New DSM2 Cross Sections Based on DEM

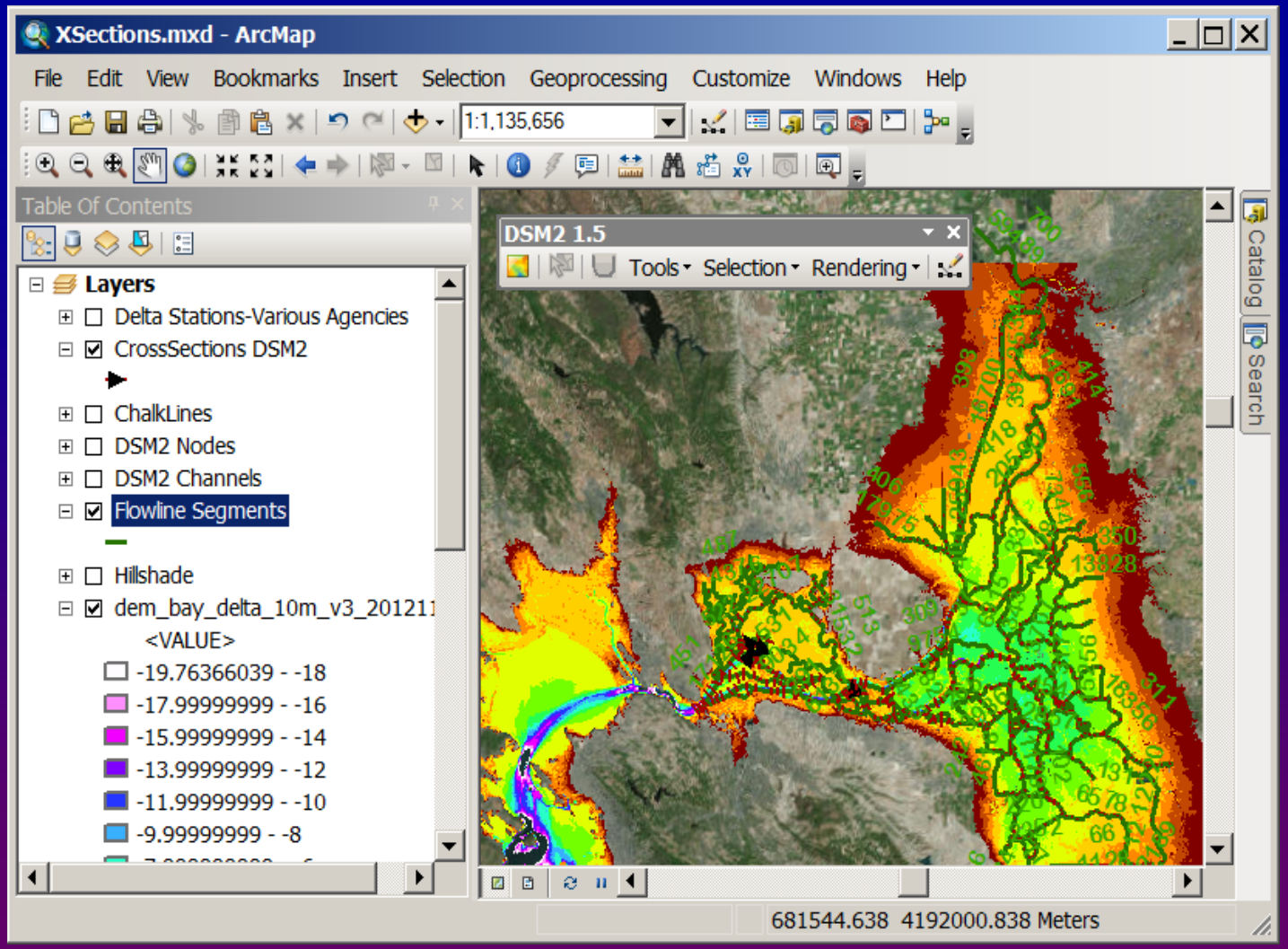
February 3, 2016

Lianwu Liu, Nicky Sandhu

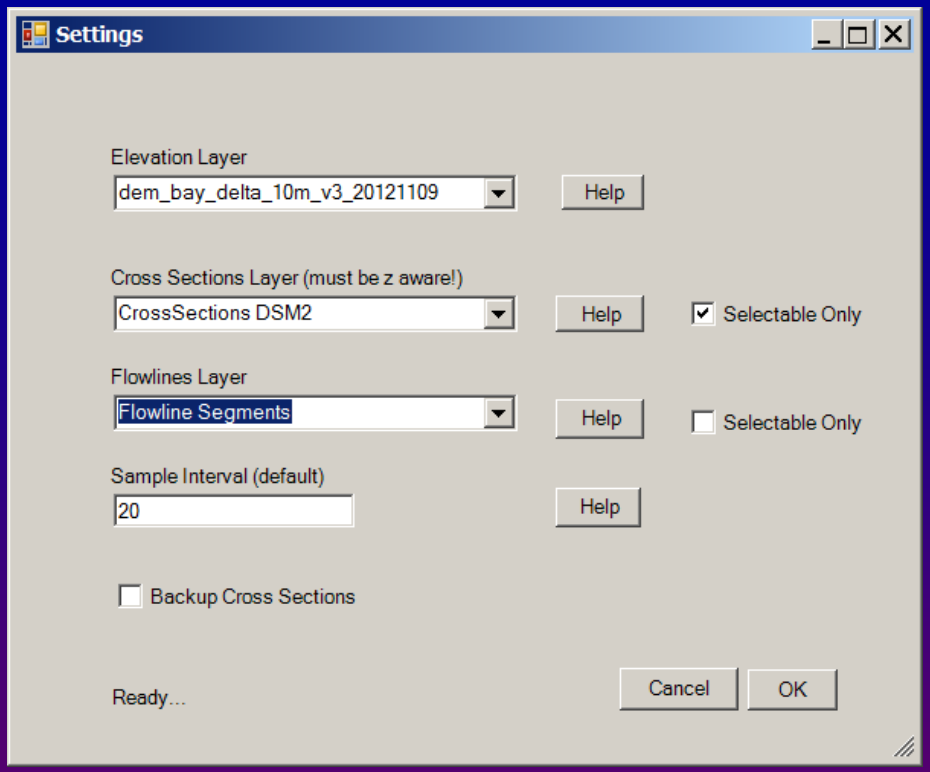
Delta Modeling Section

California Department of Water Resources

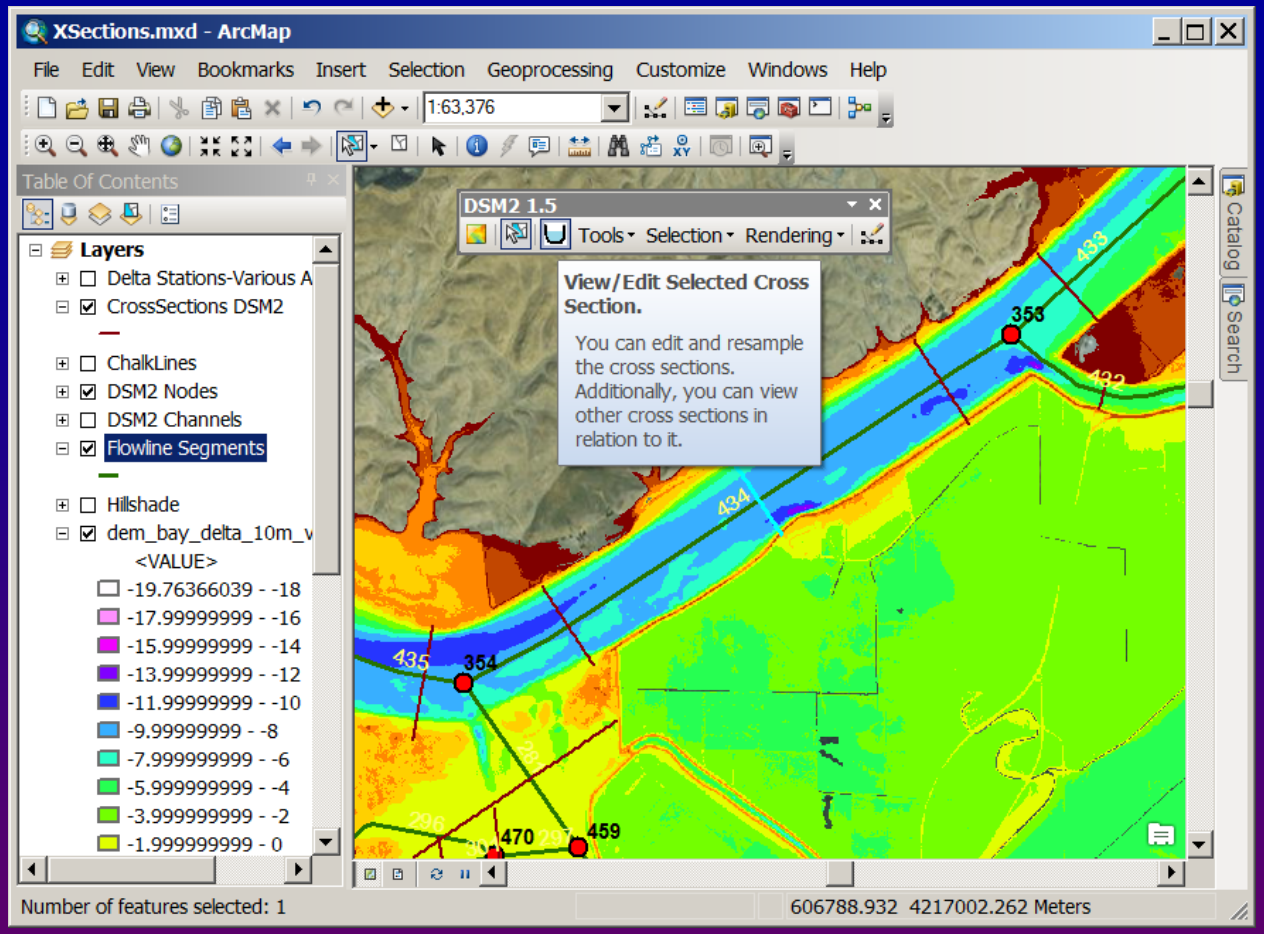
ArcMap Cross Section Tool



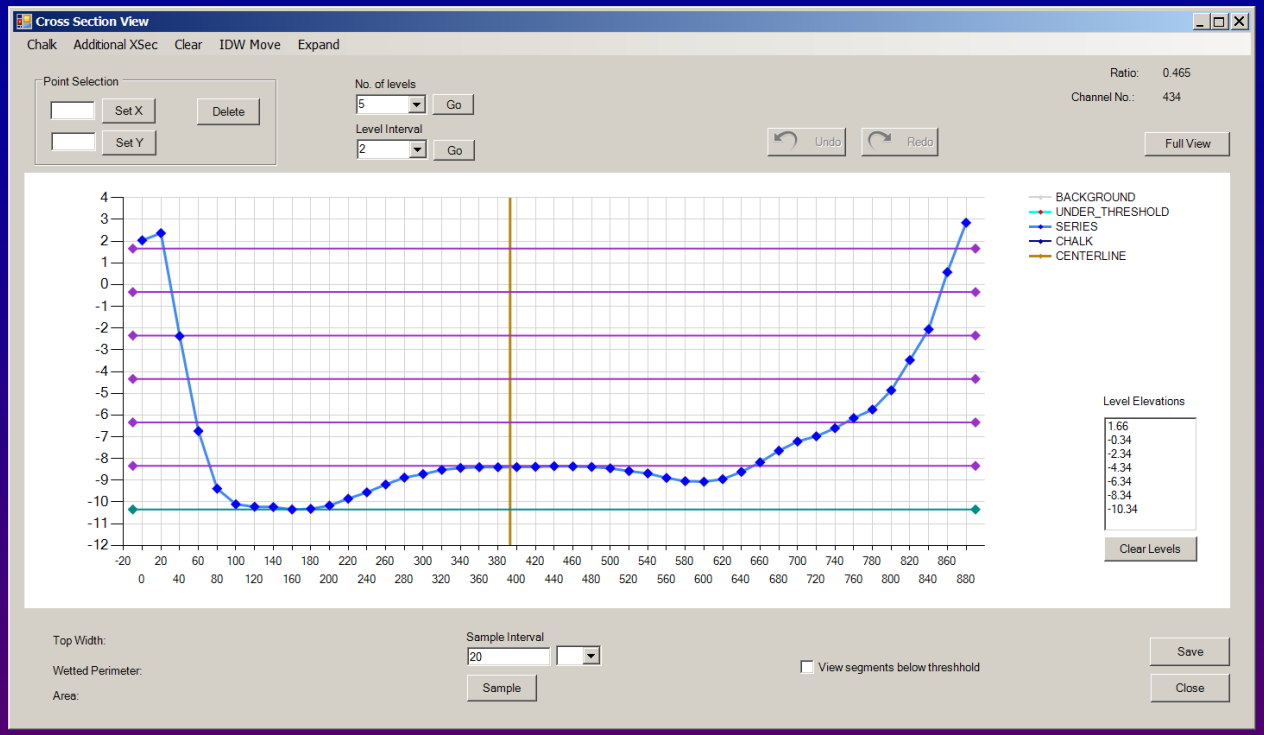
Set Layers and Parameters



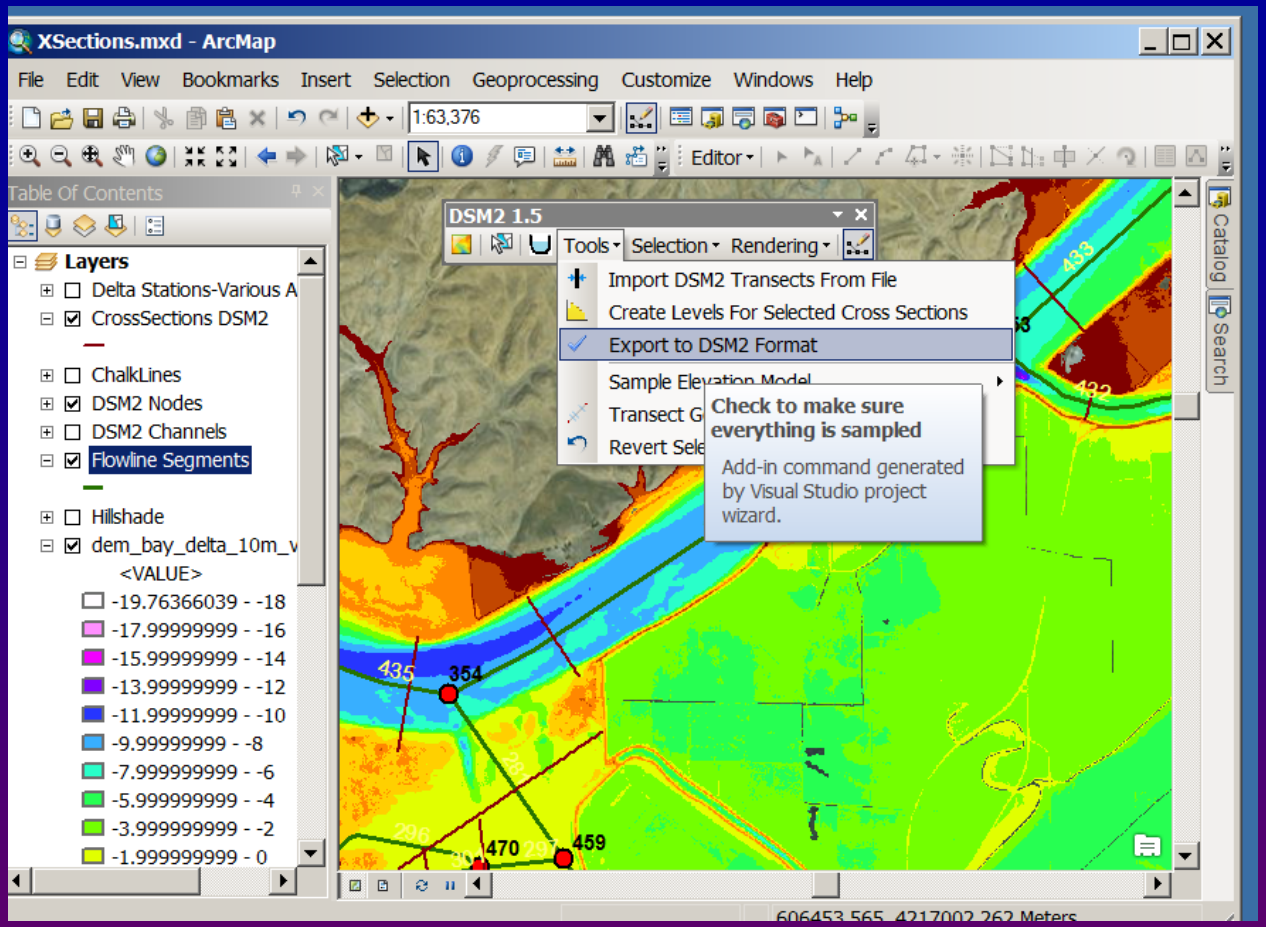
View/Edit Cross Section



Sample Profile



Batch Tools


XSections.mxd - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
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CrossSections DSM2
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<VALUE>
-19.76366039 - -18
-17.99999999 - -16
-15.99999999 - -14
-13.99999999 - -12
-11.99999999 - -10
-9.99999999 - -8
-7.999999999 - -6
-5.999999999 - -4
-3.999999999 - -2
-1.999999999 - 0
DSM2 1.5
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Check to make sure everything is sampled
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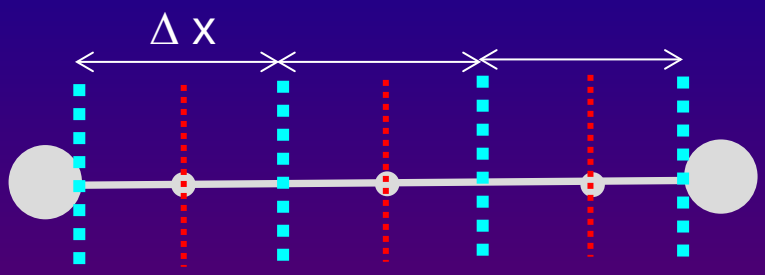
Computational Grid

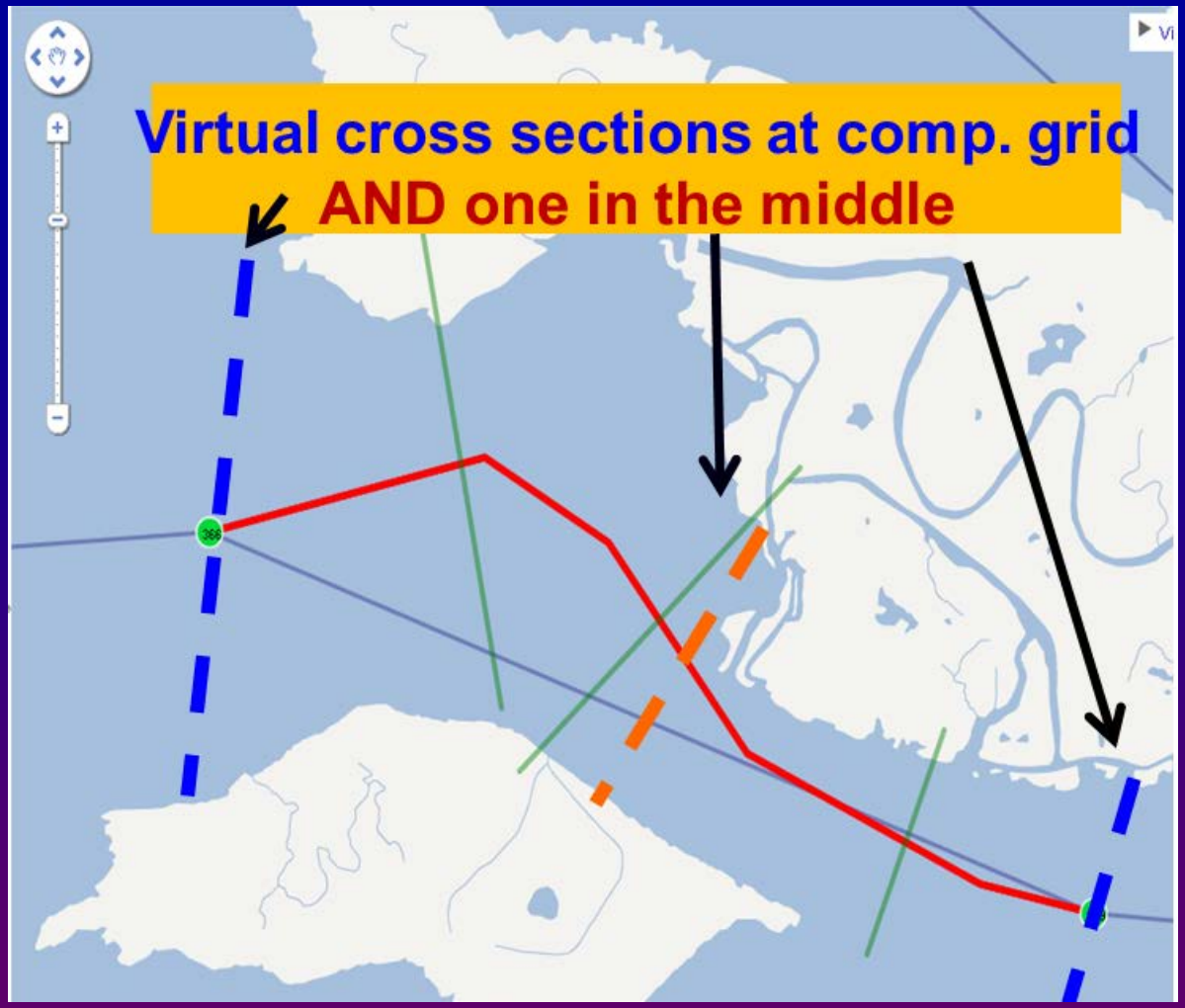
User specifies spatial grid ΔX (5000 ft) . Actual ΔX for each channel depends on the channel length

- e.g. a channel 16,500 feet, ΔX will be 5,500 feet
-



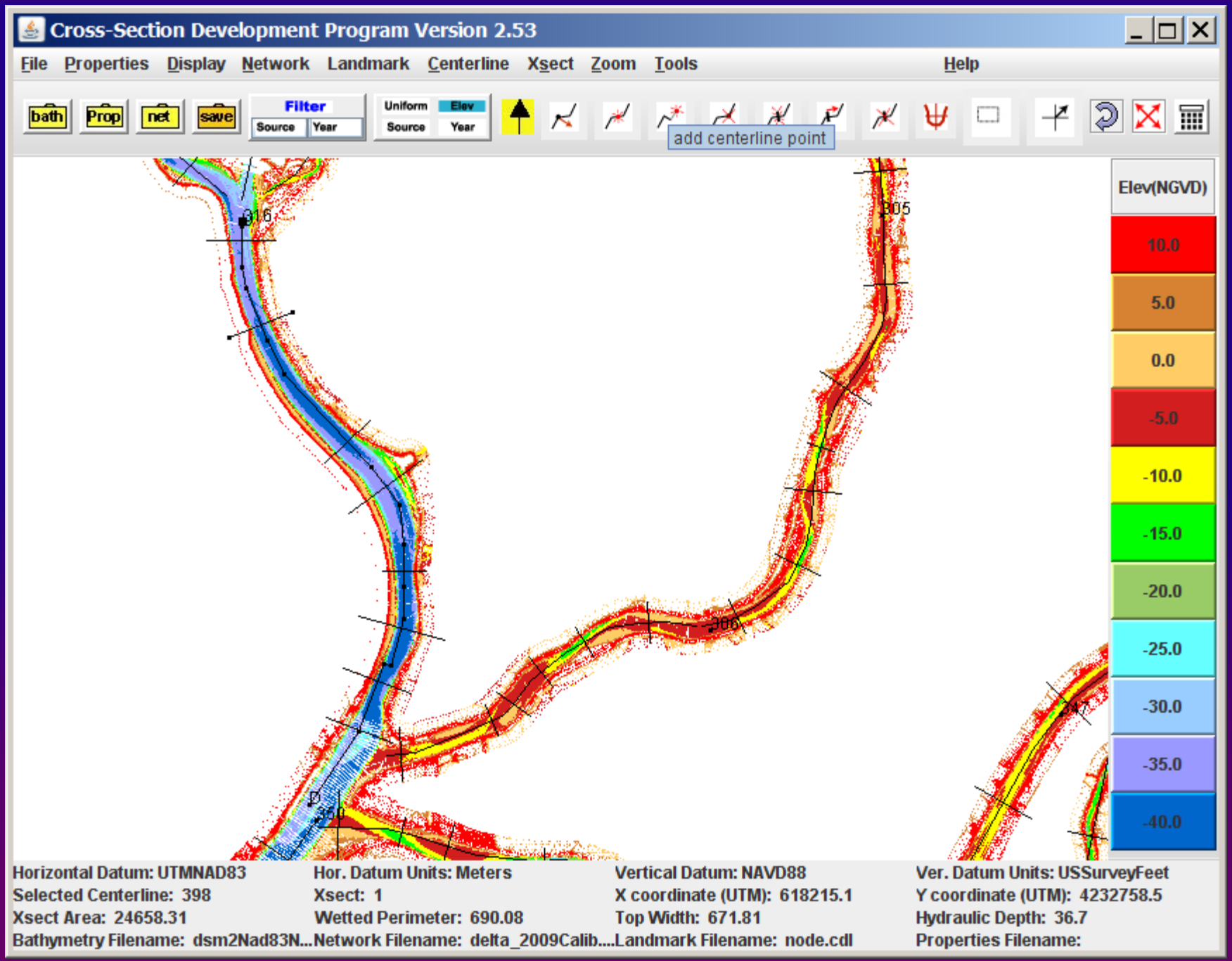
Virtual Cross Sections

Computational Grid & Virtual Cross Sections



Designing Cross Sections

- Ideally, cross sections should capture the volume, conveyance, and hydraulic control of the channel.
- In practice, it takes quite some consideration trying to put the cross sections in the best places, while keep in mind how DSM2 interpolate cross sections.
- We propose to put cross sections at all computational grid locations, with adjustments where necessary.


Cross-Section Development Program Version 2.53
File Properties Display Network Landmark Centerline Xsect Zoom Tools Help
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Hor. Datum Units: Meters
Vertical Datum: NAVD88
Ver. Datum Units: USSurveyFeet
Selected Centerline: 398
Xsect: 1
X coordinate (UTM): 618215.1
Y coordinate (UTM): 4232758.5
Xsect Area: 24658.31
Wetted Perimeter: 690.08
Top Width: 671.81
Hydraulic Depth: 36.7
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Network Filename: delta_2009Calib....
Landmark Filename: node.cdl
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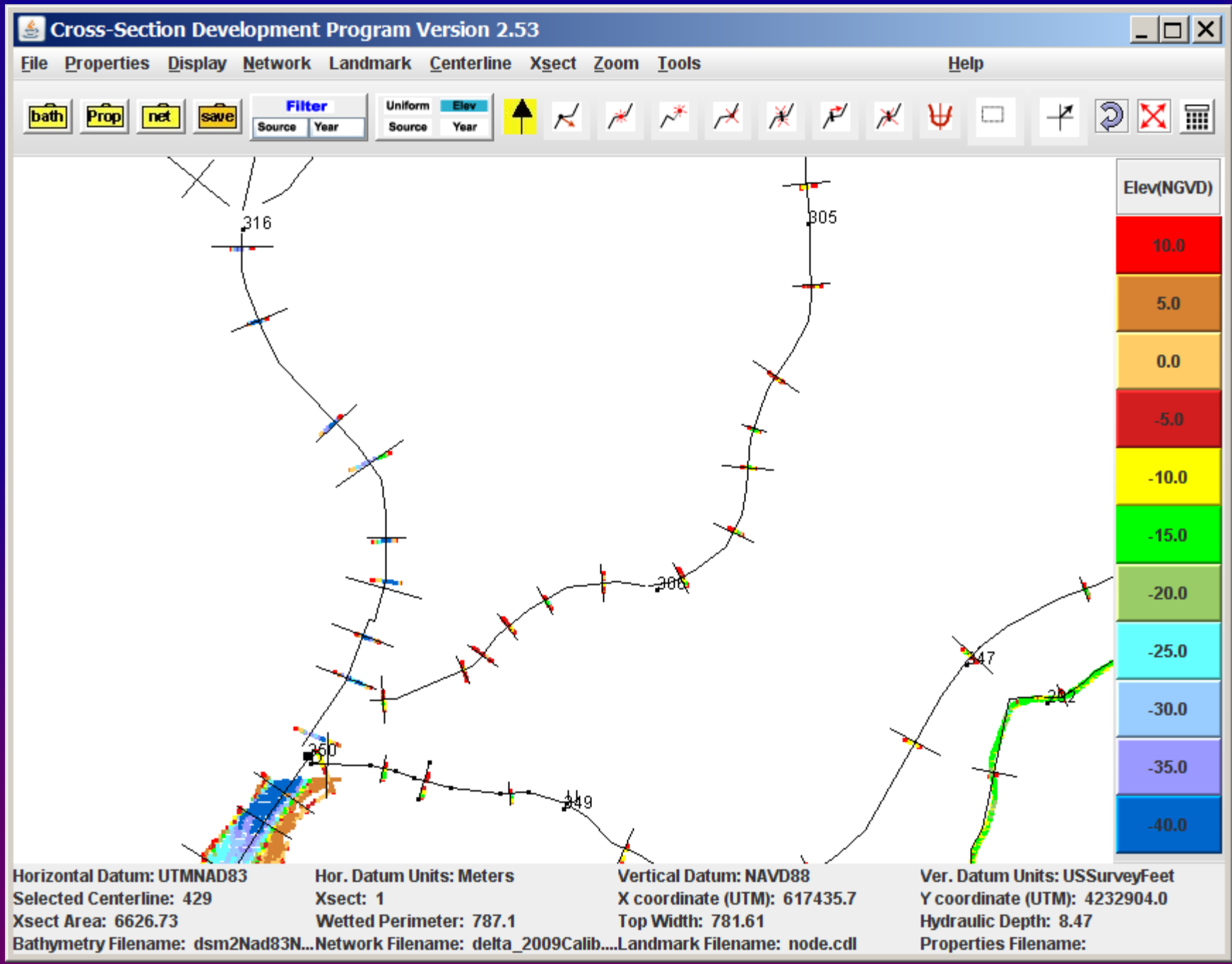
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Hor. Datum Units: Meters
Vertical Datum: NAVD88
Ver. Datum Units: USSurveyFeet
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Xsect: 1
X coordinate (UTM): 617435.7
Y coordinate (UTM): 4232904.0
Xsect Area: 6626.73
Wetted Perimeter: 787.1
Top Width: 781.61
Hydraulic Depth: 8.47
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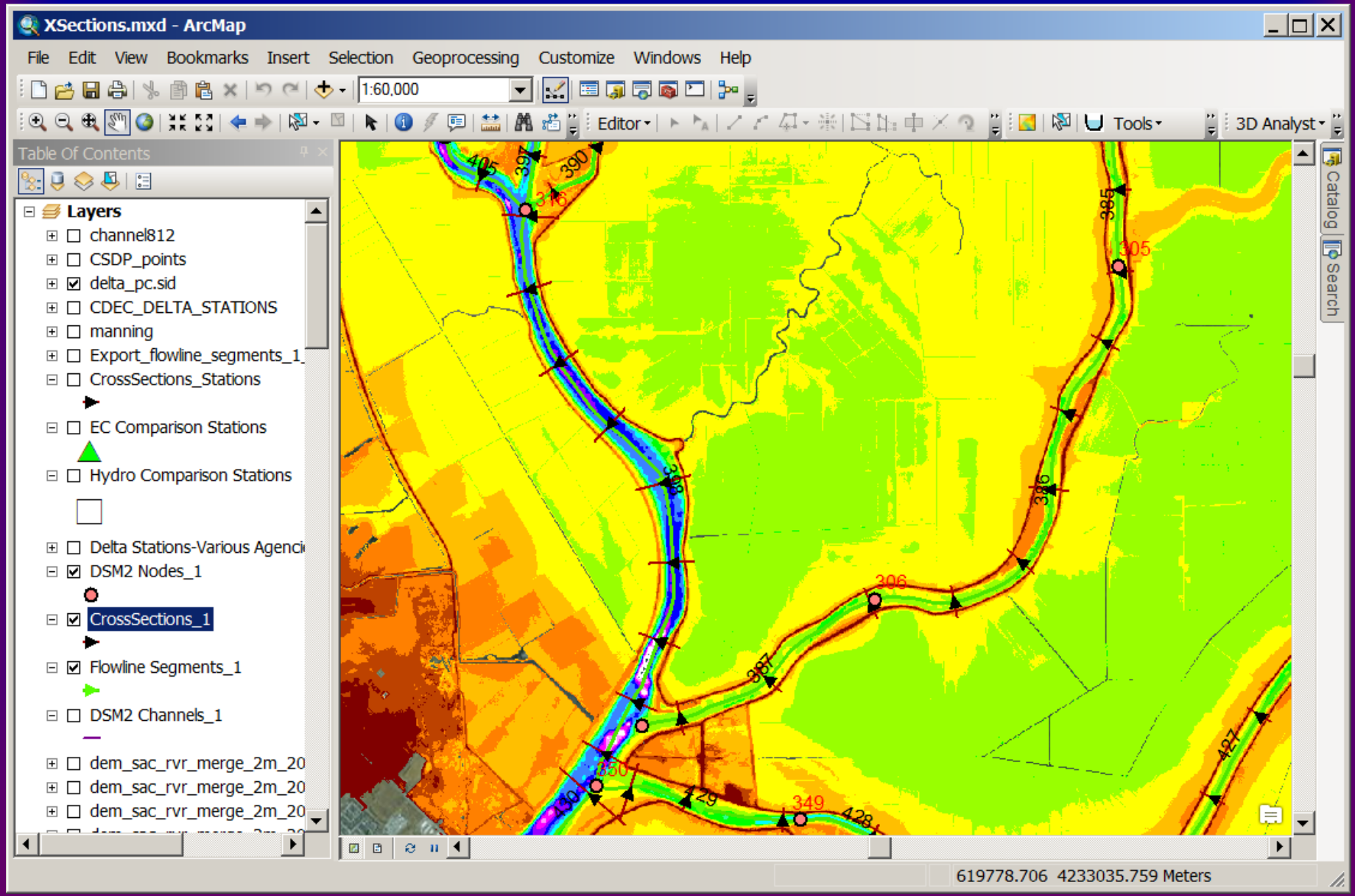
Network Filename: delta_2009Calib....
Landmark Filename: node.cdl
Properties Filename:


XSections.mxd - ArcMap
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Hydro Comparison Stations
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DSM2 Channels_1
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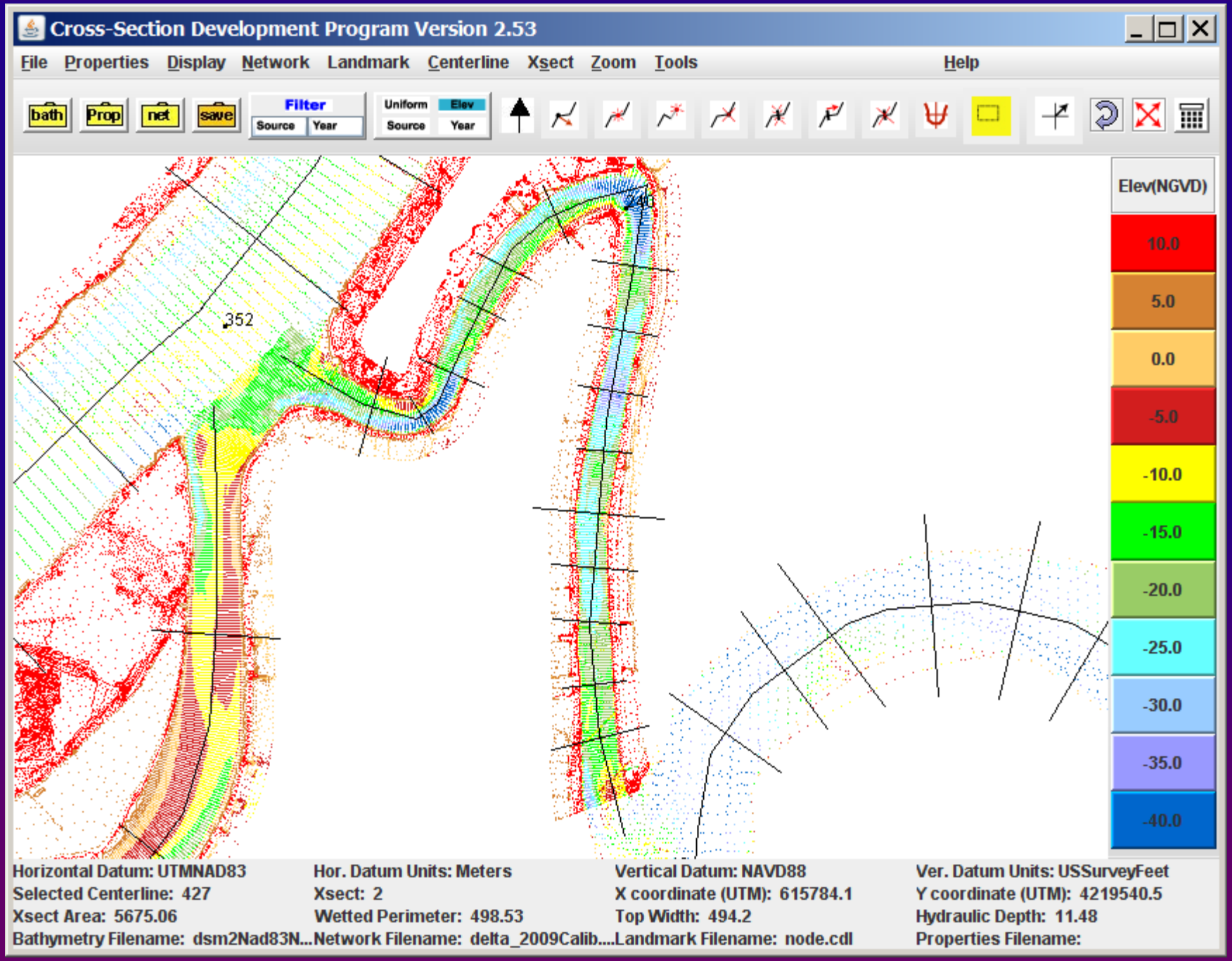
Cross-Section Development Program Version 2.53
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Y coordinate (UTM): 4219540.5
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Top Width: 494.2
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Landmark Filename: node.cdl
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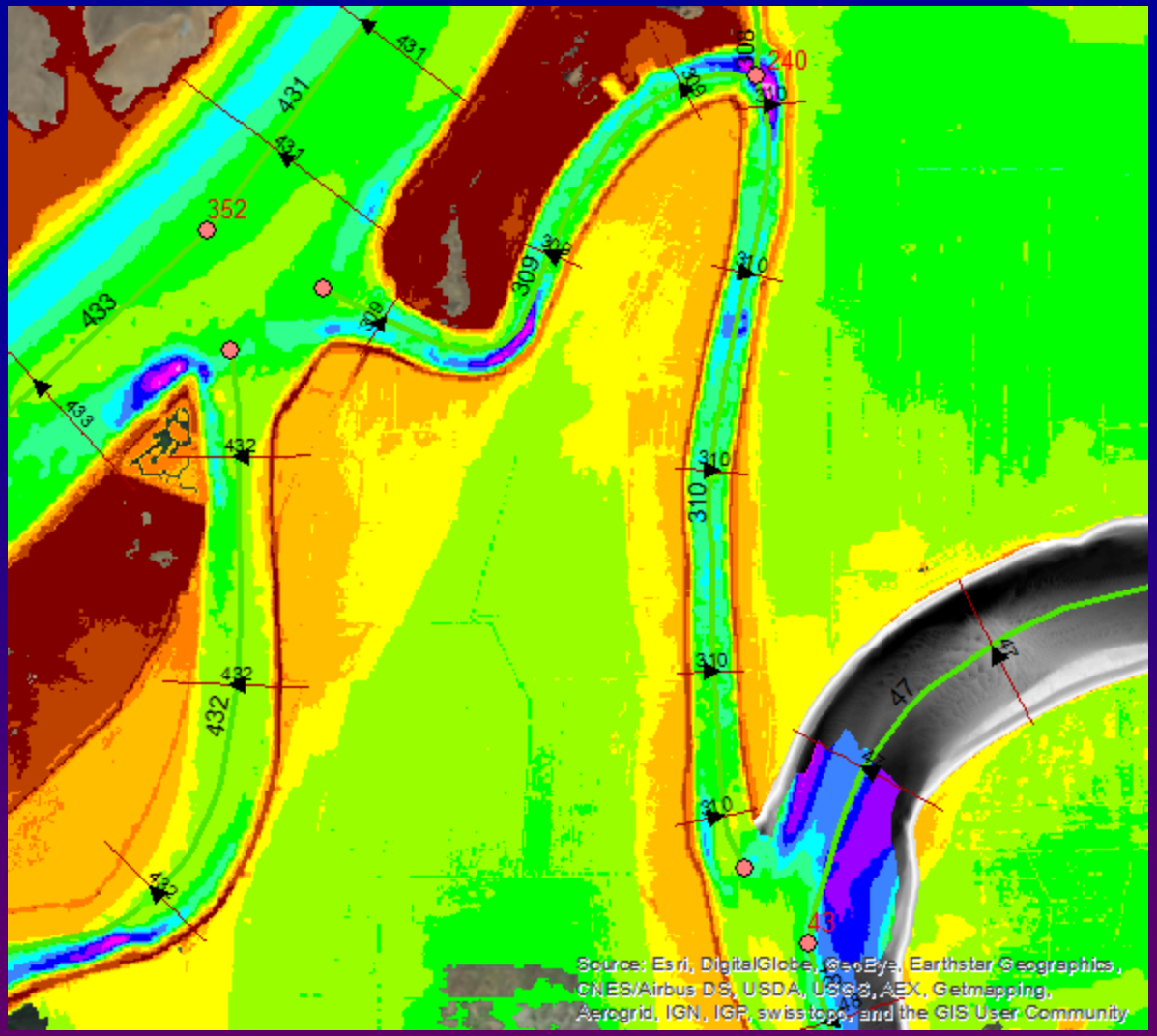
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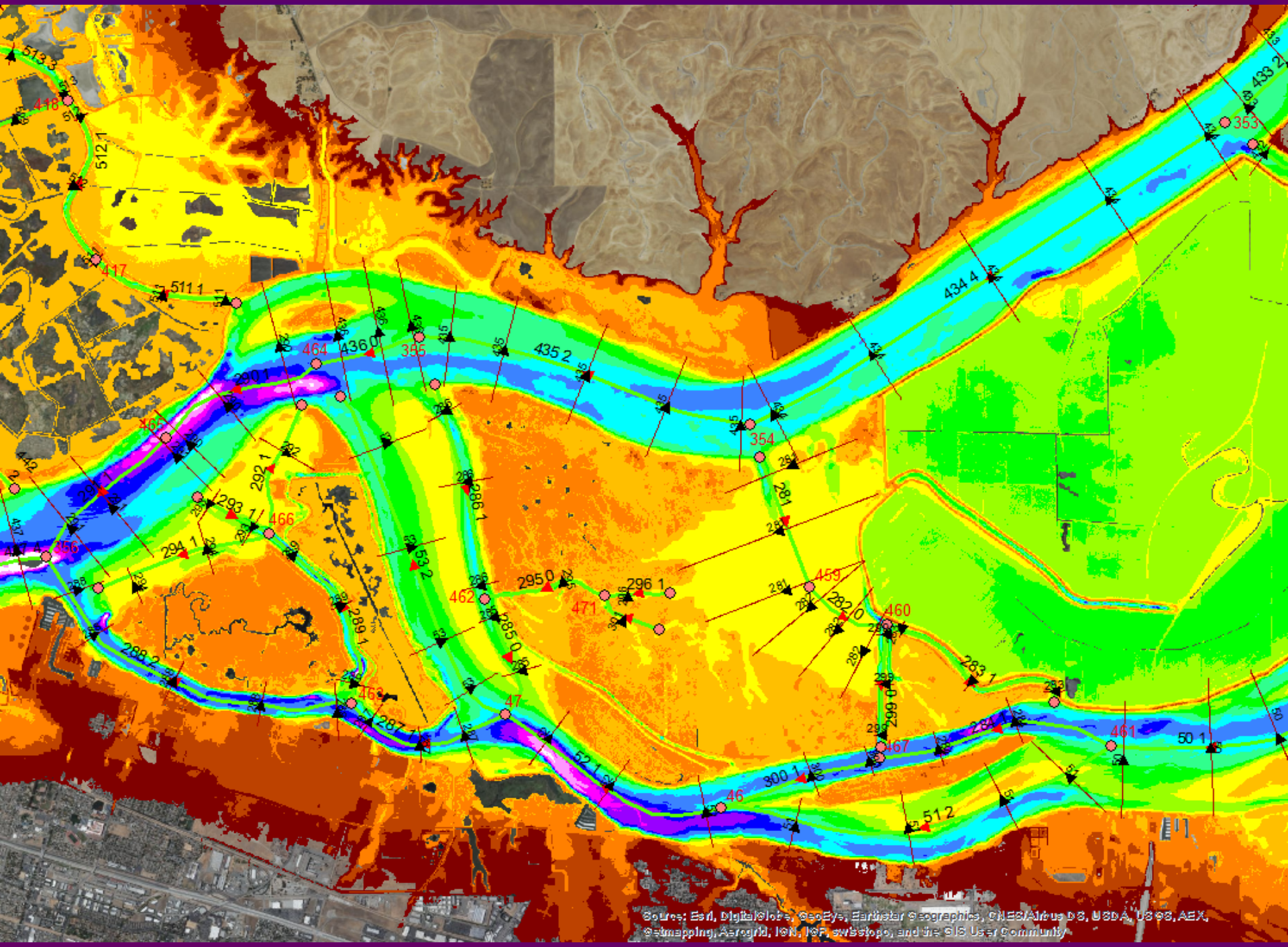
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community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Summary

- The new tool provides a robust working environment to edit/view cross sections.
- With DEM, we can put cross sections at all computational grid locations; it seems working well for most channels.
- Now we have 2 meter DEM at most of the areas. Accuracy of the DEM at small channels is still a concern.

Thank you!

Questions

liul@water.ca.gov