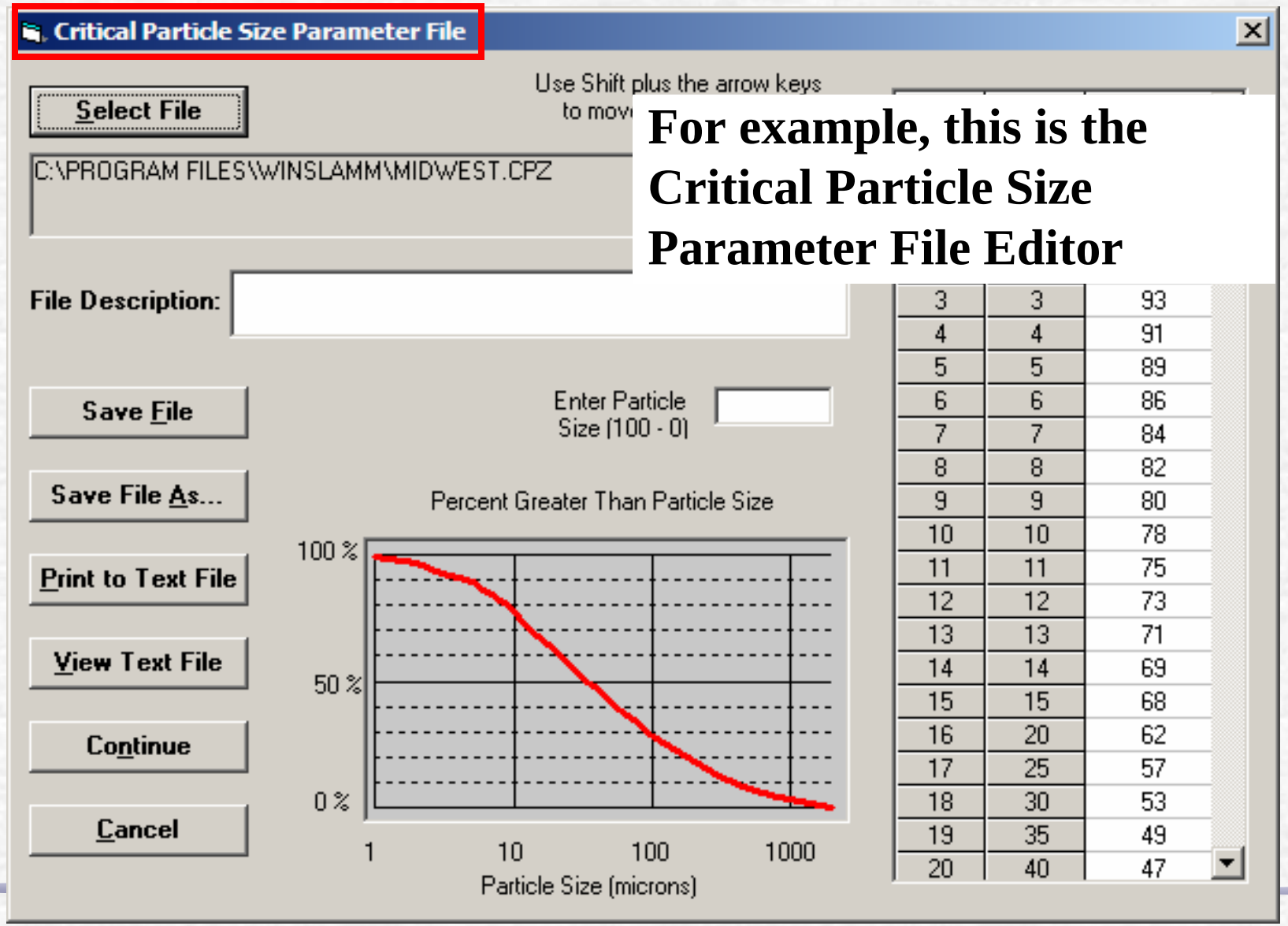
The model uses several parameter files. The user can view each of these files through the Parameter File Editor.

Parameter File Editor



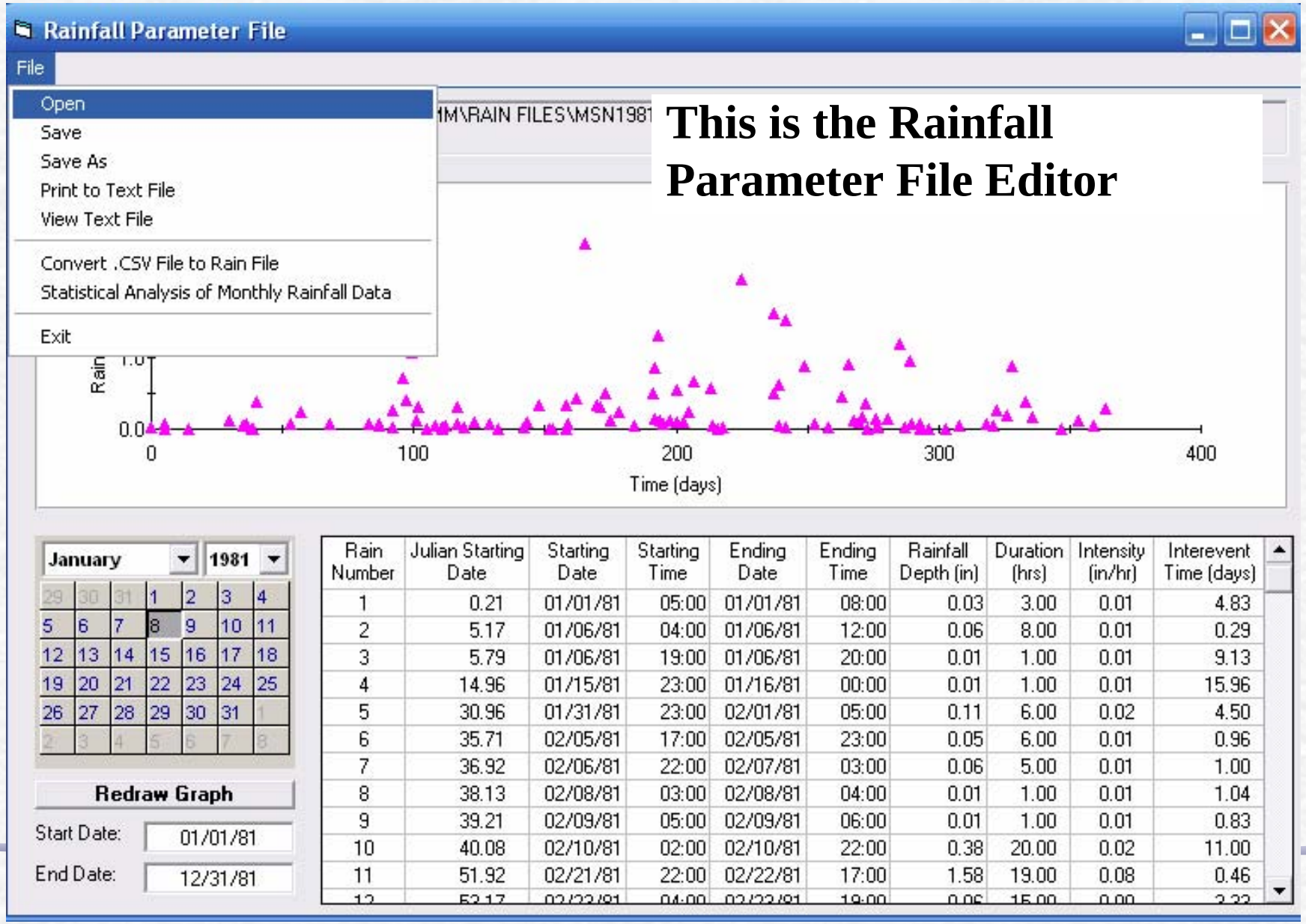
To view or edit a parameter file, select 'Utilities/Parameter Files' and select the desired parameter file editor

Parameter File Editor



For example, this is the Critical Particle Size Parameter File Editor

Parameter File Editor



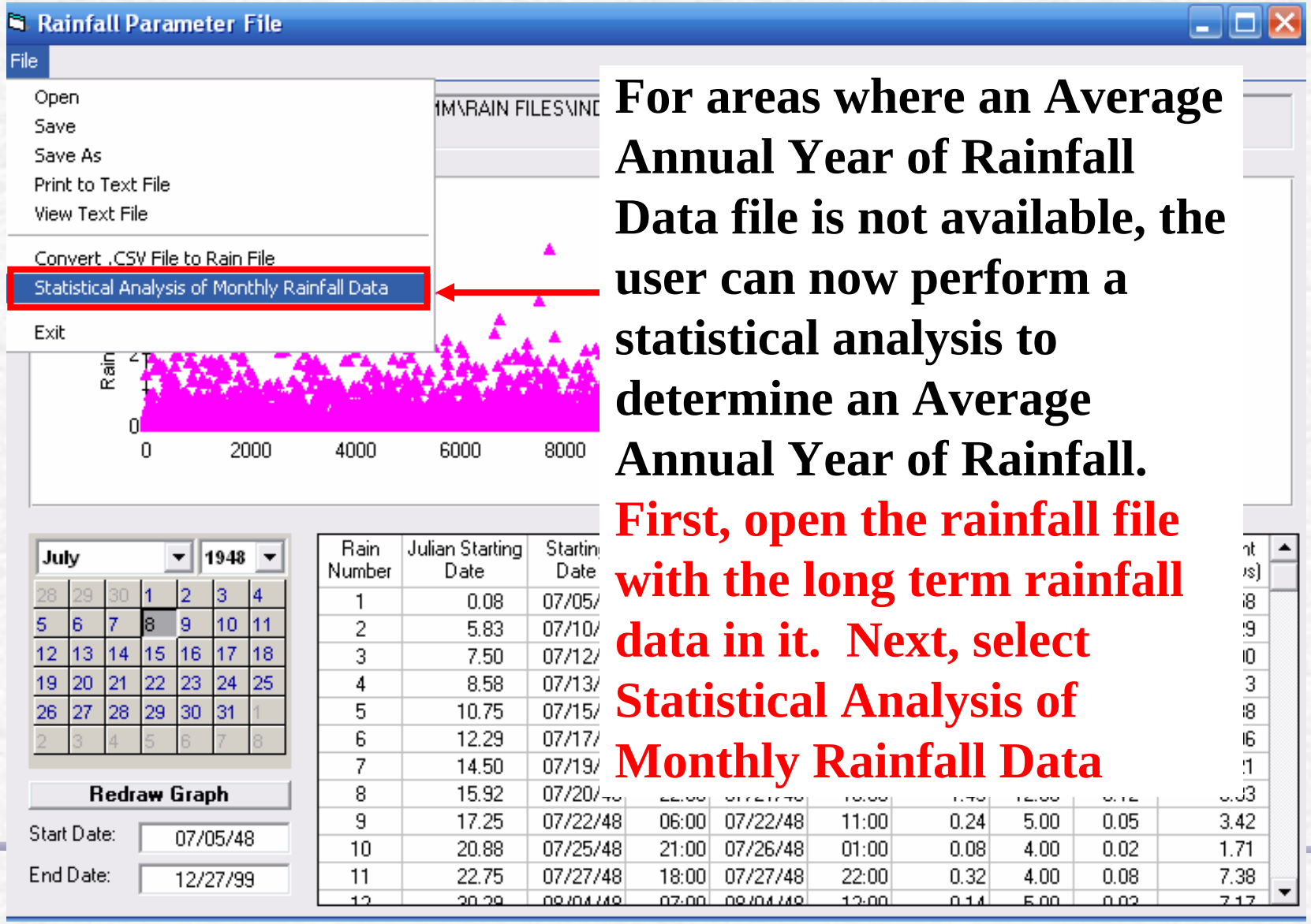
Rain Number	Julian Starting Date	Starting Date	Starting Time	Ending Date	Ending Time	Rainfall Depth (in)	Duration (hrs)	Intensity (in/hr)	Interevent Time (days)
1	0.21	01/01/81	05:00	01/01/81	08:00	0.03	3.00	0.01	4.83
2	5.17	01/06/81	04:00	01/06/81	12:00	0.06	8.00	0.01	0.29
3	5.79	01/06/81	19:00	01/06/81	20:00	0.01	1.00	0.01	9.13
4	14.96	01/15/81	23:00	01/16/81	00:00	0.01	1.00	0.01	15.96
5	30.96	01/31/81	23:00	02/01/81	05:00	0.11	6.00	0.02	4.50
6	35.71	02/05/81	17:00	02/05/81	23:00	0.05	6.00	0.01	0.96
7	36.92	02/06/81	22:00	02/07/81	03:00	0.06	5.00	0.01	1.00
8	38.13	02/08/81	03:00	02/08/81	04:00	0.01	1.00	0.01	1.04
9	39.21	02/09/81	05:00	02/09/81	06:00	0.01	1.00	0.01	0.83
10	40.08	02/10/81	02:00	02/10/81	22:00	0.38	20.00	0.02	11.00
11	51.92	02/21/81	22:00	02/22/81	17:00	1.58	19.00	0.08	0.46

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.

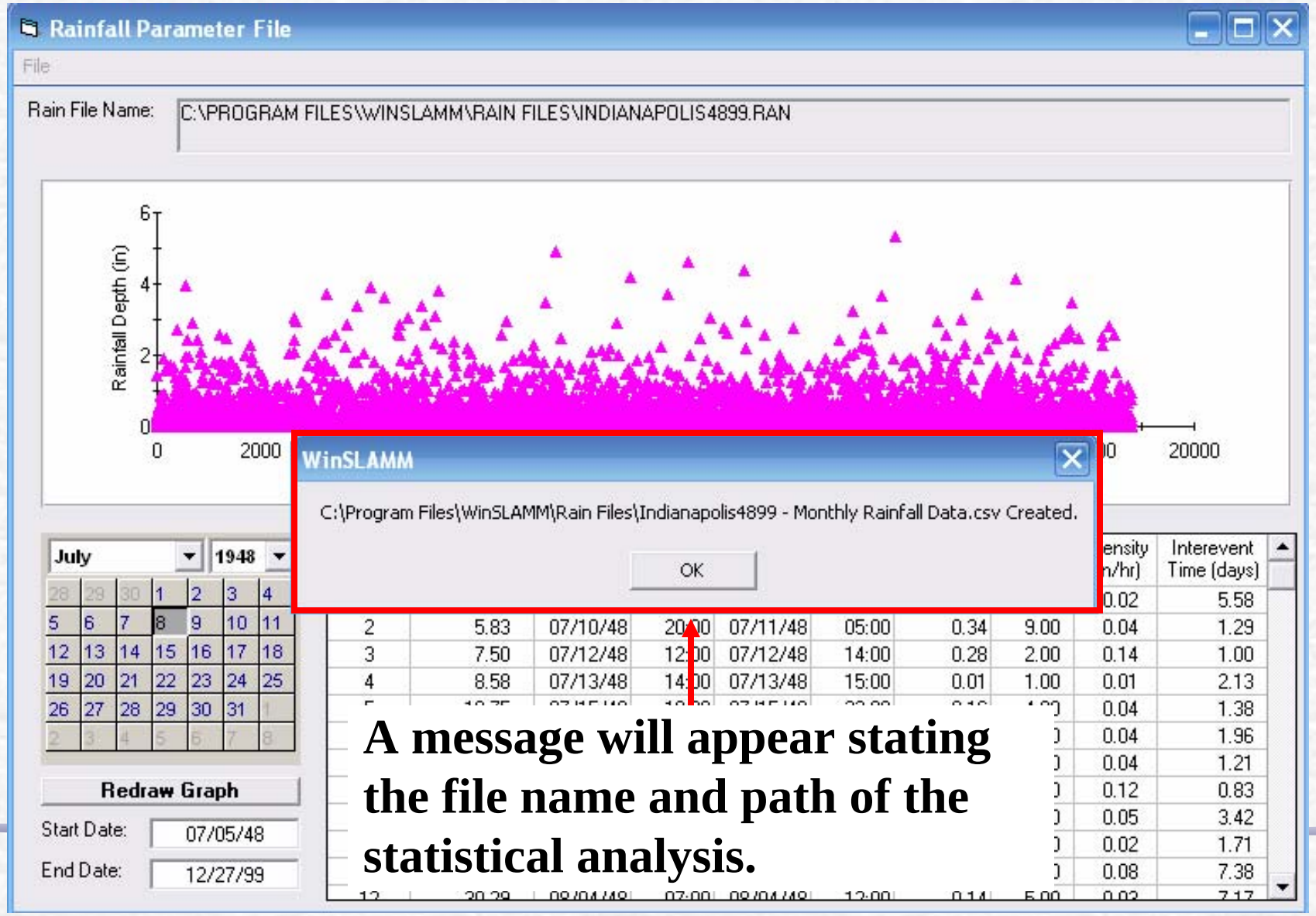
Statistical Analysis to Determine the Average Annual Year of Rainfall



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										2.83	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

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

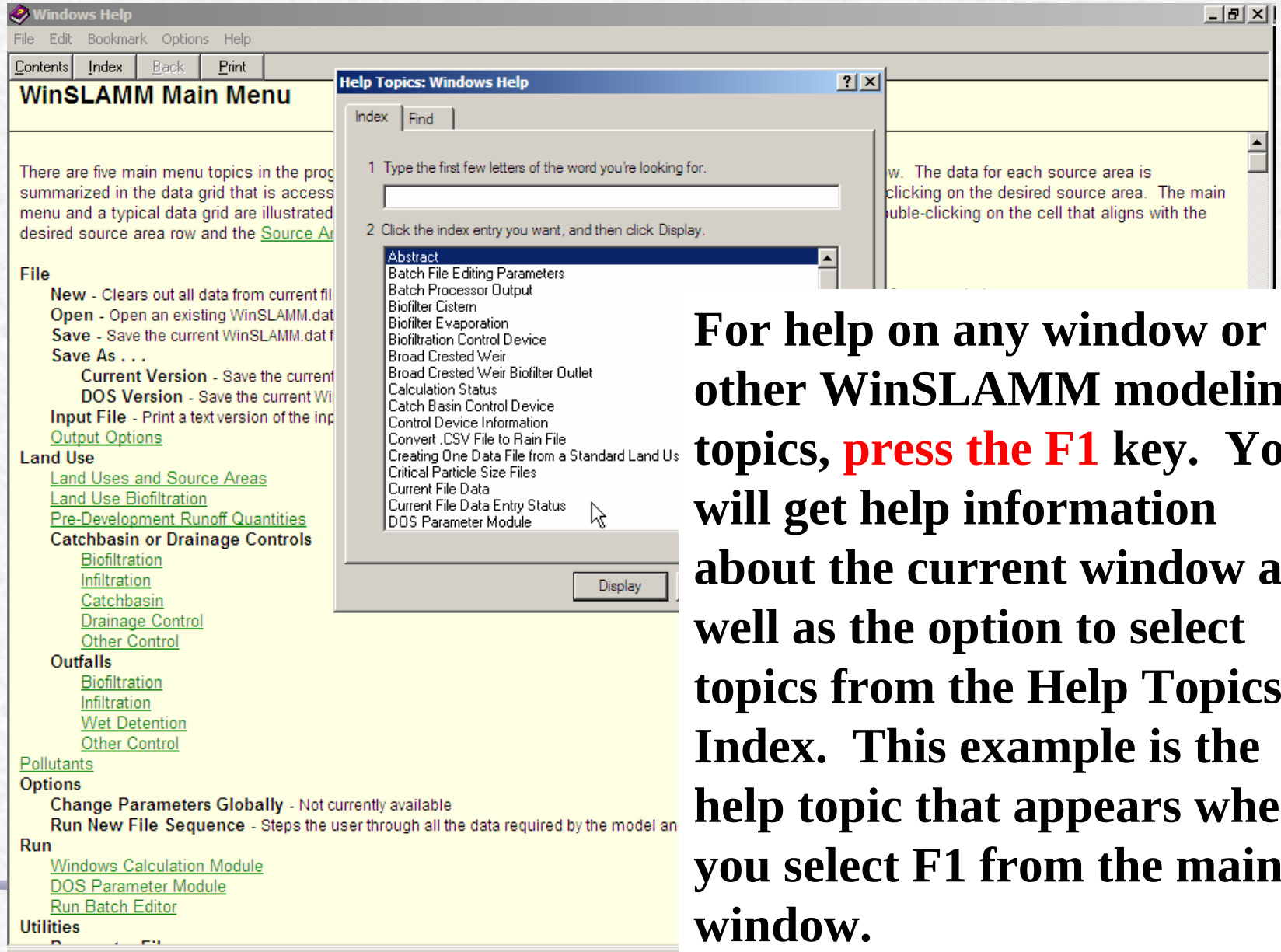
May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Deviation From Average	Absolute Deviation	Count	Average	Stnd Deviation	COV	Min	Max
10	14	7	9	10	8	5	11	103	-14.14	14.14	12	8.58	3.53	0.41	0	14
15	13	9	9	14	5	11	11	145	27.86	27.86	12	12.08	3.37	0.28	5	17
11	16	8	7	7	6	10	11	128	10.86	10.86	12	10.67	3.47	0.33	6	16
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)