

Inundation Mapping Tools

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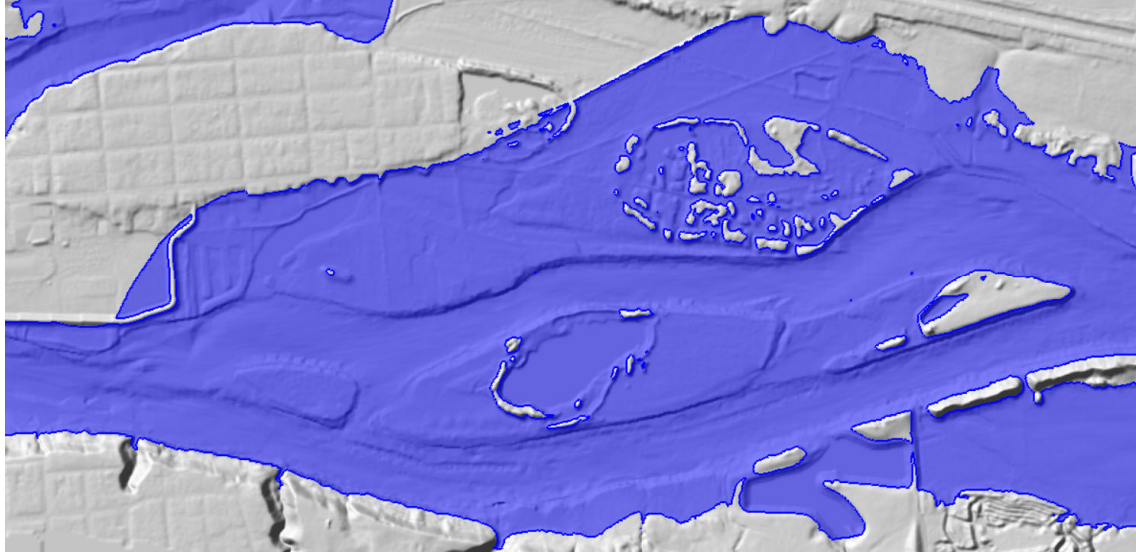


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This lecture will cover some of the new features we have added to HEC-RAS Mapper to assist in improving creating and editing of floodplain maps in RAS Mapper.



Floodplain Editing



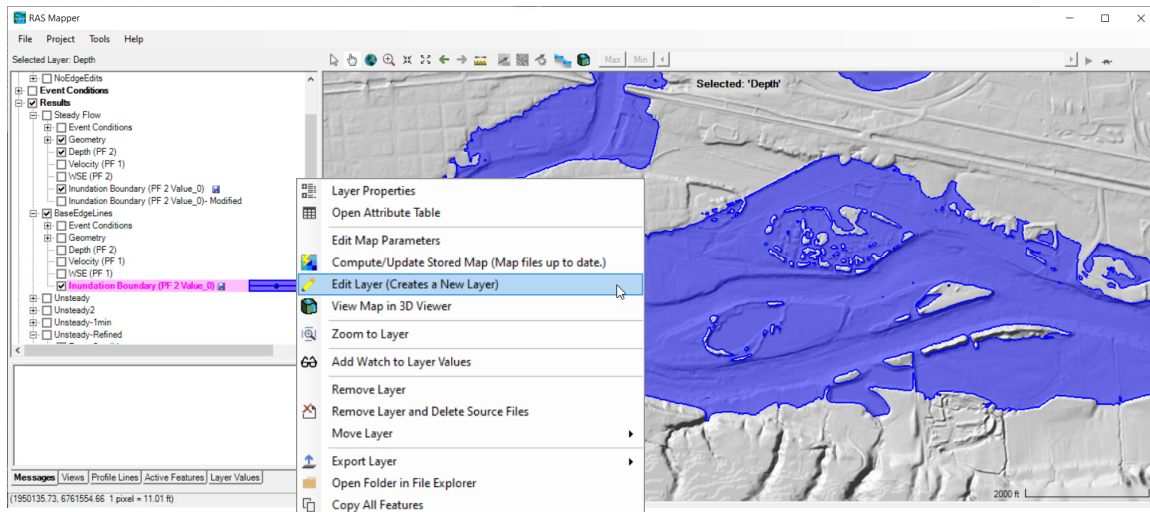
2

Once you have your simulation complete and inundation boundary maps created – you often want to edit/correct issues in the autogenerated boundary. In the past, because it was a multipart polygon, you would have to edit the inundation boundary in a GIS...

We have solved this problem by deconstructing the layer into multiple singlepart layers that the vector editing tools in RAS Mapper can work with.



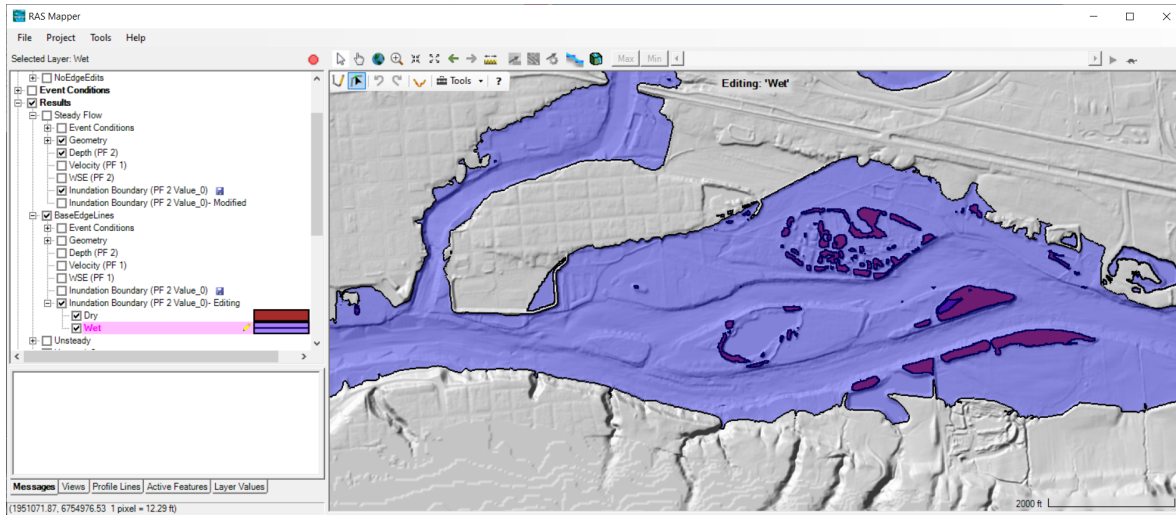
Floodplain Editing



To edit, right click on the boundary layer and choose Edit Layer.



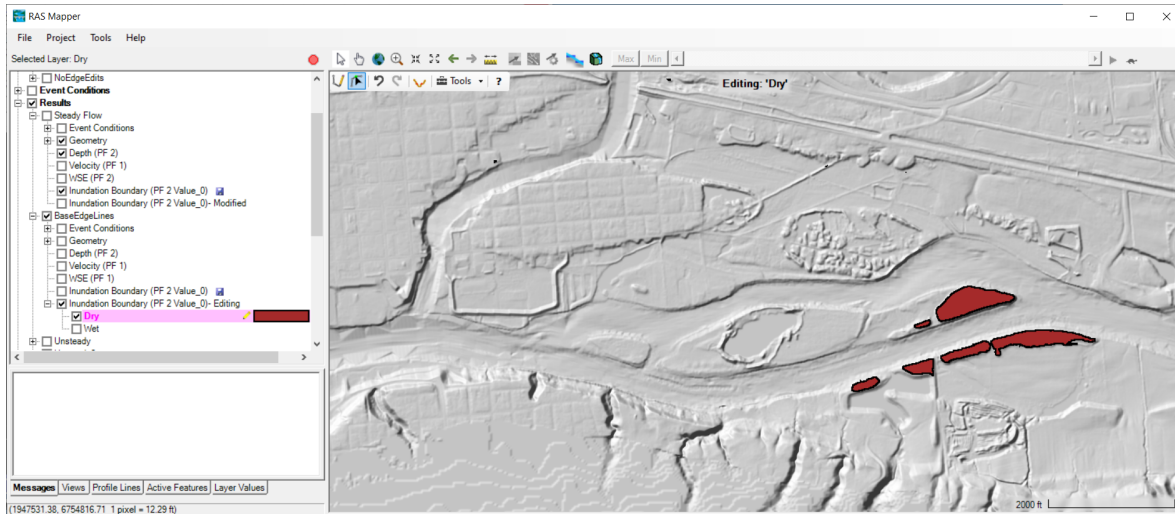
Floodplain Editing



This will create a new group layer with 2 layers – a wet layer (“parts”, what is inundated) and dry layer (“holes”, like islands)



Floodplain Editing - Dry

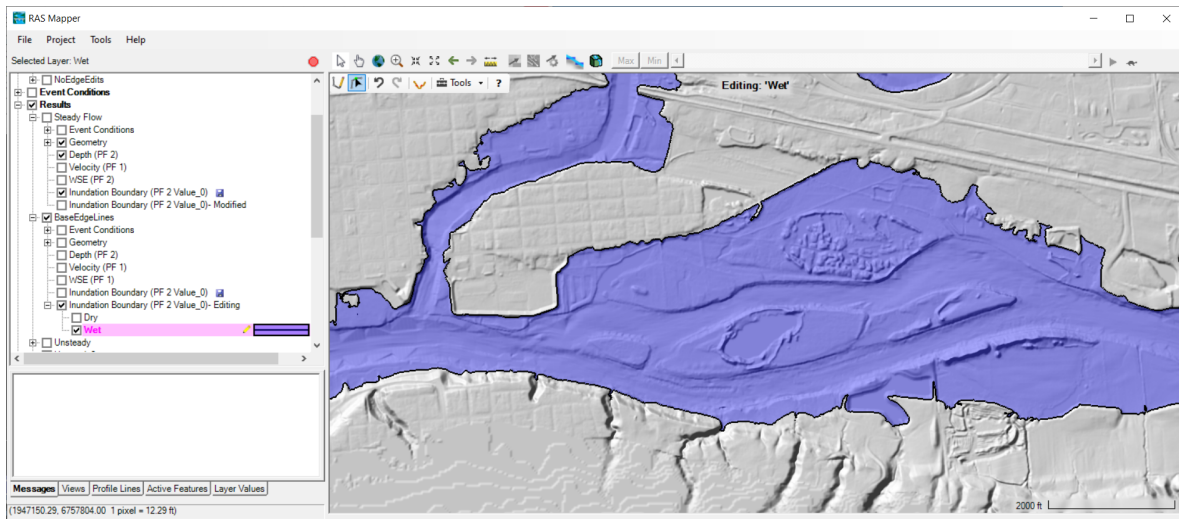


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Each layer can then be edited individually using the editing tools, filtering, polygon selection for deletion, or creation.



Floodplain Editing - Wet

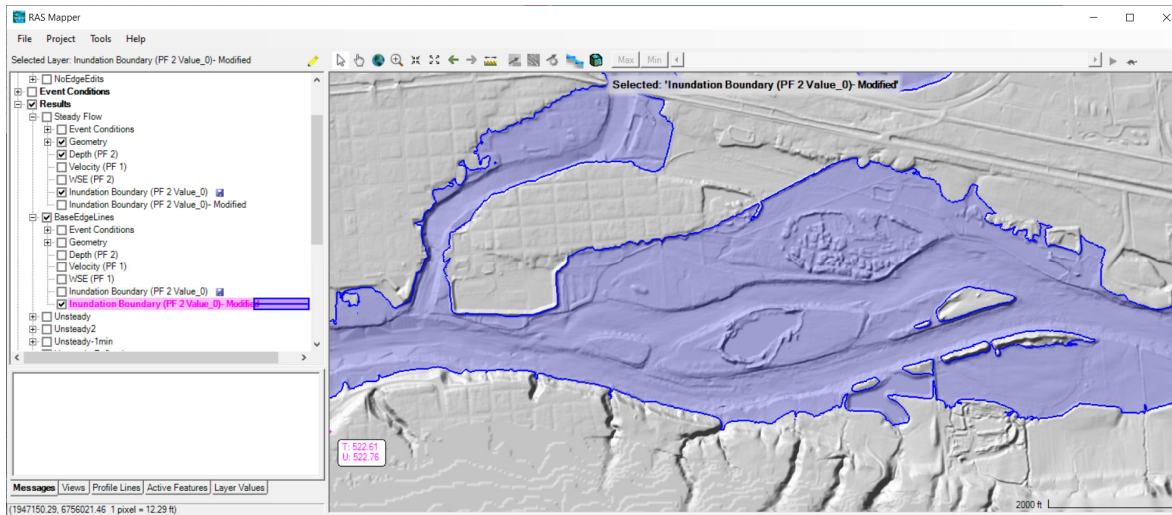


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Erroneous inundated polygons can be deleted....



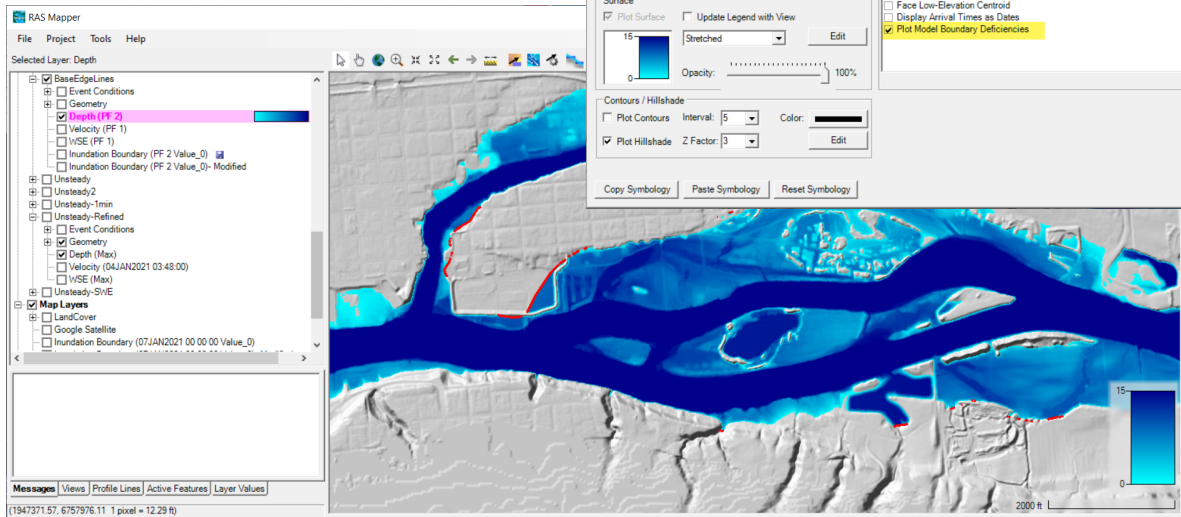
Floodplain Editing - Final



Once complete, stop editing, and a new layer (appended with “Modified”) will be added to the results.



Mapping Deficiencies

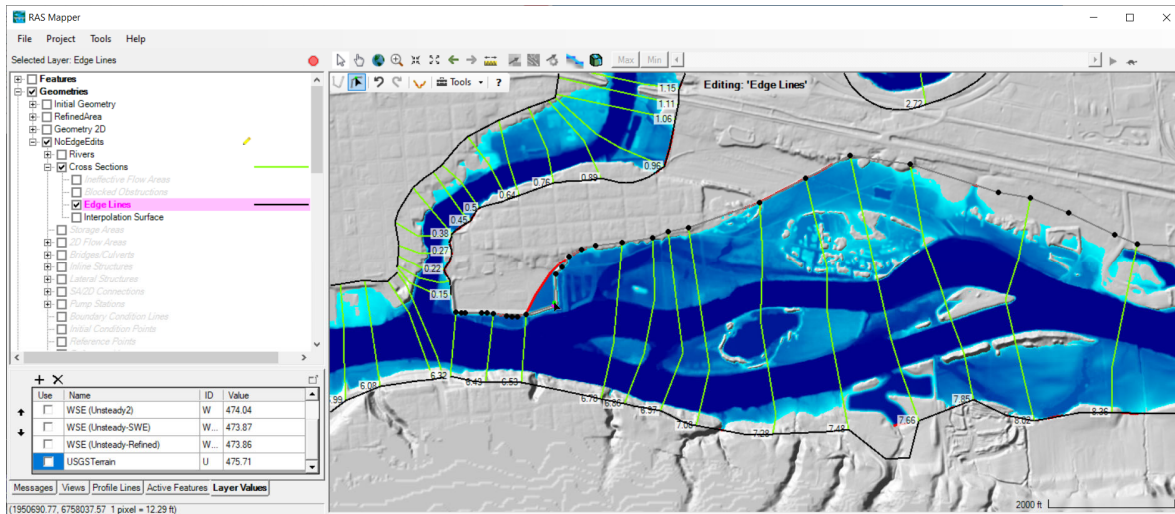


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In order to better improve identifying problems in mapping, we have added the ability to Plot Model Boundary Deficiencies for inundation maps. The option looks for mapping beyond the bounds of the model domain.



Edge Line Editing



We have also added the ability to edit the boundary of the automatically created model domain. This is expressed through the creation of Edge Lines which restrict mapping to what is considered the edge of the model domain.

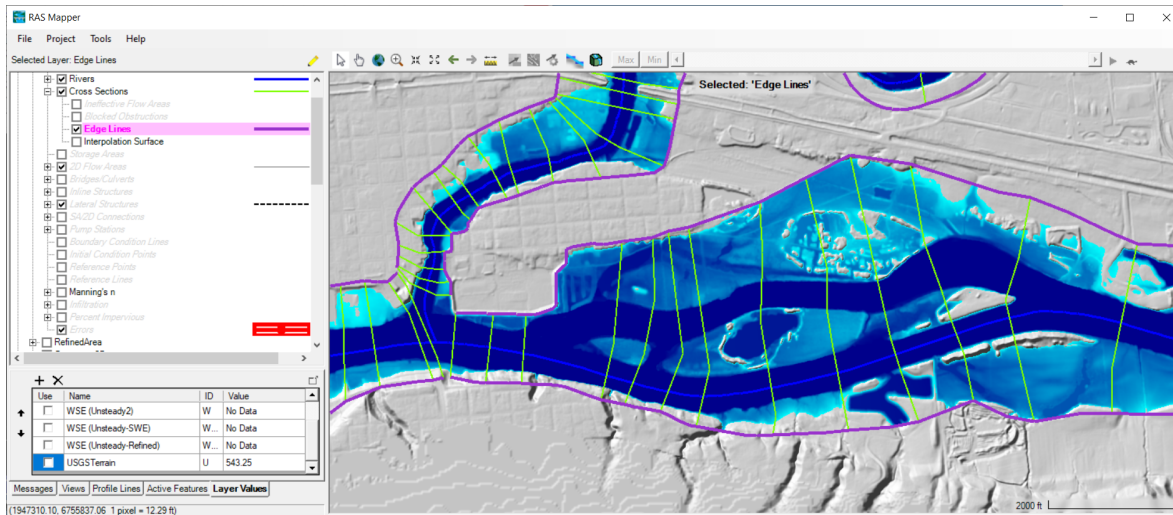
The editing of the Edge Lines allows the you to focus on laying out your cross sections based on river hydraulics rather than worrying about laying out cross sections for mapping.

You can also use the Edge Line editing to include mapping of backwater areas.

Here you can see the editing of the model boundary to exclude an area that should be protected by a levee, but wasn't modeled as part of the cross section geometry.



Edge Lines - Refined



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Refined Edge lines



Edge Lines- Defaults?

The screenshot displays the RAS Mapper interface. On the left, the 'Selected Layer: Edge Lines' is highlighted in the layer list. Below it, a table shows the layer's properties:

Use	Name	ID	Value
<input type="checkbox"/>	WSE (Unsteady2)	W	No Data
<input type="checkbox"/>	WSE (Unsteady-SWE)	W...	No Data
<input type="checkbox"/>	WSE (Unsteady-Refined)	W...	No Data
<input checked="" type="checkbox"/>	USGS Terrain	U	490.37

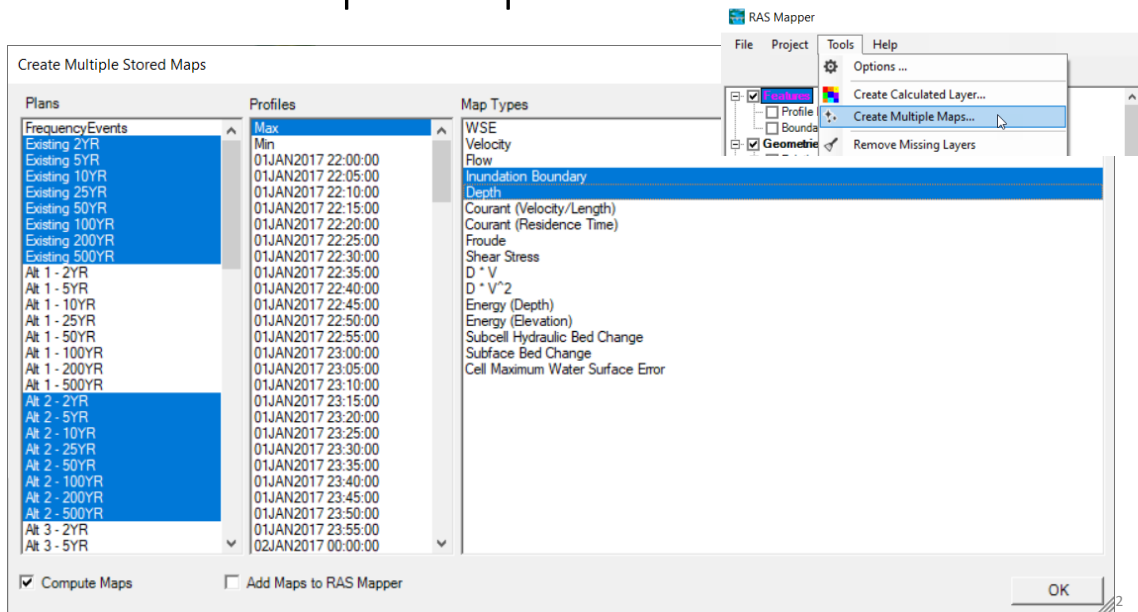
On the right, the 'Edge Lines - Layer Properties (Initial Geometry)' dialog box is open. The 'Additional Options' section has the 'Plot Default Edge Lines' checkbox checked. The 'Contours / Hillshade' section has 'Plot Contours' checked with an interval of 5 and 'Plot Hillshade' checked with a Z Factor of 1. The map view shows a river network with various colored lines representing different edge types.

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Option to plot the DEFAULT Edge Lines to understand if the previous modeler may have “cheated” or changed the model domain...



Create Multiple Maps



I'm very excited for the option in RAS to create Multiple Maps. This is intended to be used after you have completed all of your model runs. And by completed, I mean run, analyzed, and refined model runs.

Once your modeling is complete, you can set up to generate stored maps to disk to build a library of maps for visualization or further analysis.



Model Archive



Zip Plan(s) or Archive Project

Base RAS Input Files
 Current Plan
 All Plans
 Selected Plans (1/82) Select Plans ...

GIS Input Files
 Terrain Data
 Classification Data

Computed Files
 Post Process Output (*.0xx)
 Mapping Results (*.pox.hdf)
 Stored Maps (*.tif, *.shp)

Filename: C:\Users\j0heccta\Documents\Projects_NAB\RAS Model Alts\WB_2D.p08.zip Selected = 550,994 KB

Plan	Source	Folder	Filename	Size (KB)
1			WB_2D.prj	7
2	Project	Project	WB_2D.rasmap	423
3			WB_2D.dss	531,961
4		C:\Users\j0heccta\Documents\Projects_NAB\RAS Model Alts\	WB_2D.p08	6
5			WB_2D.dss	531,961
6			WB_2D.u06	4
7			WB_2D.u06.hdf	3
8		C:\Users\j0heccta\Documents\Projects_NAB\RAS Model Alts\DSS_Inflows\	100YR24HR.dss	2,666
9	Base		WB_2D.g02	1,402
10			WB_2D.g02.hdf	1,125
11		C:\Users\j0heccta\Documents\Projects_NAB\RAS Model Alts\	WB_2D.c02	801
12			WB_2D.x02	1,454
13			WB_2D.rasmap	423
14	Existing 100YR	C:\Users\j0heccta\Documents\Projects_NAB\RAS Model\	projection.prj	1
15			Terrain.hdf	652
16		C:\Users\j0heccta\Documents\Projects_NAB\RAS Model Alts\Terrain\	Terrain.vrt	3
17			Terrain.wattssft.tif	10,347
18		C:\Users\j0heccta\Documents\Projects_NAB\RAS Model\Landuse\	Mannings_n.hdf	11
19			Mannings_n.tif	131
20	Post Process	C:\Users\j0heccta\Documents\Projects_NAB\RAS Model Alts\	WB_2D.008	11,563
21	Mapping Results		WB_2D.p08.hdf	21,798
22			Depth (Max).Terrain.wattssft.tif	2,947
23	Stored Maps	C:\Users\j0heccta\Documents\Projects_NAB\RAS Model Alts\Existing 100YR\	Depth (Max).vrt	3
24			Inundation Boundary (Max Value_0).dbf	1

Copy Filenames to Clipboard Create Zip File Close

We have also added more capabilities to Archive you model once completed. The model archive tool allows you to select specific plans, supporting data, results files, and stored maps. It is intended to help you zip up everything you need to archive you model for future runs or provide to a colleague (easier that zipping files yourself)...