## 4. Model Report

The **Model Report** is an output device that generates a document describing the current model. The Model Report is flexible with respect to both the contents and appearance of the report, allowing you to configure both the information contained in the report as well as how that information is formatted.

Typically, model reports are used to document the model, i.e. table and scalar data, method selection, etc. Series data is typically output in the Tabular Series Slot Report HERE (Section 3).

#### 4.1 Creating a new Model Report configuration

**Model Report** configurations are **Output Devices** (i.e. like a Plot Page, RiverWare Data File, Comma-Delimited File or Excel File). Model Report configurations are created within the Output Manager dialog. To create a new Model Report:

- From the Output Manager dialog menu, select the New → New Model Report...
- Configure the new Model Report as described below and click the **OK** button.

【 Output Manager				
File Generate	New Copy Edit Delete			
Output N Red River Flood Co Low Flow Horatio L LakeOTh Tri Lakes Dekalb C Custom Order Generate	New Plot Page       Ctrl+ N         New Xmgr Data File       New RiverWare Data File         New Comma-Delimited File       New Excel File         New Tabular Series Slot Report       New Model Report         New Chart       New Chart         New       Copy         Edit       Deleter	ete Close		

#### 4.2 Configuring Model Reports

The Model Report configuration dialog allows you to create or change a report. It consists of the following panels as shown in the screenshot on the next page:

- **Report Settings**: aspects of the configuration which apply to the entire report, e.g., the name of the report, the output file name, and the format of the output file.
- **Report Layout**: specification of the content to be included in the report, as well as the ordering and sectional organization of that content.
- Selected Item Settings: fine-level control of the report formatting (specified on a per-item basis).
- **Report Preview**: a preview of the output in a simplified HTML browser, based on the current configuration.

In the remainder of this section, each of these panels is described in more detail.



In general, to create a new report, start with the **Report Settings**, then use the **Report Layout** to define what you want to have in the report. Use the **Selected Item Setting** to configure each item in the report. **Refresh** the preview as needed to get an idea of what the report will look like. For long reports, use the **Preview Only Selected Item** toggle (described HERE (Section 4.2.4)) to only show a small portion of the report. If you plan to have similar sections for multiple objects, fully configure the section for one object, then use the **Add Items Similar to Selected Item**... button (HERE (Section 4.2.2)) to create sections for all other objects.

#### 4.2.1 Report Settings

The **Report Settings** panel displays settings which apply to the entire model report. There is one row for each setting, presented by name and value. To change a setting's value, click in the appropriate value cell, enter the new value and hit return (or click outside of the editing window). When appropriate for the particular type of value being edited, an ellipsis button is displayed to the right of the cell;

clicking on this button will bring up a dialog to assist with the editing process. For example, when entering the name of an object, the button brings up an object selection dialog. The following report settings are currently supported:

- **Report Name:** the name of the output device, as displayed in the Output Manager dialog.
- Output File: the name of the file to which the report should be written. This should typically be a fully specified path (e.g., C:\Reports\MyReport.html) but may contain references to environment variables (e.g., \${REPORT\_DIR}\MyReport.html).
- **Title:** the title of the report. If provided, this text will appear at the top of the report.

Report Settings			
Format Setting	Value		
Report Name	Red River Model Report		
Output File	\${TEMP}/RedRiverReport.html		
Format	HTML		
Title	Red River Basin		
Include RiverWare Icons	Yes		
Include Content Display Contro	ols Yes		

- Include RiverWare lcons: If "Yes", then references to workspace objects in the report will be accompanied by the appropriate RiverWare icon. When the report is generated, the image files corresponding to these icons will be written to a subdirectory at the same level as the output file. For example, if the output file is "C:\Reports\MyReport.html", then the images will be written to the directory: "C:\Reports\RiverWareReportImages", which is created by RiverWare as necessary.
- Include Content Display Control: If "Yes", the generated HTML file will include hide/show controls to the left of each section. These controls allow you to hide or show that section's content. Note, the HTML display must support Javascript.
- **Body Font:** The font used for text in the body of the report. This and other fonts are specified in font declaration format used by cascading style sheets (CSS). The specification can be edited in line, or selected with a font chooser.
- Title Font: The font used for the report title.
- Level 1 Font: The font used for top level section titles.
- Level 2 Font: The font used for second level section titles.
- Level 3 Font: The font used for third level section titles.
- Level 4 Font: The font used for fourth level section titles.
- **Include Date In Output File Name:** If "Yes", each occurrence of the string "DATE" in the output file name will be replaced with the current date (in the ISO 8601 extended format, YYYYMMDD).
- **Include Time In Output File Name:** If "Yes", each occurrence of the string "TIME" in the output file name will be replaced with the current time (in the ISO 8601 format, HHMMSS).

5	Sa	mpl	е НТ	ML	L ou	tput
		_		_		

Pool Elevation Pool Elevation Surface Area

ft

0.00

251.00

2.086.00

acre

0.00

37.00

169.00

# Section hidden,

click to show 3.2 
McGee Creek

1

2

3

Elevation Area Table

ft

463.00

480.00

500.00

Sect	ion	shov	vn
click	c to	hide	

Once editing of the report settings is complete, the **Report Settings** panel can be hidden by unchecking the associated checkbox.

### 4.2.2 Report Layout

You control the entire content of the report as specified in the **Report Layout** panel. This content is organized by items, and you specify the report contents by indicating which items should be included, the

order in which these items should appear, and their organization into sections. Use the 2 for a description of each item and as follows:

Item	Description		
Table of Contents	Lists the sections in the report, with hyperlinks to their locations.		
Model Information	The information contained in the File Info dialog (accessed from the workspace by File $\rightarrow$ Model Info), including the model's save history and the comment.		
Run Control	The information contained in the single run control dialog, including the controller, start and end dates, and timestep size.		
Section	A titled section whose contents are controlled by the items in the section.		
Object Section	A section describing a workspace object, whose title is the name of that object and whose contents are controlled by the items in the section.		
Slot	A slot's name, description, and values.		
Slot Table	A table showing the name and a single value for one or more selected slots.		
Method Table	A table listing the method categories and the selected method in each category.		
Subbasin	A table listing the members of a subbasin.		
Text	User defined text to be included in the report.		
RPL Set	Creates a section for each group in a RPL set.		
RPL Group	Creates a section for a single group in a RPL set.		

The following operations allow you to create the report layout and arrange its items as desired:

- The Add Item button: Use the drop-down menu to chose an item to add to Add Item: Section Ŧ the layout. The new item is added below the currently selected item, either at the same sectional level or as a child of the selected item, as appropriate for the types of the new and selected items (if the new item is not initially in the desired location, it can be moved as discussed below). A similar action can be accomplished using the Edit Layout - Add Item menu action and then choosing the desired item type. Use the plus button 🕒 to add the previously selected item. This allows you to quickly add multiple items of the same type.
- The Add Items Similar to Selected Item... button: when an item associ-Add Items Similar to Selected Item ... ated with an **object** is selected, this button is enabled. When this button is clicked, you can use the object selector to select multiple objects. A copy of the selected report item is made for each selected object, with the original object reference replaced with the object selection. For example, if an Object Section item associated with Reservoir A is currently selected and this button is clicked, then you select Reservoir B and Reservoir C, then two new Object Section items will be

added. Each will be identical to the Reservoir A item except that all references to Reservoir A in one will be replaced with references to Reservoir B, and similarly Reservoir A references with Reservoir C references in the other item.

- The **Move** arrows: these buttons can be used to move the selected item up or down or to change the sectional organization by making an item a child of item above it (right arrow, make child, or "move in") or a sibling of the parent item (left arrow, **Promote**, or "move out").
- Item **drag and drop**: an item can be dragged from one location to another to move it, or it can be dragged from the Report Layout of one model report configuration dialog to that of another dialog to add a copy.
- **Edit operations**: the following standard edit operations can be accessed via the right-click popup menu or the Edit Layout menu: Cut, Copy, Paste, Delete. In addition the Edit Layout menu provides the **Paste Below Selected Item** which adds the buffered item as a new item instead of overwriting the selected item.

Initially section items are display collapsed; in addition to individually collapsing and expanding the contents of section items in the Report Layout, the right-click popup menu provides the "Expand All" and "Collapse All" actions.

#### 4.2.3 Selected Item Settings

The **Selected Item Settings** panel allows you to control the appearance of individual report items. This panel lists the settings which apply to the item currently selected in the **Report** Layout panel, and allow them to be edited by clicking on the current setting value (this list of settings behaves like that in the Report **Settings** panel). The following table gives the settings which apply to each type of report item:

Item Type	Setting	Туре	Notes
Table of Contents	Title	Single-line text	
Model Information	Include File Save History	Yes/No	
	Include File Comment	Yes/No	
Run Control	n/a		
Section	Title	Single-line text	The text used as the section name.
Object Section	Object Name	Single Selection	
	Include Object Type	Yes/No	

**Report Item Settings** 

#### Selected Item Settings (Slot: Broken Bow.Elevation Area Table) Format Setting Value Slot Name Broken Bow, Elevation Area Table Include Object Name No Include Slot Type No Maximum Columns Per Table 0 Apply Selected Setting Globally...





Item Type	Setting	Туре	Notes
	Slot Name	Single Selection	
	Include Object Name	Yes/No	
	Include Account Name	Yes/No	
	Include Slot Type	Yes/No	
Slot	Maximum Columns Per Table	Integer	If positive, values will be displayed in multiple tables as necessary.
	Plot Width (pixels)	Integer	Applies to SeriesSlots whose values are plotted (not displayed in a table).
	Plot Height (pixels)	Integer	Applies to SeriesSlots whose values are plotted (not displayed in a table).
	Selection	Multiple Selection	
Slot Table	Title	Single-line text	If present, will appear as the title of the table.
	Include Object Name	Yes/No	
	Include Account Name	Yes/No	
	Object Name	Single Selection	
Method Table	Title	Single-line text	If present, will appear as the title of the table.
	Show Only Non-default Methods	Yes/No	
Subbasin	Subbasin	Single Selection	
Text	Text	Multi-line text	
	Set	Single Selection	These items might generate output for
RPL Set	Show Policy Groups	Yes/No	a RPL Report Group, and that group
	Show Utility Groups	Yes/No	objects, slots, or subbasins, so these
	Show Global Groups	Yes/No	items include format settings that
RPL Group	Set	Single Selection	apply to slots, objects, and subbasins.
	Group	Single Selection	Include Object Name" setting which is used when generating output for a RPL Report Group containing a slot. Click HERE (RPLUserInterface.pdf, Section 1.5.1).

Clicking the **Apply Selected Setting Globally...** button will search the report layout for items that have a different value for the selected setting. If any such settings exist, then you will be asked to confirm that they would like to copy the selected setting's value to these items, that is, to bring all of values for the selected setting into agreement.

#### 4.2.4 Report Preview

preview a small portion.

The first tab of the panel on the right side of the dialog provides a preview of what the output report might look like in an external application. Clicking on the **Refresh** button reference will generate output corresponding to the current layout and settings and display the output within the panel. Checking the **Preview Only Selected Item** will cause the refresh to display only the output generated by the item selected in the Report Layout panel. This setting is very useful for long reports where you only want to

The arrow buttons  $\blacklozenge$  provide navigation backwards and forwards to locations in the document which have been visited by clicking on a link.

Note that many applications are capable of displaying an HTML document (e.g., this panel of RiverWare, Mozilla Firefox web browser, and Microsoft Word editor), but different applications often display the same HTML differently.

#### 4.2.5 Log

This tab provides a textual description of the report generation process. The log contains details such as: the time at which generation began and ended, the output file path, the directory to which image files were written, and how many new images were written there. When a problem occurs during preview generation, the details will be reported here (and typically not in

Report Preview (HTML)	Log
Initiating report preview 13:52:59. Writing report to file:	generation at 12-05-2012

the diagnostic dialog). If the preview does not looks as expected, the log will often explain the issue.

#### 4.2.6 Additional Buttons and Menu Actions

Following is a description of the remaining buttons and menu actions:

- **Generate**: Clicking the **Generate** button creates the model report output file in the path specified by the Output File setting.
- Generate and View: Generate the report as above and open the file using the program specified in the Output → File Type Associations... menu.
- OK: Clicking the OK button saves any unapplied changes and closes the configuration dialog.
- **Cancel**: Clicking the **Cancel** button discards any unapplied changes and closes the configuration dialog.



• **Apply**: Clicking the **Apply** button saves to the Output Manager any changes since the last apply, so that when the dialog is closed, these changes will be retained by the Output Manager. Note that for these changes to be reflected in the model file, a separate model file save action is required. The configuration dialog is not closed as part of the Apply operation.

Selecting File  $\rightarrow$  Export creates a file containing the model report configuration. This file can then be imported via the Output Manager into another model.

Selecting **File — Cancel** discards any unapplied changes and closes the configuration dialog.

#### 4.3 Model Report Generation

When a Model Report is generated from the Model Report configuration dialog or from the Output Manager dialog, an HTML file is created at the location specified in the Output File setting. This file can then be viewed by any external application appropriate for viewing HTML.

When the report is generated, if **Include RiverWare Icons** is "yes" **HERE (Section 4.2.1)**, then image files corresponding to RiverWare icons will be written to a subdirectory at the same level as the output file. For example, if the output file is "C:\Reports\MyReport.html", then the images will be saved to the directory: "C:\Reports\RiverWareReportImages", which is created by RiverWare as necessary.