

Meshing for HEC-RAS 6.x

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Objective

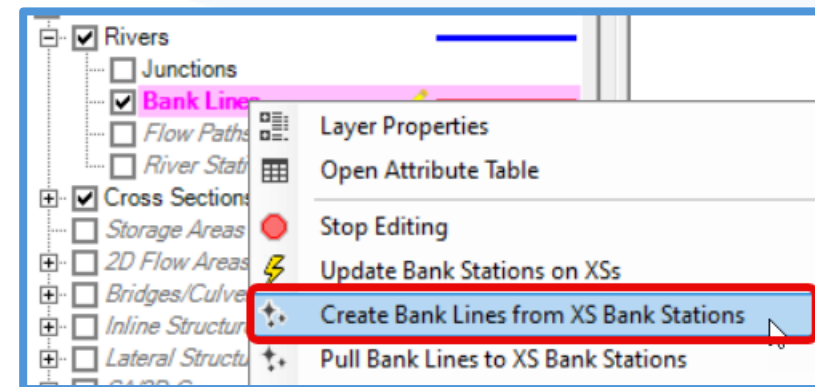
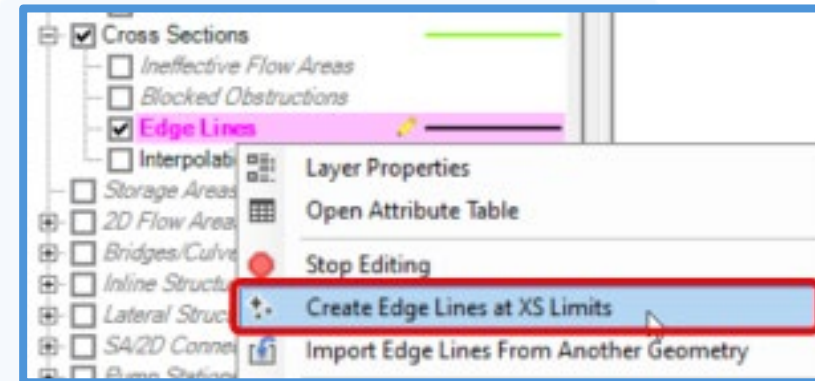
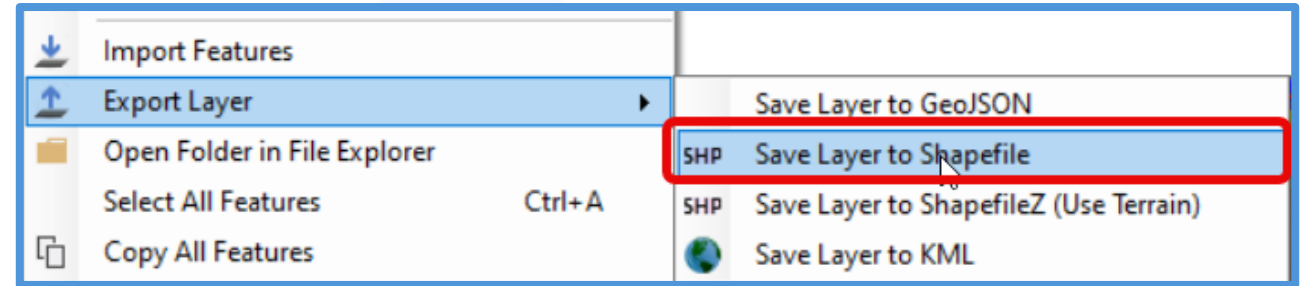
- This presentation will provide detailed discussion on developing a mesh for use in HEC-RAS 6.x and comparing results between versions.
 - Creating a Mesh
 - Exporting a Mesh
 - Incorporating Bridges
 - Importing HEC-RAS 6 results to HEC-RAS 2025

Creating a Mesh for HEC-RAS 6.x

- Convert a HEC-RAS 6.x 1D model to 2D
- Export features from RAS Mapper
 - Edge Lines
 - Bank Lines
- Import them to the HEC-RAS Conceptual Mesh

HEC-RAS Mapper

- Export a Layer
 - Cross Sections?
- Edge Lines – define model boundary or floodplain
- Bank Lines – define the river channel



Import to Conceptual Mesh

Geometry

- Conceptual Mesh
- Mesh

Regenerate Mesh

Tools >

Tables >

Copy >

Import >

Export >

Polylines/Polygons

Arc Importer

Importing Layers

- banklines
- edgelines

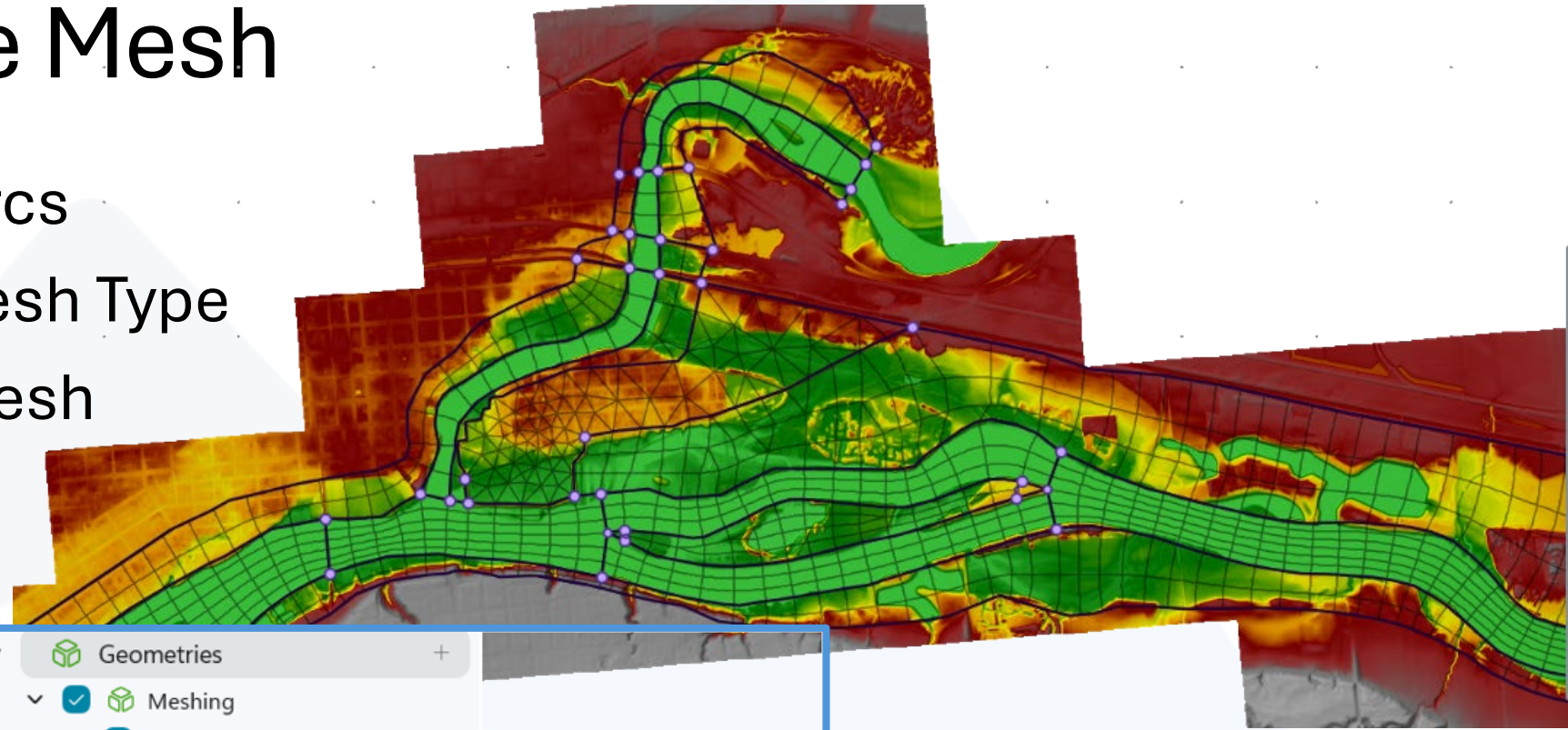
Import Options

Auto Merge

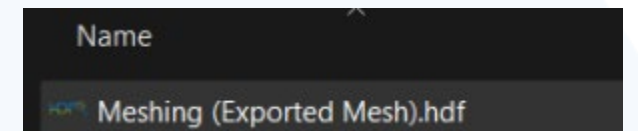
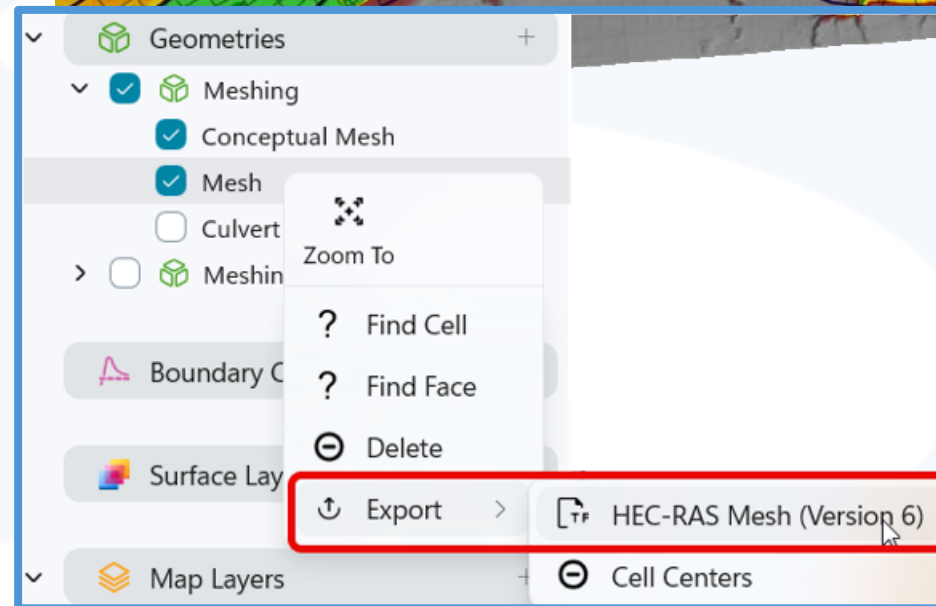
Import and Merge

Complete the Mesh

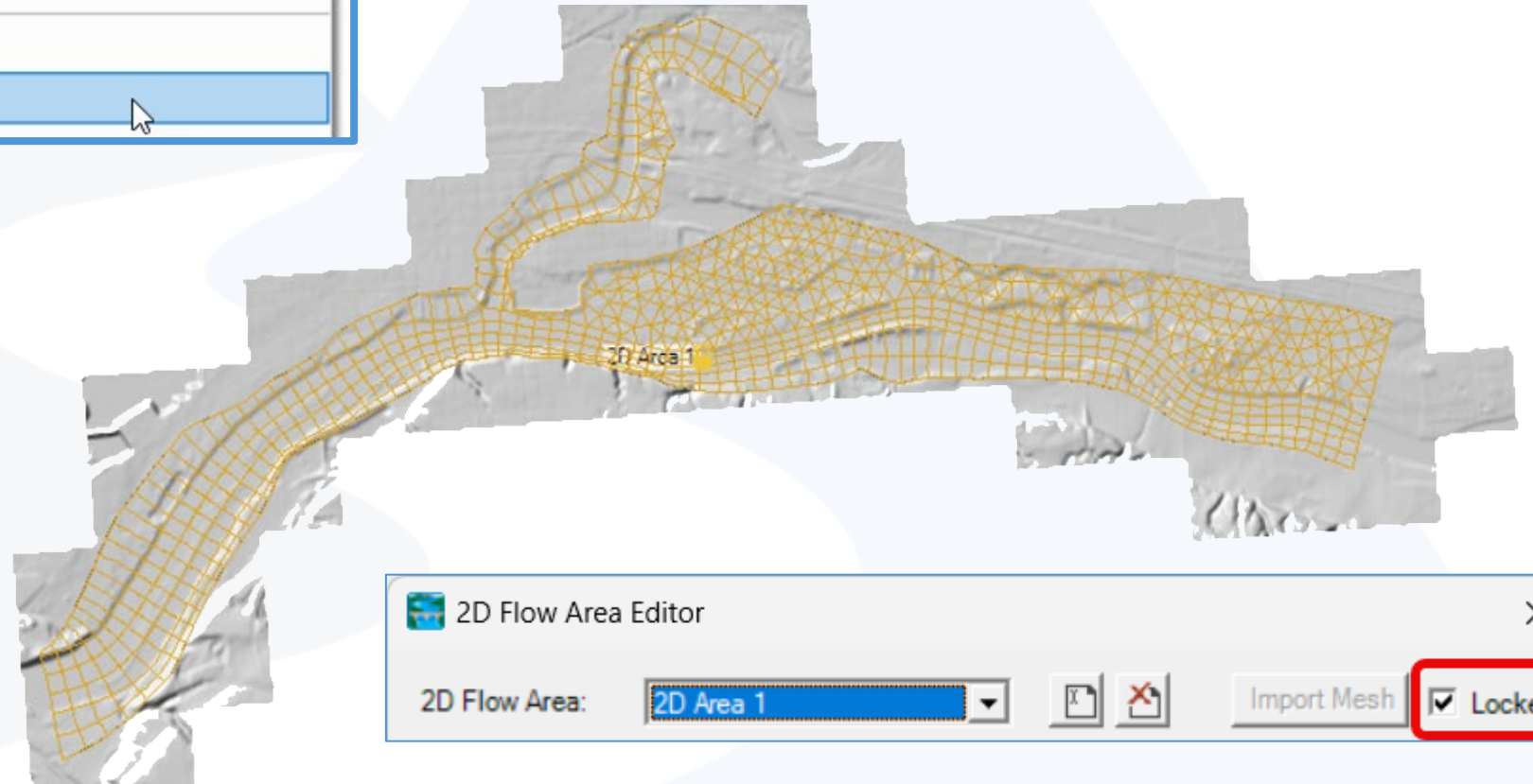
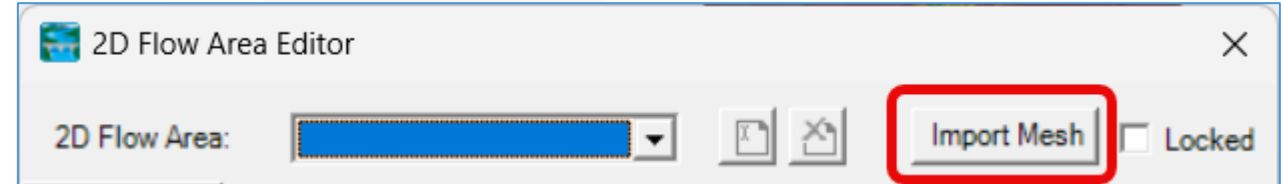
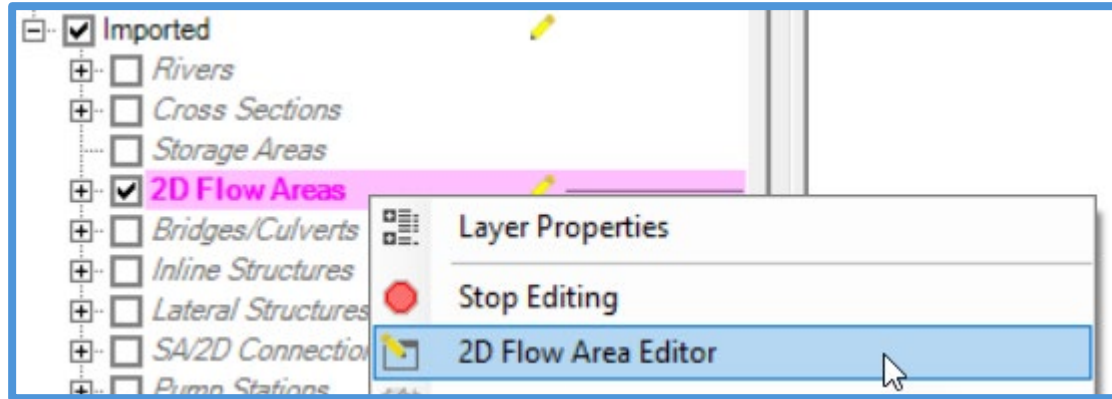
- Add Nodes and Arcs
- Specify Region Mesh Type
- Regenerate the mesh



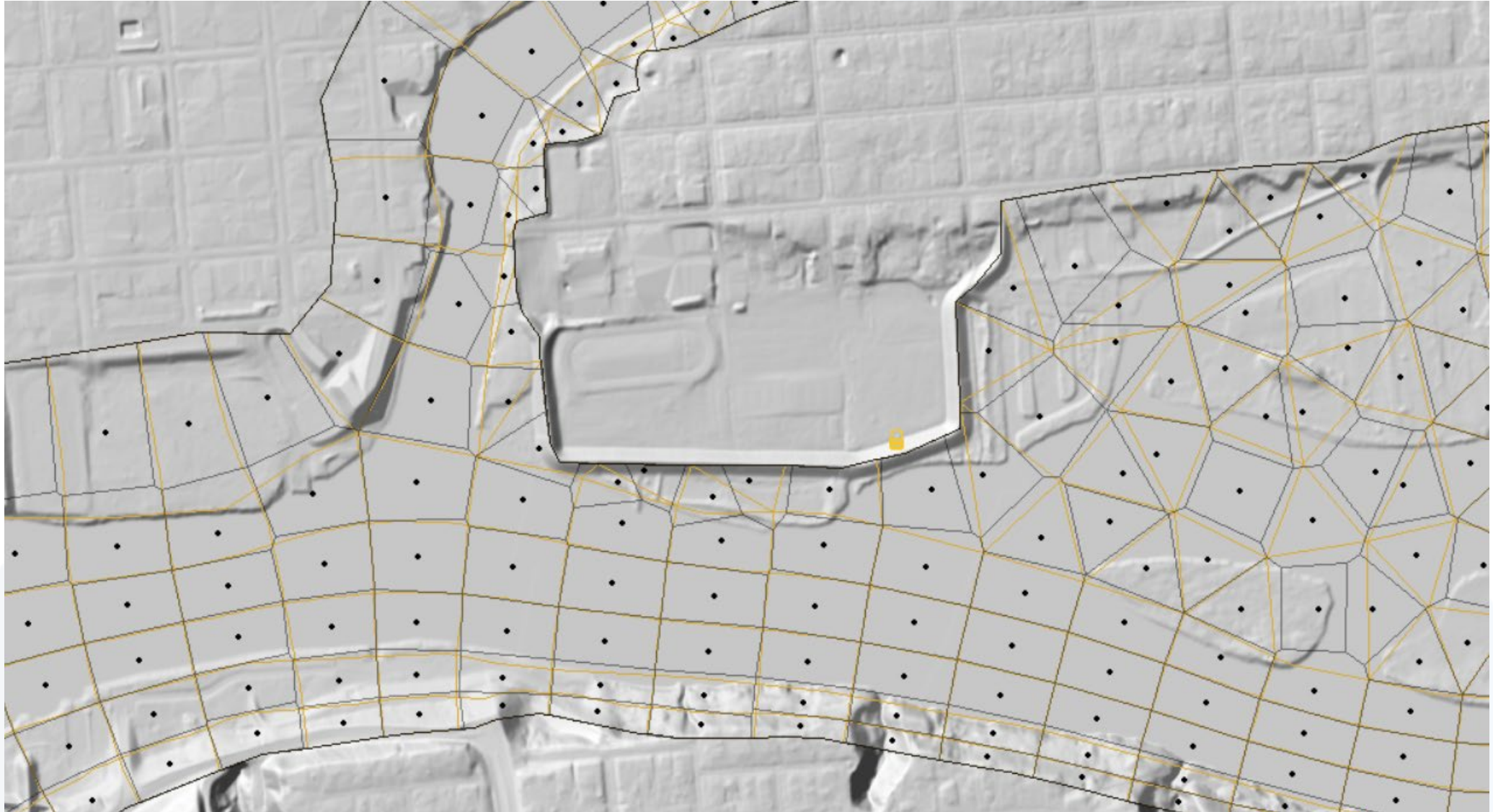
- Export the Mesh



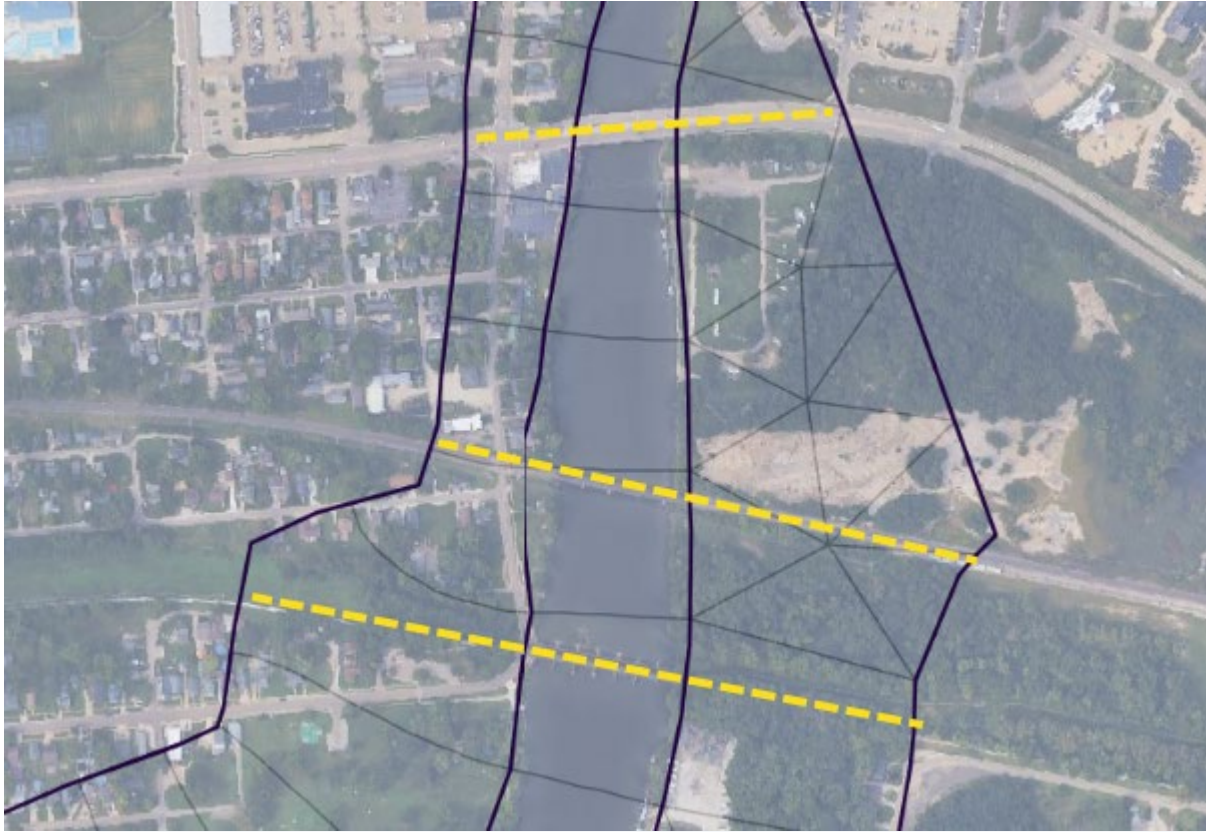
Import Mesh to HEC-RAS 6.x



Meshing in 6.x is NOT same in HEC-RAS 2025



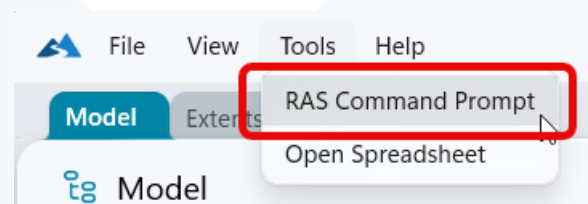
Bridge Locations



Results

- You can load HEC-RAS 6 results to HEC-RAS 2025 for evaluation
- HEC-RAS 6 result files (.hdf) are not identical to the new format (.h5)

- RAS Command Prompt



- Opens a CMD window to call HEC-RAS command line tools

```
C:\WINDOWS\SYSTEM32\cmd.exe
GDAL environment initialized to C:\Programs\7\GDAL\
GDAL 3.9.1, released 2024/06/23
RAS environment initialized to C:\Programs\7\
ras 0.1.0.2238-dev
Run 'ras --help' to see command options.

C:\Users\q0heccta\Documents\_Support\_Examples\RASr\MeshForRAS6_Workshop>
```

- migrate project -s "/path/filename.hdf" -d "."
 - Copy to the results.h5 file into the /Results directory

Results Comparison

The screenshot displays the MeshForRAS6 software interface. The main window shows a 3D map of a river system with a color-coded elevation overlay. The interface includes a menu bar (File, View, Tools, Help), a search bar, and a toolbar with navigation and zoom controls. The Project Explorer on the left shows a tree view of the model components, with the 'Results' section expanded. The 'Results' section contains three main categories: 'RAS6_DWE (Latest)', 'RAS6_SWE (Latest)', and 'RAS6_DWE_1n (Latest)'. The 'RAS6_DWE_1n (Latest)' category is selected, showing a 'Latest' result from 1/1/0001 12:00:00 AM. The 'Event_DWE_1n (Latest)' category is also expanded, showing a 'Latest' result from 11/21/2025 3:23:00 PM. The 'Layer' panel on the right shows the 'Result Visualization' settings, with 'Map Type' set to 'Depth' and 'Keyframe Result' set to 'Event_DWE_1n (Latest)'. A 'Sync' button is visible. In the bottom right corner, a graph titled 'RAS6_DWE_1n WaterSurfaceElevation' is displayed. The graph plots 'Elevation (ft)' on the y-axis (ranging from 460 to 468) against 'Time' on the x-axis (ranging from 2020-12-30 23:33:20 to 2021-01-15 00:00:00). The graph shows two data series: 'Event_DWE_1n WaterSurfaceElevation' (red line) and 'RAS6_DWE_1n WaterSurfaceElevation' (green line). Both series show a sharp increase in elevation starting around 2021-01-01, peaking at approximately 467.5 ft around 2021-01-04, and then gradually decreasing. A red dot on the map indicates the location of the graph.

Model

- Plans
 - Event_DWE
 - Event_DWE_1n
 - Event_SWE
- Results
 - RAS6_DWE (Latest)
 - RAS6_SWE (Latest)
 - RAS6_DWE_1n (Latest)
 - Latest
 - 1/1/0001 12:00:00 AM
 - Depth
 - Geometry
 -
 - RAS6_DWE_1n
 - Event_DWE_1n (Latest)
 - Latest
 - 11/21/2025 3:23:00 PM
 - Depth
 - 5. Mesh_Complete_1n
 - Flow Event
 - Event_DWE_1n
 - Event_DWE (Latest)
 - Features

1,956,022 / 6,760,165 ft

RAS6_DWE_1n WaterSurfaceElevation

Find on Map WaterSurfaceElevation

Elevation (ft)

Time

Legend

 - Event_DWE_1n WaterSurfaceElevation
 - RAS6_DWE_1n WaterSurfaceElevation

Time	Event_DWE_1n WaterSurfaceElevation (ft)	RAS6_DWE_1n WaterSurfaceElevation (ft)
2021-01-01 03:20:00	460.5	460.5
2021-01-01 07:06:40	465.0	465.0
2021-01-01 10:53:20	467.0	467.0
2021-01-01 14:40:00	467.5	467.5
2021-01-01 18:26:40	466.5	466.5
2021-01-01 22:13:20	465.5	465.5
2021-01-02 02:00:00	464.5	464.5
2021-01-02 05:46:40	464.0	464.0
2021-01-02 09:33:20	463.5	463.5
2021-01-02 13:20:00	463.0	463.0
2021-01-02 17:06:40	464.5	464.5
2021-01-02 20:53:20	464.0	464.0
2021-01-03 00:00:00	463.5	463.5