



RELEASE NOTES

(v4.08.00 – January 19, 2024)

A separate installation guide is available with the installation download link:

<http://www.streamnologies.com/icpr4/version.htm>

This major release includes numerous new features and major enhancements to the software, as well as a few bug fixes. Each of these is detailed beginning on the second page of these notes. *This release includes a database change.*

If you open an older project in this release (v4.08.00), you will be prompted to update to the new version. For any older projects that you wish to migrate forward to this release:

- After a project has been updated to v4.08.00, or if it was created with this latest database structure, it cannot be opened in prior versions.
- We recommend that you always keep a backup copy of your older project whenever you update to the current version.

We recommend that you first save a graphic view port BEFORE migration. That way, when you open your older project in the new release you can quickly return to your preferred view settings. It is possible, however, that after migration you might need to zoom to the project area and then save in the new graphic view port manager (shown in the notes below).

For those of you who are new to StormWise, we suggest working through the Tutorials & Examples found in the help menu.

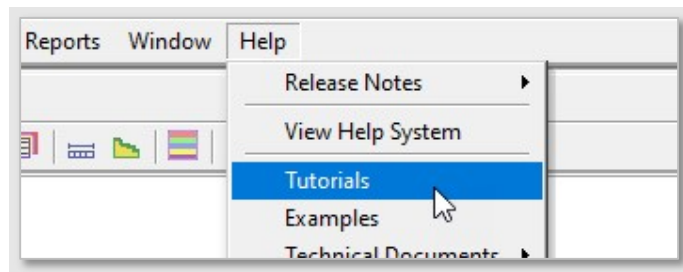


Table of Contents

- New Look and Updated Data Form Controls6
 - New Look! Embedded Graphic View & Tool Tips6
 - New Manager Form Functionality7
 - Data Form Updates:.....8
 - “Goto” Data Forms8
 - User Defined Form Filters.....8
 - New Charts9
 - Chart Controls.....9
- New Features and Enhancements 10
 - EPA SWMM Import (Beta) 10
 - Storage Exclusion Polygons..... 10
 - Manual Basin Total Area 10
 - Initial Abstraction Ratio Ia/S..... 11
 - Offset Distance for Fence 12
 - 3D Breaklines and Breakpoints for 2D Overland Flow & 2D Groundwater 12
 - New Node Parameter - Alert Stage 12
 - New Map Layer Capabilities: 13
 - Optimized Loading Time..... 13
 - New Map Layer Type 13
 - Label Editor Tool 13
 - Edit Raster Colors..... 13
 - Import..... 13
 - New Map Layer Capabilities (Continued): 14
 - Add/Edit/Copy Individual Labels in Graphic View 14
 - Edit Labels/Elevation Points in Graphic View 14
 - New Map Layer Capabilities (Continued): 15
 - New Drape Surface Tool 15
 - Move Map Layers & Surfaces 15
 - New Background Image Capabilities 15
 - Pyramid By Tag – 15
 - Large Images..... 15

New Surface Tools:	16
• Simplified “Copy From”	16
• Simplified “Offset”	16
• New “Resample”	17
• Simplified “Clip”	17
• Surface Selection Persists	17
New Reporting Features & Improvements.....	18
Superimpose Scenarios	18
New Basin & Link Aggregate Reports	19
New “Volume” Parameter in Link Time Series Reports.....	19
New Start/End Time Options.....	20
Copy Header for Tabular Reports	20
Viewer Report Item Selection Column	20
Quick Charts to CSV	21
Custom Report Form Changes.....	21
Link Path Profile Tool Improvements.....	22
Map Layer Intersect.....	22
2D Animations - Auto Import	23
Other Improvements	24
Thread Count Selection	24
Creating a Simulation	24
Creating Links in Schematic Mode.....	24
Cross Section Selection.....	25
Cross Section Generation	25
Set Invert Tool For Weirs.....	26
Reverse Link Connectivity Tool Update	26
Shapefile Imports	26
Export Basin Leaders	26
Overwriting Existing Data	26
Default Surface Dynamic Zoom	27
Import Map Layers with Prohibited Characters.....	27
Improvements for 2D Scenario Build.....	27

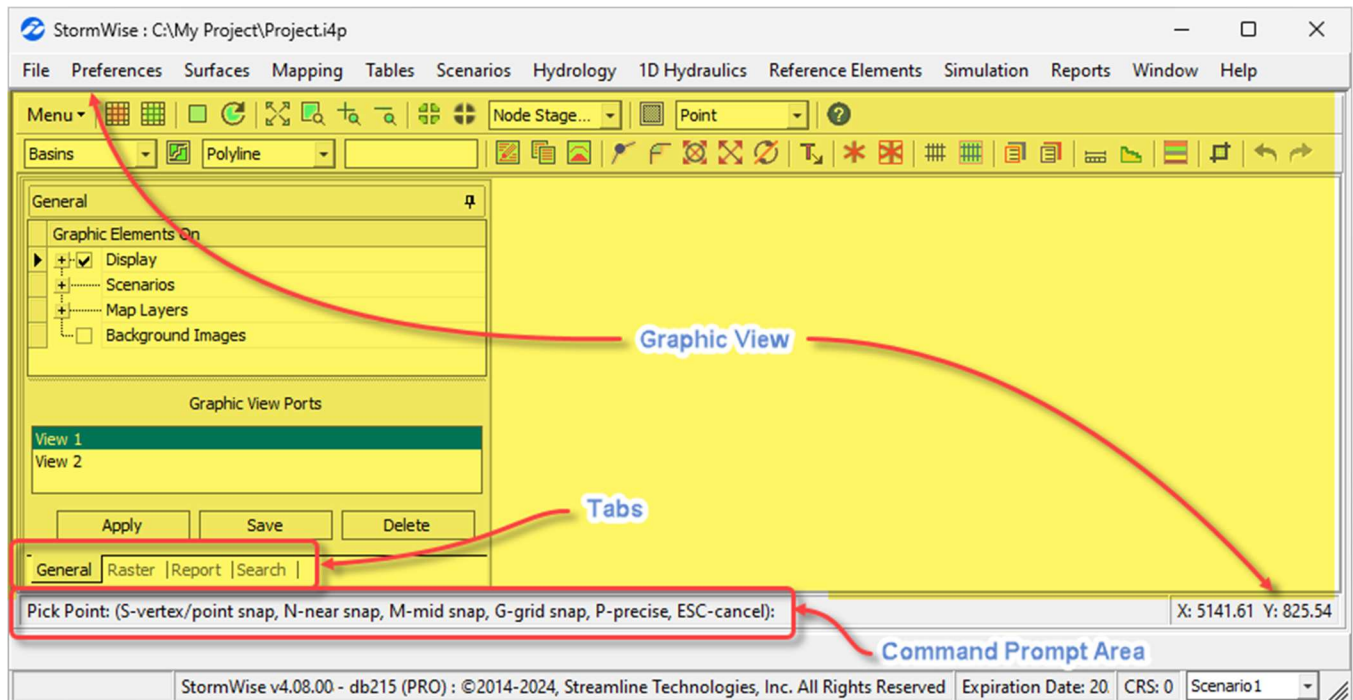
Breakpoint Pattern Form Change	28
Channel Links Connected to 1D Node Interface Points	28
Channel Name Auto Update in 2D Channel Feature Forms	28
New Error & Warning Messages.....	29
User Configuration – Colors and Font Edit Removed	29
Removed Legacy XML Import Option.....	29
Bug Fixes	30
Simulation Selection Was Not Being Retained	30
Active Spacebar Command Not Shown.....	30
Reporting Issue for Applied Irrigation Volume	30
Reporting Issue for Time Stage Nodes.....	30
Operating Table Warnings	30
Added Error Message for Rating Curves with Duplicate Points.....	30
Move Selection Tool Bug	30
Setting Channel Link Inverts	31
2D Region Parameters Set to Zero.....	31
Groundwater Region Display Size.....	31
Delete Cove.....	31
Surface Clip.....	31
2D Basins Precipitation Results	31
Animation Export Issue.....	31
Crop Report Bug	31
Metric Non-Dimensional Rainfall	31
Custom Report Showing Deleted Drop Weirs.....	31
Groundwater Exclusion Name	32
Scenario Extract Tool	32
Difference Tool.....	32
Stage/Area Take-Off.....	32
Using Region as Mapped Basin Feature	32
Loading 1D Node Interface for Report Selection.....	32
Node Volume Report	32
2D Scenario Build Temp Folder.....	32

Custom Report – Drop Structure Data.....	32
Groundwater Mounding Reports	33
“Program Files” Documents	34

New Look and Updated Data Form Controls

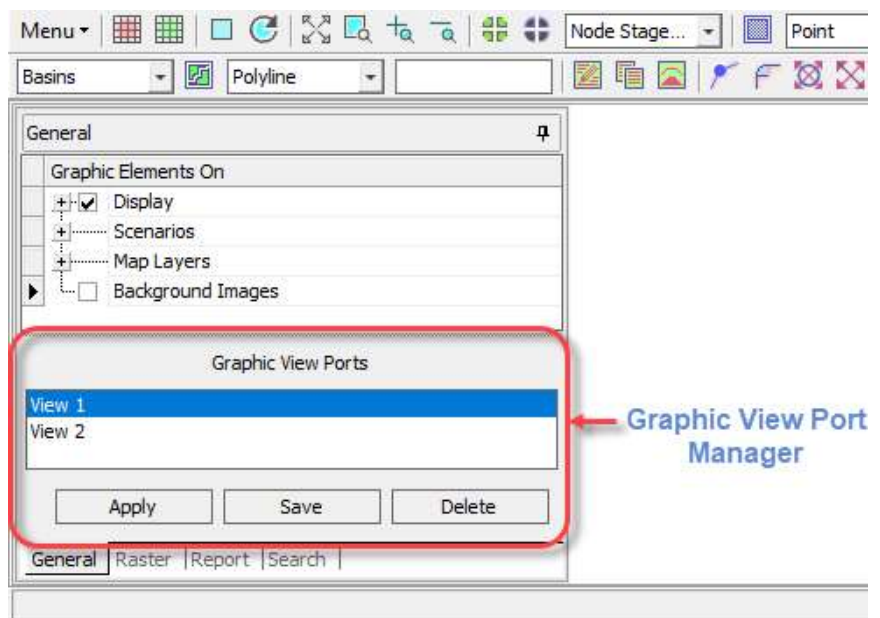
New Look! Embedded Graphic View & Tool Tips

The Graphic View is now embedded within StormWise (formerly ICPR4). This eliminates steps to open and maximize the graphic view at the start of a work session. Additionally, the command prompt and tab areas will *always be visible* when a project is open. The graphic view drawing area now defaults to a white background color.

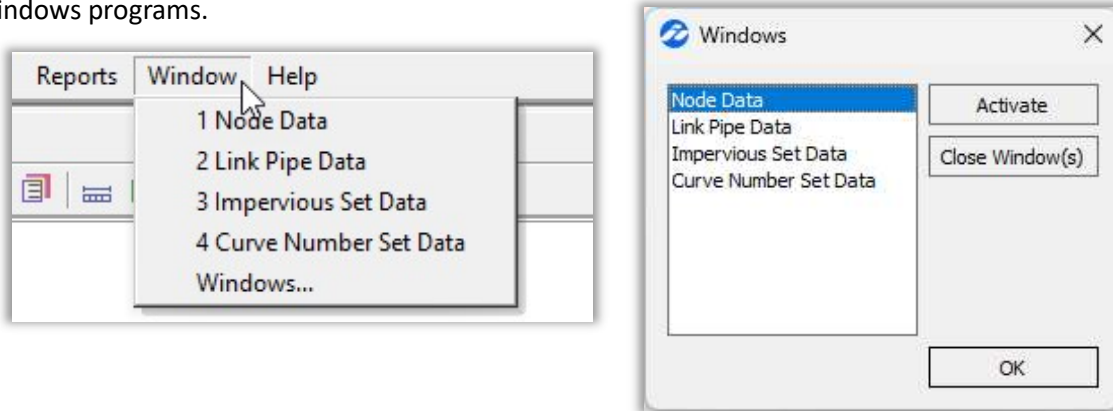


Multiple instances of the graphic view can be opened for users with a StormWise "Expert" license.

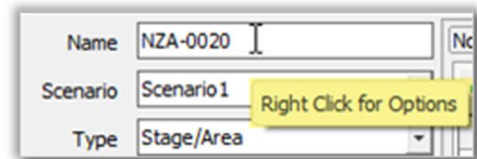
Saving and applying preferred view settings and zoom areas is easier using the new Graphic View Port Manager!



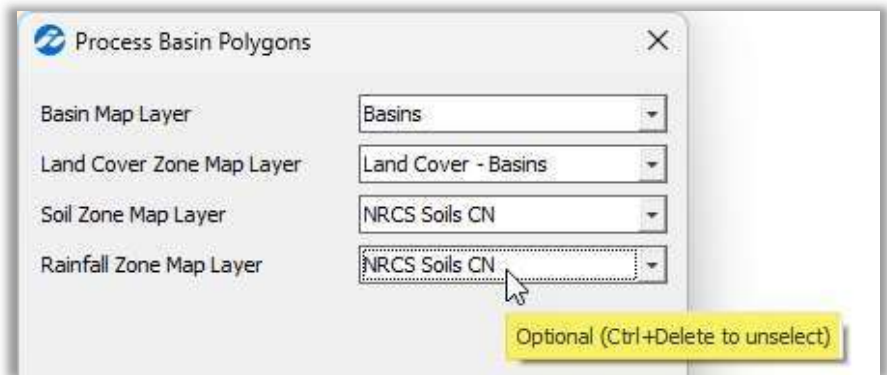
The *functionality of all data forms/windows is now consistent with Microsoft programs*. Users can view multiple data forms on adjacent monitors or use the Windows menu option to activate data forms. Activating multiple data forms will bring them all to the front of the Graphic View. Alt-Tab may be used to cycle open windows, as with other Windows programs.



New Tool Tips will pop up whenever you hover over any data fields or graphic view data tree locations where tools can be accessed by right clicking. If you prefer to turn these off, go to Preferences > User Configuration and select "Hide Right Click for Options Tool Tip".

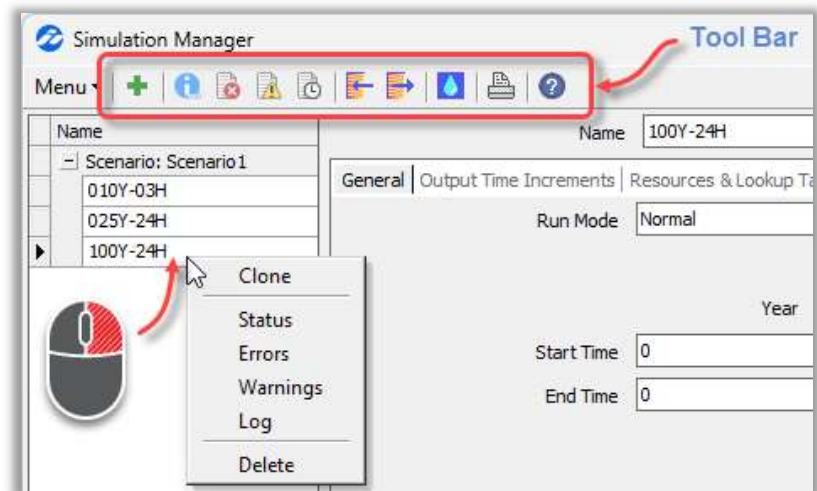


Hover your mouse over any map layer data field and a tool tip will indicate if the field is optional. Also, users can now *clear these optional map layer selections*. For example, if a map layer is selected unintentionally (as shown in the example to the right) you can easily clear the field, by pressing Ctrl + Delete, rather than having to close the tool and begin again.



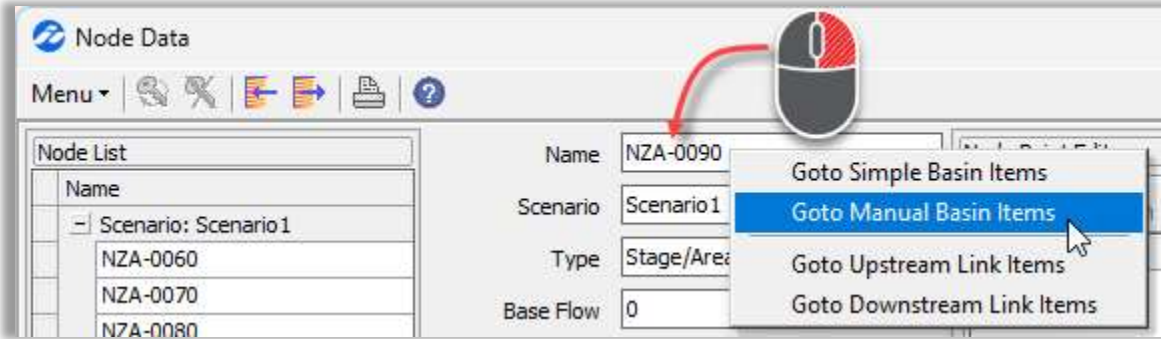
New Manager Form Functionality

Buttons were removed from the primary "Manager Forms". These include the Map Layer Manager, Background Image Manager, Scenario Manager, Surface Manager, and Simulation Manager. All operations & tools can now be found either in a top ribbon tool bar or by right clicking the Name list, as shown to the right.

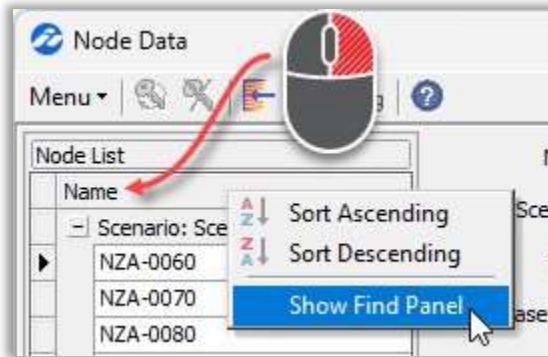


Data Form Updates:

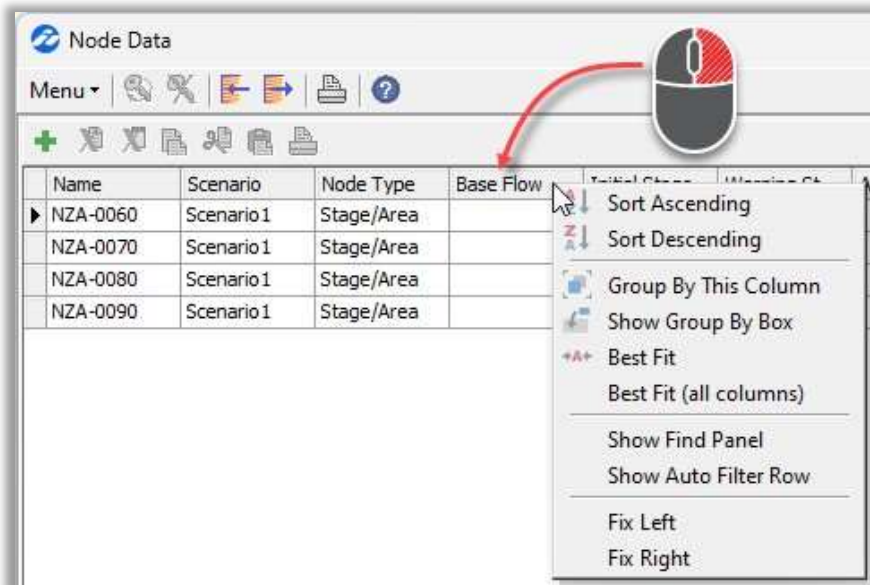
- “Goto” Data Forms - Several improvements were made to bring back some of the version 3 capabilities that our users have requested. From the node data form, users can now right-click inside the name field and select options to “Goto” the connecting basins, upstream links, or downstream links.



- User Defined Form Filters - The specific basins, nodes, links, cross sections or 2D features displayed in a data form can be filtered to include only those that satisfy user-specified query settings. This can greatly simplify working in projects with numerous model components. Use the "Show Find Panel" tool to enter filter query settings.



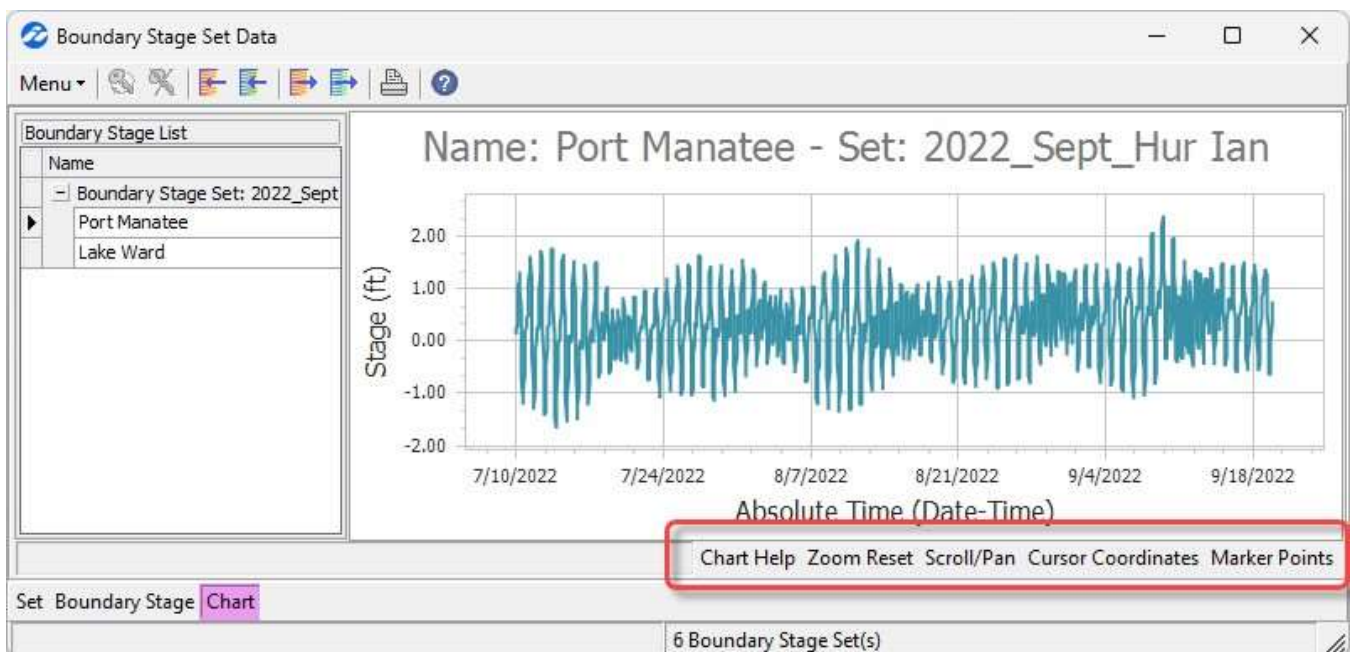
Form filters and other organizational tools can also be found on the Grid tab of the data form.



- New Charts - Several data forms were updated to include a “Chart” tab where data can be viewed graphically. These include Boundary Stage, External Hydrograph, and Crop Coefficient lookup tables as well as Node and Rating Curve data forms.



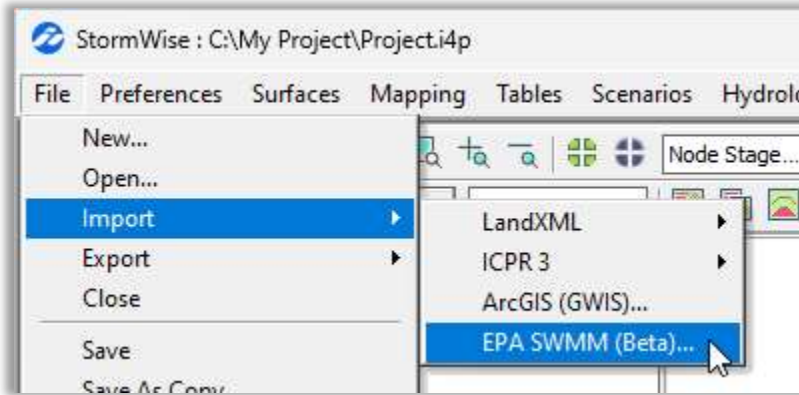
- Chart Controls - All data form charts and report charts now include additional control buttons to: *navigate to the help system, reset the zoom, print, or to enable/disable pan, cursor coordinates and marker points*. Previously, scroll/pan and cursor coordinates were automatically enabled. However, these controls were added to reduce load times (e.g., the scroll/pan and cursor coordinates are disabled unless needed for projects with very large data sets).



New Features and Enhancements

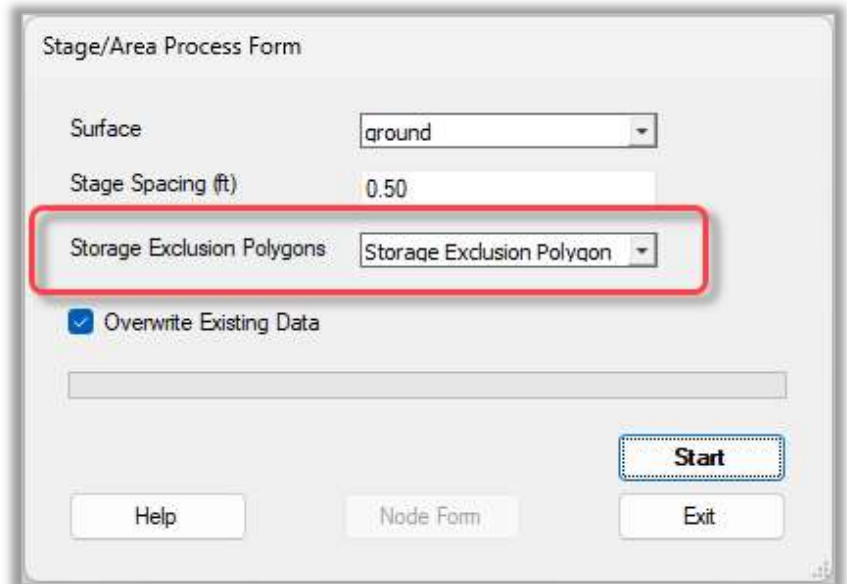
EPA SWMM Import (Beta)

We are pleased to announce that you can now import EPA SWMM models into StormWise (formerly ICPR4)!



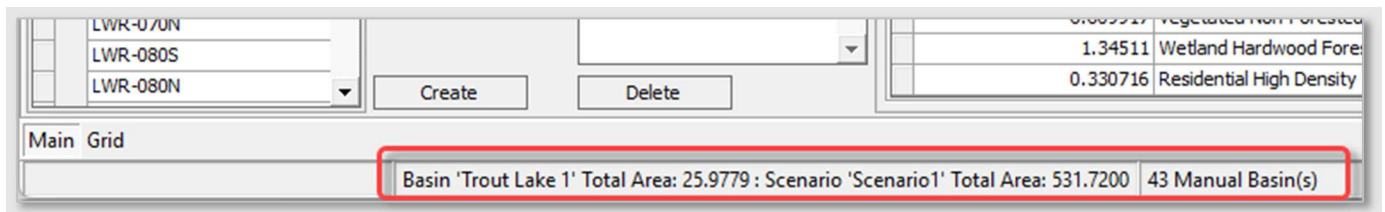
Storage Exclusion Polygons

Users can now easily *automate stage-area data take-off for overbank storage areas* on both sides of a channel link. Simply create a "Storage Exclusion Polygons" map layer and specify the rasterized version when using our automated tool to generate stage-area data tables. This allows for accurate flood level calculations during extreme flooding events when out-of-bank conditions are expected.



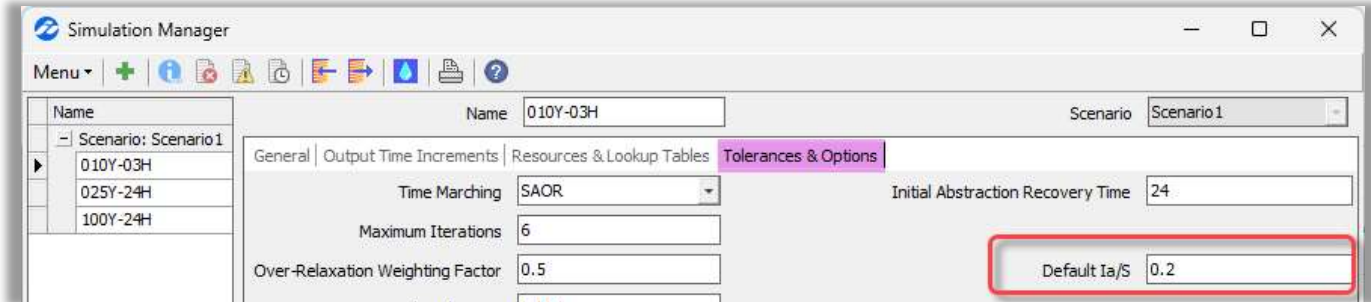
Manual Basin Total Area

Sub-basin area summations are provided at the bottom of the manual basin data form. The grand total now indicates the *total area for the scenario*, rather than for the entire StormWise model. The manual basin name and scenario name are also specified. Total areas are still provided in the printable reports as well.



Initial Abstraction Ratio Ia/S

The *initial abstraction ratio (Ia/S) used in the runoff curve number method can now be adjusted* from the default value (0.2) whenever necessary for your project. Ia/S can be edited globally in the Simulation Manager.

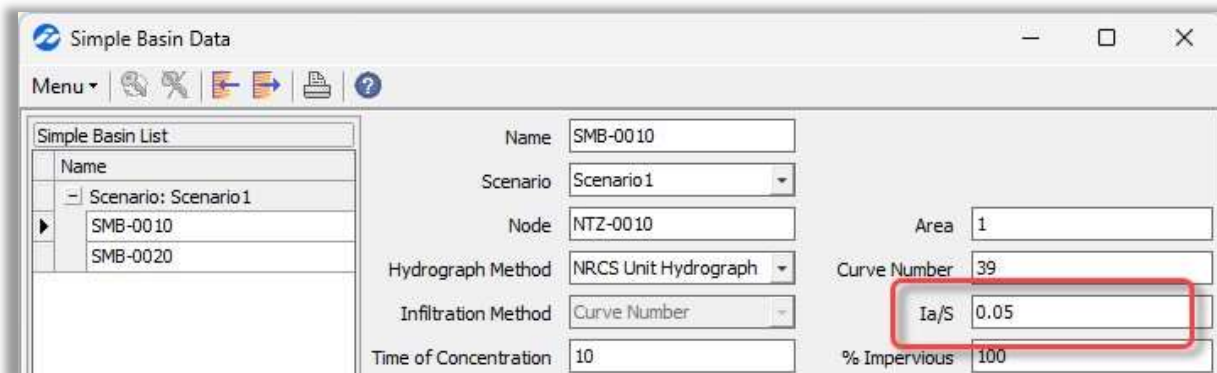


Or, for projects utilizing the distributed method, Ia/S adjustments can be made for individual land use types in the impervious lookup table. Any non-zero value entered in this lookup table will override the default value in the Simulation Manager.

The screenshot shows the 'Impervious Set Data' dialog. A table lists land cover zones with their respective % Impervious, % DCIA, % Direct, and Ia/S values. The Ia/S column is highlighted with a red box.

Land Cover Zone	% Impervious	% DCIA	% Direct	Ia/S	% Impervi
Building and Side...	100	100	0	0.05	
Commercial and ...	85	75	0	0.05	
Cropland and Pa...	0	0	0	0.05	
Herbaceous	0	0	0	0.05	
Industrial	72	65	0	0.05	

And for lumped method projects, Ia/S adjustments can be made for individual Simple Basins. Any non-zero value entered on a Simple Basin data form will override the default value in the Simulation Manager.



**Note that because of the new variability of this parameter, the "Equivalent Curve Number" that was included in the Basin Runoff Summary report can no longer be back calculated from the rainfall excess. Therefore, this calculation has been removed from the report.*

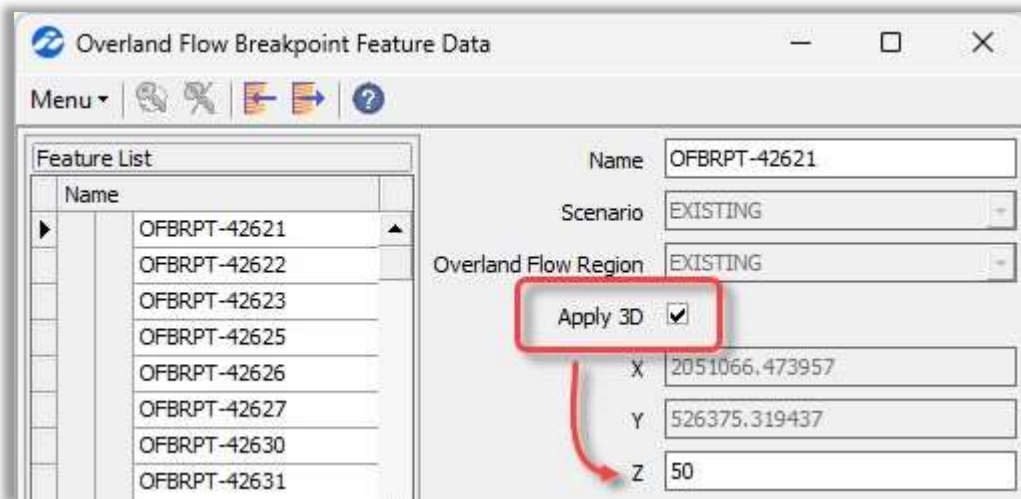
Offset Distance for Fence

A new “Fence Offset Distance” tool allows you to *include items outside or near a fence polygon* in your selection set. Application of this tool may be useful for 2D “Expert” users attempting to select features near region boundaries or control volume features. However, the default setting for this feature will remain 0-ft offset. In that case simply click ok. Adjustments can be made to the fence offset distance, without redrawing the original fence, by selecting the "Edit Fence Offset Distance" tool button.



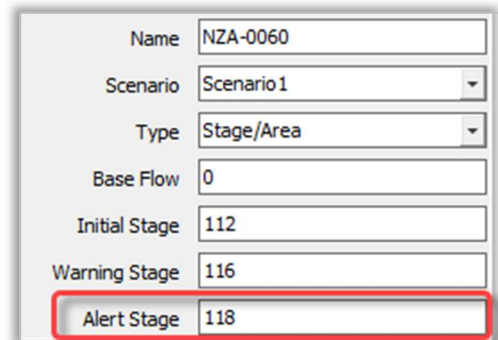
3D Breaklines and Breakpoints for 2D Overland Flow & 2D Groundwater

Instead of using surface information specified in the Overland Flow Region Manager, *ground elevations can now be specified at breakpoint locations* and/or at each vertex along a breakline. The user specified ground elevations are incorporated into the overland flow triangular mesh vertex during the scenario build. Similarly, ground elevations can be specified for 2D Groundwater breakpoints and breaklines and incorporated into the groundwater triangular mesh.

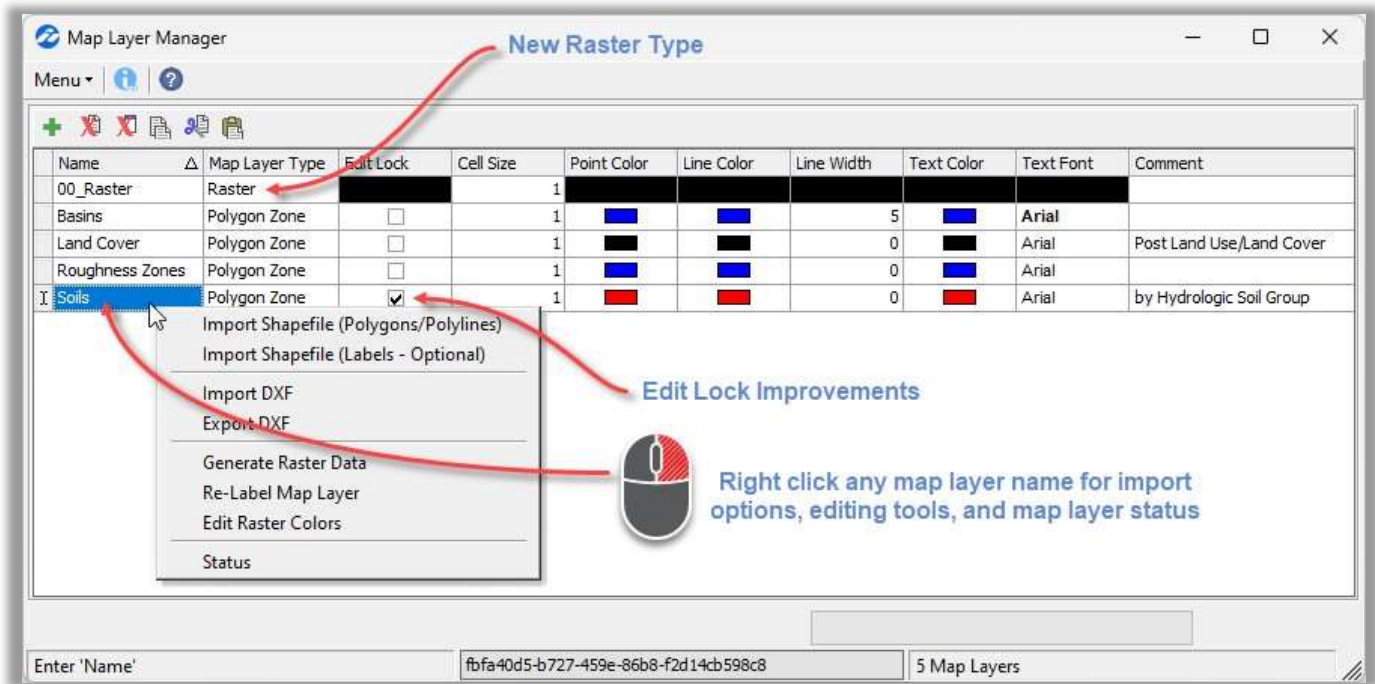


New Node Parameter- Alert Stage

A new “Alert Stage” parameter has been added to 1D nodes and 1D node interfaces. This parameter is similar to a warning stage and serves as a second monitoring elevation. It is primarily used for *FloodWise (Streamline Technologies' real time flood forecasting (RTFF) system)*. Just like warning stages, the alert stage is not used for computational purposes.



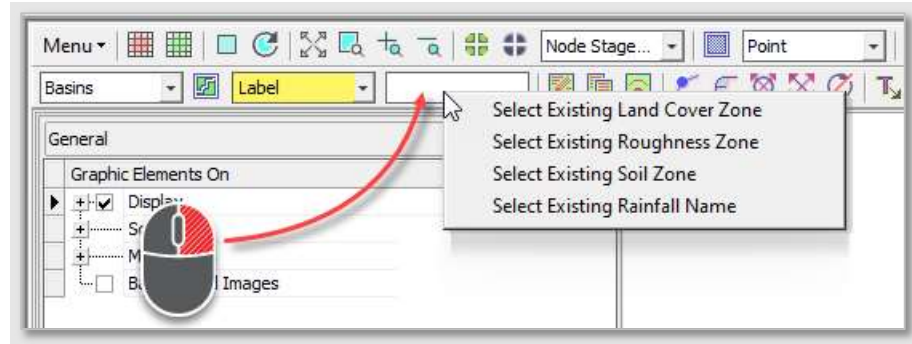
New Map Layer Capabilities:



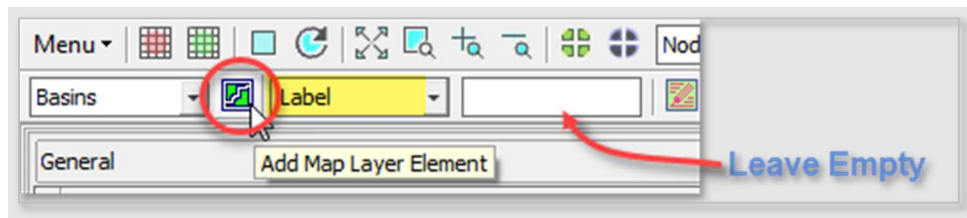
- **Optimized Loading Time** - Loading time for map layers has been greatly reduced! After importing large map layers, *turn on "Edit Lock"* in the Map Layer Manager. For example, in the image above, the "Soils" map layer is locked. Any locked map layer can be viewed in seconds, and you can zoom and pan across to instantly view regions across large map layers.
- **New Map Layer Type** – A new "Raster" map layer type allows you to directly import any outside raster image file into StormWise. This is the fastest option for importing large image data sets.
- **Label Editor Tool** – Easily edit all map layer labels using the new "*Re-Label Map Layer*" tool.
- **Edit Raster Colors** – It is now possible to *customize the colors* used to display each region in a map layer raster image.
- **Import** – After adding a map layer in the Map Layer Manager, *right click the name in either the manager form or the data tree to import map layers.*
 - Shapefile point (labels only) or polygon files can be imported separately.
 - Any leading or trailing empty spaces in polygon zone labels will now be deleted when placing labels in StormWise, during map layer import, and during rasterization. This process helps safeguard against inconsistencies with lookup table zone names.

New Map Layer Capabilities (Continued):

- Add/Edit/Copy Individual Labels in Graphic View – *Rather than manually typing map layer label names, and risk a typing error, they can now be:*
 - selected from a lookup table (right click inside text field),



- selected from any other graphic element (leave text field empty and click “Add Map Layer Element” for selection prompt),



The “Drawing Polygon Map Layers” tutorial demonstrates using this labeling option.

- or quickly copied from an existing map layer label (using new graphic view button).



- Edit Labels/Elevation Points in Graphic View – Users can also now *edit map layer labels and/or point elevations* using a new graphic view button.



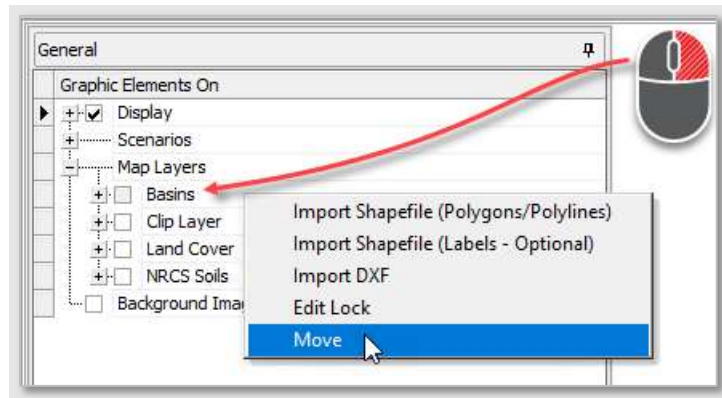
New Map Layer Capabilities (Continued):

- New Drape Surface Tool – The Drape Surface tool can be used to drape a surface over selected points/polylines on an elevation map layer to re-assign elevations. This tool will modify existing elevations on the selected points/polylines based on the selected surface. The tool is especially useful when elevation map layer edits drawn in StormWise will later be merged into a primary surface DEM.



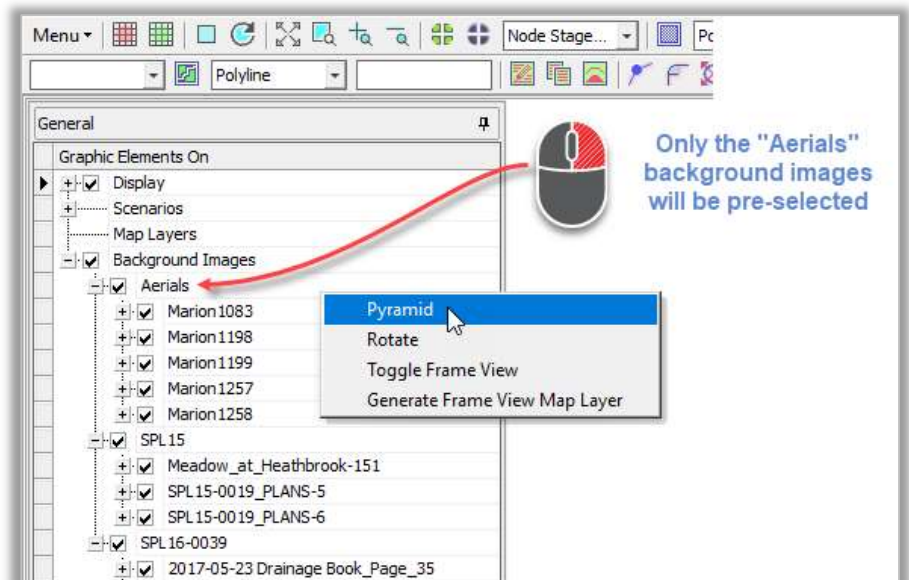
Move Map Layers & Surfaces

Users can now *move map layer polylines, labels, and rasters* directly in StormWise *without the need to re-import and re-rasterize* which can be time consuming for large projects. Surface rasters can also be moved by right clicking the surface name on the Raster tab.

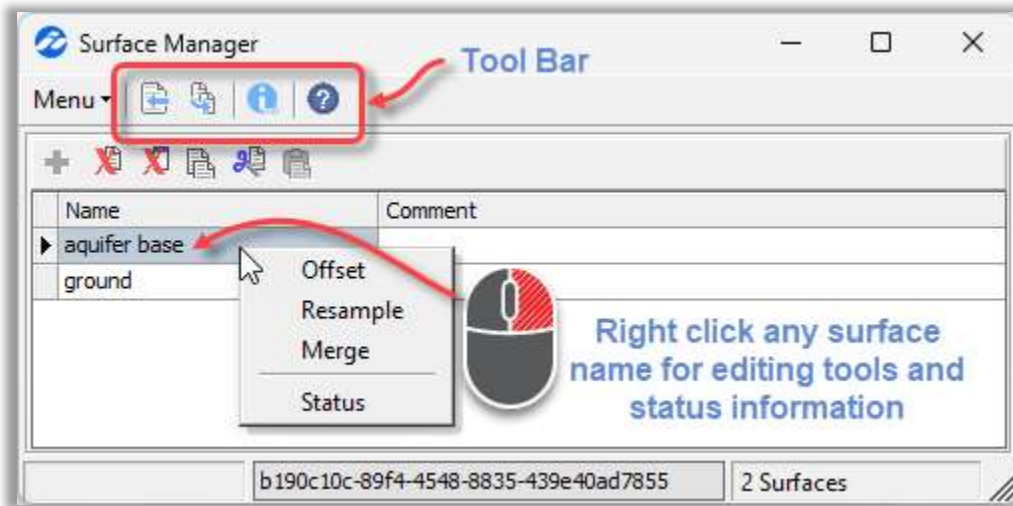


New Background Image Capabilities

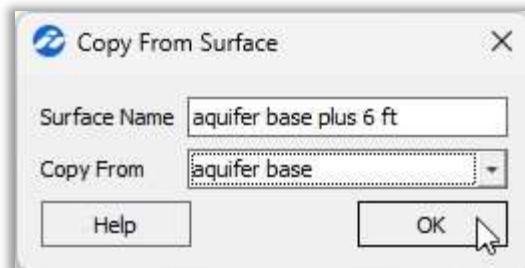
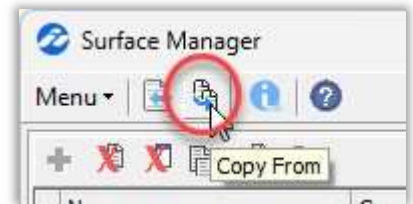
- Pyramid By Tag – Background images can now be pyramided by Tag.
- Large Images – Previously, StormWise (formerly ICPR4) had difficulty with vary large images. The user was required to manually tile the images before importing. With this new release, StormWise now *automatically tiles large images and groups them through a relationship field*.



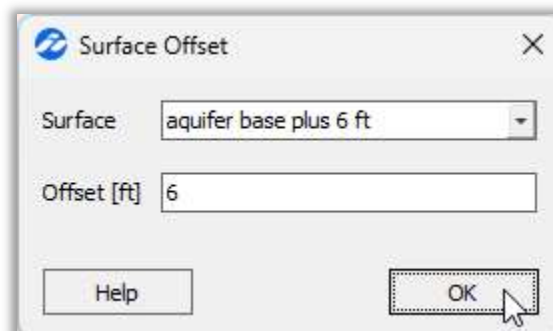
New Surface Tools:



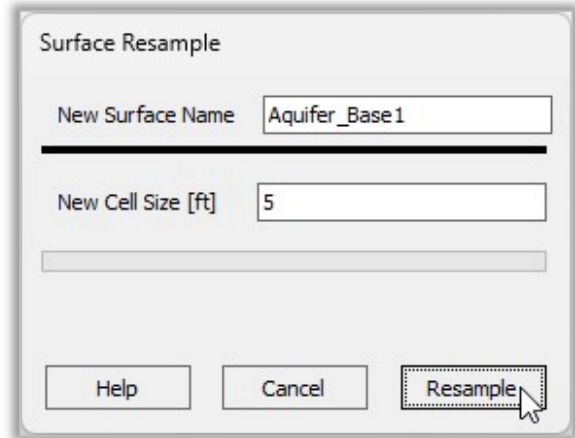
- Simplified “Copy From” – This tool has been simplified from previous versions (e.g., *the step to first create a new surface record was eliminated*). In the Surface Manager, click the “Copy From” button. Users are prompted to select the surface to copy from and enter a new surface name. This tool performs a direct copy of the surface record, which can later be offset or otherwise modified if desired.



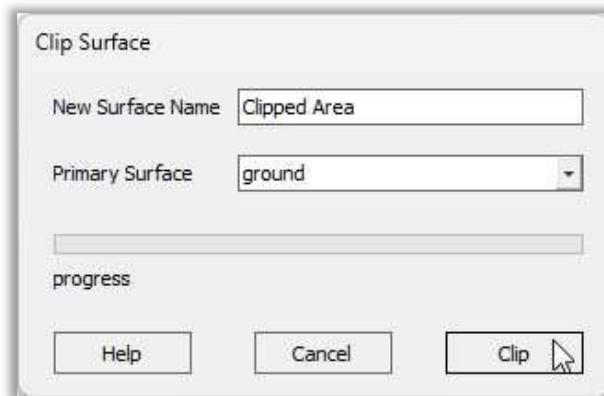
- Simplified “Offset” – There is *no longer a need to first select the surface that you want to offset*. Now simply right-click and select the “Offset” tool. The new process allows you to specify the surface that will be offset as part of the Surface Offset tool.



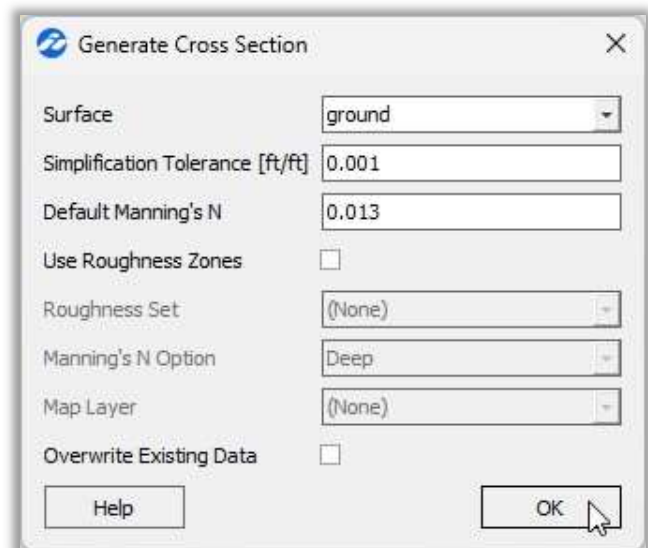
- New “Resample” – It is now possible to *resample surfaces* (i.e., specify a new cell size using the nearest neighbor method) in StormWise (formerly ICPR4).



- Simplified “Clip” – Previously, this tool clipped whichever surface raster was toggled on at the time when the tool was initiated. *The preliminary step to toggle on the surface raster was eliminated.* With this new release, simply click the “Clip Surface” icon in the Graphic View. After making your clip option selection, you are then prompted to specify which surface you would like to clip (“Primary Surface”) as well as specify a new surface name.



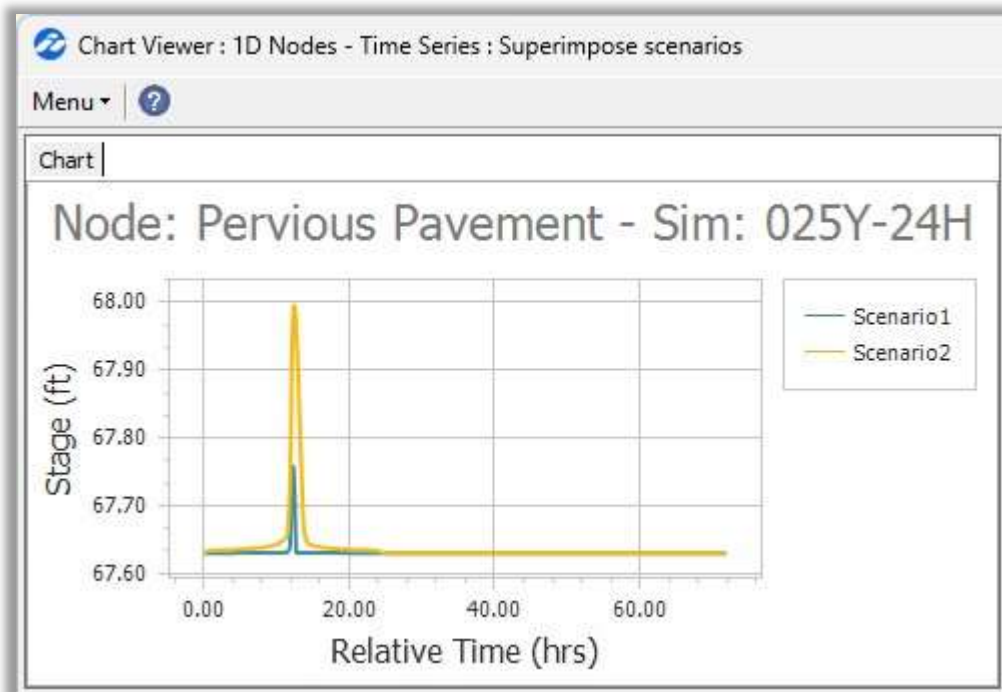
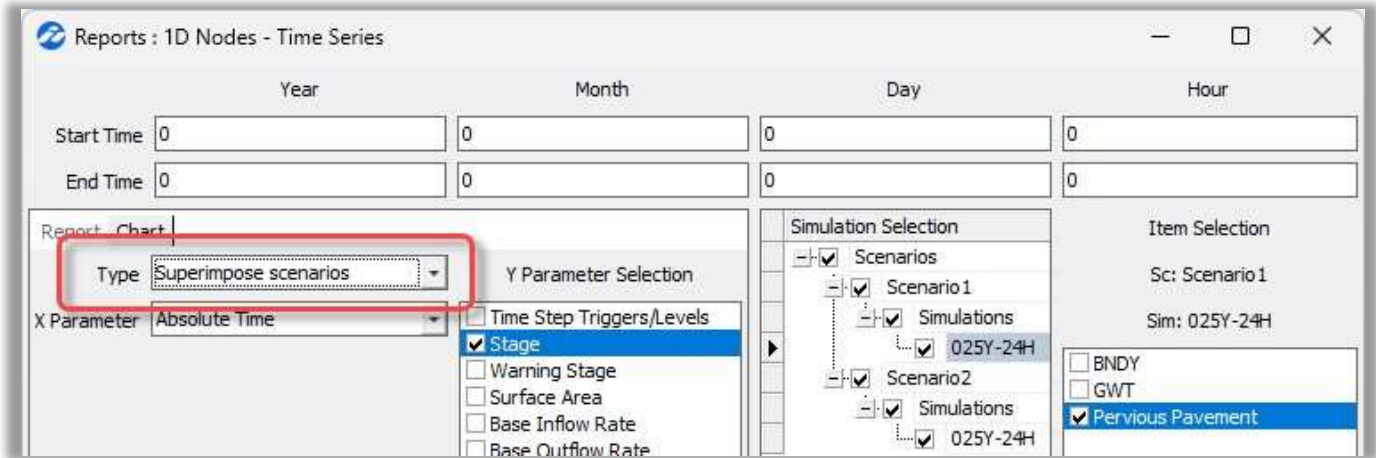
- Surface Selection Persists – When generating node stage area or cross sections, once you return to that tool for a second iteration the surface will already be pre-selected from the last use.



New Reporting Features & Improvements

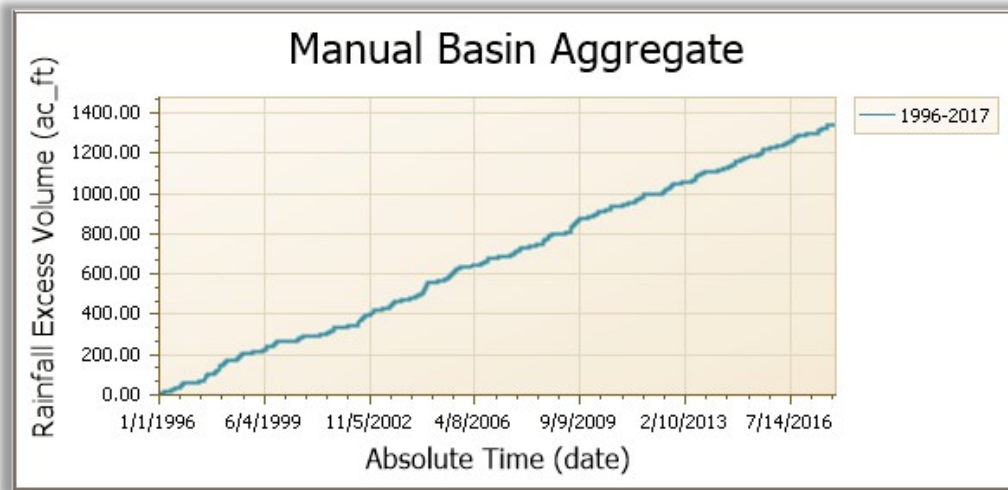
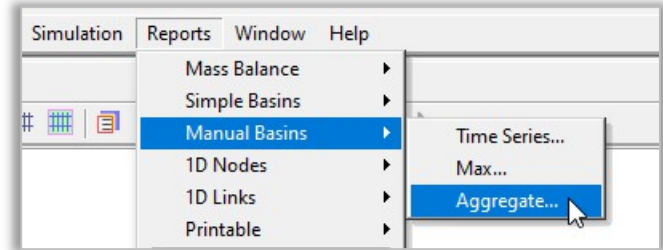
Superimpose Scenarios

You can now superimpose multiple scenarios on any StormWise report.



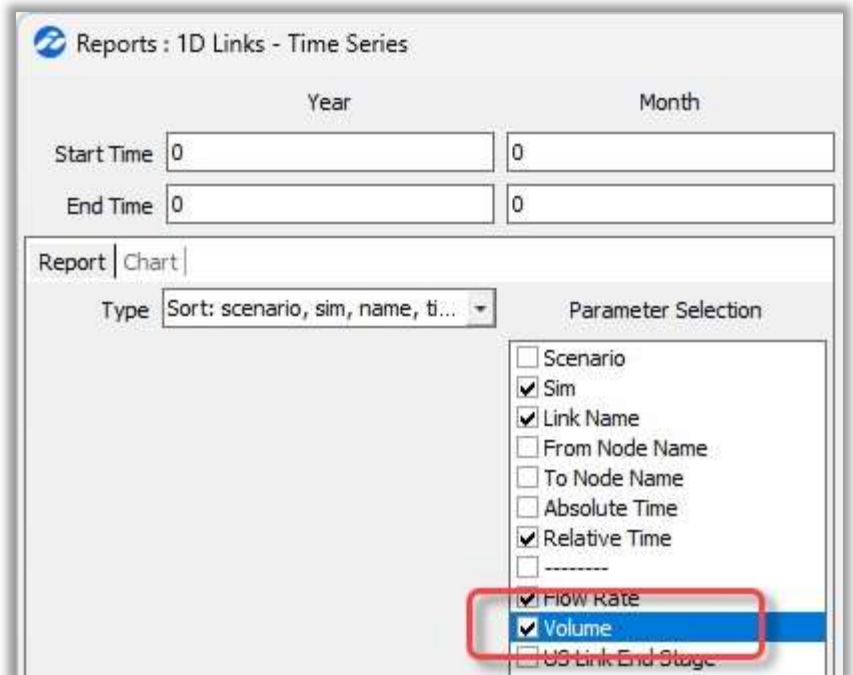
New Basin & Link Aggregate Reports

1D & 2D links, 1D basins, and 2D basin aggregate reports are now available! The 1D link & 1D basin aggregate reports can be created from the Reports drop down menu. Any 1D or 2D aggregate report is accessible from the Multi-Item Report section on the graphic view “Report” tab.



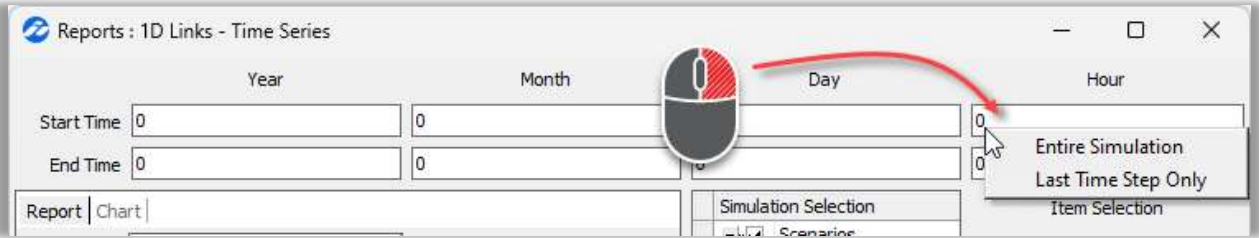
New “Volume” Parameter in Link Time Series Reports

Previously, users who were interested in the volume of flow through any link were required to calculate the volume based on the flow rate results. With this release, link time series tabular reports and charts now *include volume as a parameter selection option*. Keep in mind, link volume calculations are dependent on your print increment settings.



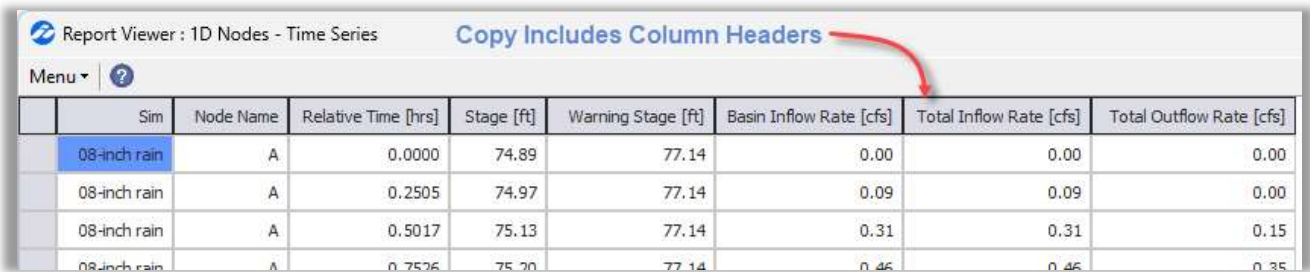
New Start/End Time Options

Users can right click in any StormWise Viewer report start/end time data fields to select “Last Time Step Only” or “Entire Simulation”. This allows users to easily switch between these time settings. The “Last Time Step Only” option is especially *useful for volume parameters where the final cumulative volume is needed*.



Copy Header for Tabular Reports

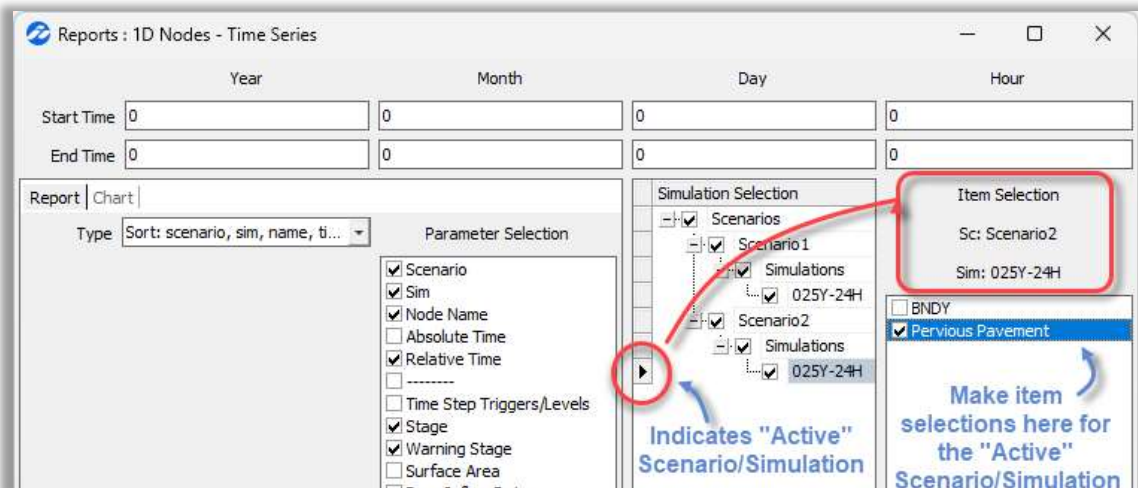
The *column headers are now included* when copying any tabular report data to the clipboard or exporting any tabular report to CSV. This saves time when copying results into a spreadsheet for further analysis.



Viewer Report Item Selection Column

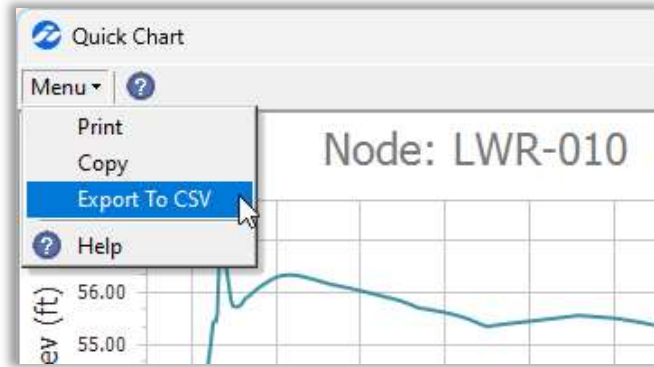
The term “Viewer Reports” refers to the menu-accessed reporting system that opens a viewer window in StormWise. These are not formatted for printing and are typically used for design analysis prior to preparing submittal documentation.

These reports allow different item selection sets for each scenario/simulation. To clarify how this works for new users, the “Item Selection” column now includes a *text section indicating which scenario and simulation are active*. Users can still right click for the option to apply the item selection set to all simulations.



Quick Charts to CSV

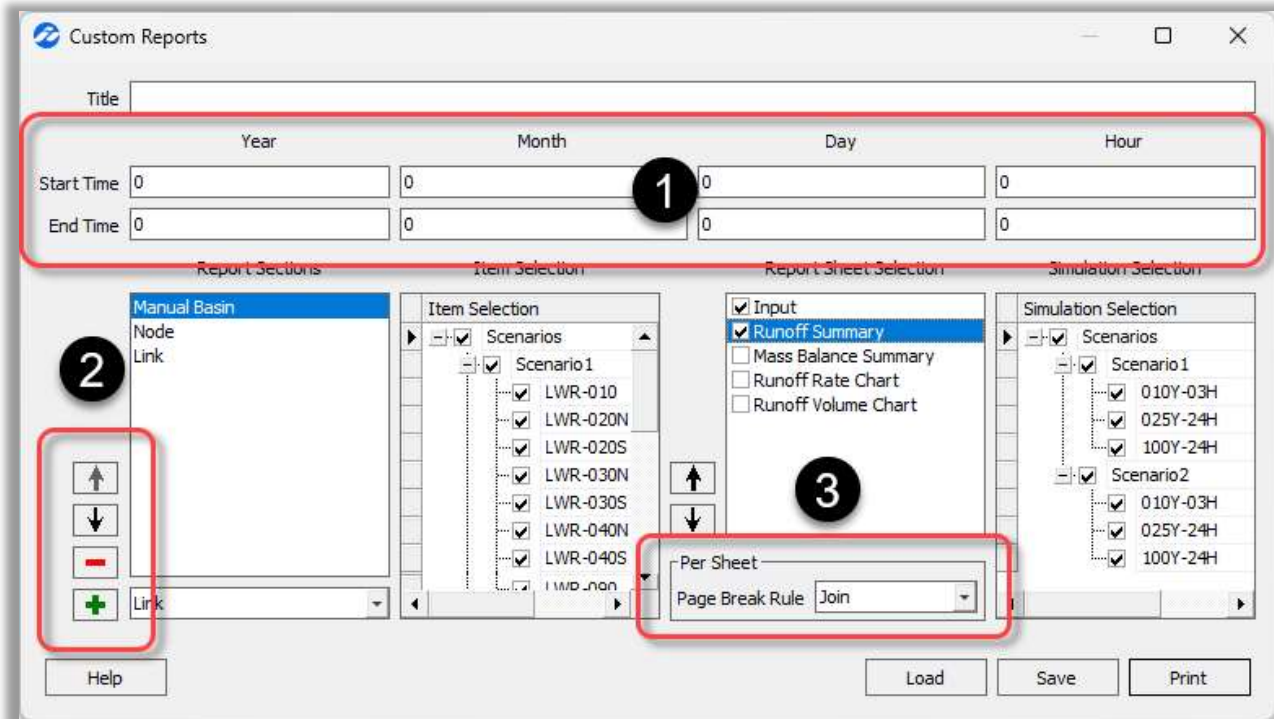
Quick chart results can now be exported to CSV.



Custom Report Form Changes

The appearance of the Custom Reports form has changed for this release. Key updates include:

1. Start/End times are now located at the top of the form. The *Start/End times now apply globally* to the entire custom report. For example, in the screen shot below the Manual Basin, Node, and Link results will be bracketed between hour 0 and hour 24.
2. The report sections "Add" & "Remove" text buttons have been replaced with symbols and moved to the left.
3. The "Per Sheet" header was added as a reminder to make a page break rule selection for each individual report sheet. For example, in the screen shot below "Join" is selected for the "Runoff Summary" report sheet. A separate page break rule could be set for the other report sheet (e.g., "Input") that has been selected in the screen shot below.



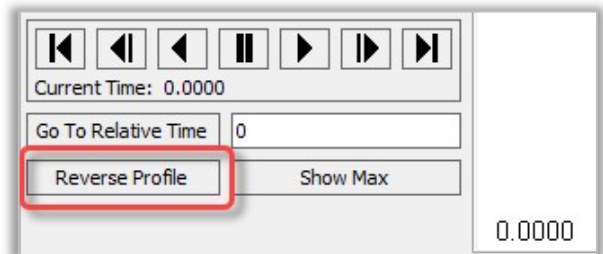
Link Path Profile Tool Improvements

Improvements to this tool include:

1. Previously, when a link path was drawn (for the profile animation report tool) it was automatically created for the “Active Scenario”. Instead, users are now *prompted to specify a scenario* before you begin drawing.



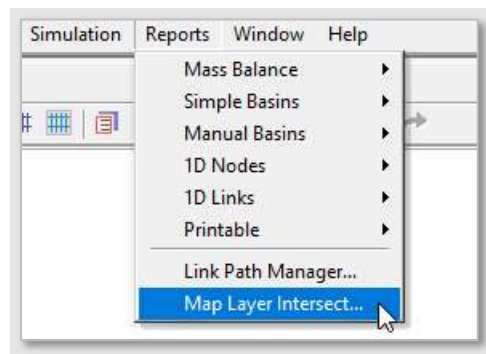
2. A tool is now available that *horizontally flips* the direction that the profile is displayed.



3. In order to avoid errors with the link path tool, a link path will now be automatically deleted whenever any node or link along the link path is deleted. Please note that, while the undo tool can be used to undo a graphical node or link deletion, it will not currently undo the link path deletion.

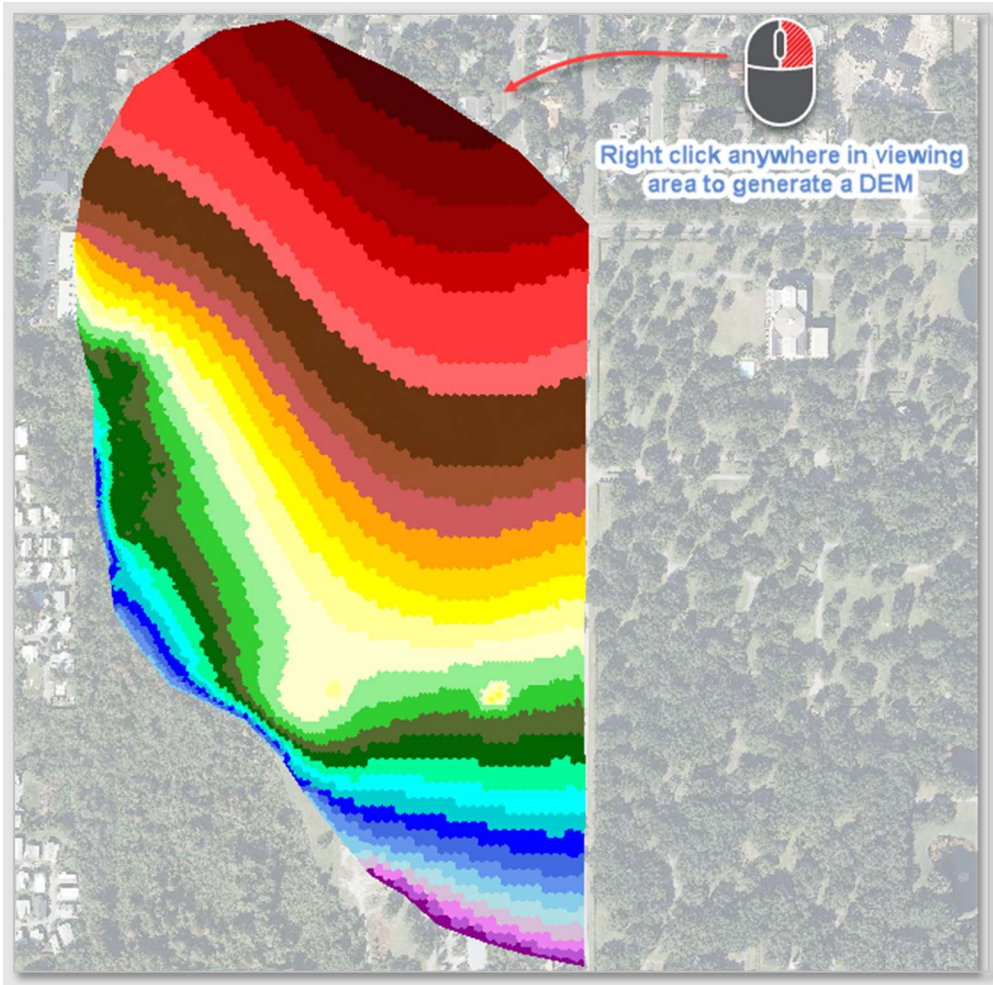
Map Layer Intersect

StormWise includes a tool that intersects up to 6 different map layers and provides area breakdowns for those intersected regions. It can be accessed from the report menu dropdown. The functionality of this tool remains the same in this release, but the *name of the tool was changed from “Process Polygons” to “Map Layer Intersect”*. *This name change was made* in order to avoid confusion with the “Process Polygons” tool for manual basins.



2D Animations- Auto Import

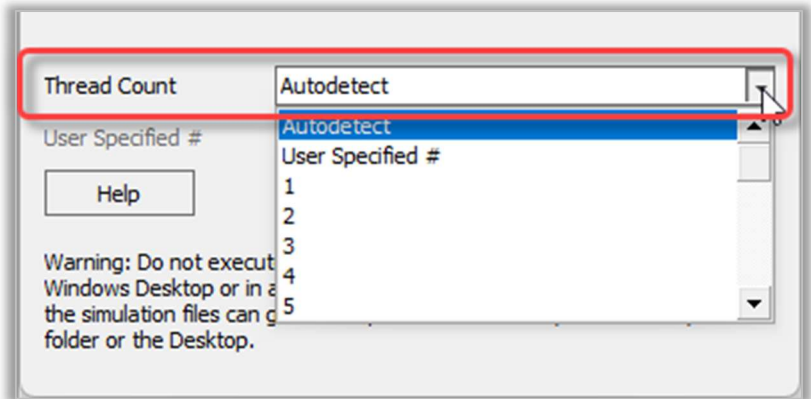
When exporting a 2D animation in StormWise, an option is now available to automatically add the newly created Surface to the Surface Manager. This allows you to skip the extra (surface import) step and instead quickly progress to displaying profiles with animation results.



Other Improvements

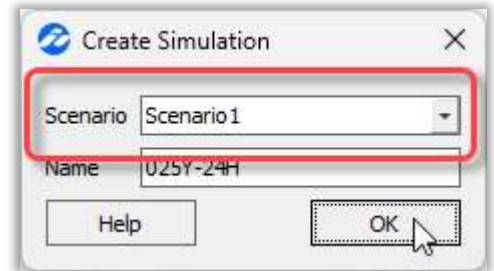
Thread Count Selection

If you are using a computer with multiple processors, StormWise allows you to control the number of threads used for the simulation. The program now allows users to select “Autodetect”, select any number from 1 to the maximum detected thread count, or chose “User Specified #” and manually enter a value. *Experimentation with thread count is encouraged for minimizing model simulation time.*



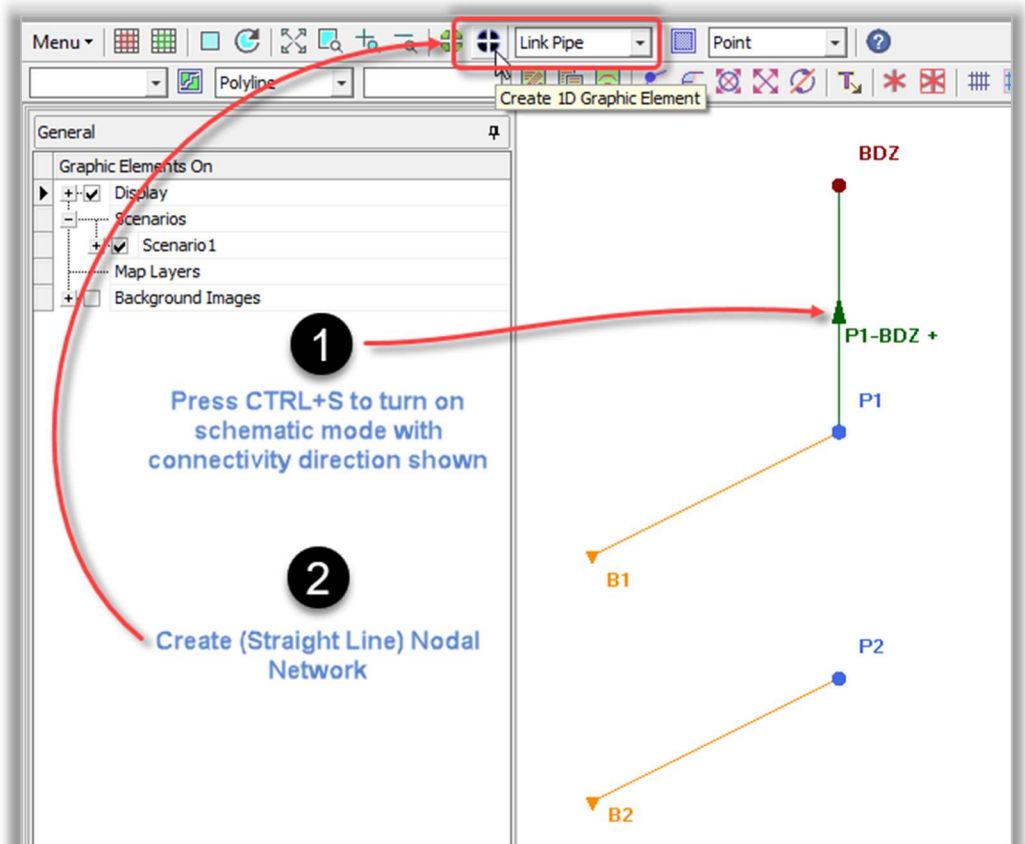
Creating a Simulation

Previously, when you created a new simulation record (or cloned an existing record) it was automatically created for the “Active Scenario”. Instead, users are now *prompted to specify a scenario* where the new simulation record will be placed.



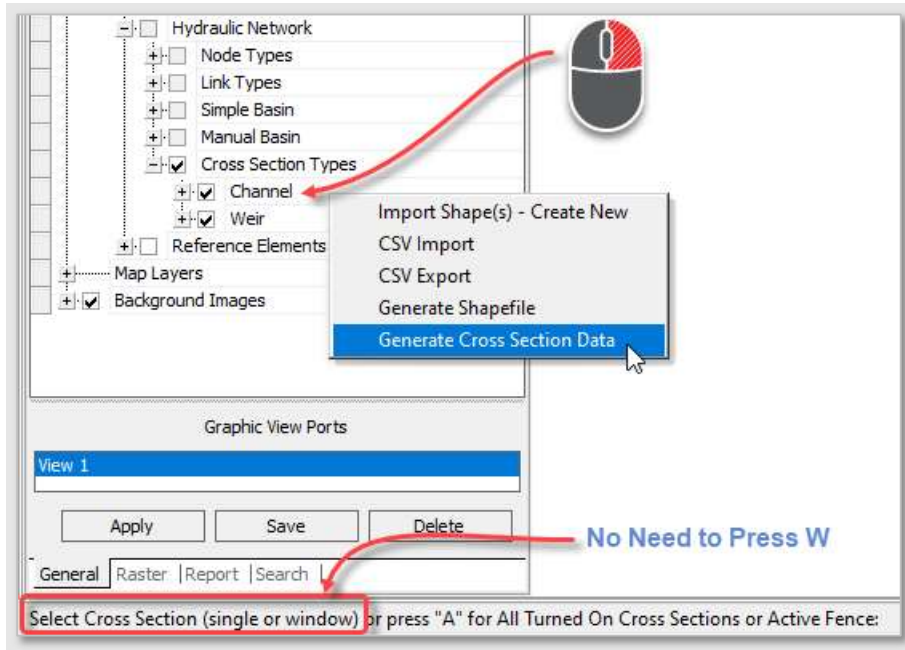
Creating Links in Schematic Mode

You can now quickly draw a nodal network while working in schematic mode (CTRL+S). Any links added while in this mode will automatically be drawn with a 2-point polyline linking the from node and to nodes. To draw a link with more than two vertices, exit schematic mode (CTRL+S) and edit the link using the polyline edit tool.



Cross Section Selection

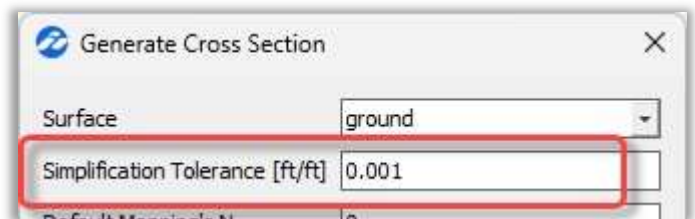
In StormWise versions prior to 4.08.00, users had to press “W” on the keyboard before dragging a window to select channel/weir cross sections for the Generate Cross Section Data, Assign Cross Sections, and Set Inverts tools. The cross section selection for these tools has been simplified so that users can simply drag a window for selection, *no keyboard commands are required*. The simplified functionality for the cross section selection is now consistent with other tools in StormWise such as the node Generate Stage/Area Table tool.



Cross Section Generation

The following improvements were made to the Generate Cross Section (from a Surface) tool:

- The specification tolerance (which is used to thin out unnecessary points) will *never remove the lowest point* in the cross section.



- If only a single weir or channel cross section is generated (i.e., the selection was not made using a window or “all” selection) the tool remains active until the process is cancelled by a right click or by pressing the escape key.



- The Surface selection, simplification tolerance, and other *settings all persist* with subsequent use of this tool. You can quickly cut cross sections from a DEM without having to re-enter this data.

Set Invert Tool For Weirs

The automated tool to set weir invert elevations now automatically selects the lowest point in the cross section. No invert option selections are needed.

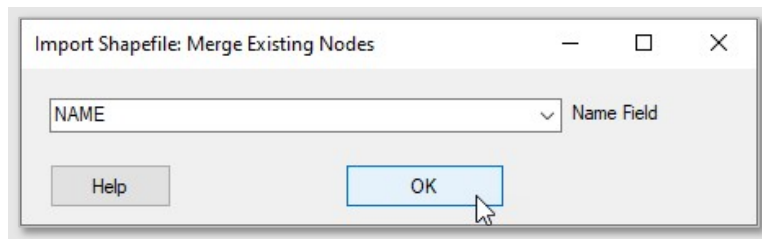
Reverse Link Connectivity Tool Update

Previously, this tool was used to switch the from/to nodes only for a specific link. In addition to switching the connectivity direction, this update allows you to *switch the upstream/downstream link parameters as well*.



Shapefile Imports

Previously, shapefile attribute tables were required to match the names provided in the “Rules for Shapefile Imports” table in the StormWise help menu. For example, a “Name” field was required for each graphic element type. With this release, users can now *select any data field for the graphic element name, link to/from nodes, basin nodes, etc. upon shapefile import*.

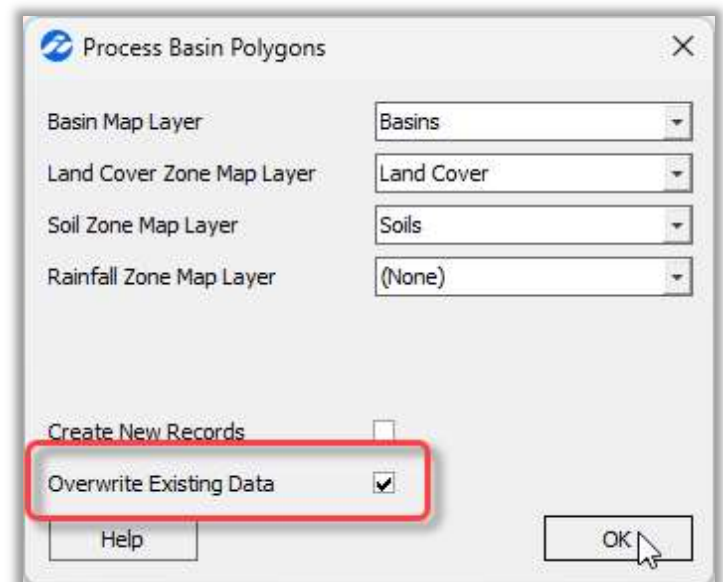


Export Basin Leaders

A *polyline shapefile is now included with any basin (simple, manual, or mapped) shapefile export*. The polyline connects the basin symbol to the node.

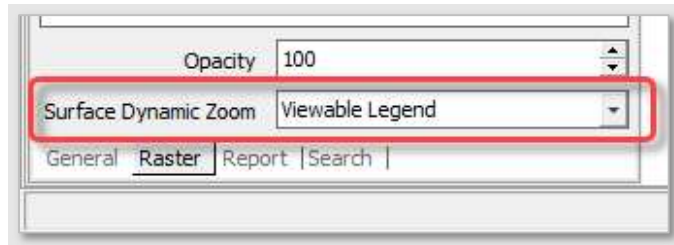
Overwriting Existing Data

Several tools in StormWise have the capability to overwrite existing data. These include the Process Polygons, CSV Import, Generate Node Stage/Area, Generate Pond Control Volume Stage/Area, Generate Cross Section, and DXF Map Layer Import tools. This release requires users to check the “Overwrite Existing” option to *verify that existing data should be deleted*. If unchecked, the tools populate data only for elements that do not include existing data.



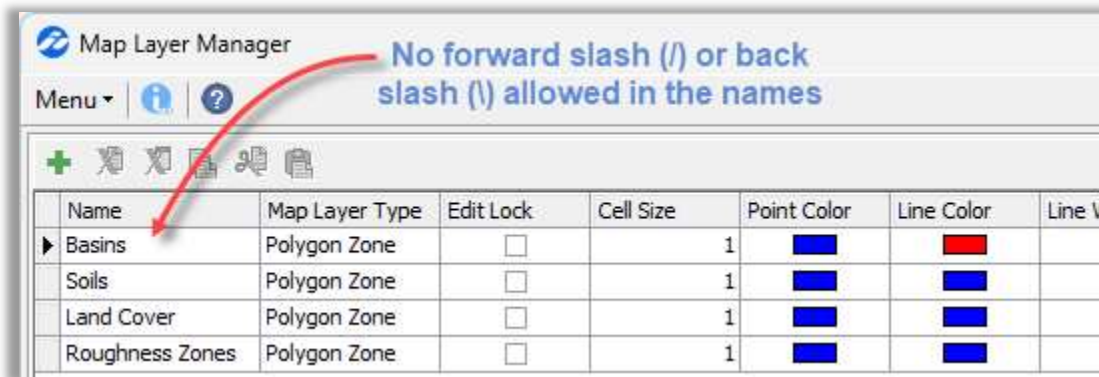
Default Surface Dynamic Zoom

"Viewable Legend" is now the default setting for surfaces displayed in StormWise. This setting updates the raster legend elevations dynamically based on surface data in the current zoom view. Additionally, the legend only shows what's in the viewable extents. This is especially helpful when viewing subtle elevation differences in relatively flat areas at close zoom ranges.



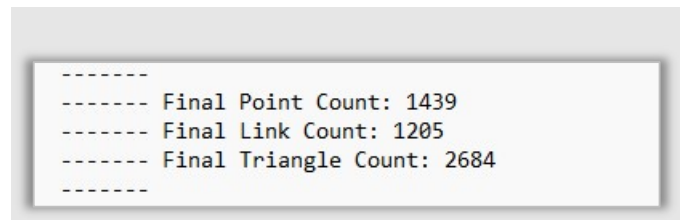
Import Map Layers with Prohibited Characters

Previous versions of StormWise allowed *forward slash (/) and backslash (\) characters* in the names for map layer, lookup table sets, background images, overland flow regions, groundwater regions and surfaces. These characters are no longer allowable and items cannot be renamed using them. When importing map layers from another project, any forward slash (/) and backslash (\) characters will be *replaced with an underscore (_)*.



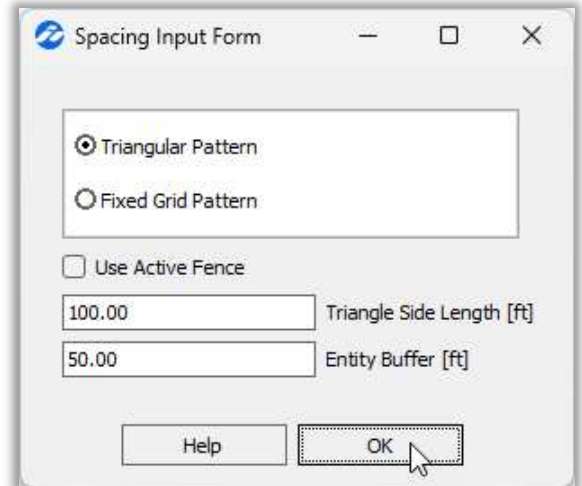
Improvements for 2D Scenario Build

A scenario build error check has been added to *identify cases when 2D extrusions touch or overlap*. Additionally, the scenario log file now provides the Overland Flow region 2D link count and the Groundwater region final point count.



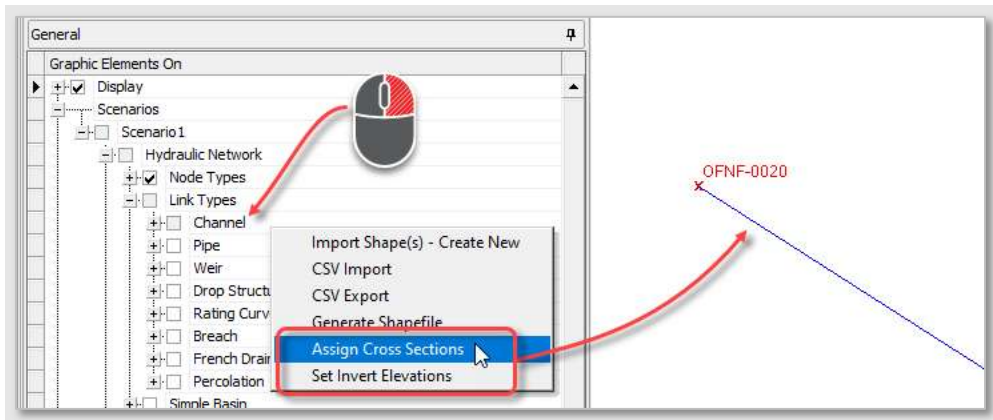
Breakpoint Pattern Form Change

The “Spacing Input Form” for overland flow and groundwater breakpoint patterns has been simplified. Patterns can be created with either fixed grid or triangular patterns and users are *only required to enter a side length & buffer dimension in feet (or meters)*.



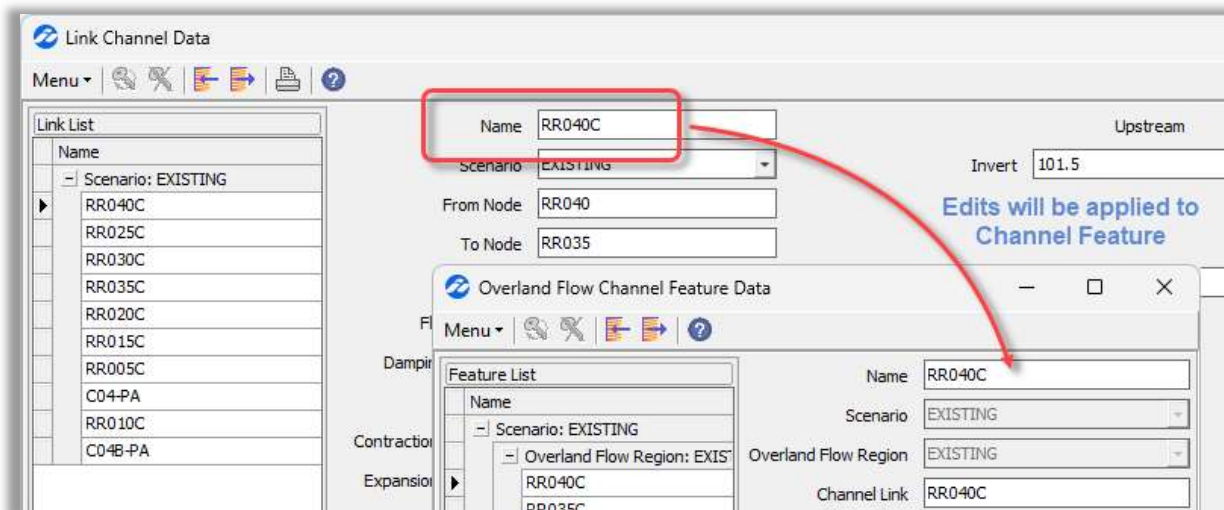
Channel Links Connected to 1D Node Interface Points

It is now possible to *use the “Assign Cross Sections” tool and “Set Invert Elevations” tool for all channels*, including those that are connected to 1D node interfaces.



Channel Name Auto Update in 2D Channel Feature Forms

Any “Name” changes on a 1D channel data form can now be automatically applied to the 2D channel feature “Channel Link” parameter. Simply click “Yes” when prompted to approve the name change in all locations.



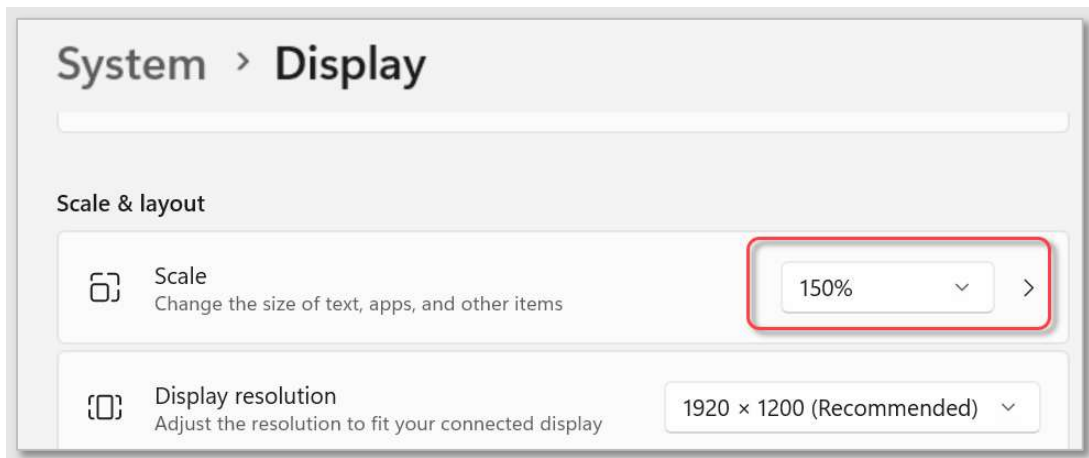
New Error & Warning Messages

Additional simulation error and warning messages have been added to identify fatal simulation errors (e.g., when %Impervious = 100, but DCIA < 100) or simulation warnings (e.g., when the hydrology output increment is less than the calculation time). A list of common errors & warnings can be found in the Help documentation, with internal links to helpful references.



User Configuration – Colors and Font Edit Removed

Editing form colors and fonts was removed. Users who would like to increase the font size may still do so using Windows Display settings.



Removed Legacy XML Import Option

Prior to v4.07.00, StormWise created an XML (Extensible Markup Language) data file with each “Save” that contained most of the project data. They were used primarily for version control purposes. The XML file was sometimes used to recover project data. This method became *obsolete after the introduction of the “Backups” sub-folder* that automatically creates Project.i4p files that can now be used to recover a project. The XML import option has now been removed.

Bug Fixes

Simulation Selection Was Not Being Retained

After generating a custom report, you can now re-open the report selection form and all items & simulation selects should be retained from the previous session. However, this does not apply if item or simulation names were modified.

Active Spacebar Command Not Shown

Previously, the command did not persist (i.e. was not available as the “Active” command) after editing a polyline. This has been corrected so that after editing one polyline, users can press the spacebar to repeat the active command and continue on to select and edit another polyline.

Reporting Issue for Applied Irrigation Volume

There was a reporting issue associated with the applied irrigation parameter for Crop Time Series results. This has been corrected.

Reporting Issue for Time Stage Nodes

Stored volume is not tracked for time/stage nodes and therefore the % error calculation is not valid. The custom report “% Error Inflow” was previously reported as “100 %” and is now reported as “N/A” for all time/stage nodes.

Operating Table Warnings

Previously the message “Ignoring point with decreasing Q” was issued in the simulation log for operating tables with decreasing flow. Instead, the messages are now issued as a simulation warning. This change does not have any impact on simulation results for models that are migrated forward from older versions.

Added Error Message for Rating Curves with Duplicate Points

Previously, duplicated entries were allowed in a rating curve table. In some cases, however, the duplicate data would cause a floating point error. Duplicate entries are now flagged as an error and must be corrected prior to running a model simulation. A “Remove Duplicates” button can be used to perform this task from the Rating Curve data form.

“Pro” vs “Expert” ICPR3 Import Tool Options

Previously, the ICPR3 import tool included an option to import basins as Mapped basins regardless of whether a user subscribed to a “Pro” or “Expert” license. When this option was selected in the “Pro” version, the mapped basins were imported but not accessible because they are applicable to 2D models only. This option has been removed from the tool for the “Pro” version and the program will automatically import basins using the CN method as “Simple” basins and import basins using the Green-Ampt method as “Manual” basins.

Move Selection Tool Bug

The Move Selection tool did not move the correct model components when a fence was drawn for item selection. This has been corrected, you can now either draw a selection window or pre-draw a fence for item selection.

Setting Channel Link Inverts

Previously, an error would occur when setting the channel invert elevations using the "Ground at Node" option if your model included multiple scenarios. This has been corrected.

2D Region Parameters Set to Zero

When importing overland flow or groundwater regions from shapefile or DXF, the min triangulation angle, min/max triangulation angle, and cell size parameters were all populated with a zero value instead of a default value. This caused errors during scenario build. Regions now import with the non-zero default values. In the case that any regions are populated, a min triangulation angle, min/max triangulation angle, or cell size set to zero, this will result in a Build Error.

Groundwater Region Display Size

In models with multiple groundwater regions, an error occurred when a user attempted to change the region line size in the Graphic Elements Properties Manager. This has been corrected.

Delete Cove

The undo tool was not allowing users to retrieve a channel cove feature after it was deleted. This has been corrected.

Surface Clip

Surfaces that were generated from an elevation map layer and simultaneously clipped with a map layer were causing errors with Graphic View operations. For example, if the clipped map layer was selected to create a new feature (using the X-copy command prompt) the program would close out. This has been corrected.

2D Basins Precipitation Results

Precipitation results were not correct when units were set to cubic feet or acre-feet. This has been corrected.

Animation Export Issue

When a project included multiple overland flow regions, the maximum velocity files (CSV, shapefile, or raster) were not exporting for the selected region. Instead, the files were created for the overland flow region that was created first. This has been corrected.

Crop Report Bug

There were inconsistencies in tabular crop reports if they were created using only a selection of available parameters, and not all of them. This has been corrected.

Metric Non-Dimensional Rainfall

There was a bug that caused a simulation to fail when non-dimensional rainfall files were used in a metric unit project. This has been corrected.

Custom Report Showing Deleted Drop Weirs

Deleted drop structure weirs were still listed in custom reports. This has been corrected.

Groundwater Exclusion Name

Scenario builds were unsuccessful when a groundwater exclusion feature was used and given a name that did not match the groundwater region name. This has been corrected, all features can use unique names.

Scenario Extract Tool

The scenario extract tool was not operating correctly when one or more simulations were left un-executed. The tool would create boundary stage tables for new internal time/stage nodes (for simulations that were executed), but would not copy boundary stage tables for existing boundary nodes. The new boundary stage set was also not referenced in the Simulation Manager, creating extra steps required by the user. This has been corrected.

Difference Tool

There was a sorting issue that occasionally affected the difference reports generated for large watershed studies. This has been corrected.

Stage/Area Take-Off

The stage/area was not populating correctly when there were voids in the surface located within the stage-area polygon. This has been corrected. Additionally, a warning message will be issued to alert users when voids exist within the stage/area polygons. The stage/area tool was also optimized to handle scenarios where a mound is present at the center of the stage/area polygon, and all areas at the perimeter are significantly lower. This optimization ensures accurate calculations in such situations.

Using Region as Mapped Basin Feature

This 2D Overland Flow option was not working correctly. A drawn Mapped Basin Feature was still required despite the “Use Region as Mapped Basin Feature” option being selected. This has been corrected.

Loading 1D Node Interface for Report Selection

The “Multi-Item Report/Chart” categories allows you to select and save an item list that includes both 1D nodes and 1D node interfaces. Previously, the “Load” button would only import the 1D nodes into the report selection form. This has been corrected to also include any 1D node interfaces that were saved in the selection list.

Node Volume Report

In some instances, when only a single node was selected for a Node Volume Report, the % Error (By Inflow) was falsely reported as 0. This has been corrected.

2D Scenario Build Temp Folder

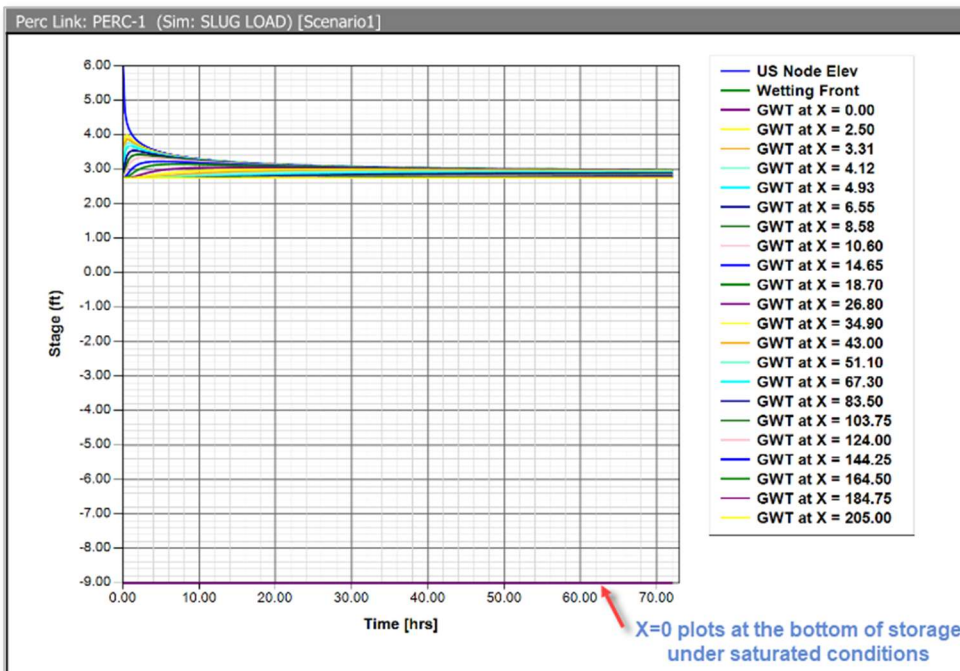
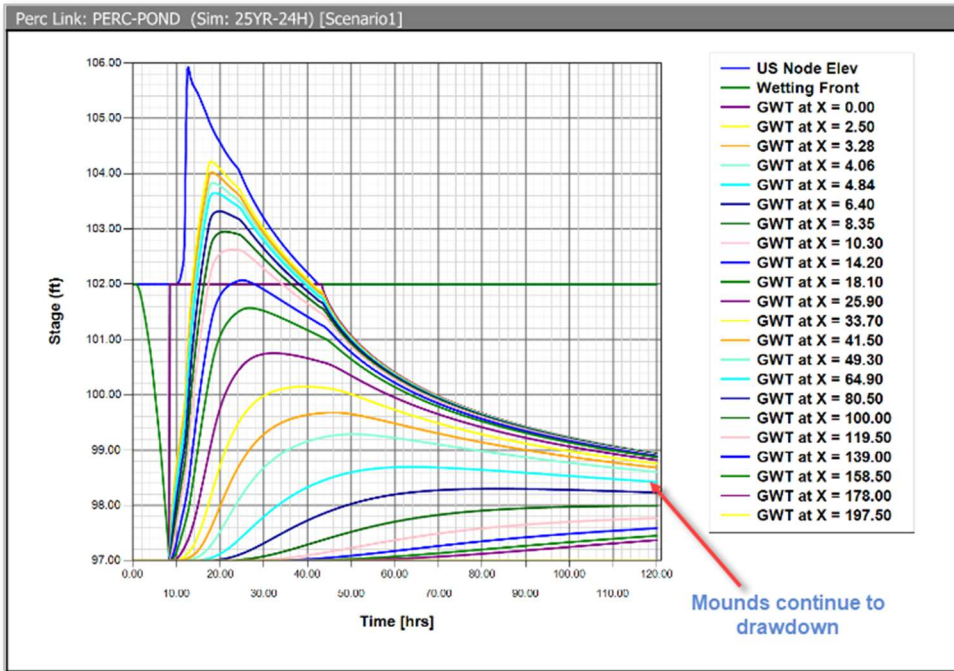
Previously, the 2D scenario build was placing files in the user’s C:\Temp folder. The process would fail if you did not have this folder. This issue has been corrected by placing all temporary files in the model’s “Temp” sub folder.

Custom Report – Drop Structure Data

Sim Name and Link Name data were reversed for any drop structures listed in a Link Min/Max Conditions printable report. This has been corrected.

Groundwater Mounding Reports

In some cases, the groundwater mounding results stayed at a constant elevation near the end of the simulation instead of continuing to drawdown. This has been corrected. Additionally, the y-axis range now displays a broader extent in order to display the minimum and maximum values. The mound at X=0 is designed to plot the bottom of the storage when the soil column begins in a saturated condition (i.e., layer thickness = 0, or the water table is above the bottom of the storage).



“Program Files” Documents

The program files “Docs” folder now includes various documents for modeling and reference purposes. For example, the raw data for the built-in rainfall distributions is provided within the StormWise Program Files “Docs > Rainfall” folder. Spreadsheets are provided to assist with generating a customized back-to-back rainfall distribution or equivalent pipe size dimensions. All release notes, our license agreement, validation, and technical reference reports are also included.

