



## Technical Documentation Version 7.1

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# Release Notes

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# CADSWES

**Center for Advanced Decision Support for Water and Environmental Systems**

This document describes new features, enhancements, and changes included in RiverWare<sup>tm</sup> Version 7.1. These changes are new to the executable since the release of RiverWare<sup>tm</sup> Version 7.0 on Dec 16, 2016.

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# Release Notes Version 7.1

This document describes new features, enhancements, and changes in RiverWare Version 7.1.

## 1. Batch Mode

### 1.1 InvokeDssDMI RCL Command

The batch mode command InvokeDssDMI was generalized to set the DSS File path or F Part. The syntax is described [HERE \(BatchMode.pdf, Section 4.4.11\)](#).

## 2. Data Management Interface

### 2.1 HDB: Reading and displaying of Metadata

HDB Database DMIs were improved to read a per-timestep validation character and display it as a series slot note. This allows per timestep metadata (like P for provisional or A for approved) to be brought into RiverWare and shown on a slot as a **Series Slot Note**. For more information, click [HERE \(DMI.pdf, Section 5.3.2.2\)](#).

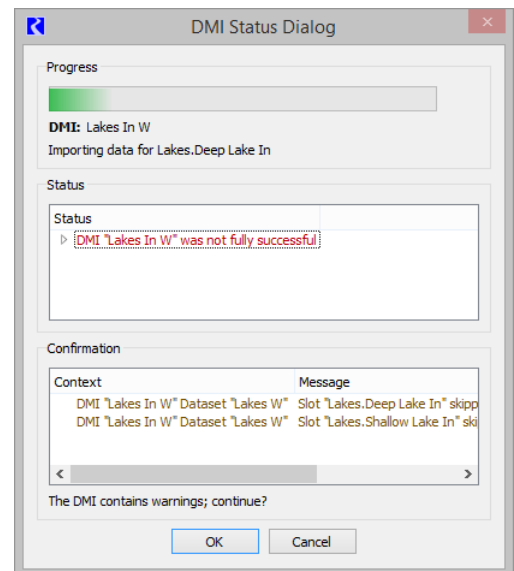
### 2.2 Status and Progress Dialog

The DMI interface was improved by merging progress and confirmation information into a single dialog. This new dialog also provides the status of the DMI execution, for example 8 slots were processed successfully while 2 slots were processed unsuccessfully (missing values).

Thus the new dialog provides:

- DMI Progress
- DMI Status
- Warnings and Confirmations

For more information, click [HERE \(DMI.pdf, Section 2.5.2\)](#)



## 3. Multiple Run Management

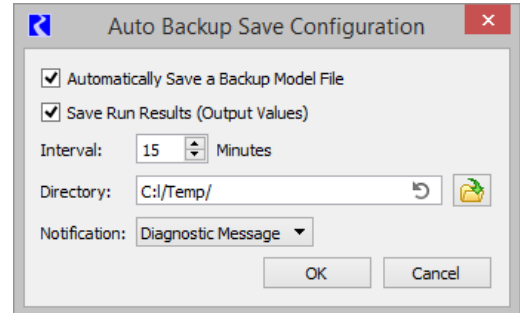
### 3.1 HDB Output Ensemble Names for MRM

When using HDB output ensembles for MRM, a diagnostic message is now issued at the beginning of MRM to notify the user of the names of the ensembles being used.

## 4. Model Files

### 4.1 Auto Backup Save

A new utility has been added to auto-save the model file to a backup file location. When enabled, at a specified interval, the model file is saved to a backup file in a specified directory. Click [HERE \(ModelFiles.pdf, Section 4.6\)](#) for more information.



### 4.2 Model Info and Run History

The **File** ➔ **Model Info** dialog was enhanced to show:

- **Save History** showing information about the last save
- **Run History** about one or more runs as described [HERE \(ModelFiles.pdf, Section 2.2\)](#).

## 5. Objects

### 5.1 Canal - Dispatching

Within Rulebased Simulation, reservoirs linked to a Canal object are now forced to redispach the same method within a timestep. This change was made to address a problem where rule and slot priorities led to the reservoirs dispatching the incorrect method.

### 5.2 Inline Power Plant - Specify Units Generating

A new method, **Specify Units Generating**, was added to the **Inline Power** category. In this new method, you specify the generating capacity for each unit, and the fraction of capacity at which each unit is generating. The method then calculates the **Unit Power** and **Unit Energy** as well as the total plant **Power** and **Energy**.

For more information, click [HERE \(Objects.pdf, Section 14.1.2.3\)](#).

### 5.3 Power Reservoirs - Specified Power Coefficient

On power reservoirs using the **Plant Power Coefficient** or **Plant Efficiency Curve** methods, **Hydro Capacity**, **Best Hydro Capacity**, and **Energy** with the **Best** flag are now calculated correctly when the Power Coefficient is input or set by a rule.

### 5.4 Reach Routing Method - Muskingum with Segments

A new routing method was added to the Reach object. The **Muskingum with Segments** method allows you to route using the standard Muskingum equation,  $Outflow = C0 Inflow(t) + C1 Inflow(t-1) + C2 Outflow(t-1)$ , but further discretize the reach into sub-segments. Each segment uses the same routing parameters as specified in the Routing Parameters category. In addition, this method has fewer requirements for initial data than the original Muskingum

method; if the initial Outflow is not known, it is set to the Inflow. For more information, click [HERE \(Objects.pdf, Section 20.1.1.8\)](#)

## 5.5 Slope Power Reservoir - Weighting Coefficients Interpolation

The Slope Power Reservoir was improved to not issue table interpolation errors during intermediate calculations. This change affects iterative algorithms including max outflow computations and RPL functions like **SolveSlopeStorageGivenInflowHW**, **SolveSlopeStorageGivenInflowOutflow** and **TargetSlopeHWGivenInflow**.

The fix includes introducing two new slots:

- **Partition BW Table Auto Max**
- **Partition BW Table Auto Min**

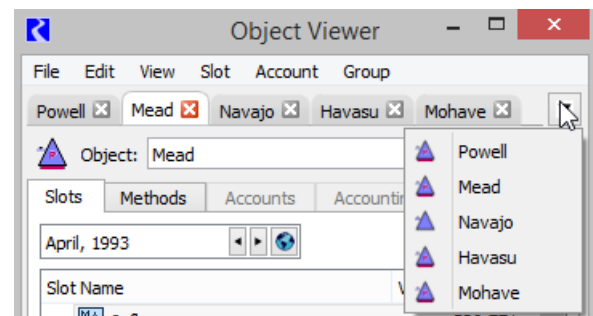
These two slots use the **Partition BW Table** to show the largest and smallest headwater values for each flow parameter. The tables are used within the slope storage calculations to check that values are valid.

## 6. Object Dialogs

### 6.1 Object Viewer

A new **Object Viewer** dialog was created to show multiple **Open Object** dialogs as tabs in a single dialog. Objects can be dragged off of the viewer to show in the standard **Open Object** dialog and then re-docked as desired.

For more information, click [HERE \(ObjectDialogs.pdf, Section 1\)](#).



## 7. Optimization

### 7.1 Impulse Response Reach Routing

In Optimization, the **Impulse Response** method can now be selected for the Routing category on Reach objects. The formulation is the same as for simulation:

$$\text{Outflow}(t) = C0 \text{ Inflow}(t) + C1 \text{ Inflow}(t-1) + C2 \text{ Inflow}(t-2) + \dots + \text{Total Gain Loss}$$

Refer [HERE \(Optimization.pdf, Section 5.7.2.5.3\)](#) for details about the slots associated with this method.

### 7.2 Slope Power Backwater Lambda Approximation

Previously a sloped power reservoir using the backwater lambda approximation technique was unnecessarily writing input constraints when the reservoir had already dispatched successfully in the pre-optimization simulation run. In some cases, this caused an infeasibility. To resolve

this problem, input constraints are no longer written for the Pool Elevation slot at timesteps for which prior dispatching was successful. In addition, the automatic setting of approximation points was improved to make use of known values when the object already dispatched successfully for some timesteps.

## 8. Output Devices

### 8.1 File Size Reduction of Generated Images

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A significant reduction of the size of generated image files was applied to:

- Image files generated for model reports.
- Image files created as part of the chart animation video generation.

In some cases, the file sizes were reduced by a factor of 30 without any impact on image quality.

### 8.2 Charts

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The following changes were made to Charts:

- Within the configuration, a new tab has been added for setting fonts on all chart labels.
- A checkbox option was added to show/hide the chart date.
- An option was added to not to show the legend on the chart.
- On bar charts, sizing options were provided to configure the bar width proportion.

For more information, click [HERE \(Output.pdf, Section 5.2\)](#).

### 8.3 Model Reports

---

Model Reports provide a way to export information about a RiverWare model or run to an HTML file. Following are changes and improvements to the Model Report:

#### 8.3.1 *Embed Images in HTML*

A new Model Report setting was added: **Embed Images in HTML File** with options: **Yes/No**. Selecting **Yes** (the default on new reports) embeds images in the HTML file. This makes it easier to send the generate HTML file via email or file transfer. Selecting **No**, creates a sub folder in the specified directory where all images are stored. For more information, see [HERE \(Output.pdf, Section 4.2.1\)](#).

#### 8.3.2 *Ensure HTML and add HTML to File chooser*

To make it easier to define the HTML file to use, the following changes were made:

- Automatically add .html extension if not specified.
- Provide a file selection filter for efficient selection of HTML files.

#### 8.3.3 *Text Items*

The Model Report Text item ([HERE \(Output.pdf, Section 4.2.3.28\)](#)) allows you to add rich/formatted text to your report. The following enhancements have been implemented:

- **Superscript** and **Subscript** formatting is supported under the **Format** menu.
- Using the Tab key, four space characters are added to mimic a tab.



### 8.3.4 Show/Hide individual Descriptions and Comments

Finer control was added to allow you to specify which **Descriptions** or **RPL Comments** are shown in the report. Yes/No settings for showing descriptions and RPL comments were added to Object, Slot, RPL Set, RPL Group and RPL Rule/Goal items.

In a large model report, it could be quite time consuming to turn on or off all of these new settings. For this reason, the following four operations, have been provided under a new **Settings** menu.

- Show All Descriptions
- Hide All Descriptions
- Show All RPL Comments
- Hide All RPL Comments

### 8.3.5 Run History Item

A new **Run History** item was added to allow you to optionally show the following pieces of information in a report:

- RiverWare Version
- User
- Controller
- Run Start Time
- Run Duration
- Run Status

#### Run History

RiverWare Version: RiverWare 7.1  
User: |  
Controller: Simulation  
Run Started: 13:09 January 5, 2017  
Run Duration: 33 hours : 57 minutes  
Run Status: Finished

See [HERE \(Section 4.2\)](#) for more information on the new Run History. See [HERE \(Output.pdf, Section 4.2.3.19\)](#) for information about this report item.

## 8.4 Output Canvas

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The Output Canvas, described in [Output.pdf, Section 6](#), allows for visualization of outputs in spatially distributed teacups and flow lines. The following improvements have been added to the Output Canvas:

### 8.4.1 Resizable charts, icons, and images

A scaling factor has been added to the Output Canvas configuration for individual icons and images. In addition, an anchor point feature has been added to charts for resizing the chart on the canvas.

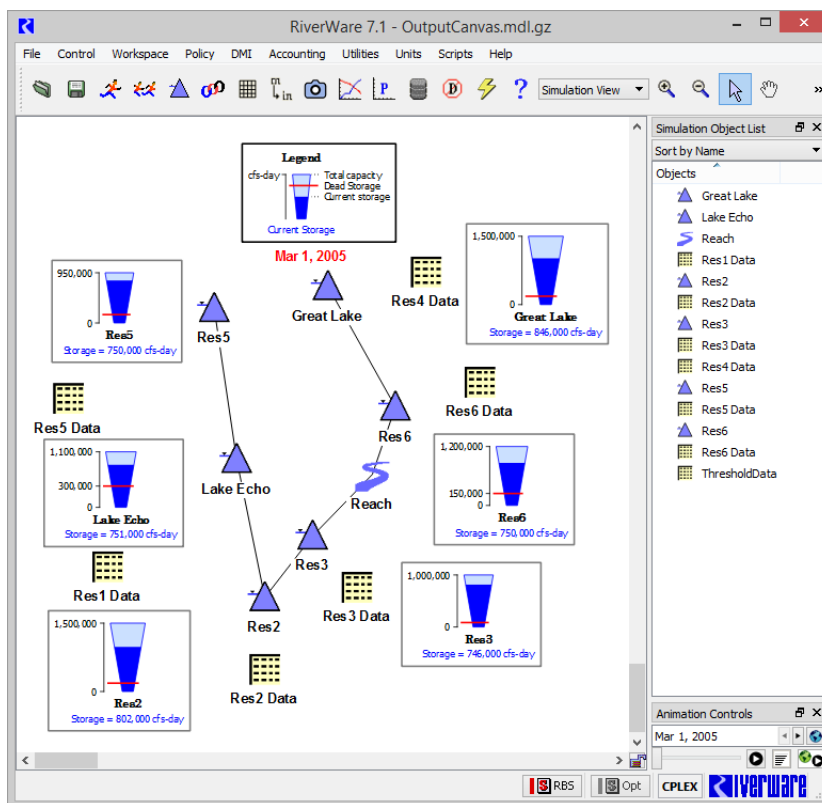
### 8.4.2 Printing to Paper and to PDF

**Print Preview** and **Print** submenus have been added to the generated output canvas **File** menu. If you have a PDF print driver, you can print the Output Canvas directly to a PDF file

### 8.4.3 Teacups / Charts / Text shown on workspace

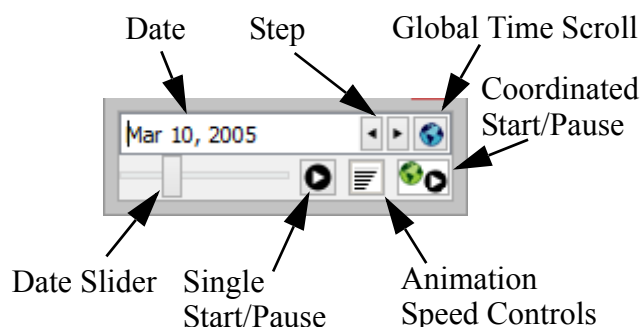
New Output Canvas settings were added to **Show on Simulation View** and **Show on Geospatial View**. When enabled, the canvas teacups, charts and text are shown on the appropriate workspace canvas views. You can move the items on the workspace, but all other configuration is performed on the Output Canvas editor. For more information, click [HERE \(Output.pdf, Section 6.6\)](#).

As part of this work, the datetime spinner and animation controls were added to the workspace as a dockable panel below the object list. Use this to advance canvas items through time. For more information click [HERE \(Workspace.pdf, Section 2.7\)](#)



## 8.5 Coordinated Animation

Charts and Output Canvas can be animated through the run period. Now, there is a Coordinated Start button that allows all relevant dialogs to animate together. When the icon is pressed, all slider/spinners move together in coordinated time. For more information, click [HERE \(Output.pdf, Section 6.6\)](#).



## 8.6 Plotting

### 8.6.1 Inconsistency for Patterned Line Appearance

Plots with patterned lines (dash, dot, etc) with a width of two pixels or more were displaying differently on the plot versus the legend. To remedy this inconsistency, the display of curves on

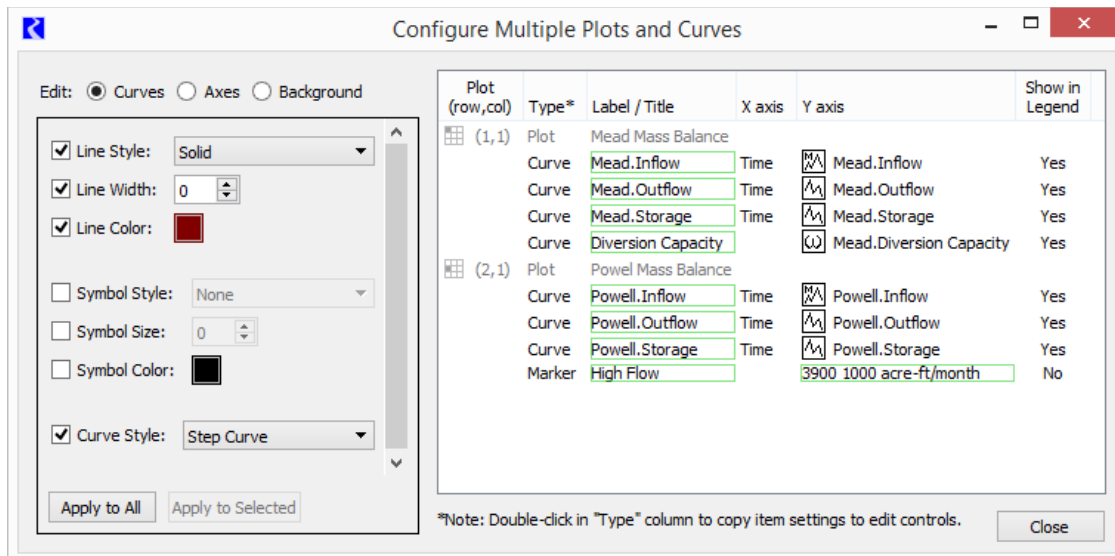
the plot was improved to match the legend. As a result, existing plots may look different than in previous versions.

### 8.6.2 Marker Labels

Previously, marker labels were tied to the marker line. They did not display unless a line style was selected. Now Marker Labels can be shown without a line; that is, they can be shown to label a specific point on the plot without a line.

### 8.6.3 Editing Multiple Curves and Graphs

The new **Configure Multiple Plots and Curves** dialog provides centralized plot editing controls. Most plot settings for the supported nine separate plots within a plot page are editable within the new **Configure Multiple Plots and Curves** dialog. You can select multiple items within a plot page, e.g. curves and markers, and apply selected settings to those items in a single operation. For more information, click [HERE \(Output.pdf, Section 2.3.5\)](#).



### 8.6.4 User Specified Axis Units

Each axis is now associated with a particular unit type (e.g. flow) rather than being limited to a specific scaled unit. The user can switch the scaled units associated with an axis between:

- the scaled units of the first slot assigned to the axis,
- user-specified scale and units (among the units supported for the axis' unit type).

More information can be found [HERE \(Output.pdf, Section 2.3.2.3\)](#).

### 8.6.5 Copy/Paste of slots to/from the slot clipboard

Copy and Paste of slots from the slot clipboard was reinstated. Slot curves are added to the plot as long as axes having the slot curves' unit types are available.

## 8.7 Tabular Series Slot Reports

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### 8.7.1 Omit Slots Behavior

Tabular Series Slot reports now have an improved **Omit slots** behavior. The change in filtering is as follows:

- old behavior: omit slots containing only NaNs or zeros (exact value)
- new behavior: omit slots displaying only NaNs or zeros as values

The important difference is in the checking for values that are exactly zero versus values that are displayed as zero. With the new functionality, the display precision is taken into account when checking for zero values. The new **Omit slots** options are now as follows:

- displaying only NaNs
- displaying only NaNs or zeros as values

More information is available [HERE \(Output.pdf, Section 3.2.2\)](#).

## 9. RPL

### 9.1 Diagnostics for Rules/Goals

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For rule diagnostics, the rule's priority was added to the display text. For initialization rule contexts, the initialization rule's index was added to the display text.

Now, the formats are:

- Optimization goal: GOAL: (<priority>) <goal name>
- RBS rule: RULE: (<priority>) <rule name>
- Initialization rule: RULE: (#<index>) <rule name>

Within the RBS and Optimization diagnostic settings dialogs, the rule and goal filters were enhanced to include and show the new context information.

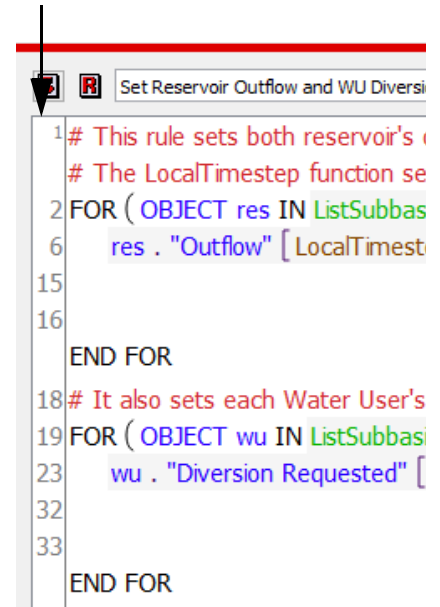
### 9.2 Display Settings

---

RPL Display Settings, including **Font**, **Colors**, and **Line Breaks**, are now saved in the model file instead of in user settings. When you first open and save your model in this version, the RPL Display Settings will be saved in the model. You can export or import settings as needed. For more information, click [HERE \(RPLUserInterface.pdf, Section 6.2\)](#).

### 9.3 Element Numbering

To make it easier to find and communicate about RPL logic, you can now number the statements and expressions with which rules and functions are composed. **RPL Element Numbers** can be optionally shown in a column along the left side of each RPL frame or as a right click context menu. Show these numbers from the RPL Display Settings. For more information, click [HERE \(RPLUserInterface.pdf, Section 6.2.4\)](#).



```

1 # This rule sets both reservoir's
# The LocalTimestep function se
2 FOR ( OBJECT res IN ListSubbas
6   res . "Outflow" [ LocalTimest
15
16
   END FOR
18 # It also sets each Water User's
19 FOR ( OBJECT wu IN ListSubbas
23   wu . "Diversion Requested" [
32
33
   END FOR

```

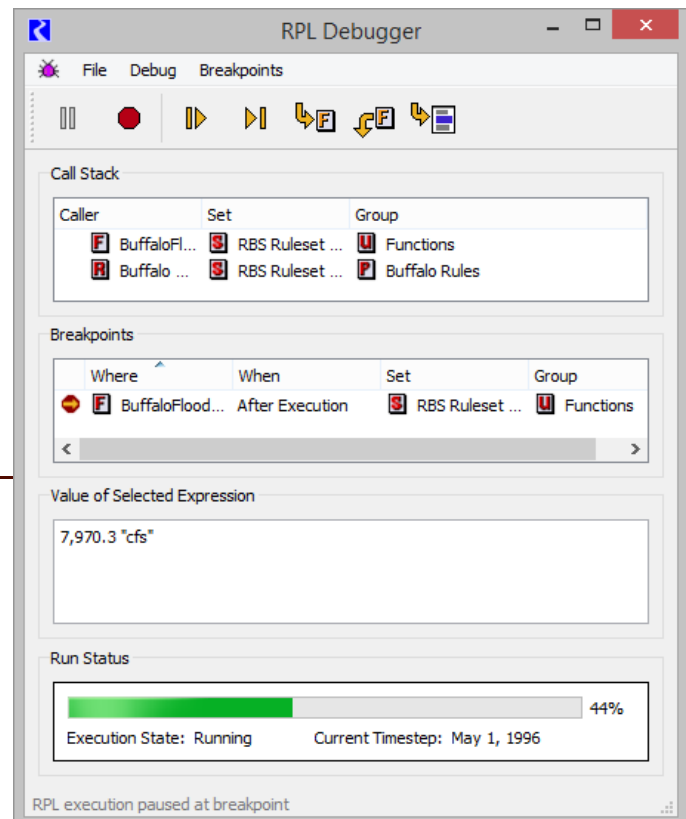
### 9.4 ELSE IF Branches

ELSE IF operators were added to both RPL Expression and the RPL Statements. You can add these operators to any IF or ELSE expression or statement as new ELSE IF branches.

### 9.5 RPL Debugger

The following changes were made to the RPL debugger:

- The Run Status is now shown as part of the RPL Debugger as shown to the right.
- Long lists are no longer truncated in the **Value of Selected Expression** panel. The debugger now displays the full list.
- Commas in numbers are now shown in the RPL Debugger.



### 9.6 Rename Variable or Argument

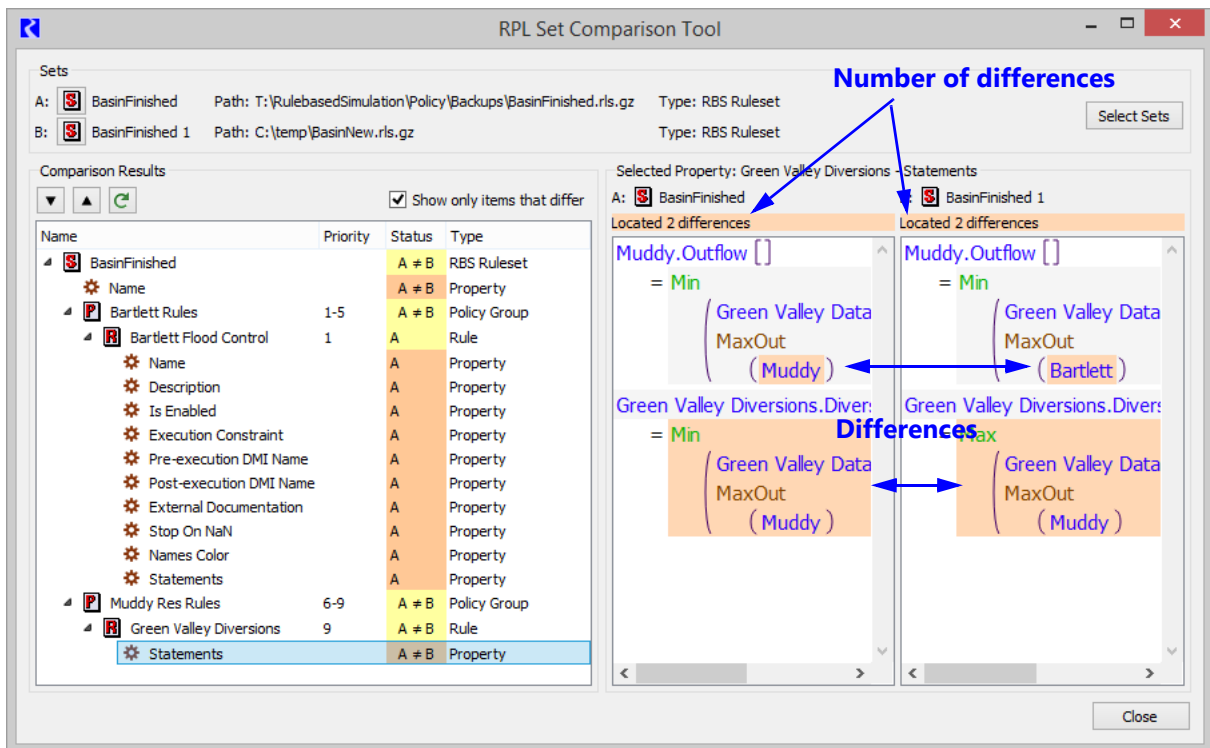
A new right-click “**Rename...**” operation was added to RPL to provide an easy way to rename all the occurrences of the selected variable or argument name.

Variables are associated with statements (FOR and WITH), expressions (FOR and WITH), or functions (argument names). For more information, click [HERE \(RPLUserInterface.pdf, Section 2.3.6\)](#).

## 9.7 RPL Set Comparison Tool

The **RPL Set Comparison Tool** compares two RPL sets and shows you the differences between the sets. This allows you to see where items are different, what the specific differences are, and allows you to easily access the RPL set dialogs so that you can change one or both sets.

The comparison tool was improved to highlight multiple differences within the same item and note how many differences occur.



For more information, click [HERE \(RPLUserInterface.pdf, Section 1.7.3\)](#).

## 9.8 RPL Notes

On RPL dialogs, a new **Notes** panel was added. **Notes**, like **Descriptions**, can be entered in a panel at the bottom of the dialog. Notes can be used when you have information about the RPL item that you want to enter that doesn't belong in the **Description** field. For example, development information (E.g. who, why, when changed) could be entered in the **Notes** panel. Notes can be included in model report outputs using the RPL items and the **Show Notes** setting.

Notes are described [HERE \(RPLUserInterface.pdf, Section 2.1.3\)](#).

## 9.9 RPL Dialog - Description and Notes Indicators

The RPL dialogs were improved to better show

Show:  **Set Description**  Selected Description  **Set Notes**  Adv. Properties

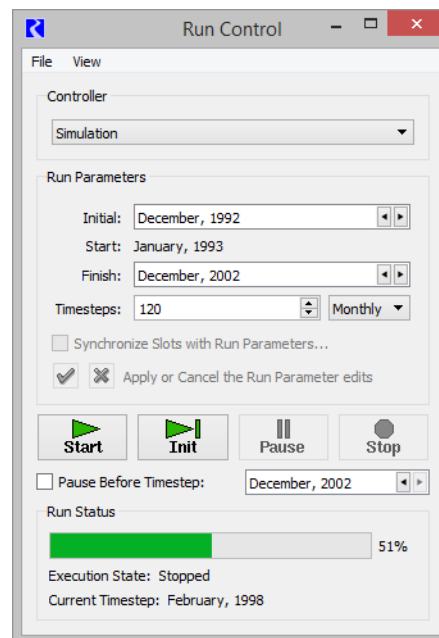
Descriptions, Notes, and the presence of non-default values in the row of toggles. Now, when the description or notes panel contains text, the checkbox label is bold. When the panel is empty, the text is grey. In addition, when a description or notes exists, the tooltip on the text and checkbox shows the first 140 characters of the text.

## 10. Run Control

### 10.1 Run Status Panel

A run status panel was added to the bottom of the **Run Control** and **Multiple Run Control** dialogs as shown to the right. A separate run status dialog no longer opens automatically but can be manually opened from the View menu if desired.

For more information, click [HERE \(RunControl.pdf, Section 1\)](#)



## 11. Script Management

### 11.1 New Actions

#### 11.1.1 Execute Script

A new Execute Script action was added to the Script Manager. **This allows a script to execute another script.** Note, the script called by this action cannot have additional Execute Script actions; that is, only one level of Execute Script calls is allowed. For more information, click [HERE \(ScriptManagement.pdf, Section 3.3.16\)](#).

#### 11.1.2 Set Run Timestep

A new script action was added that sets the run timestep size. This action is analogous to changing the run control timestep size. Options include whether to synchronize objects, exclude slots, aggregate input data and how to handle NaNs when aggregating. For more information, click [HERE \(ScriptManagement.pdf, Section 3.3.40\)](#).

## 11.2 Script Manager Enhancements

The Script Manager was re-designed and enhanced to provide more functionality. For more information on these topics, click [HERE \(ScriptManagement.pdf, Section 2.2\)](#).

### 11.2.1 Script Groups

Scripts can now be organized into script groups. The Script Manager appearance was modified to include a tabbed panel, with each tab corresponding to a particular script group. The user selects a group's tab to manage the group and view its list of scripts.

### 11.2.2 Show Descriptions

Whenever a script is selected in the Script Manager or associated dialogs, its description is displayed in a panel below the list of scripts.

### 11.2.3 Open on Model load

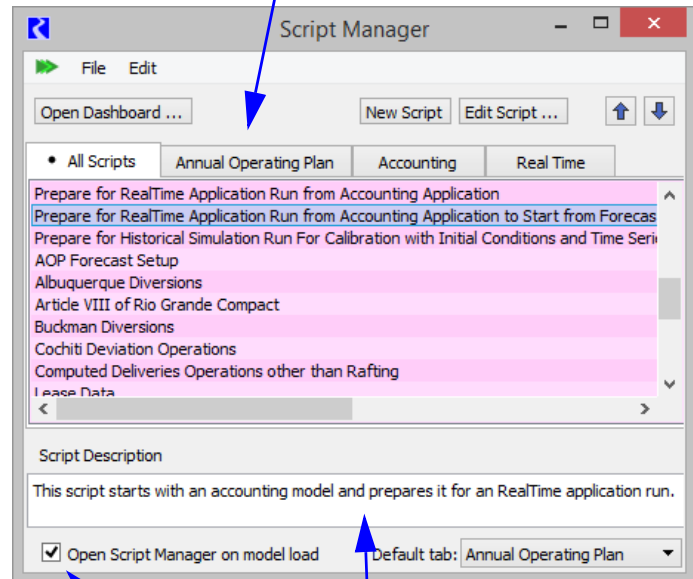
The Script Manager can be configured to automatically display its window upon loading a model. One can also specify which script group tab is initially displayed when the Script Manager window is initially opened (either upon model load or manually).

## 11.3 Export/Import Multiple Scripts and Groups

Multiple Scripts and Script Groups can now be exported to and imported from a single file. For exporting, an additional dialog is now provided by the Script Manager via the existing **File** ➤ **Export** menu item. This dialog allows the user to select multiple scripts and/or groups at the same time, and to save them all to a single file. For importing, the existing **File** ➤ **Import** menu item now also supports opening files containing multiple scripts and/or groups.

For more information, click [HERE \(ScriptManagement.pdf, Section 2.4\)](#)

### User Created Groups/tabs



Open on  
model load

Selected Script's  
Description

## 12. SCT

### 12.1 Column Widths per sheet

When the SCT is shown with slots as rows and timesteps as columns (horizontal time), column widths are now preserved on a per-sheet basis. In addition, the following column width adjustment operations now operate on a per-sheet basis:



- Resize Columns: Set All to Selected Column Width
- Grow Columns: Fit Data
- Resize Columns: Fit Data
- Resize Columns: Fit All

For more information on these options, click [HERE \(SCT.pdf, Section 8.10\)](#).

## 12.2 Font Specification

The default font choice in the SCT Configuration dialog's **Font** tab has been renamed to **Workspace Font**, and the effect of that choice has been simplified. When **Workspace Font** is selected, the SCT uses the font of the RiverWare Workspace (which is used also by most other parts of the RiverWare user interface). With this selection, any changes to the Workspace's font are immediately reflected in the SCT.

The font-related settings associated with SCT configurations include:

- **Workspace Font**
- The user-defined **Font A**
- The user-defined **Font B**

## 12.3 Go To Next NaN

A new menu item, **Go to next NaN**, now appears on the **View** menu. **Go to next NaN** navigates directly from one NaN value to the next through timesteps first then through the timesteps on subsequent slots. A new shortcut, Ctrl+Shift+N, also carries out the new **Go to next NaN** action.

## 12.4 Go To Menu improvements

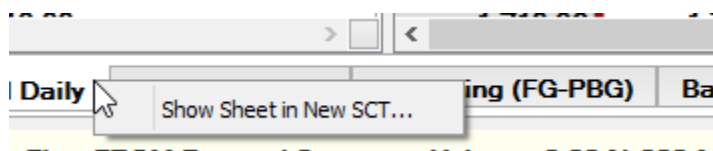
The Go To menu on the SCT was improved to show a menu based on Series Slot Sheets (when available) instead of integer submenus. For more information, click [HERE \(SCT.pdf, Section 2.12\)](#).

## 12.5 Navigation at bottom of the Sheet

When entering values in a sequence of cells using the enter key, the navigation now stops at the final SCT timestep instead of wrapping around to the next series slot.

## 12.6 Show Sheet in New SCT

You can now “tear off” a Series Sheet to create a new SCT. This allows you to see multiple sheets at once. On the Series Slots tab, right-click on the sheet tab and choose **Show Sheet in New SCT...** For more information, click [HERE \(SCT.pdf, Section 8.5\)](#).



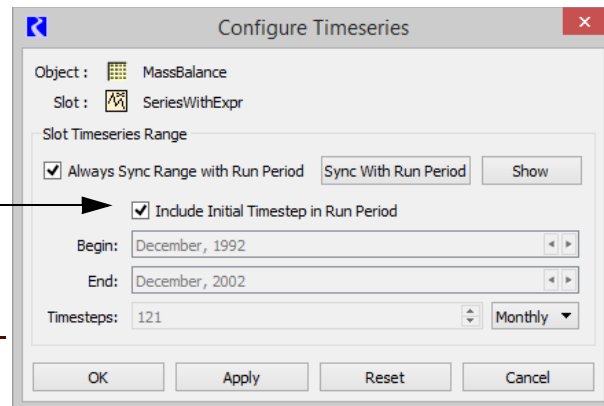
## 13. Slots

### 13.1 Expression Slot Evaluation Keyboard Shortcut

On the expression slot, the “Evaluate” shortcut key was changed to F9 due to the previous shortcut (Alt-E) conflicting with other operations.

### 13.2 Expression Slot Evaluation Range

On the expression slot, you can now automatically include the initial timestep in the evaluation range. Use the Include Initial Timestep in Run Period toggle as shown.



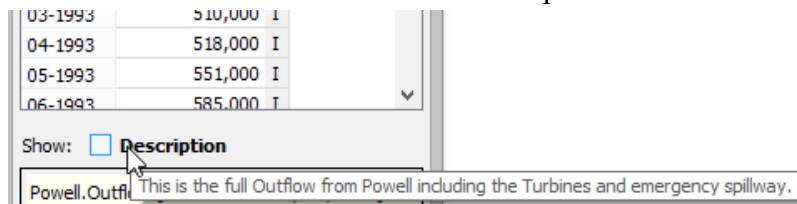
### 13.3 Go To Next NaN

A new menu item, **Go to next NaN** now appears on the **View** menu.

**Go to next NaN** navigates directly from one NaN value to the next through timesteps first then through the timesteps on subsequent columns within the dialog. A new shortcut, **Ctrl+Shift+N**, also carries out the new **Go to next NaN** action.

### 13.4 Slot Description Indicator

The Slot dialogs were improved to better show slot **Descriptions**. Now, when the description panel contains a description, the checkbox label text color is black and the font is bold. When the description panel is empty, the text is grey and the font weight is normal. The border was removed. In addition, when a description exists, the tooltip on the Description text and checkbox shows the first 140 characters of the description.



### 13.5 Text Series Slots

A new type of series slot was added that stores text. The **Text Series Slot** can be added to any object from the **Slot** menu. More information can be found [HERE \(Slots.pdf, Section 3.5\)](#).

## 14. Snapshots

### 14.1 New Icon for Snapshots

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A new icon was implemented for Snapshots on the workspace tool bar, Snapshot object, and within the Snapshot Manager.



## 15. USACE-SWD Methods

### 15.1 New Debugging Slots

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Enhancements were made to the reservoir and computational subbasin objects for better debugging and usability of Flood Control methods. The enhancements include:

- Added a debugging slot on the reservoir object, **Downstream Control Point Share**, for reporting a reservoir's share contribution at one or more downstream control points.
- Added a debugging slot, **Forecasted Operating Levels**, to the computational subbasin to show each reservoir object's forecasted operating levels. Also a new default **None** method was added to the **Priority Determination** category so that the default method does not have this new slot as a dependency.
- Modified the reservoir object's rating curve table to use elevation rather than storage as the lookup reference for a specified release. A new category, **Rating Curve Modification**, was added. This category is shown when **Flat Top Surcharge** is used. This category has the default **None** method and the new **Specify Rating Curves using Elevation** method. When this second method is selected, the new **Rating Curves using Elevation** slot is used to generate the **Rating Curves** slot (which shows Storage). The **Rating Curves** slot is also marked as having a source slot.

## 16. Units

### 16.1 New Units: Billion Cubic Meters

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The volume unit BCM, or Billion Cubic Meters, was added. In addition, flow units BCM/day, BCM/month, and BCM/year were also added.

### 16.2 FlowPerTime RPL Units

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RPL Units were added for the FlowPerTime unit type. This allows RPL Policy to reference slots with this unit type.

### 16.3 Unit Converter with DateTime Units

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The unit converter was enhanced to allow conversion of DateTime values (as stored on slots) to and from their underlying numeric values. For more information, click [HERE \(Units.pdf, Section 3.2\)](#).

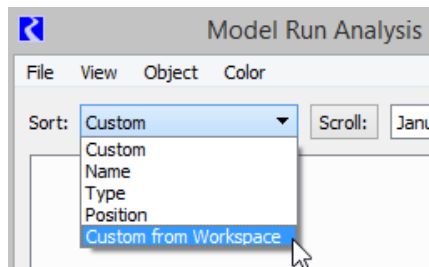
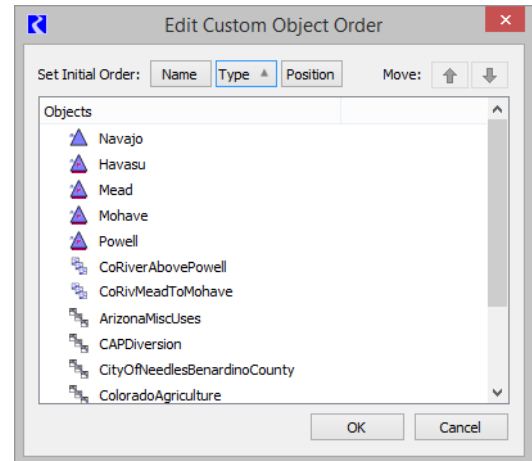
## 17. Workspace

### 17.1 Custom Object Order Dialog

A new dialog was created to provide a mechanism for reordering simulation objects using click and drag, sort-by buttons, and up and down arrows. This is accessed from the workspace **Simulation Object List** using the **Sort** ➔ **Edit Custom Order** option.

For more information, click [HERE \(Workspace.pdf, Section 3.5\)](#).

The **Model Run Analysis** and workspace **Object Coordinates** dialog were enhanced to allow you to use the workspace custom order in those dialogs too.



### 17.2 Output Canvas Items Shown on Workspace

Output Canvas Teacups, Charts, and Text can now be shown on the Simulation and Geospatial workspace views as described [HERE \(Section 8.4.3\)](#).

As part of this work, the datetime spinner and animation controls were added to the dockable panel below the object list. Use this to advance the canvas items through time.



# Release Notes Version 7.1

## 18. Closed Bug Reports

The following bugs have been closed since the last major release(7.0). For more information on any bug, see the CADSWES website. The bugs are listed in order by bug number:

Num	Synopsis
5588	Java DSS server times out
5650	Clearing WS after resetting database DMI edit dialog crashes
5654	Export Import of Database DMIs do not change references to datasets and namemaps.
5678	SolveTurbineRelGivenEnergyInflow exceeds the specified energy when near Hydro Capacity
5713	Energy is being increased to MEL
5718	Problem with HypLimitSimWithStatus built-in function
5801	No way to search and replace or rename within a function or rule
5813	Loading a problem into POSAT doesn't work if active goals change
5837	Model Report Crash
5839	Bad error message when Energy and Turbine Release are both input
5856	Open Table Slot Dialog: column deletion operations create a phantom GUI column
5858	Periodic Slot: Delete column doesn't adjust numeric column headers
5860	Bad data-entry behavior in selected, off-screen cell within an open SCT
5861	Locator window reference rectangle is too subtle, light gray.
5862	SCT font problem in RW7.0
5863	core dump when trying to DMI Periodic slot to Excel
5864	Patterned legend and plot lines appear different if thickness is greater than 1
5865	Plots in model reports are not scaled correctly, clipped.
5867	Automatically generated post-optimization ruleset is invalid
5868	Setting an integer Scalar slot with "Slider" Script action writes a float to slot
5870	SCT's Default Font selection is not working well, Needs simplification.
5871	SCT pre-run divider is incorrect when run aborts
5872	Turbine Release Extrapolation during Sim results in RBS interpolation error
5874	Value for Script Slider for Scalar slot does not display minimum value
5875	Still possible to open the old Plot Page editor
5876	Crash loading new model file with database DMI dialog open
5877	SCT display issues when cutting (removing) a slot
5878	Time Agg Series Slot unit column label incorrect after config change, until slot re-opened.

Num	Synopsis
5880	Printed SCT has extra partial rows printed
5881	Script Manager creates new script even if user cancels the operation.
5884	Object Account Summary has phantom columns when accounts are removed from the list
5885	Muskingum Cunge routing does not get set up correctly
5886	Crash saving a model after deleting an object
5888	Plot pages not formatting correctly in model reports.
5890	Right click in empty Model Report layout causes crash.
5891	Deleting a column on custom table slot on a simulation object blows away column labels
5892	Program Freezes
5896	'RPL Sets to Compare' dialog spans two monitors and size cannot be reduced
5899	RiverWare Crashes when using Ctrl-Z to undo in initialization rule
5900	RiverWare shifts marker X-position back 1 day when editing
5901	Marker Label does not display unless a Line Style is selected
5902	Plot Pages created in the Output Manager are not saved in the model file
5903	Set Table Slot Value Script Action clears Value if Allow Editing is set and does not use the Value (for dates) set or the Action
5905	AggSeries Slot Add/Remove Column Operations Missing
5908	After switching to a different sheet, SCT scroll position can become out-of-synch.
5911	SCT: When 'Sheets' are used, the 'Go To' function doesn't always scroll correctly to the picked slot divider.
5912	Inserting columns in table slots with different units messes up the units on the existing columns
5913	SCT, switching Sheets, vertical time scrolling out of sync
5914	Model crashes when running in MRM mode
5915	Excel DMI reading table written by range crashes
5916	Inputs changed when double click on row of SCT sheet with custom summary rows
5917	Convergence error with drift and large changes in headwater
5922	Incompatible units error message uses bad display units
5923	Alignment of plot grid with right axis is not working.
5924	Numeric display incorrect when Scale equals scale of unit with respect to standard unit (e.g. 1000 ML).
5925	Charts are too large, resizing makes them disappear
5926	Crash when running a model after synchronizing slots to new run period
5927	some script errors are not reported when executed from dashboard or script editor
5930	Optimization fails for some policies that look reasonable
5931	minor documentation error in OffsetDate
5933	Crash when evaluating expression slot that calls invalid function
5935	ambiguous Column Labels radio-button state in Tabular Series Slot report dialog
5938	delete script then run script from dashboard, RiverWare crashes
5939	script editor retains changes even after Cancel button is clicked

Num	Synopsis
5942	RPL Set Comparison Tool - highlighting problems
5943	run-script controls in dialogs get stuck as being disabled
5945	RPL Comment bad wrapping behavior when comment has multiple paragraphs
5946	GetMinSpillGivenInflowRelease function has side effects for slope storage reservoirs
5947	GetMinSpillGivenInflowRelease handles flashboards differently than solveMB_GivenInflowRelease
5948	In Edit RPL Comment dialog, if click Cancel, edits are applied anyway.
5950	Crash when copying and pasting RPL statements after showing statements in the set editor
5951	Crash when deleting a RPL statement after showing statements in the set editor
5952	RiverWare crash on close
5953	Plotting: Patterned lines sometimes look solid, esp. with thickness greater than one
5954	Line types and styles appear different in legend than in plot
5956	POSAT crash when viewing solution info for a goal that is modified after the run
5957	Crash when exiting RiverWare after making RPL edits
5958	Creating SCT for Integer Indexed Series Slots does not always work
5959	Interpolation issue with power table with units
5961	Water Quality methods stop solving
5962	keyboard shortcut (Alt+E) fails for series slot with expression
5963	Always sync with run period fails excludes initial timestep for series slots with expressions
5967	Crash on Copy/(paste) of empty <statement>
5968	Global Functions Set counters accumulate across runs
5969	RPL Set Comparison Tool: function name drawing problem
5970	Crash in RPL Set Comparison Tool when a set goes away
5972	Optimization model aborts with arithmetic error
5974	Incorrect reservoir solution during HypSim
5975	Rapid number entry on SCT can cause model crash
5976	Excel DMI crash reading TableSlot by range
5978	Assertion Failure in 3D Table Interpolation
5983	Printing SCTs with Sheets: Garbage printed for slots on hidden sheets.