Phil Weinstein / Accomplishments -- July 2014 -- Edit 8-04-2014

Notes:

* Tim's report covers my contribution to the SCT Expression Slot Update Trigger analysis and estimate.
* Neil's report covers my contribution to the development of the Object Attributes demonstration feature.

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| **General Development Accomplishments** |

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[I.A] New/Enhanced Software / BOR Truckee
   SCT: Show Slot Descriptions in, and from the SCT
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The RiverWare SCT was enhanced with features to show slot descriptions in, and from, the SCT. Two types of features were added:

1. Tooltips on slot items. When a slot description is shown as a tooltip, the original line-breaks are preserved AND lines longer than 90 characters are split into multiple lines (i.e. long lines are *wrapped*). Since it may not always be clear which slot item the tooltip is for (because of the fundamental imprecision of tooltips within an item list), when a slot description tooltip is shown, the complete name of the slot is presented as the tooltip's first text line.
2. New context menu operation: "Open Slot Description...". This shows the slot's Open Slot dialog with the Description panel open. This is where slot descriptions are provided by the user.

These features were applied to various slot contexts within the SCT -- not to only the SCT's series data tab. In addition to these slot description related enhancements, the SCT's "Edit Series Slot List" now shows a "Step Size" (timestep size) column in the slot item list. This document describes these enhancements in more detail:

* RiverWare 6.5: Show Slot Descriptions in SCT
R:\doc\sct\2014\SlotDesc\SctShowSlotDescFeatures.docx

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[I.A] New/Enhanced Software / BOR Truckee
   Plot Print Preview and Margin Settings
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The RiverWare Plot Dialog now supports a "Print Preview" feature for both printing all of the plots within a plot page *and* plotting only the currently selected plot. The Print Preview dialog supports print margin settings which have been made persistent within RiverWare. This document describes these enhancements in more detail:

* RiverWare 6.5: Plot Print Preview and Margin Settings
R:\doc\plotting\PrintPreviewAndMargins\2014\PlotPrintPreviewAndMarginSet-Rw65.docx

Known Limitations:

1. The relative curve line thicknesses shown in the plot print preview image will not generally exactly match that of the actual printed page. This is a limitation of our current plotting package's support for onscreen and printer-device rendering.
2. Printing from the Plot Print Preview dialog -- using its Print icon toolbar button -- lacks the adjustment we otherwise make to curve line thicknesses for printed output (i.e. when instead printing directly from the Plot Dialog). When printing *from the Plot Print Preview dialog,* curves and markers will generally be too thin to clearly see.

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[I.A] New/Enhanced Software / BOR Truckee
   Teacup diagram and Output Visualization / Functional Description Document
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We've started the analysis and design of a new RiverWare capability to illustrate water storage levels and water flows over a period of time as "tea cup" storage and "flow line" graphical timestep animations. The new "Output Canvas" graphical output device will also support multiple images (usable as a background map image) and text items. The tea cup and flow line items will generally be used for storage volume and flow entities, respectively, but will be usable for entities of any unit types (e.g. energy and power). (A convention or provision to display "tea cups" as rectangles instead of as trapezoids will provide a more coherent application to non-storage entities). In July, an initial draft of this document was prepared:

* RiverWare Output Canvas: Tea Cup and Flow Animations: Functional Design
R:\doc\Output\OutputCanvas\2014\OutputCanvFuncDesign-2014-08-01.doc

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[I.A] New/Enhanced Software / BPA Adaptor Release 1
   Control/Exec Output DMI option: Limit Output to Run Range
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A new option was added to Control-File/Executable Output DMIs to limit the range of generated series data to the model's run range. This is controlled by the user with a new "Limit Output to Run Range" checkbox in the DMI Editor dialog box -- but only for Control-File / Executable DMIs. The checkbox is disabled and turned off when the DMI is set to be an Input DMI. This option supports Series slots and AggSeries slots. It does not currently support TableSeriesSlots.

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[I.A] New/Enhanced Software / TVA [#9] Minor SCT Enhancements
   Various SCT Usability Enhancements
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The following SCT usability enhancements were implemented in July:

1. SCT "Enter Navigation" Change for Horizontal Time Views
2. SCT Import Paste Enhancements and Fixes
3. SCT Fix: Entered value didn't set Input flag if new value matches old value
4. Navigate Open SCTs to Diagnostic Message Context Slot and Timestep

These enhancements are described in detail in this document, and briefly below:

* SCT Enhancements Developed for TVA, July 2014
R:\doc\sct\2014\TvaSct-July2014.docx

(1) SCT "Enter Navigation" Change for Horizontal Time Views

In the SCT's aggregated, horizontal time view, entering a value and pressing enter caused the cell below the current cell to become active. The desired "enter navigation" is to move to the next timestep within the same series slot. Specifically, "enter navigation" now behaves as follows in the two horizontal time SCT views:

1. When entering a sequence of values, upon pressing "Enter" the next timestep in the same series slot becomes active.
2. If entry is in a summary cell (which sets the values of each of the contiguous timesteps within the particular timestep aggregation) the next summary cell (to the right) becomes active.
3. When reaching the last timestep or summary cell within a slot (within the SCT's time range) the bell is dinged and the active cell remains in place.

(2) SCT Import Paste Enhancements and Fixes

Several enhancements and fixes were applied to the RiverWare SCT's "Import Paste" feature for copying tabular numeric data from an external source (e.g. Excel) into series slots displayed in an SCT via the system clipboard. The Import Paste operation originally supported only "geometric" interpretation of tabular numeric data in the system clipboard. For example, a 3x4 grid of data in the system clipboard (3 rows by 4 columns) could be pasted into a 3x4 cell region within the SCT. The original implementation also required that the selected cells within the SCT represent a contiguous sequence of series timesteps. This formulation didn't support a common task of importing series data into a series slot when viewed in the SCT's aggregated horizontal-time view. The following changes have been implemented. (See the document cited above for a more detailed description):

1. Development of a new "Paste Clipboard Column (or Row) into Series Slot" mode of operation of the Import Paste feature. This overrides the strict "geometric" interpretation of clipboard data when the clipboard contains a single column or row of data and the SCT's cell selection is limited to a single slot.
2. Broader availability of the Import Paste operation in the SCT's Aggregated, Horizontal Time View.
3. RiverWare session persistence of the Import Paste "Limit paste operation to selected cells" checkbox.
4. Various related import paste bug fixes and a user interface revision.

(3) SCT Fix: Entered value didn't set Input flag if new value matches old value

Typing into an output-flagged cell in an SCT a numeric string which exactly matched the prior displayed value -- e.g. typing '2.00' into a cell which already displays '2.00' -- didn't assign the Input flag to that timestep cell. This was due to the way we addressed an ancillary problem reported with Gnats 5422 (Nov 2013, RW 6.4) where clicking away from an unintentionally-started cell edit caused that cell to be given the Input flag. With the resolution of the original problem which had resulted in unintentionally-started cell edits, it made sense to remove the change which sometimes prevented Input flags from being assigned. Note that when an in-cell edit is started, this message, *"Press the ESC key to cancel the edit operation,"* is displayed in the selection status line at the bottom of the SCT.

(4) Navigate Open SCTs to Diagnostic Message Context Slot and Timestep.

The RiverWare 6.6 Diagnostics Output Window context menu now supports a new "Scroll Open SCTs to Context" operation. This is enabled if the *context* portion of the clicked diagnostics message contains the name of a simulation object or slot which can be found within the Series Slots tab of any open SCT. If the message context also contains a timestep date/time, SCT's containing the context simulation object or slot are also scrolled in the time dimension. The relevant slot row or column -- or the slot/timestep cell -- is selected. An attempt is made to make both the context slot item and the beginning of the SCT's slot group (starting from the prior slot item divider) visible within the scrolled series data view.

Note that the related diagnostic message context object operations are new to RiverWare 6.5. These include "Open Context <object>...", "Copy Context Timestep", and "Global Scroll to Context Timestep".

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| **Maintenance Accomplishments / July 2014** |

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[II] RiverWare Software Maintenance / Software Updates / Bug Fixes
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This bug was analyzed and closed without changes:

* Bug 5519: TableSeries Slot Dialog: selection stats not working

The following bugs were fixed:

* Bug 5495 *Followup:* Plot Periodic Slot Dialog: Remove Time Range settings.
* Bug 5510: Crash modifying a plot page configuration via the output manager.
* Bug 5513: SCT: "Interpolate Between Inputs" wasn't always working.
* Bug 5517: Can't import Table Slot with new DMI export meta-data.
* Bug 5522: Empty user Subbasins were dropped on model load.

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