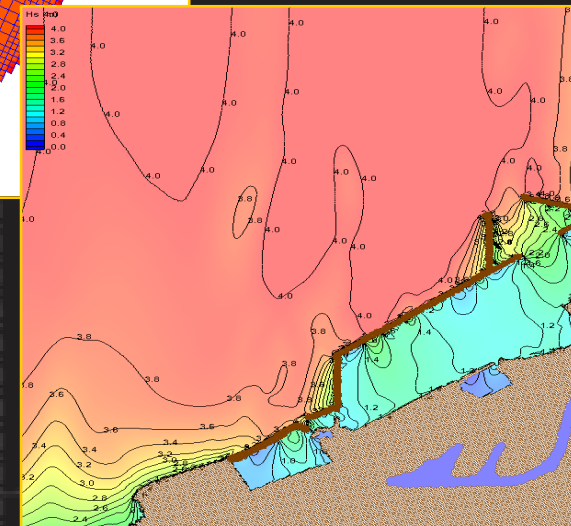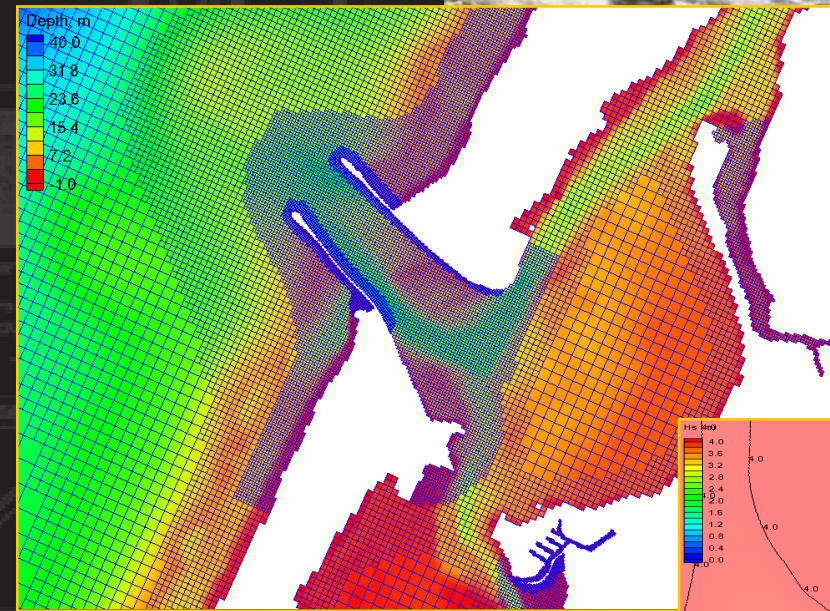# CMS PREPARATION WALKTHROUGH

Mitchell Brown
Liz Holzenthal
Honghai Li

Coastal & Hydraulics Laboratory
US Army Engineer Research and Development
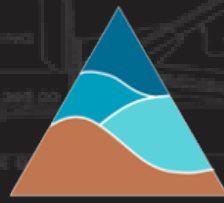Center (ERDC)

U.S. ARMY

US Army Corps
of Engineers®
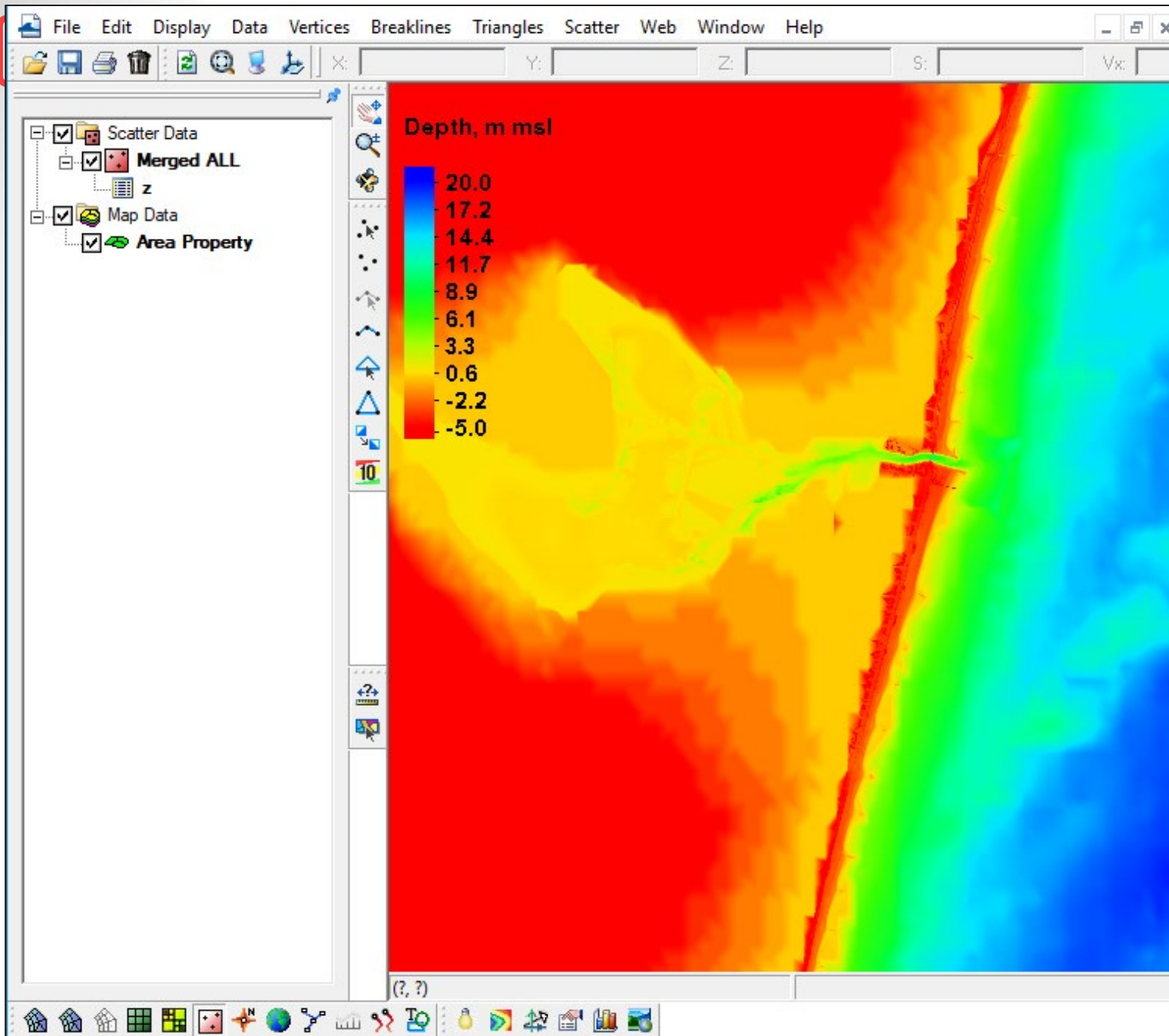
ERDC
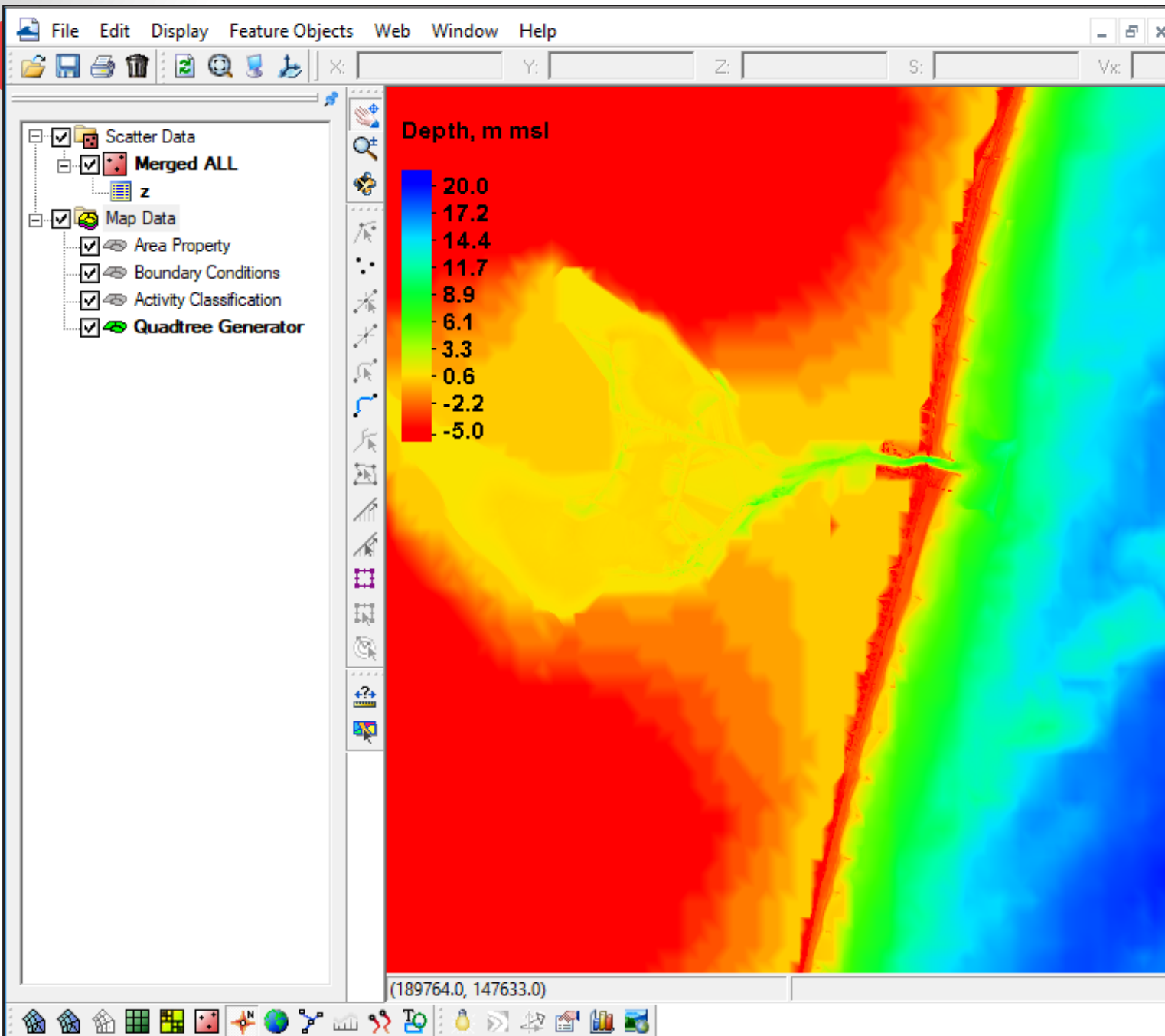ENGINEER RESEARCH & DEVELOPMENT CENTER

CIRP

CREATING A CMS PROJECT

- Load Bathymetry Scatterset/SMS Project
- Develop Grid Domain
- Activity Dataset (Land/Water)

Old survey datasets in project are not necessary once the final merged bathymetry is set. Others can be removed from project.
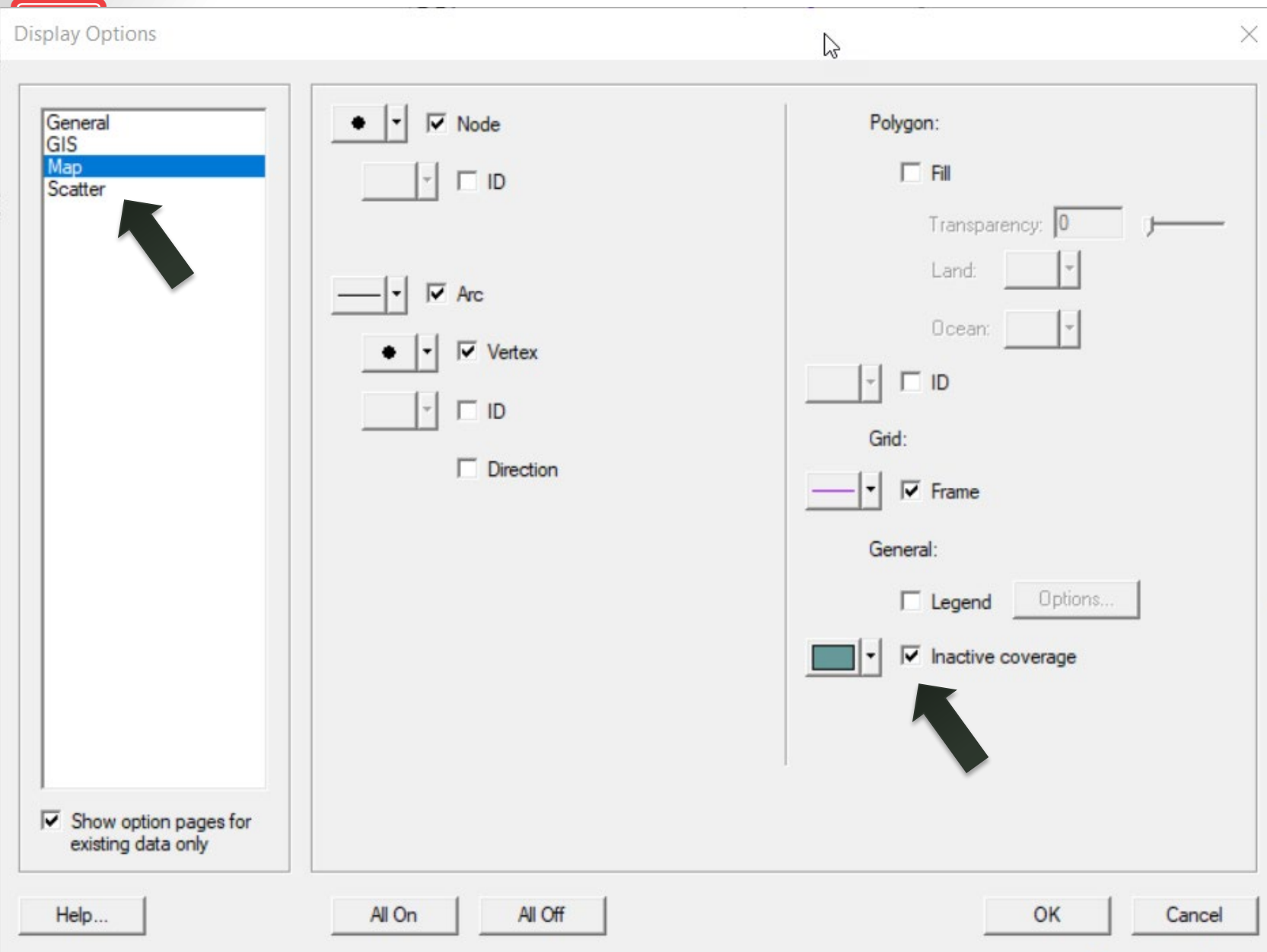
Add New Coverages for CMS
- Models | CMS-Flow | Boundary Conditions
- Generic | Activity Classification *(set domain as active or inactive)*

Depending on whether you want to use a Quadtree or Cartesian grid, choose one of the following:
- Generic | Quadtree Generator
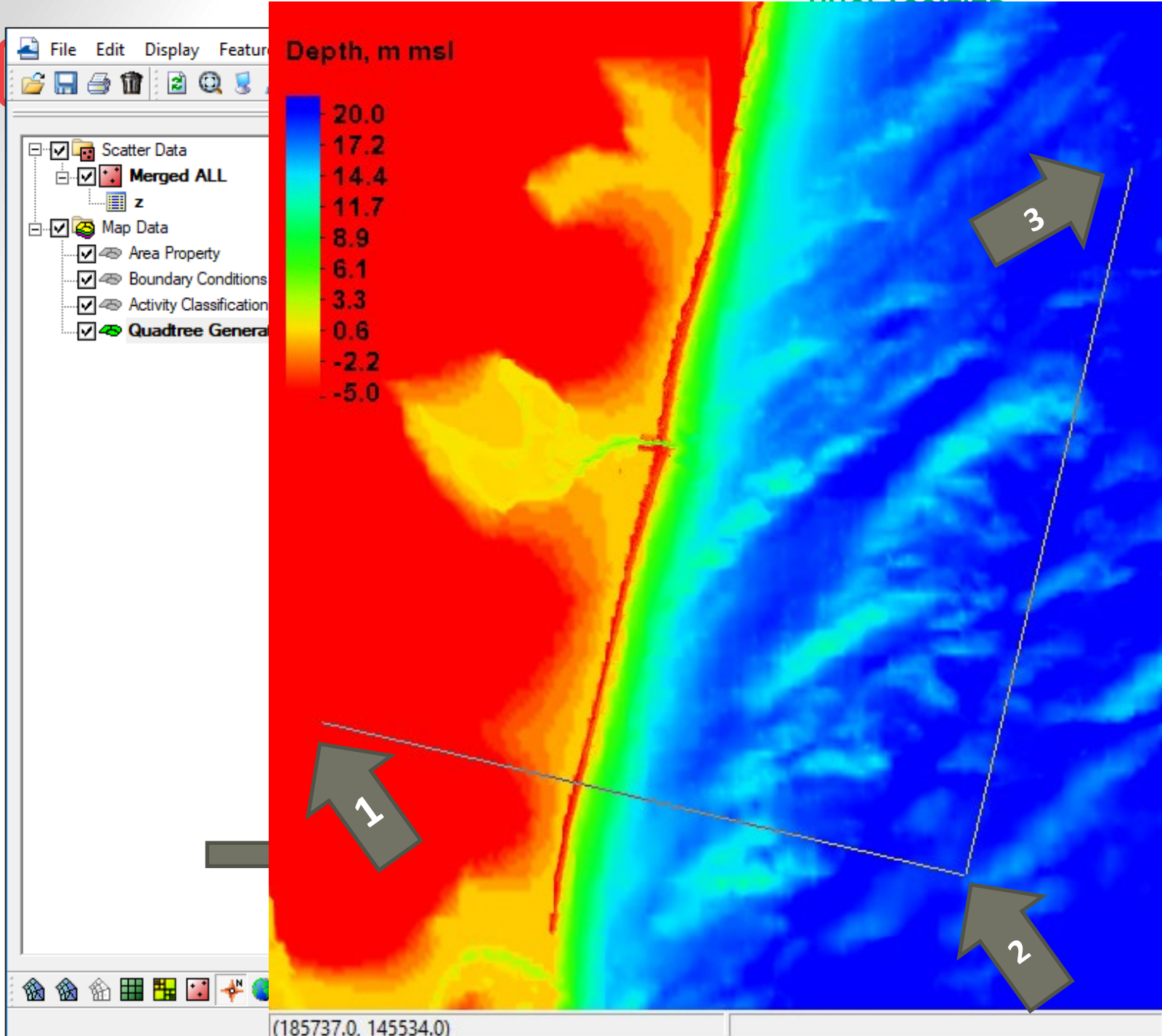- Generic | CGrid Generator

4

Since there are several coverages that will be used from the Map Module, we will want to see some of the information from other coverages while we work on some others.

- To enable this, choose Display | Display Options
- Click Map from the options on the left, then place a check in the box named "Inactive coverage" from the options on the right.
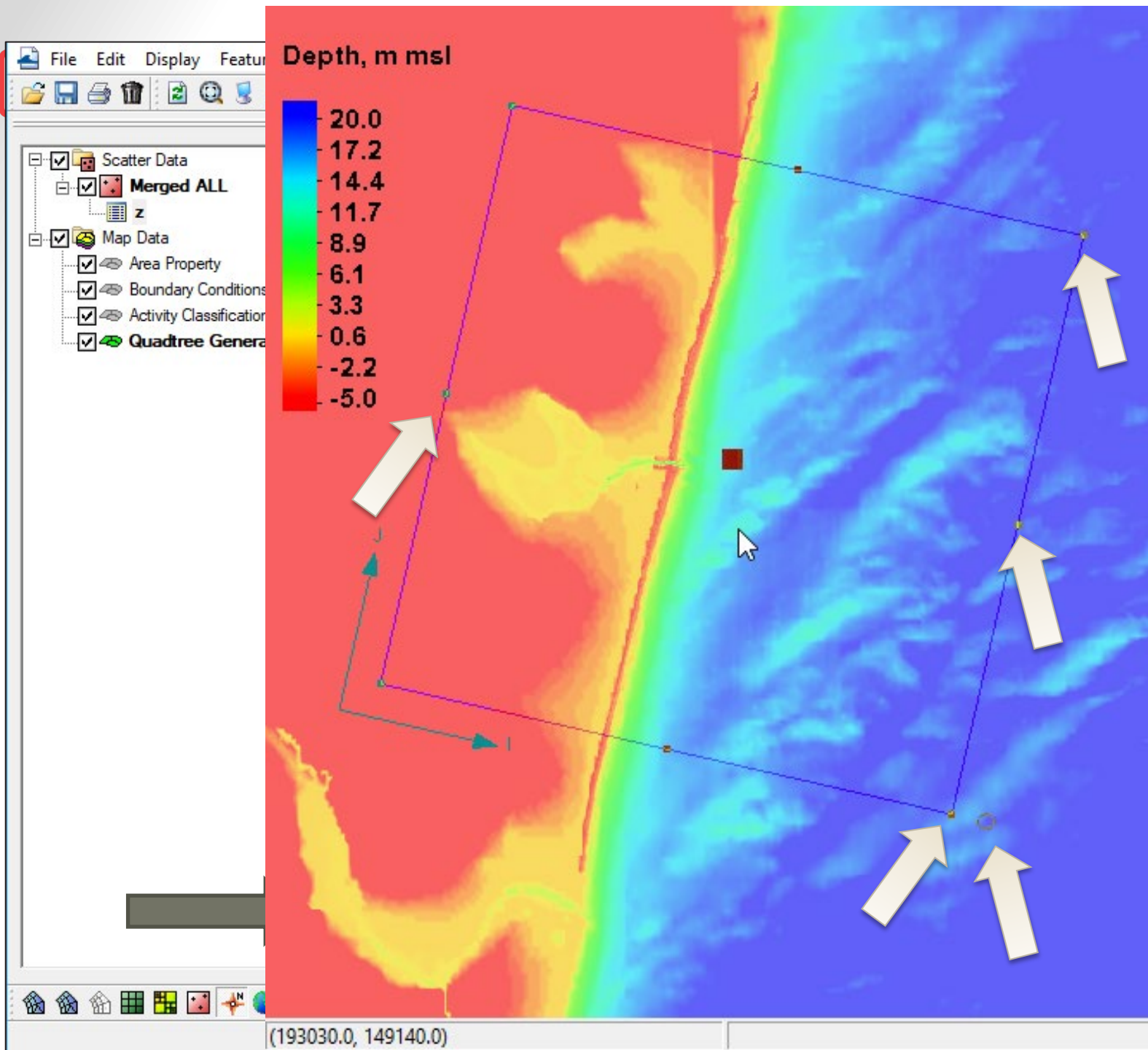
Display Options shortcut

- Select Quadtree/CGrid Generator Coverage
- Select Create Grid Frame tool

- Define domain of CMS grid by clicking three points (order or extreme accuracy is not necessary)

- Grid Frame is built but may be partially hidden from view by filled display contours.
- Making contours semi-transparent can help.

- Click Select Grid Frame tool

- Click frame selector
- You can now resize with corner or edge center points
- You can rotate around IJ Axis with handle

- Make sure to SAVE frequently as you go along.

- Double Clicking the Grid Frame selector will bring up a property dialog.
- After experimenting with the handles and rotating, enter the values as shown in the top section only.

- This defines the exact origin, I and J extents and rotation angle to our desired area.

- We will come back later to add resolution for telescoping or Cartesian grids.

Next, we define the Land/Water interface with the Activity Classification coverage.
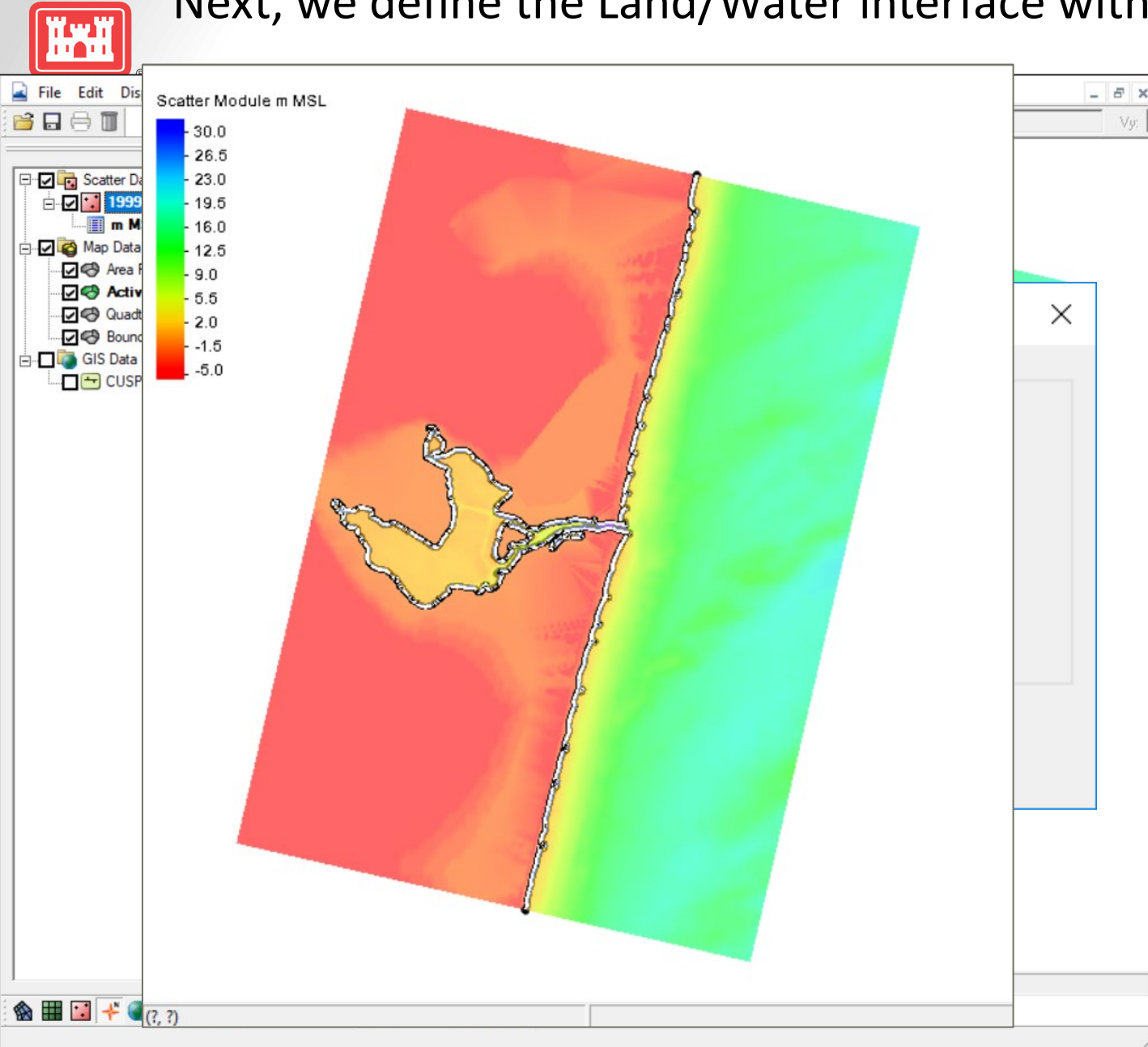

- Click the *Activity Classification* coverage in the Data Tree

- Right Click your final bathymetry dataset in the scatter module.
- Choose "Convert | Scatter Contours → Map"

- Destination coverage should be "Activity Classification"
- Elevation = 0 m
- Spacing = 10 m

- Note: Using 0.0 is just an example. Realistically, you would consider the tidal range and other factors when determining the land/water interface.
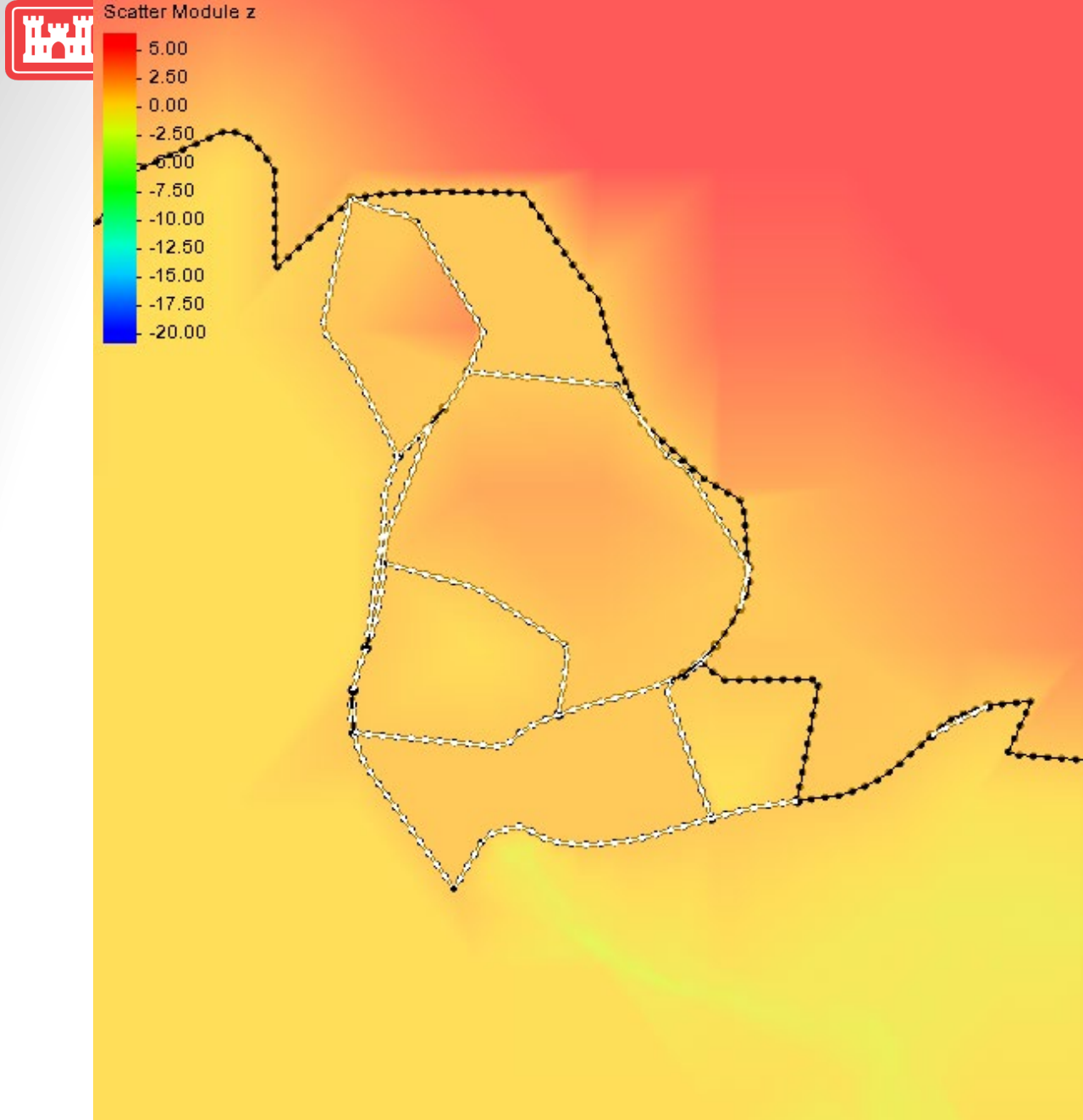
- Usually after the previous steps, you will need to clean up excess feature arcs.
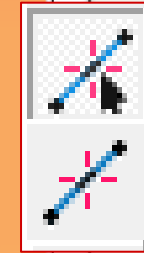- Click the Feature Arc selection tool.

- Click the first arc you wish to remove, then click subsequent arcs while holding the Shift key down to multi-select and delete.
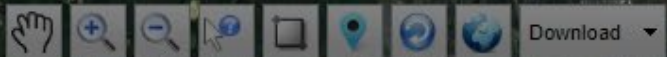- Continue for your entire domain area.

- To pan your screen while selecting, hold the F2 key down and drag with your mouse, then release and keep selecting.
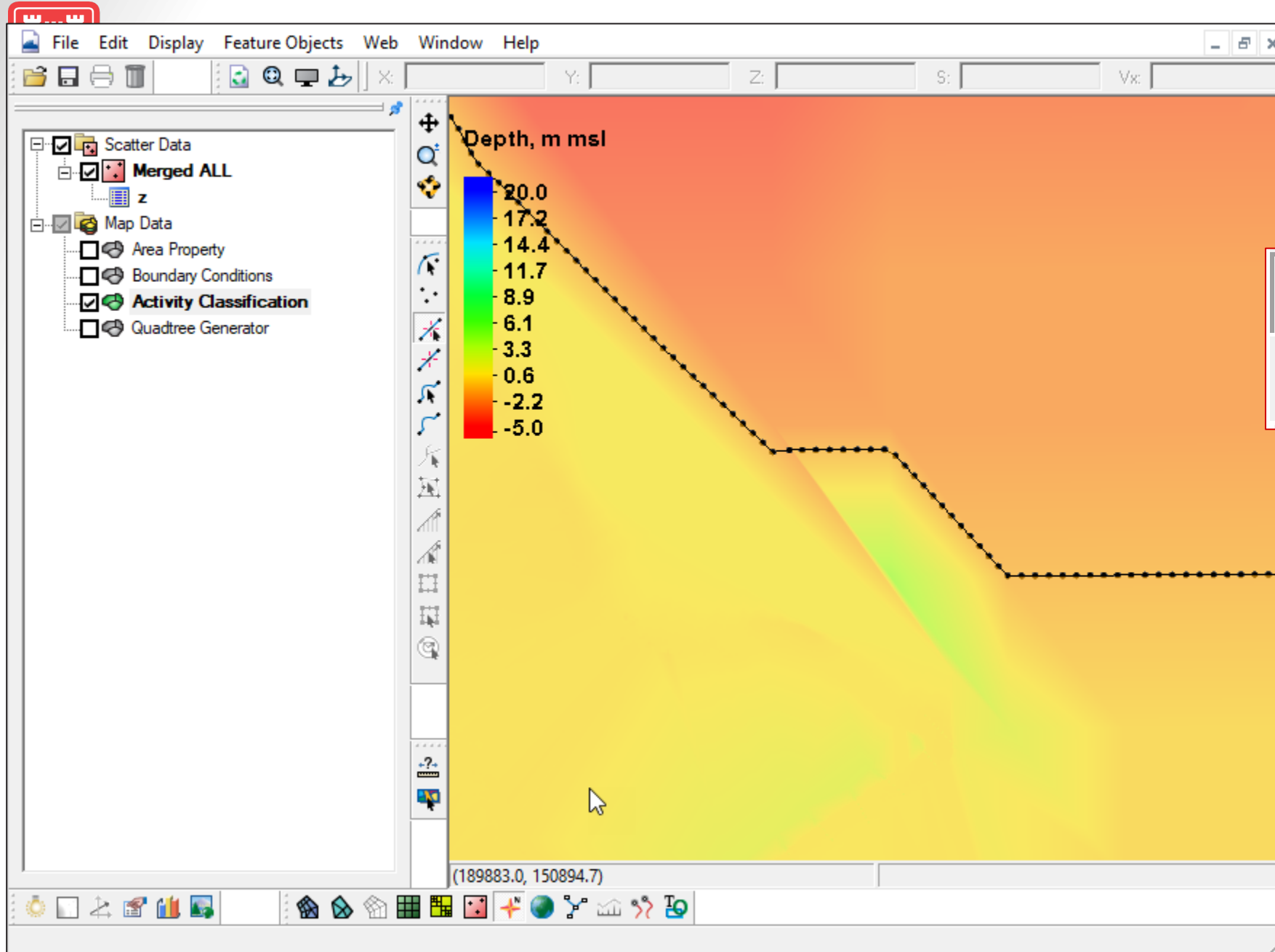
- If you want to remove some sharp angles or other points from the boundary arc, select feature vertices with the tool.

- Once selected, hit the delete key to simplify the feature arc.

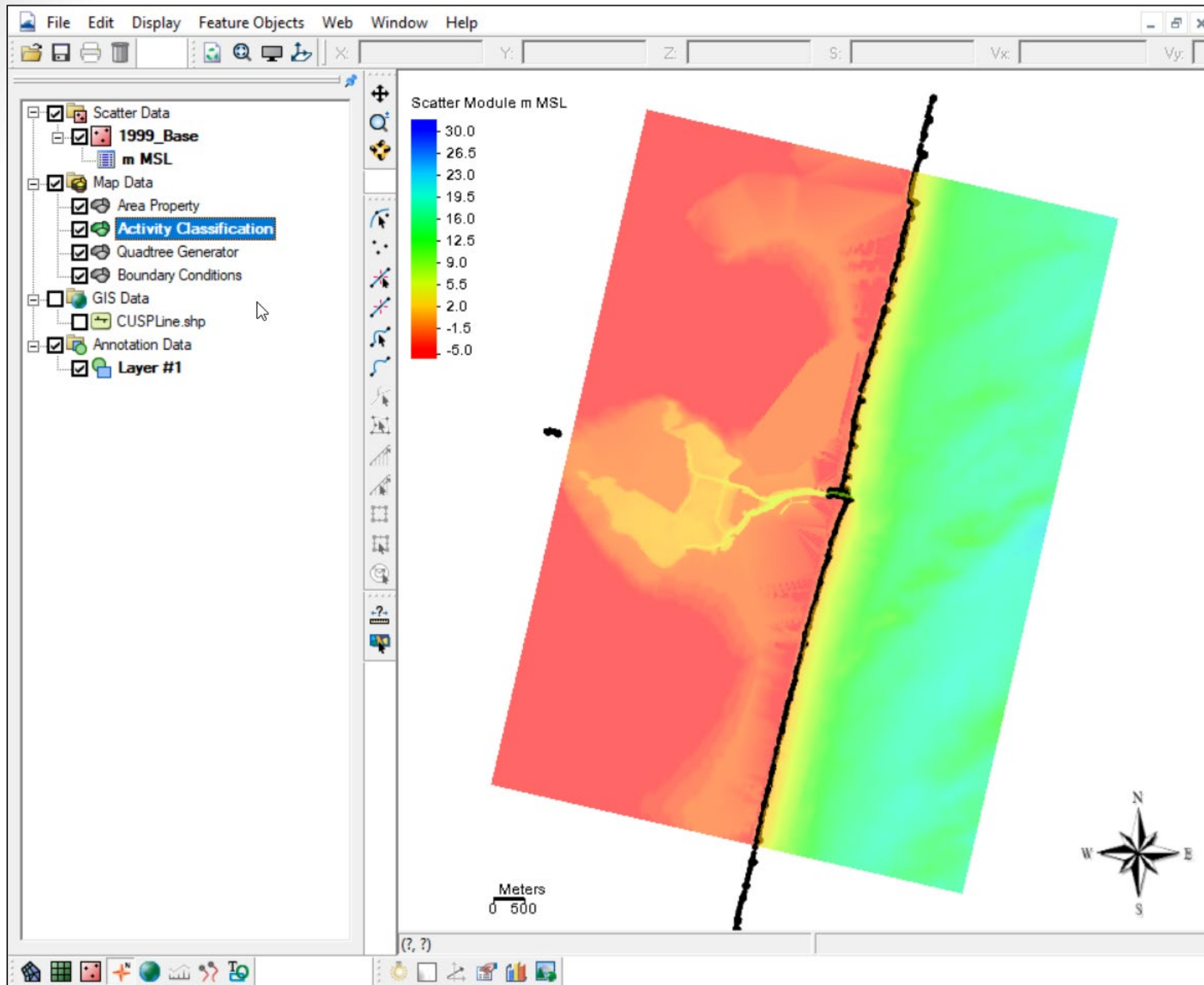Additional way to bring in a shoreline from a Coastline database

The ArcGIS shape file can be directly loaded into SMS for part of the coastline arcs.
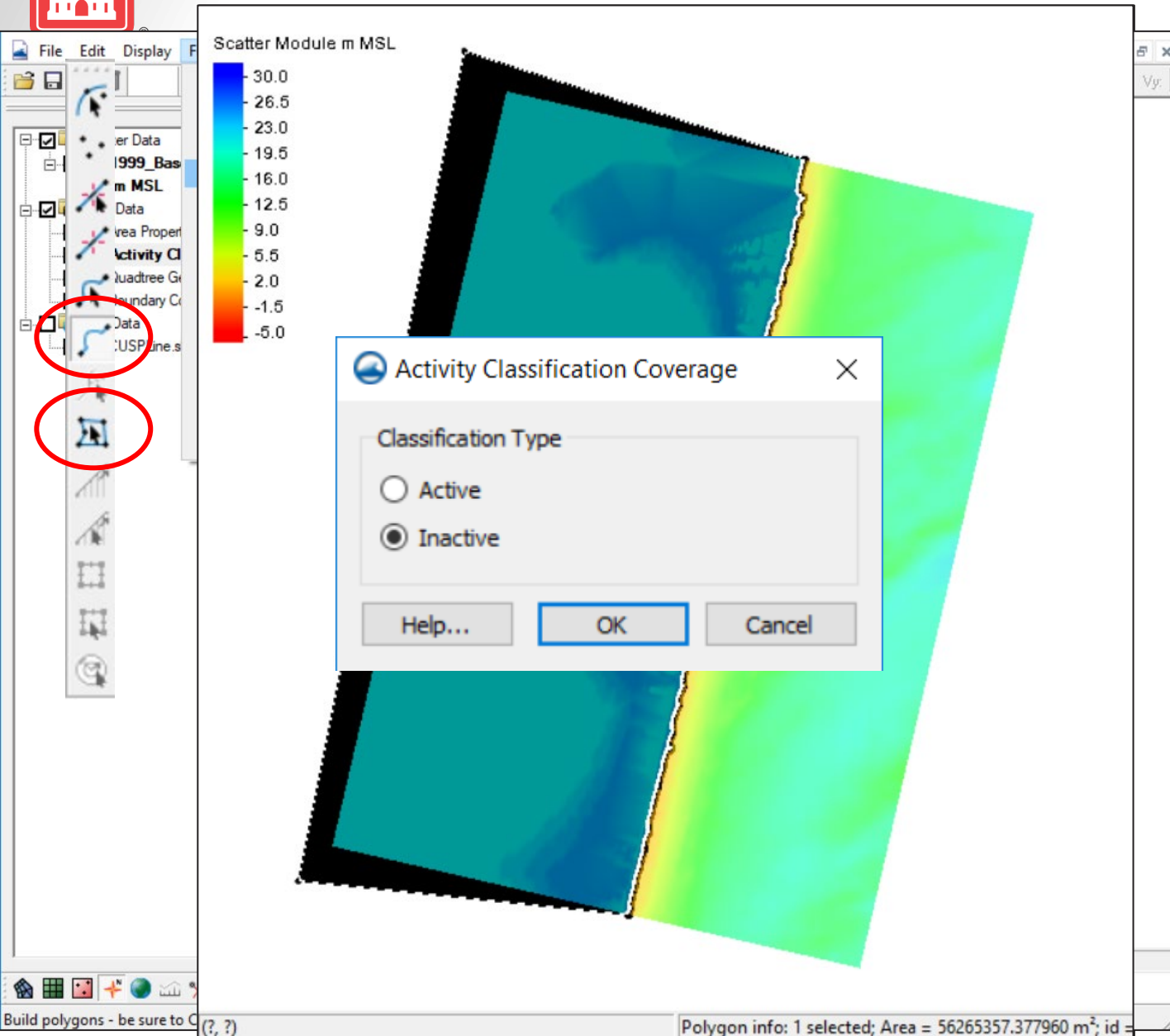
If you have an elevation dataset in the shape file to match with the coastline, it can be selected.

We will just click Finish

This is an older set of files without the full bay area. The files included in the HandsOn are complete.

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Create a polygon with coastlines to define the inactive ("land", non-computational) area.

- With the *Activity Classification* coverage selected and active.

- Choose the Create arc tool and enclose the polygon using the existing end points of the coastline arc.

- Choose "Feature Objects | Build Polygons"
- Click the Select Polygon tool and click the land polygon.
- Right-click, then choose "Attributes" and make sure Inactive is specified for perpetually dry areas.
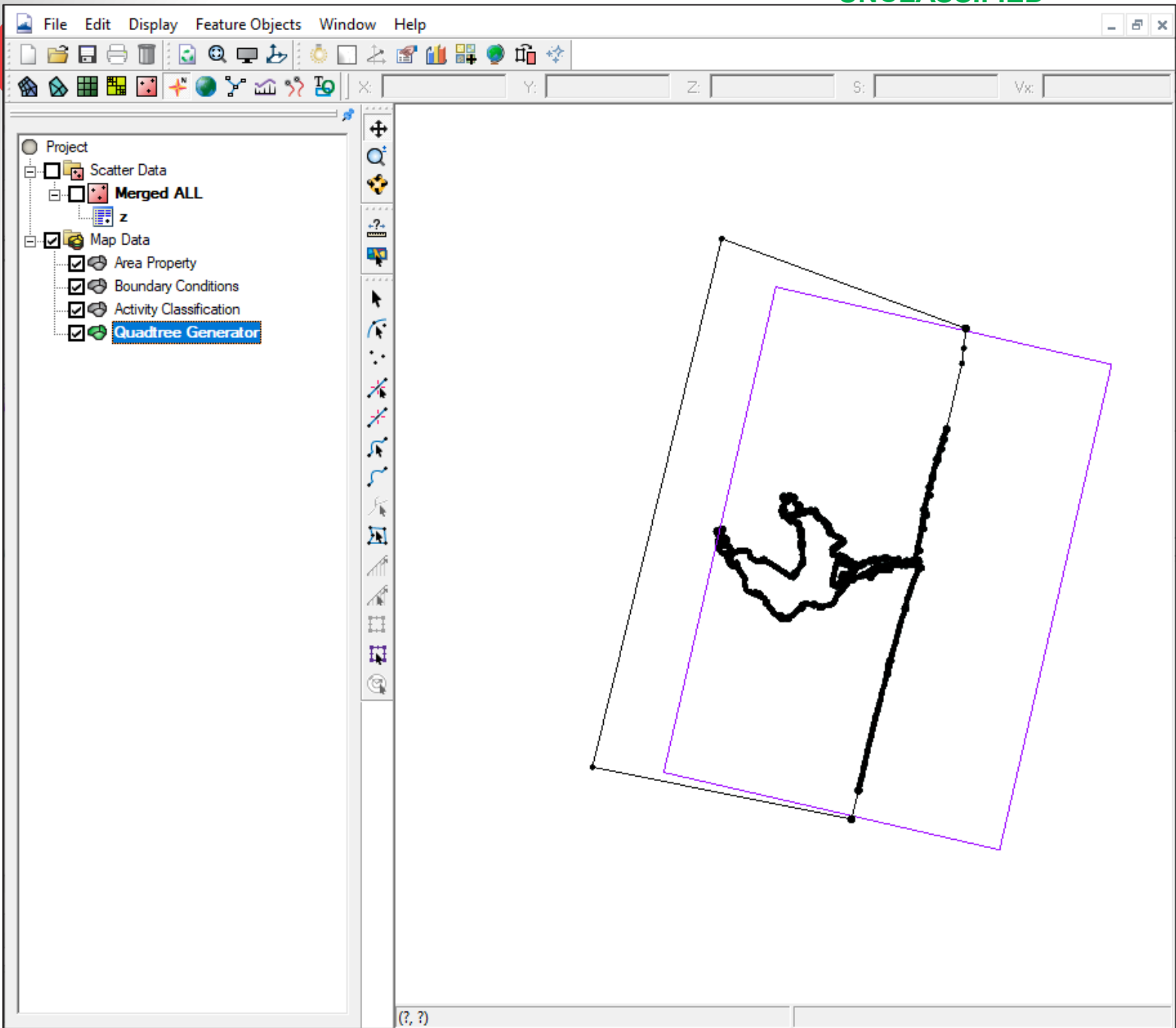
- Nothing has to be exact right now.
- All of this will show up better once the Quadtree or Cartesian grid has been constructed.

- Be sure and save your project. This project has been saved in the "Workshop/Day2/2-AfterCoastline" Folder as "Base.sms" for use in future steps.

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QUESTIONS?

CMS Team

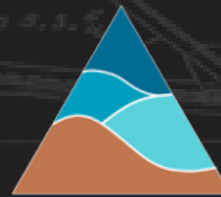|	
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