



Center for Advanced Decision Support for
Water and Environmental Systems (CADSWES)

UNIVERSITY OF COLORADO **BOULDER**

New Features II: Windowing, Navigation, and Web Maps

2023 RiverWare User Group Meeting

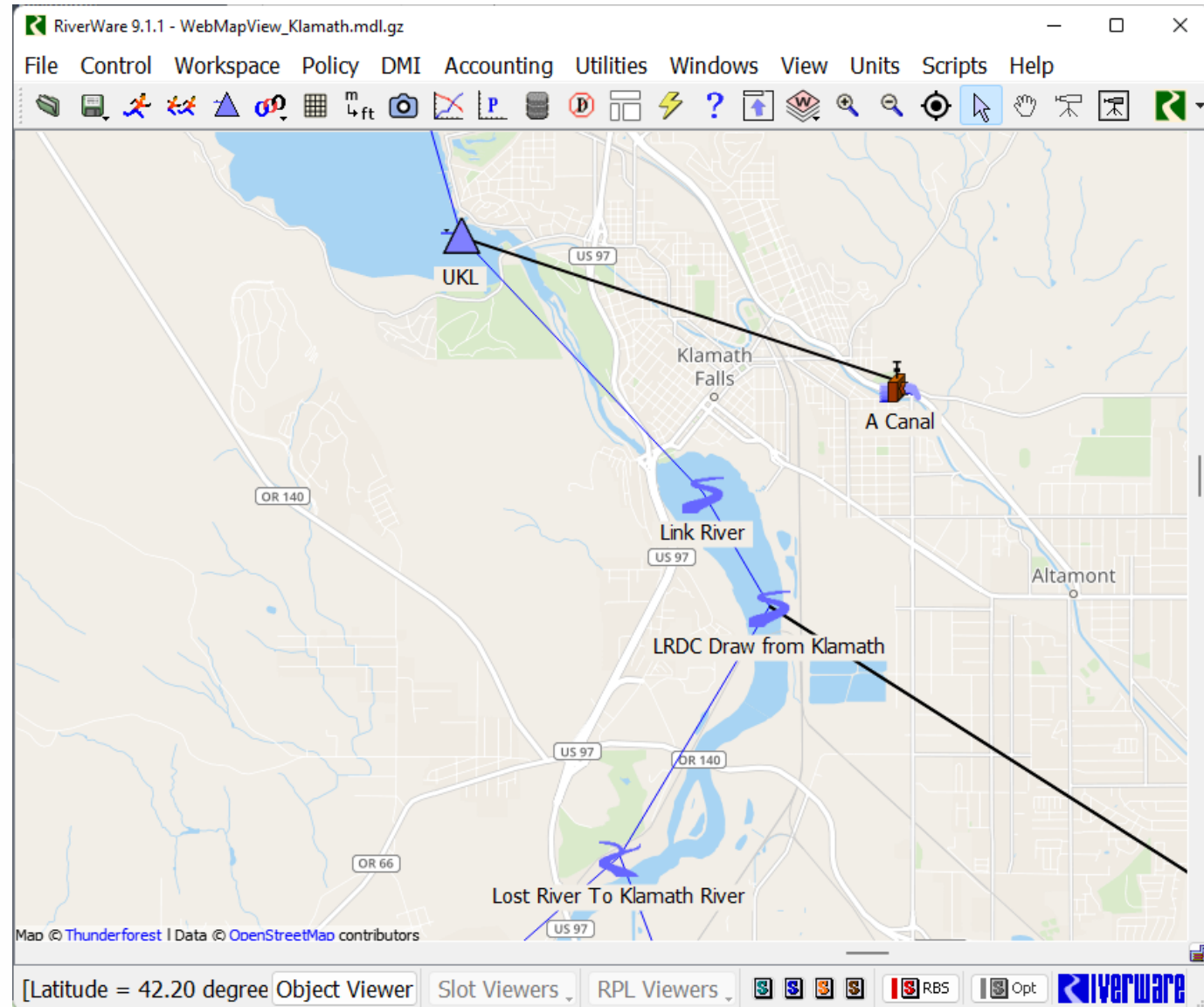
David Neumann

Outline

1. Web Maps
2. Window layouts
3. New multi-window
4. Navigation

Web Map View

- Display dynamic background maps
 - More detail when zoomed in
 - Less information when zoomed out
- Open Street Maps data provided by Thunderforest (9.1.1)
- Demo



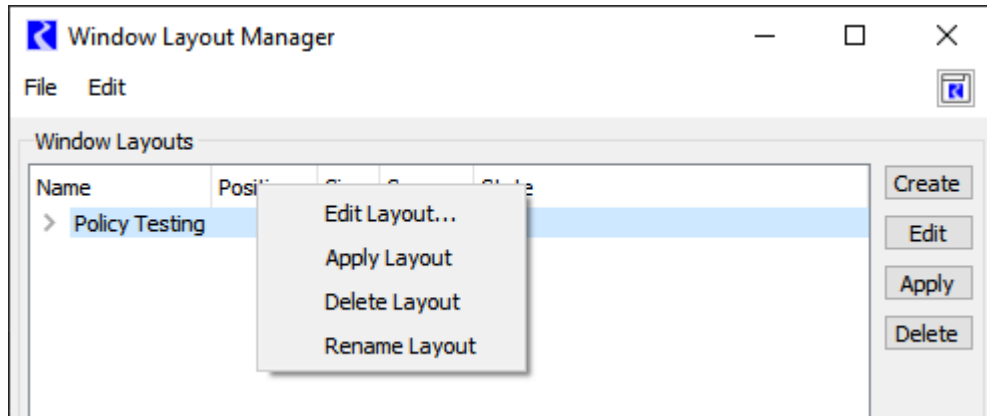
Status of Web Maps

- Challenges
 - Dynamic technology
 - Relies on third-party tile providers
- Opportunities
 - Other Web Service providers? – ESRI or others
 - Look into other map types? – Satellite, Terrain, Dark Mode

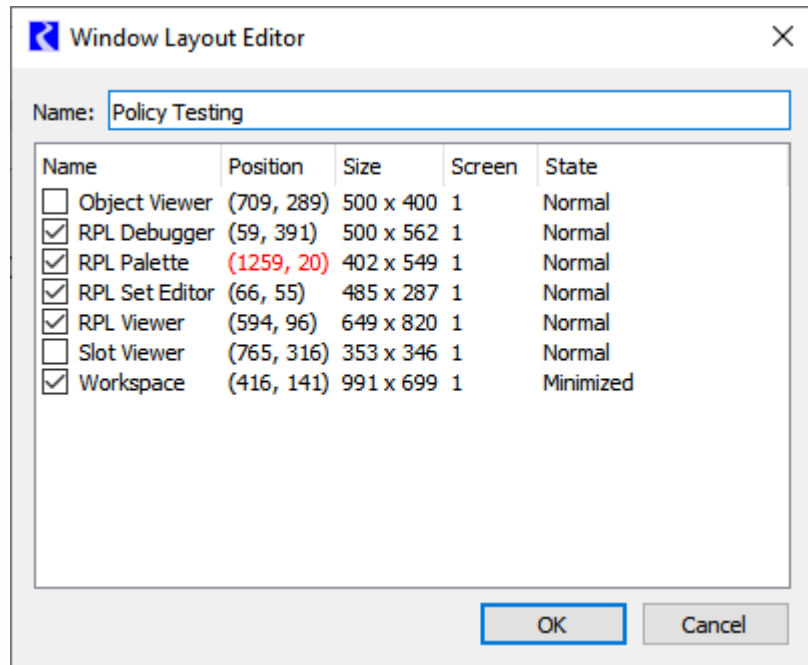
Window Layout Manager

- Save the sizes, positions, and states of many windows
- Reload them quickly during subsequent sessions
- All layouts are saved in the model file
- Exported to and imported from an external file to share between models

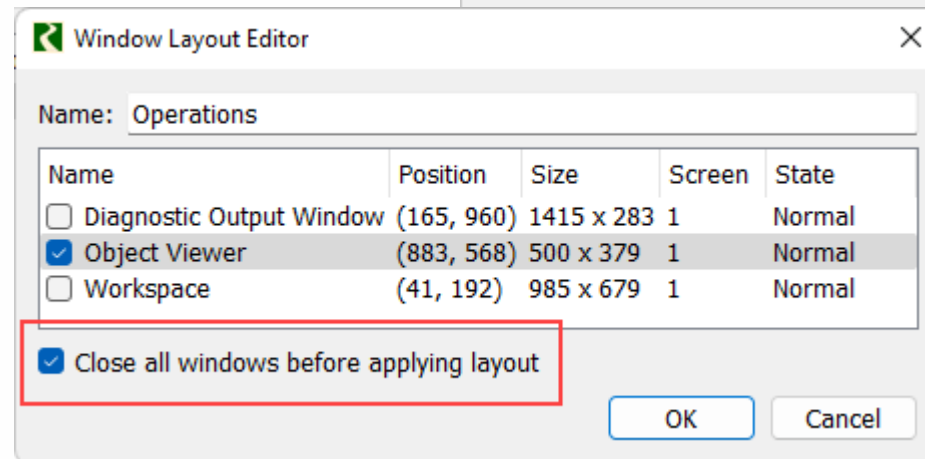
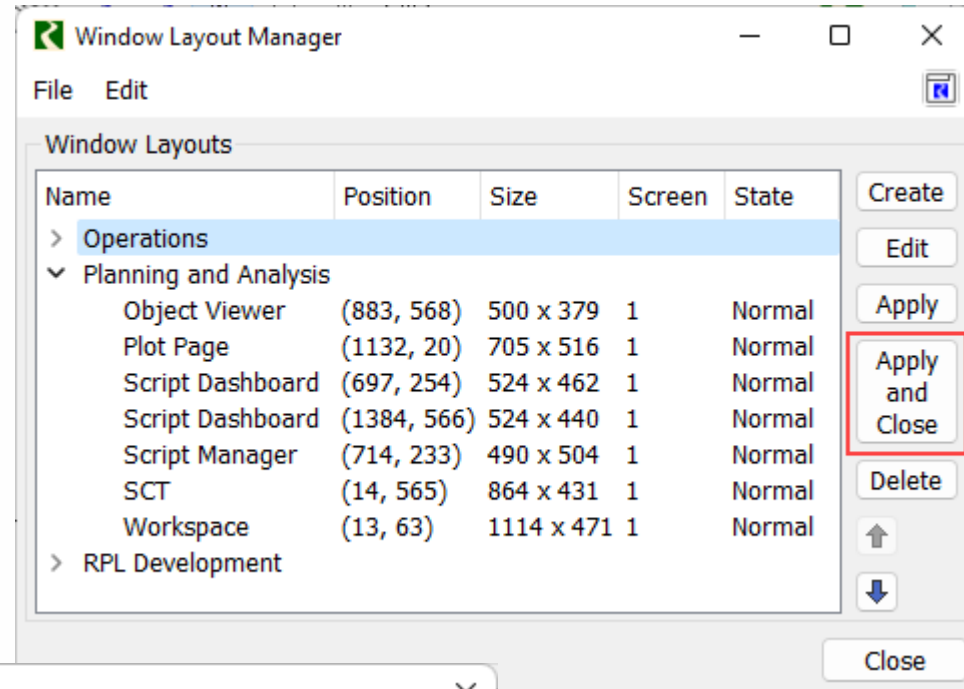
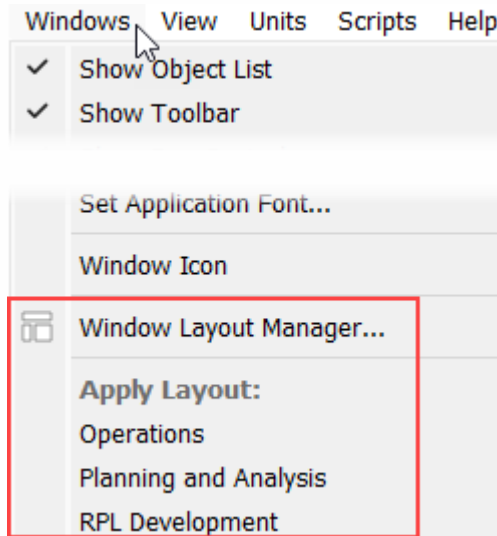
Window Layout Editor - Demonstration



- Allows layouts to be edited directly instead of deleted and recreated
- Differences are highlighted



Recent Enhancements



New Multi-Window

- Window that contains other windows
- Flexible content and placement
- Currently only one
- Use Window Layouts to preserve
- Demo

The screenshot displays a multi-window application interface. The main window is titled 'SCT BasinSCT.sct.gr (Basin.mdl.gr)' and contains several sub-windows:

- Object Viewer:** Shows a tree view of objects for 'Muddy' and 'Bartlett', including slots like Inflow, Outflow, Storage, and Pool Elevation.
- RBS Ruleset Editor - "Basin Operations":** Displays a list of rules and policy groups with columns for Name, Priority, On/Off status, and Type. Rules include Bartlett Flood Control, IC Delivery, Supplement Rafting, etc.
- Run Control:** A panel for managing the simulation run, including Controller (Rulebased Simulation), Run Parameters (Initial: December 31, 2011; Start: January 1, 2012; Finish: September 30, 2012), and Run Status (Execution State: Finished).
- Object Grid:** A data table showing values for various slots over time. The table has columns for Slot Label, Units, and dates from 12/31/11 to 4/14/12.

Slot Label	Units	12/31/11 Sat	1/7/12 Sat	1/14/12 Sat	1/21/12 Sat	1/28/12 Sat	2/4/12 Sat	2/11/12 Sat	2/18/12 Sat	2/25/12 Sat	3/3/12 Sat	3/10/12 Sat	3/17/12 Sat	3/24/12 Sat	3/31/12 Sat	4/7/12 Sat	4/14/12 Sat
Bartlett.Inflow	dfs Ave	207.9	212.6	181.2	174.6	197.6	245.1	229.4	224.8	234.0	279.7	247.2	225.6	260.1	440.3	444.5	
Bartlett.Outflow	dfs Ave		350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0
Bartlett.Storage	acre-ft Last	218,793	216,821	214,912	212,568	210,133	208,018	206,560	204,887	203,149	201,538	200,562	199,134	197,407	196,159	194,422	192,744
Bartlett.Pool Elevation	ft Last	6,227.0	6,226.5	6,226.1	6,225.6	6,225.0	6,224.5	6,224.1	6,223.7	6,223.3	6,222.9	6,222.7	6,222.4	6,222.0	6,221.7	6,221.2	6,220.8
Bartlett.Energy	MWH Last		109.7	109.5	109.2	108.9	108.7	108.5	108.3	108.1	107.9	107.8	107.6	107.4	107.3	107.2	107.1

Upcoming and Possible Work

- Allow many Multi-Windows
- Improved docking and rearranging
- Better restoring of tabs

- Reconsider the library used for implementation to provide more functionality

Navigation Enhancements



Synch Scrolling on the SCT

The image shows two windows from a software application. The left window, titled 'Slot Viewer (1 Day)', displays a table of data for 'Cochiti.Pool Elevation'. The right window, titled 'SCT ReservoirData.sct (URGWOM_8.2_FY21_2013-2019_Add_CO.mdl)', displays a list of series slots. A red box highlights the 'Synchronize Scrolling' checkbox in the bottom right of the 'Slot Viewer' window and a synchronization icon in the toolbar of the 'SCT ReservoirData.sct' window.

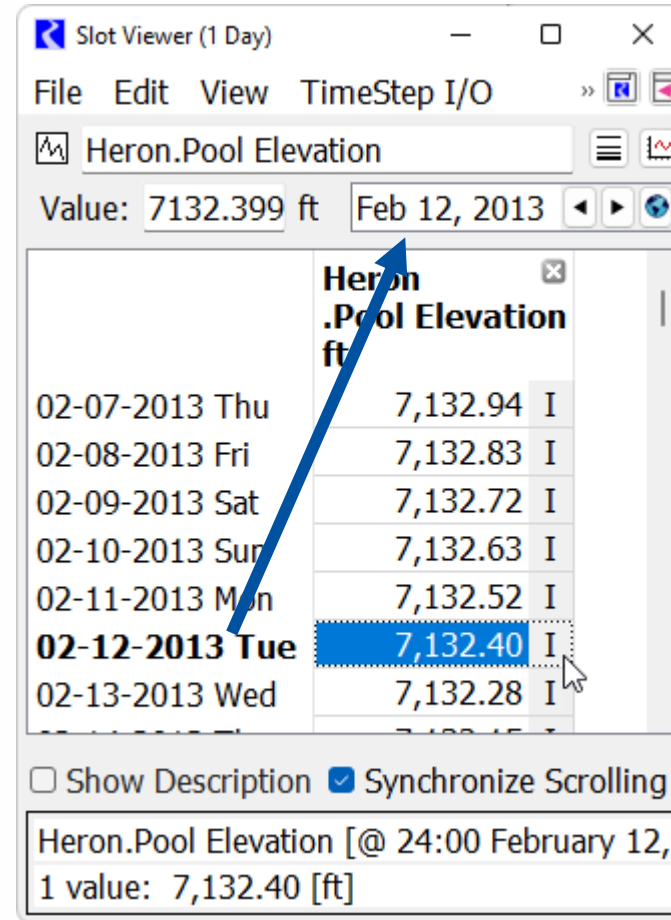
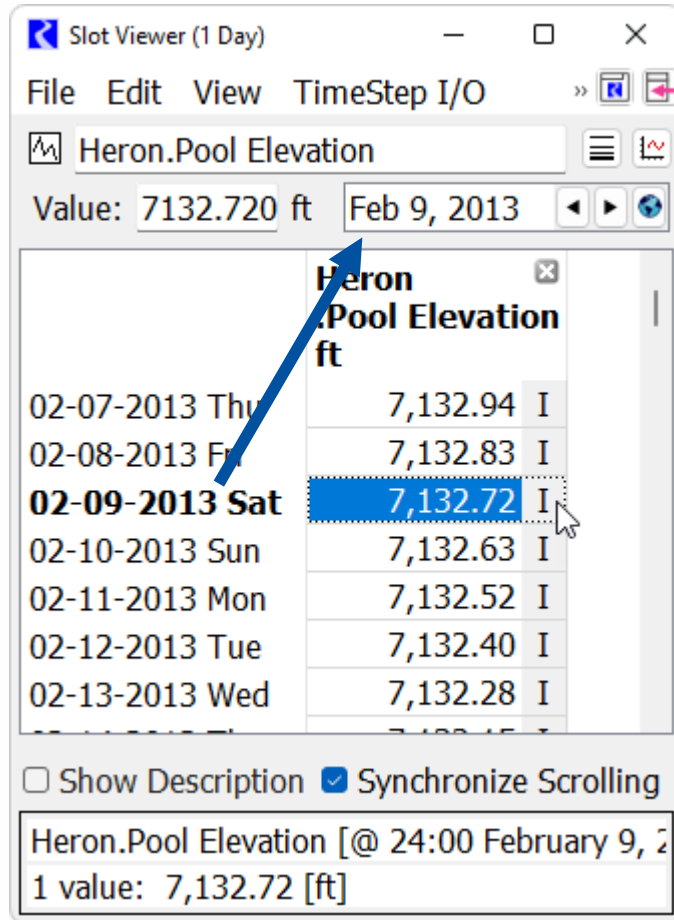
Slot Viewer (1 Day) Data:

Date	Cochiti .Outflow cfs	Cochiti .Pool Elevation ft
01-01-2013 Tue	298.00 I	5,343.40 I
01-02-2013 Wed	297.00 I	5,343.63 I
01-03-2013 Thu	294.00 I	5,343.72 I
01-04-2013 Fri	289.00 I	5,343.79 I
01-05-2013 Sat	285.00 I	5,343.95 I
01-06-2013 Sun	285.00 I	5,344.14 I
01-07-2013 Mon	285.00 I	5,344.37 I
01-08-2013 Tue	350.00 I	5,344.50 I
01-09-2013 Wed	391.00 I	5,344.56 I
01-10-2013 Thu	390.00 I	5,344.62 I
01-11-2013 Fri	389.00 I	5,344.72 I

SCT ReservoirData.sct Series Slots:

Slot Label	Units	1/3/13 Thu	1/4/13 Fri
Cochiti			
If Elevations input, don't need Storages			
Cochiti.Pool Elevation	ft	43.63	5,343.72
Cochiti.Outflow	cfs	97.00	294.00
Cochiti.Pan Evaporation	in/day	0.09	0.09
Cochiti.Surface Ice Coverage	decimal	0.40	0.40
Cochiti.Precipitation Rate	in/day	0.00	0.00
Cochiti.Max Air Temperature	F	37.00	32.00
Cochiti.Min Air Temperature	F	11.00	12.00
Cochiti.Storage	acre-ft	59.87	42,155.24
Jemez			
If Elevations input, don't need Storages			

Improve Datetime Navigation



Switching Views - Demo

