Calibrating a 2D HEC-RAS Model

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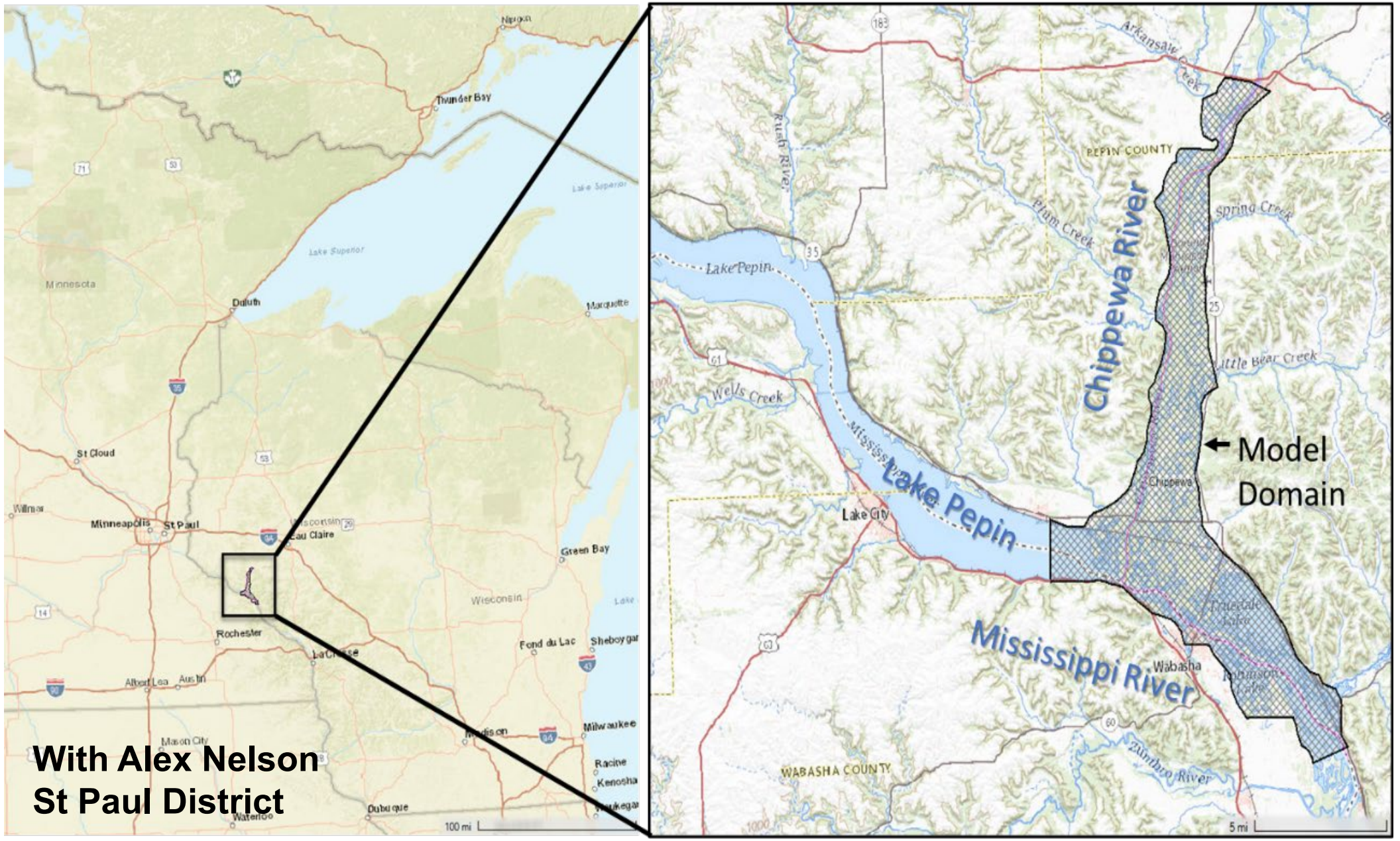
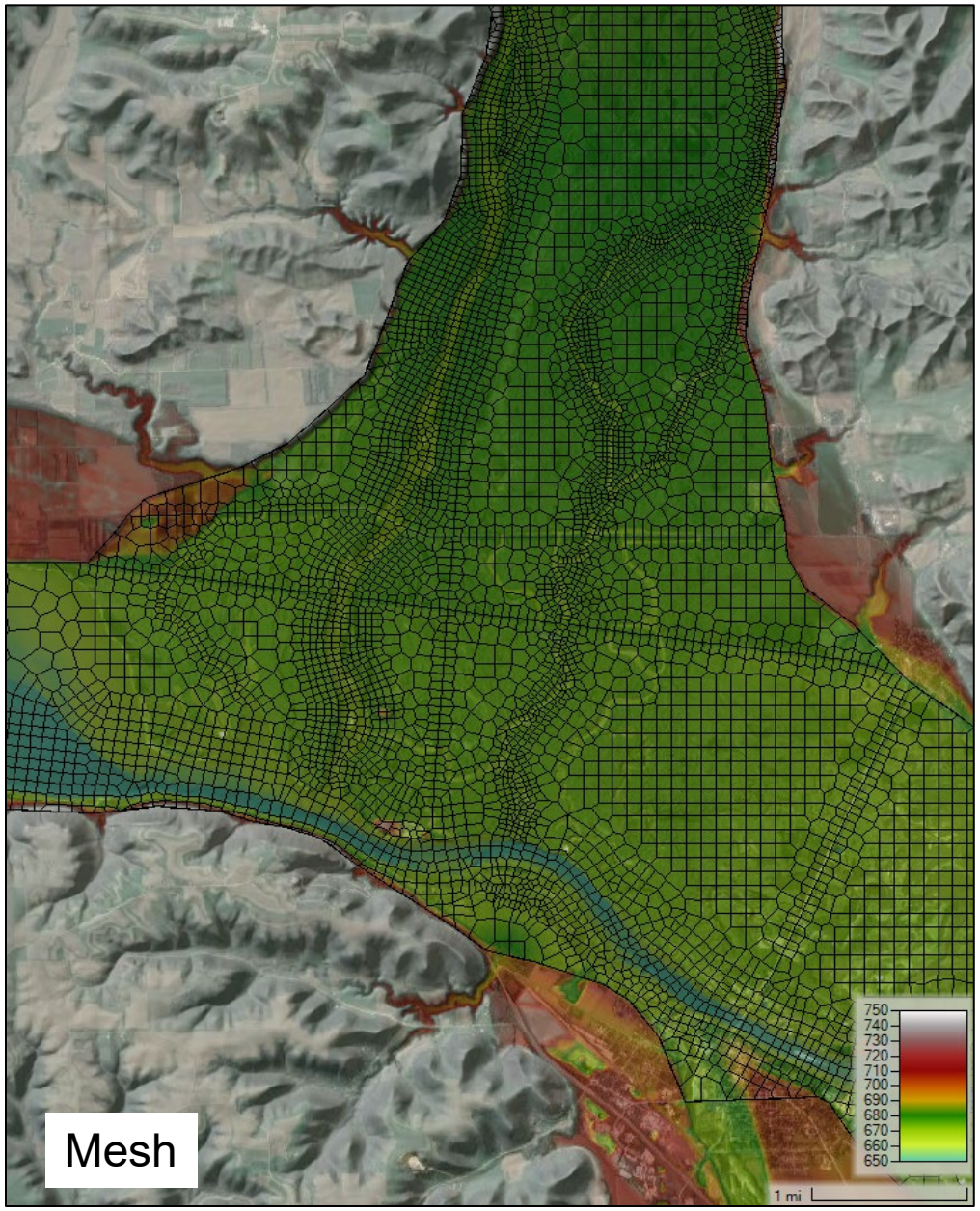
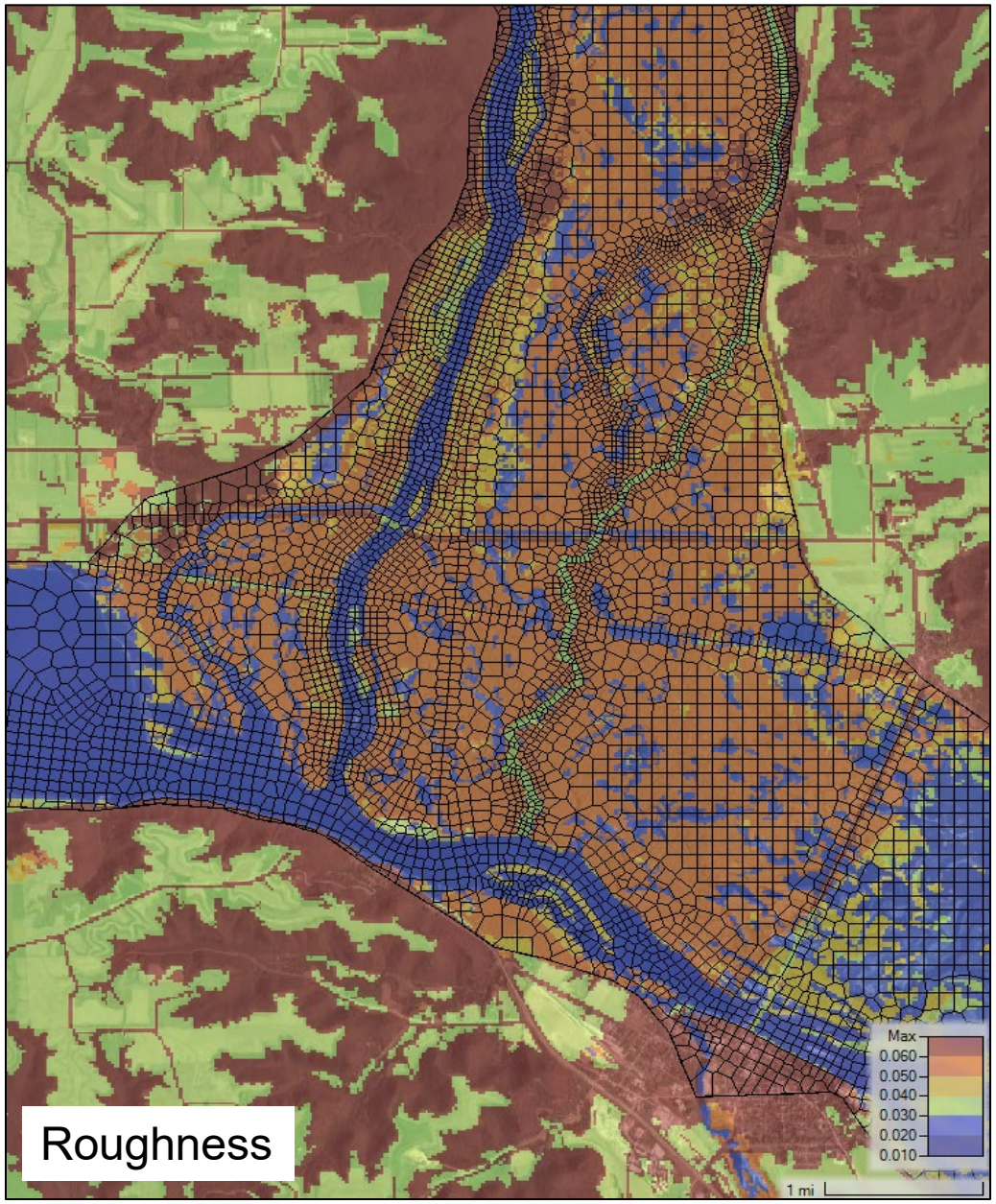
Chippewa River, Wisconsin

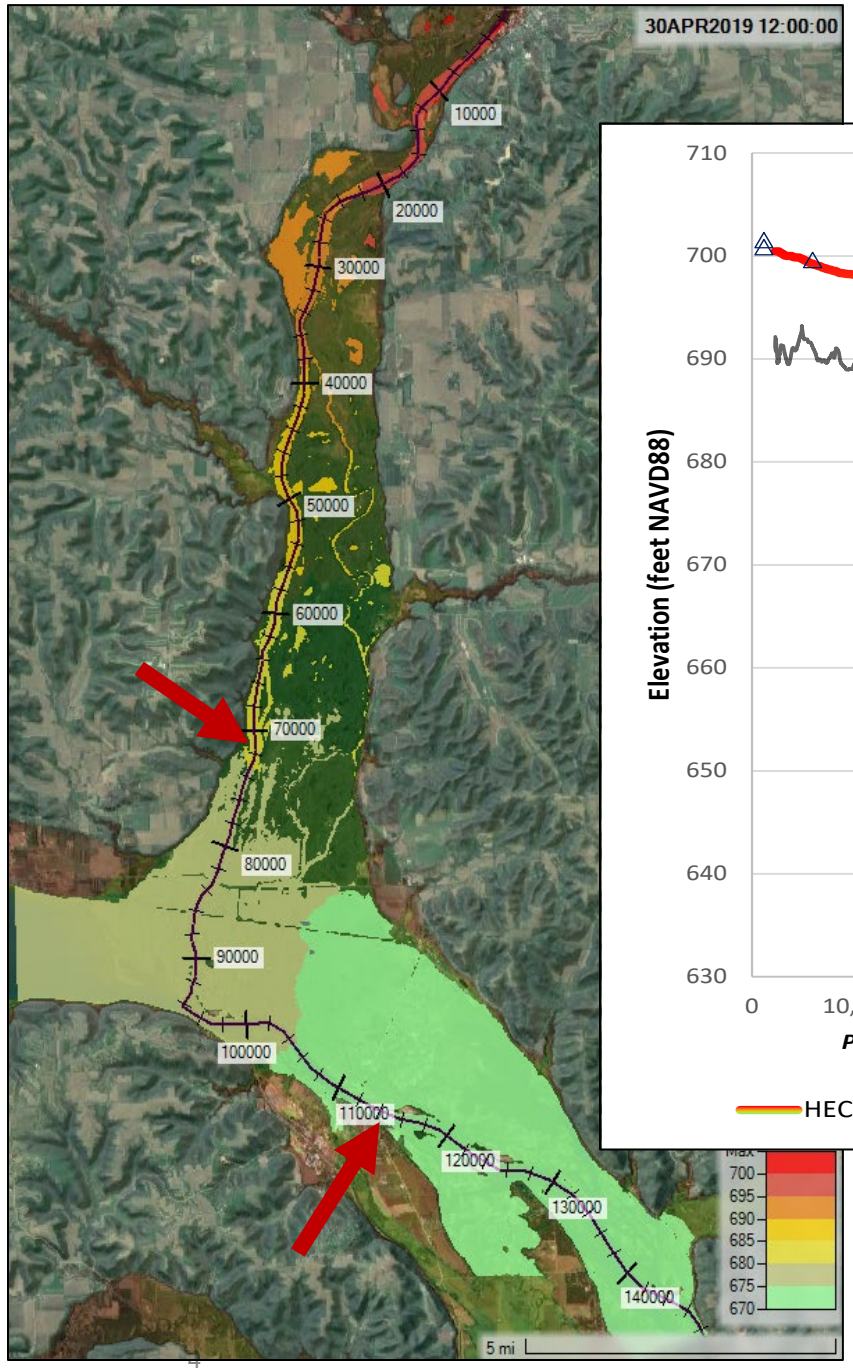


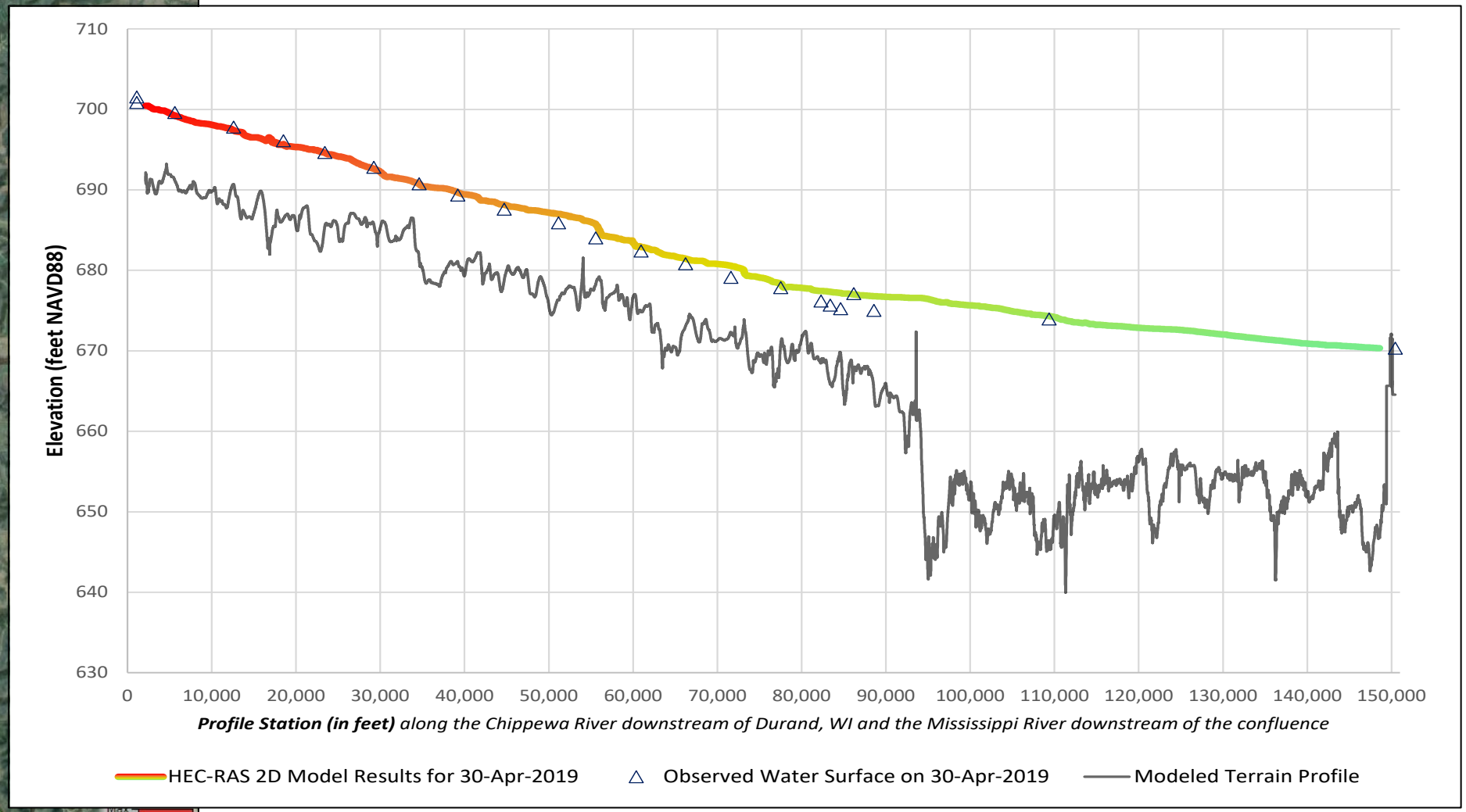
Chippewa River, Wisconsin





One-Dimensionalized Calibration





Hydraulic calibration by Alex Nelson (MVP)

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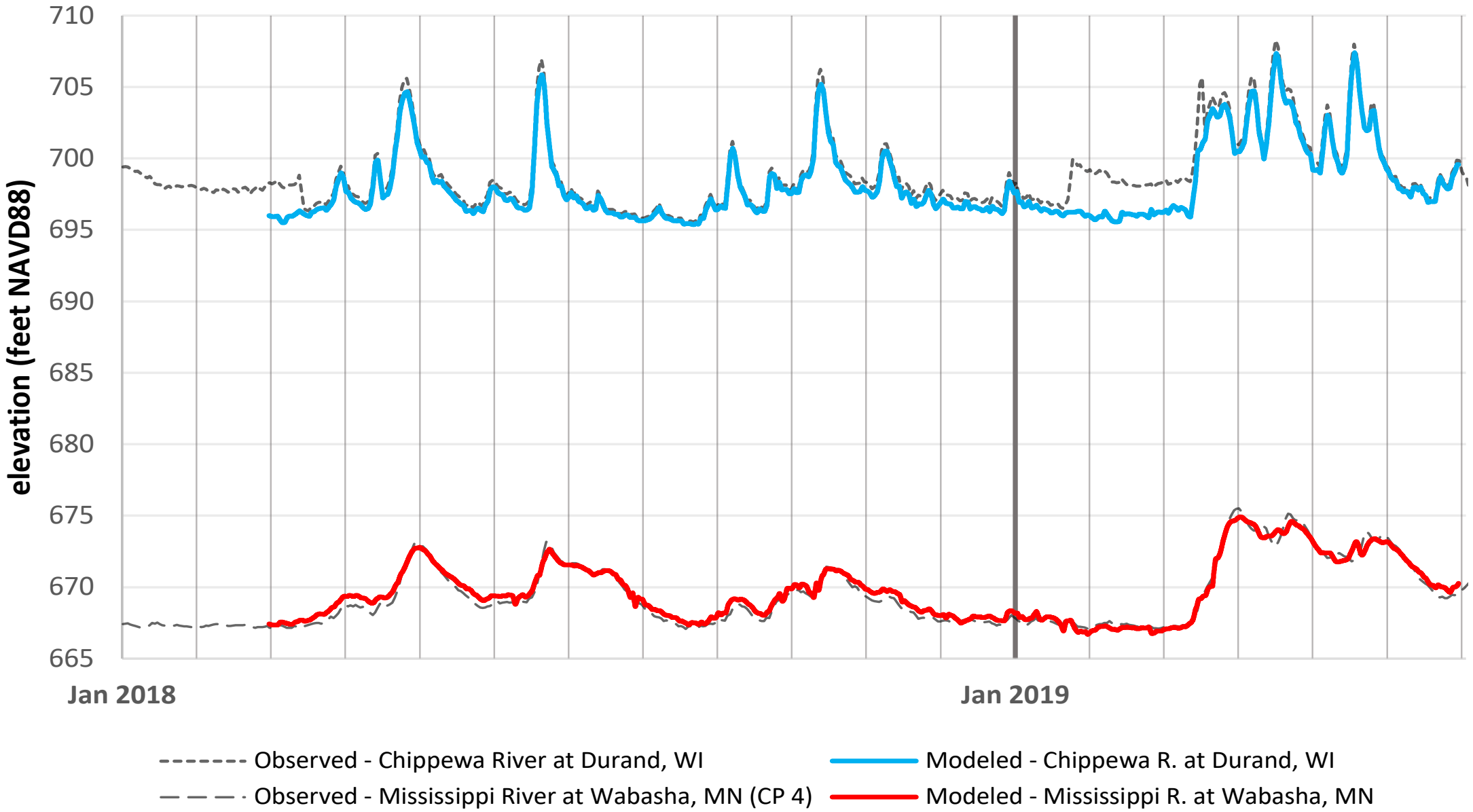
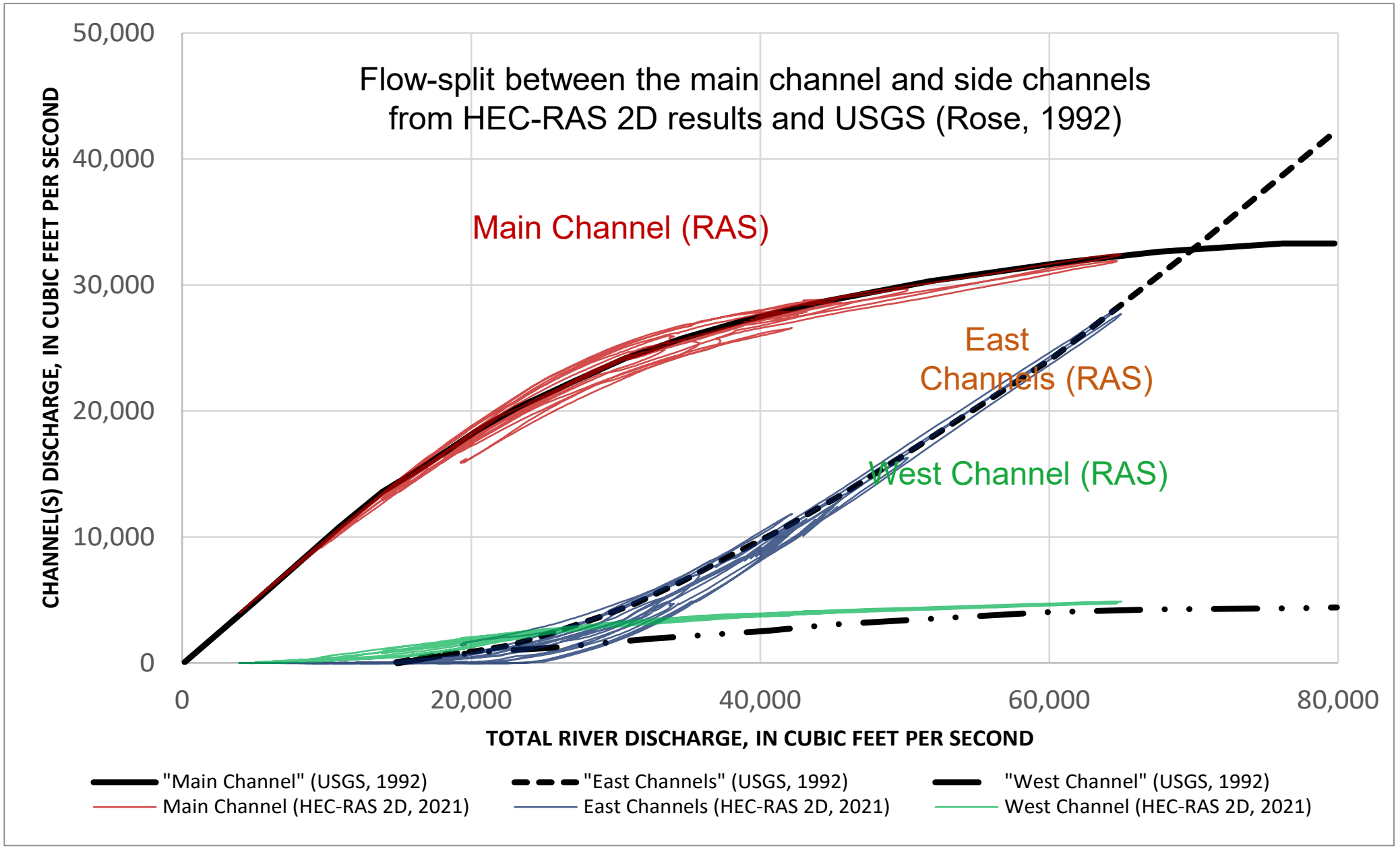
2D Calibration Cont…



2D Hydraulic Calibration Cont…



Hydraulic Calibration by Alex Nelson (MVP)

Sediment Calibration

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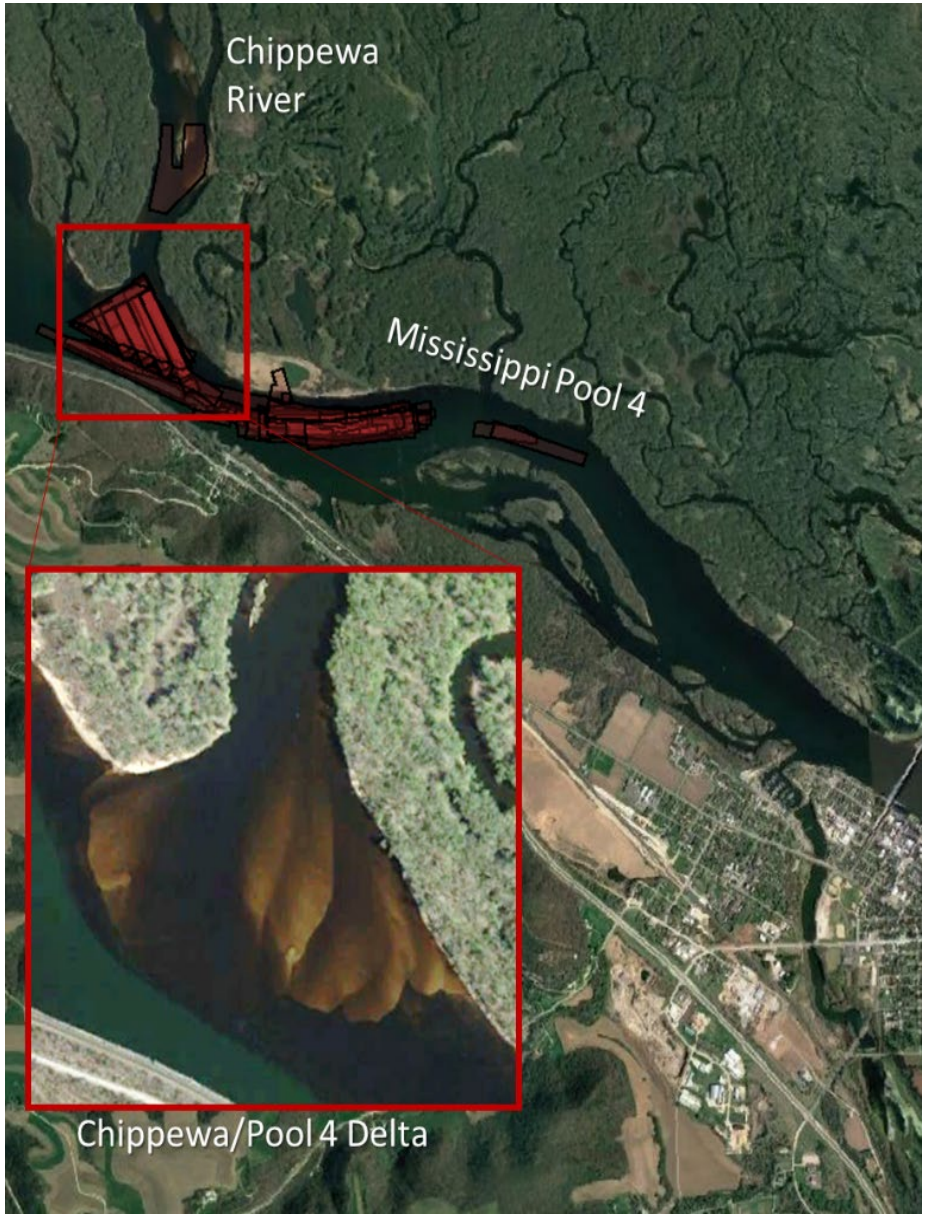
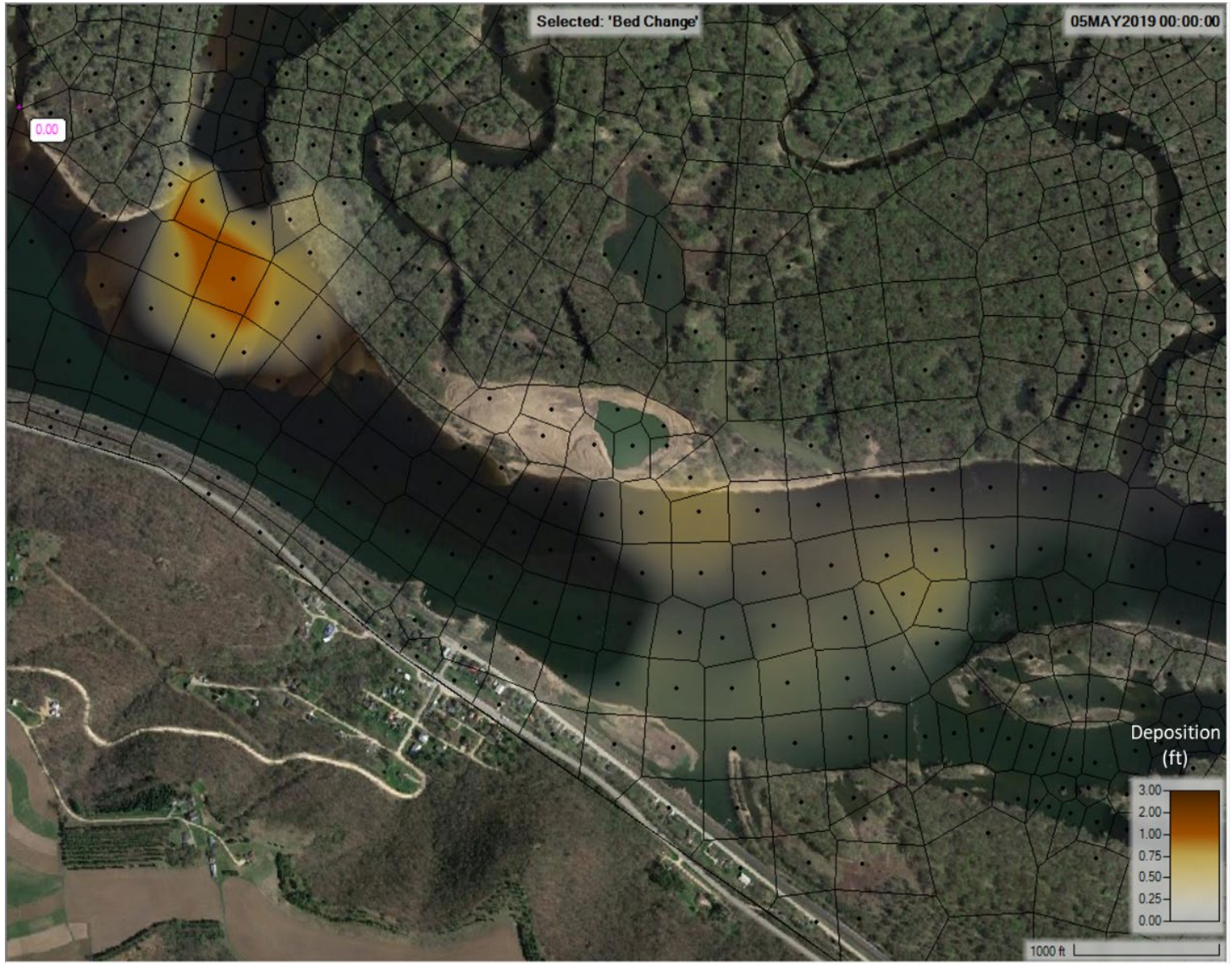
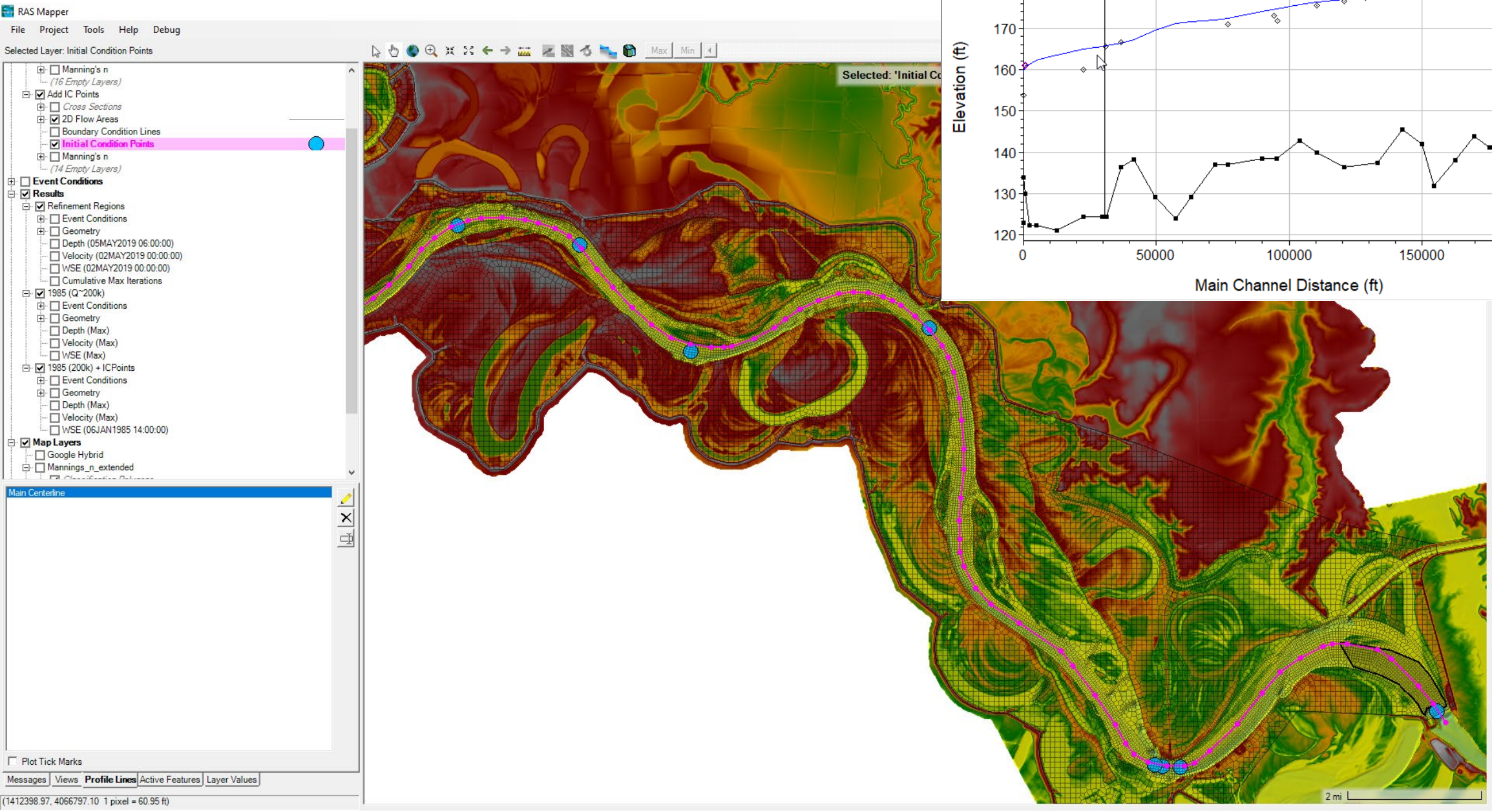
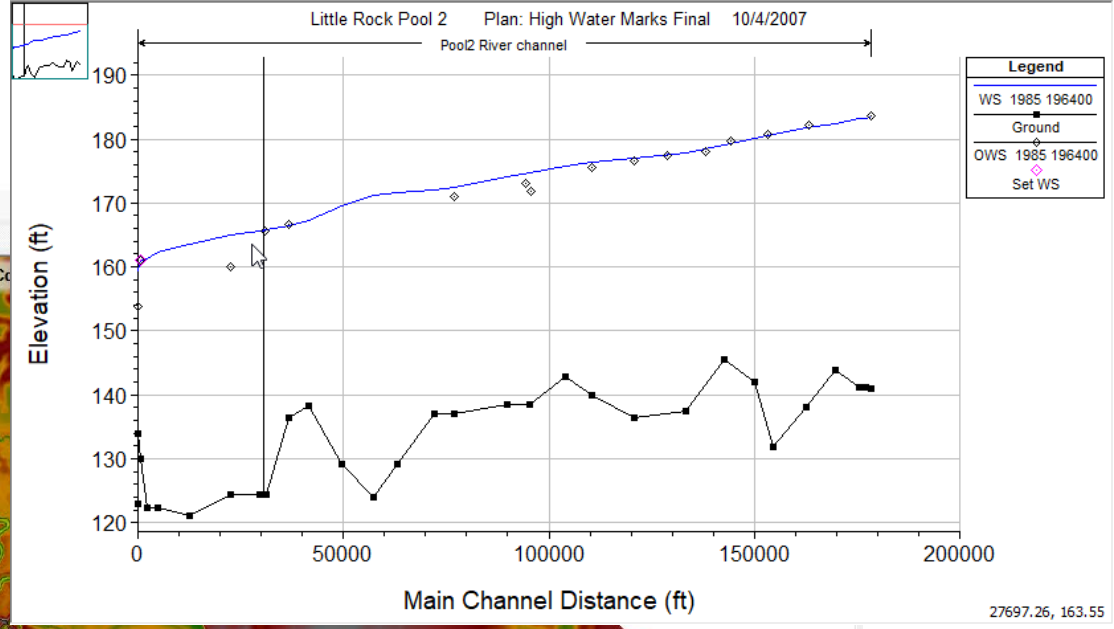


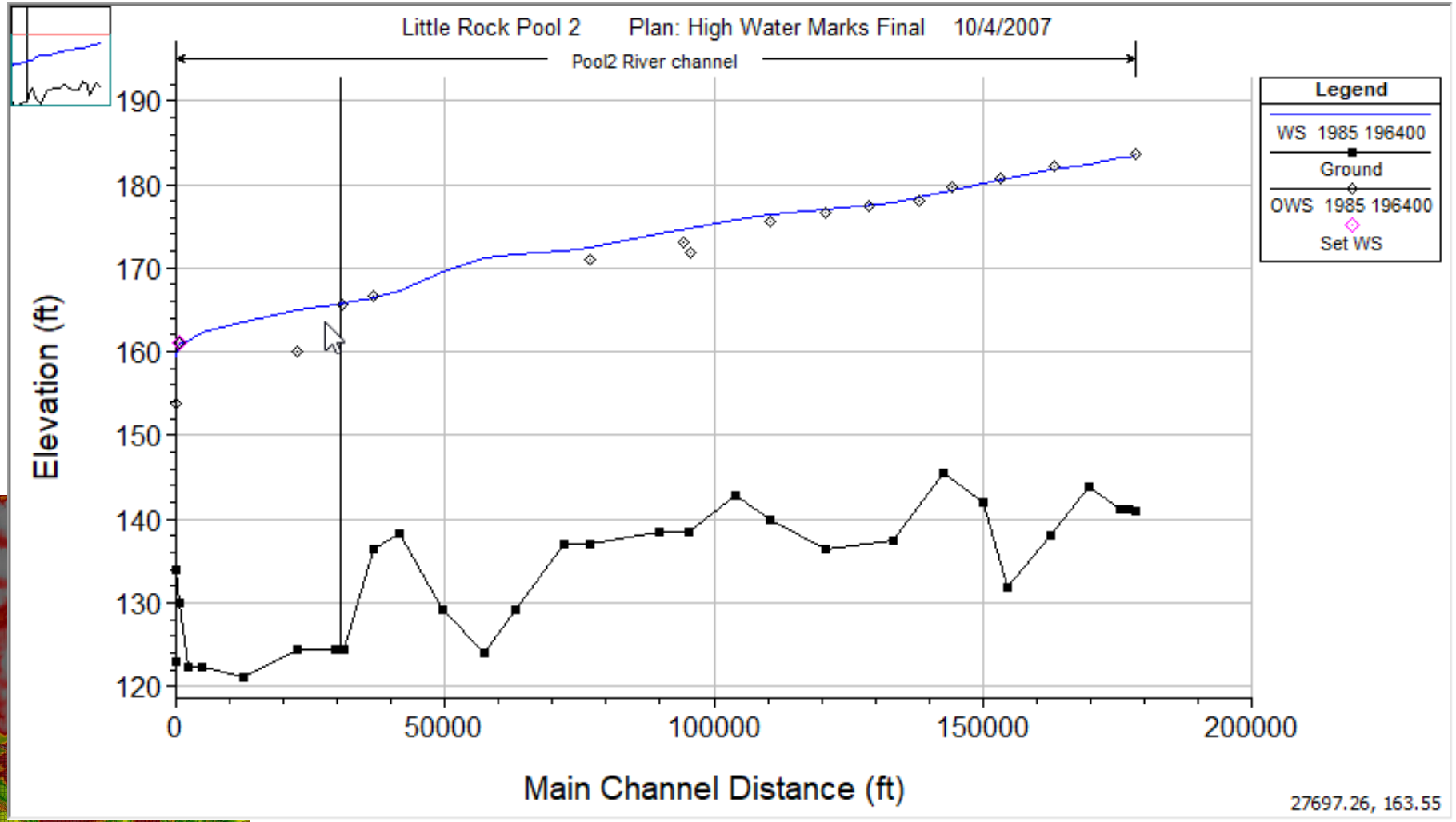


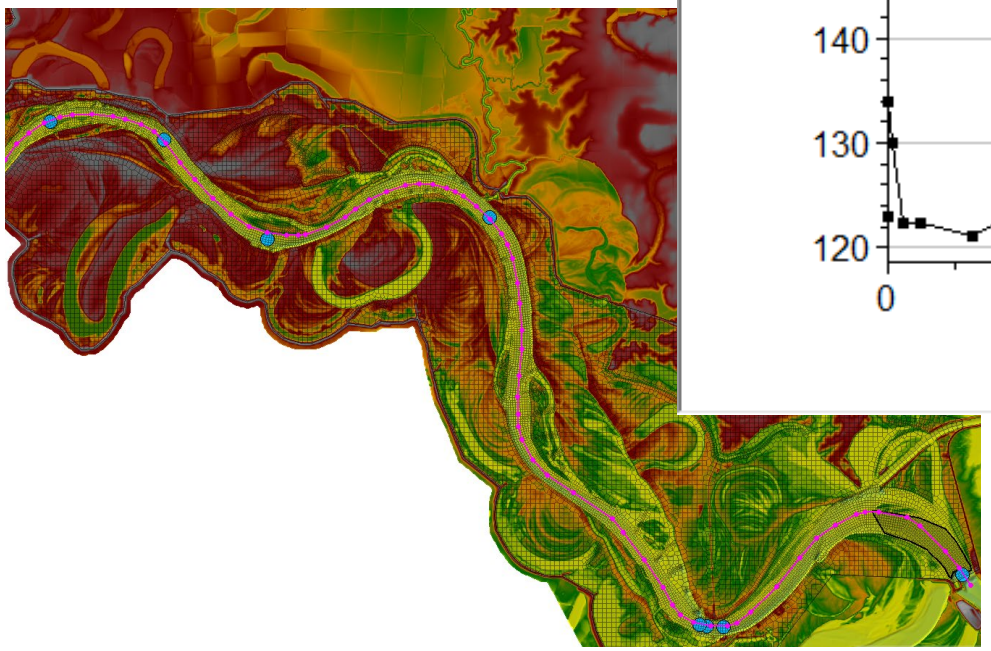
2D Hydraulic Calibration





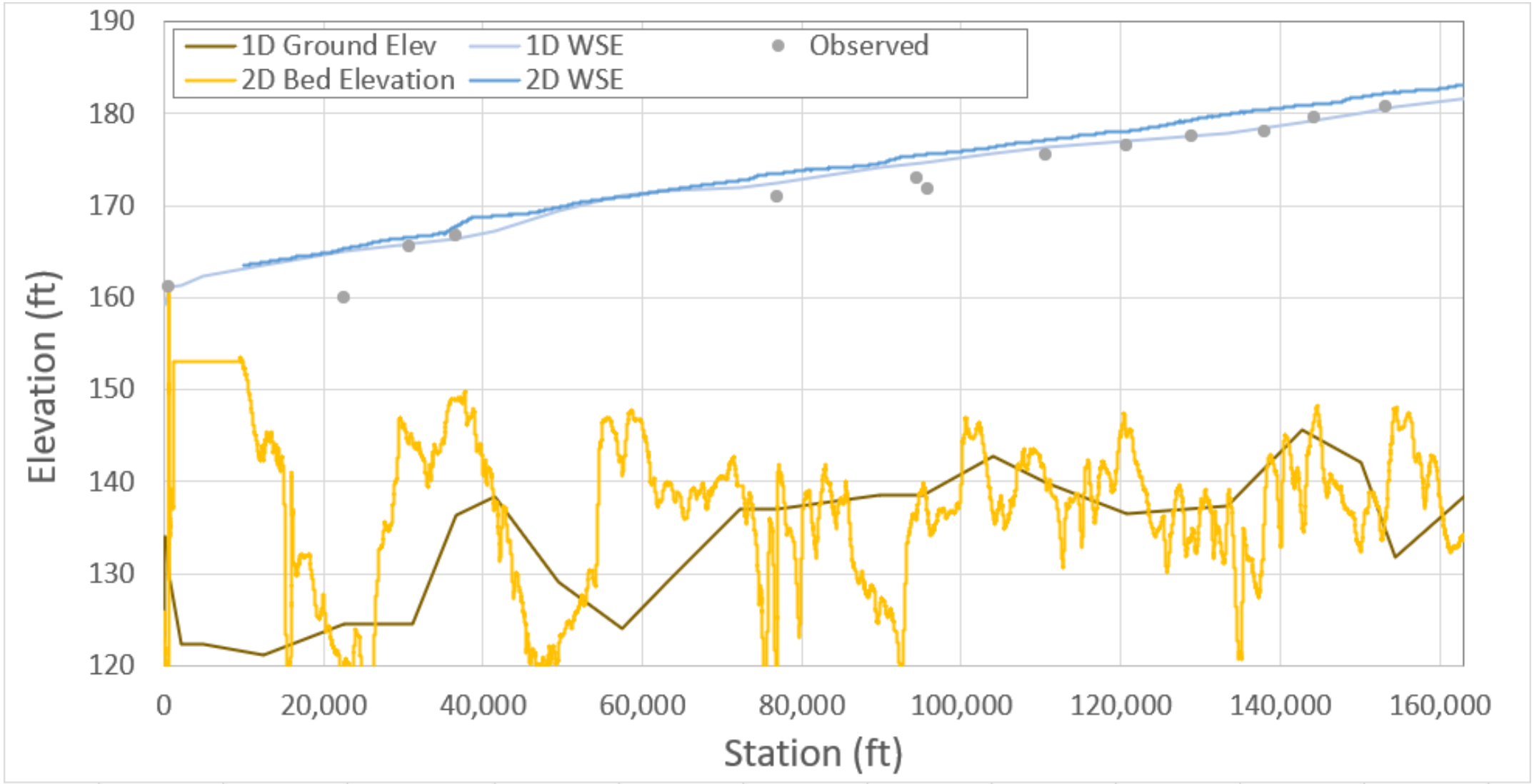
2D Hydraulic Calibration





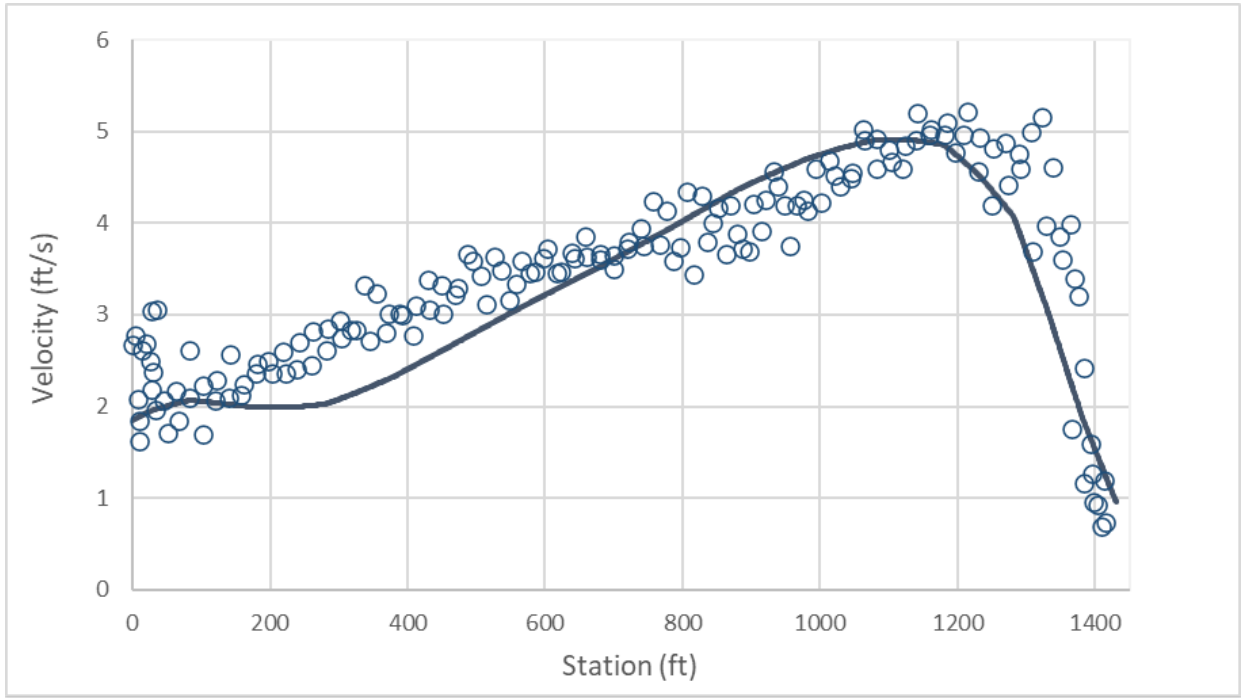
Note: Calibrate to your final equation
Don't calibrate to DW if you will need SWE

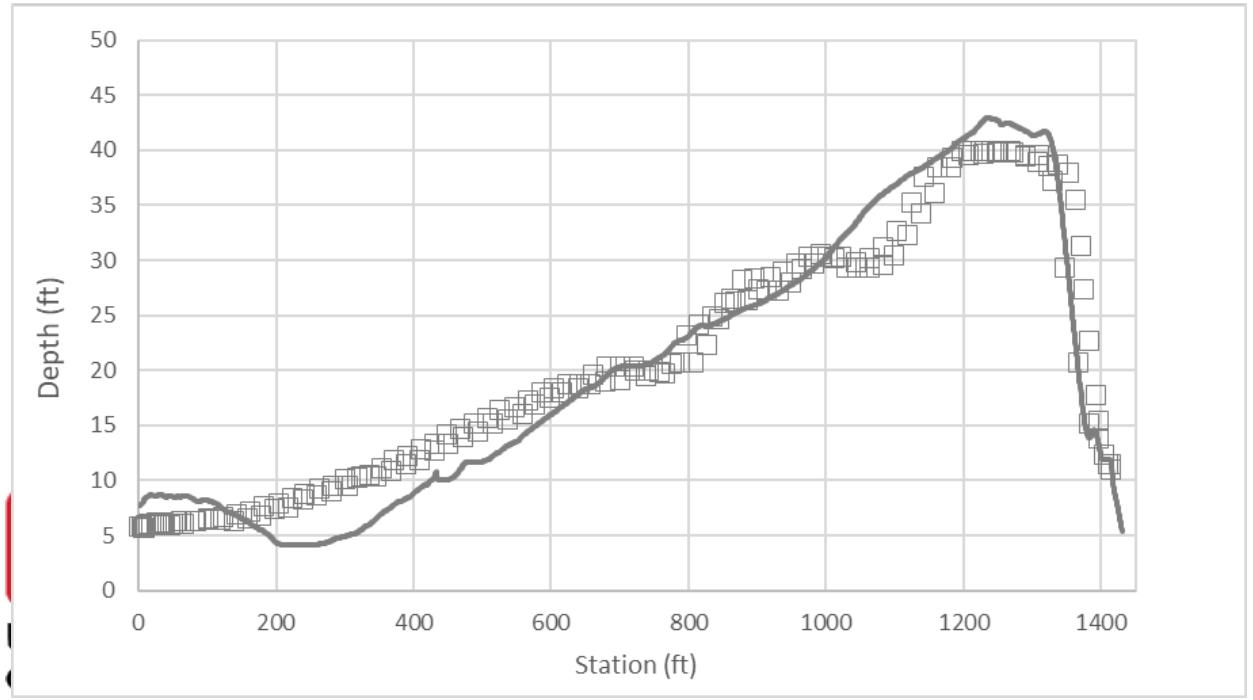
How Do You Calibrate 2D Hydraulics?



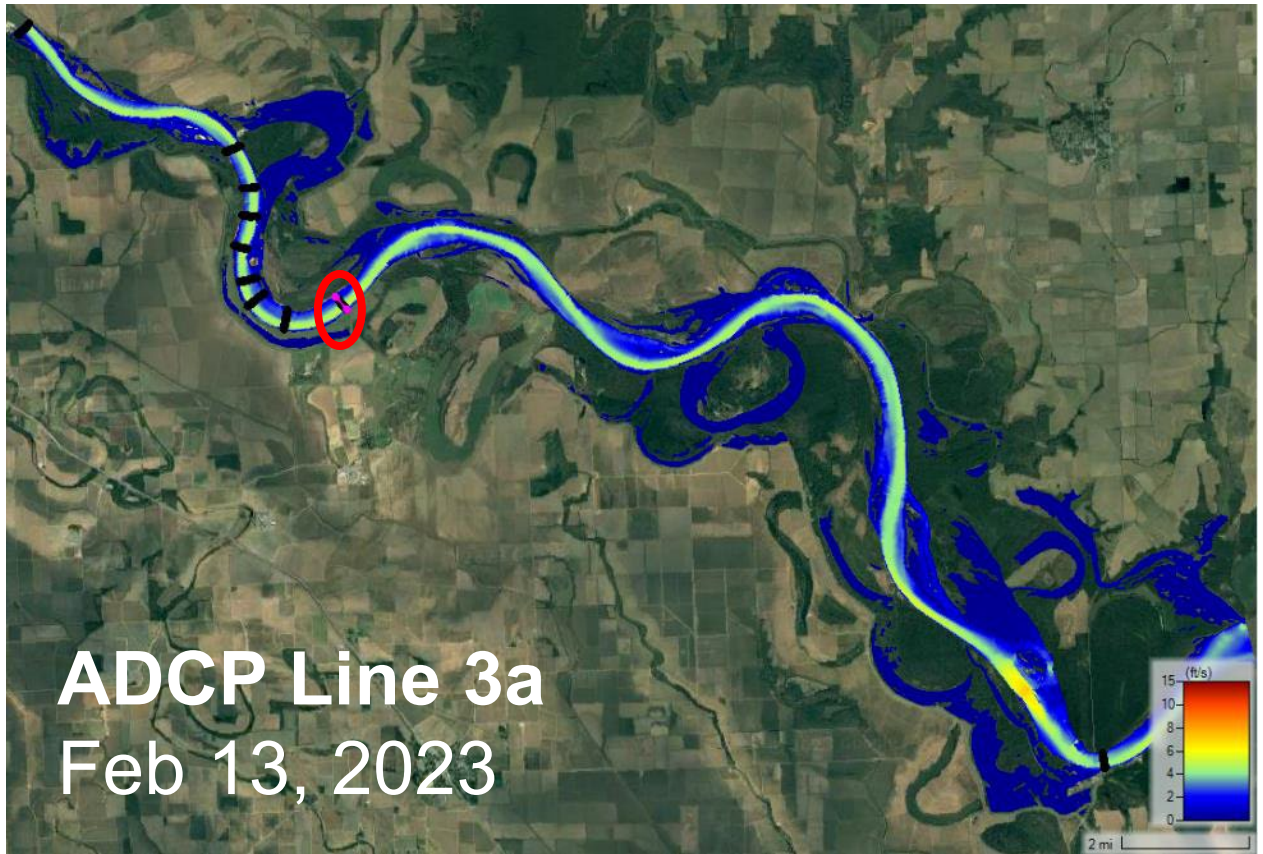
One Option is a Qusi-1D Calibration

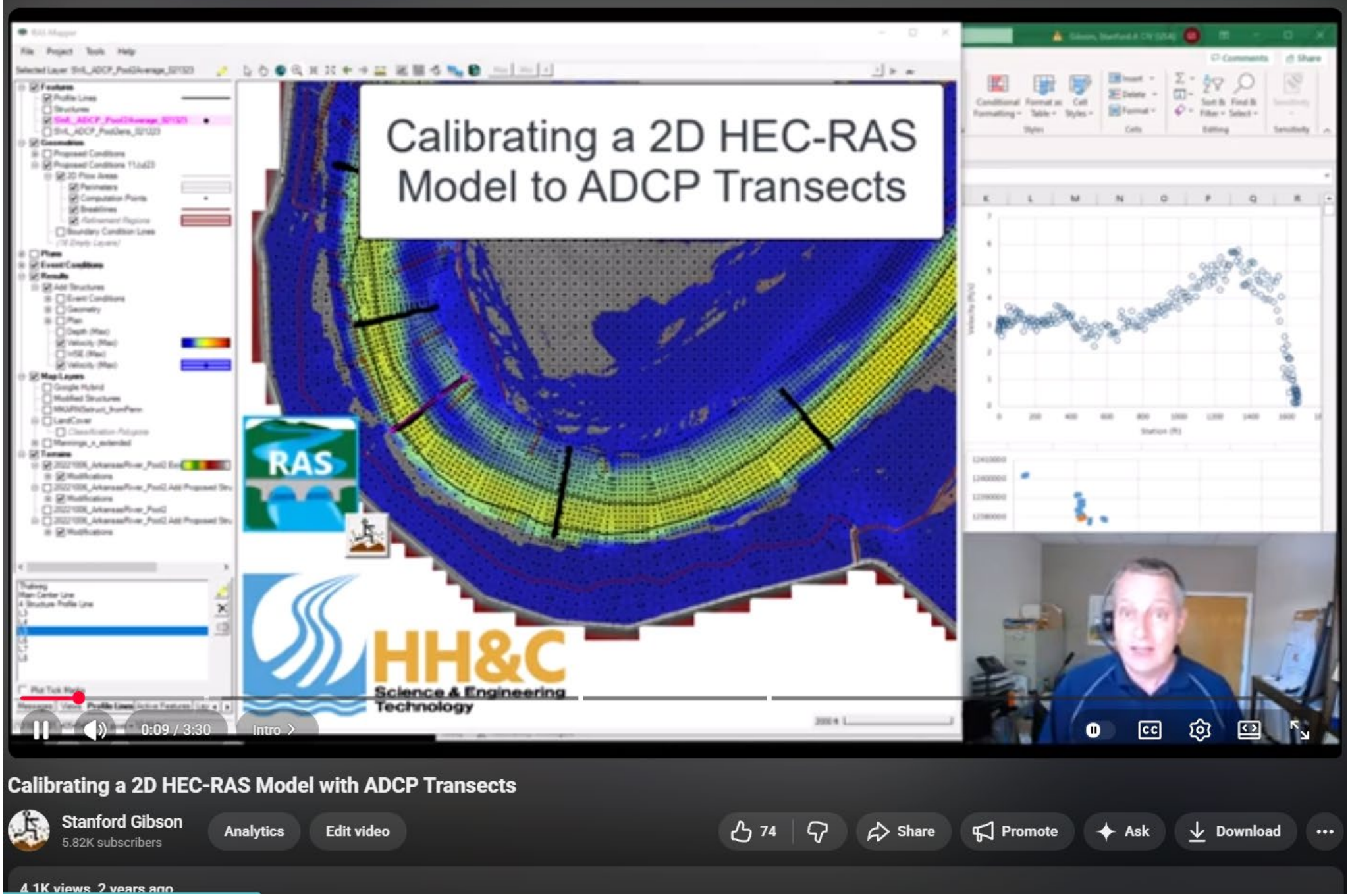
But a Lateral Depth and Velocity Calibration Can Improve Your 2D Model Performance Substantially



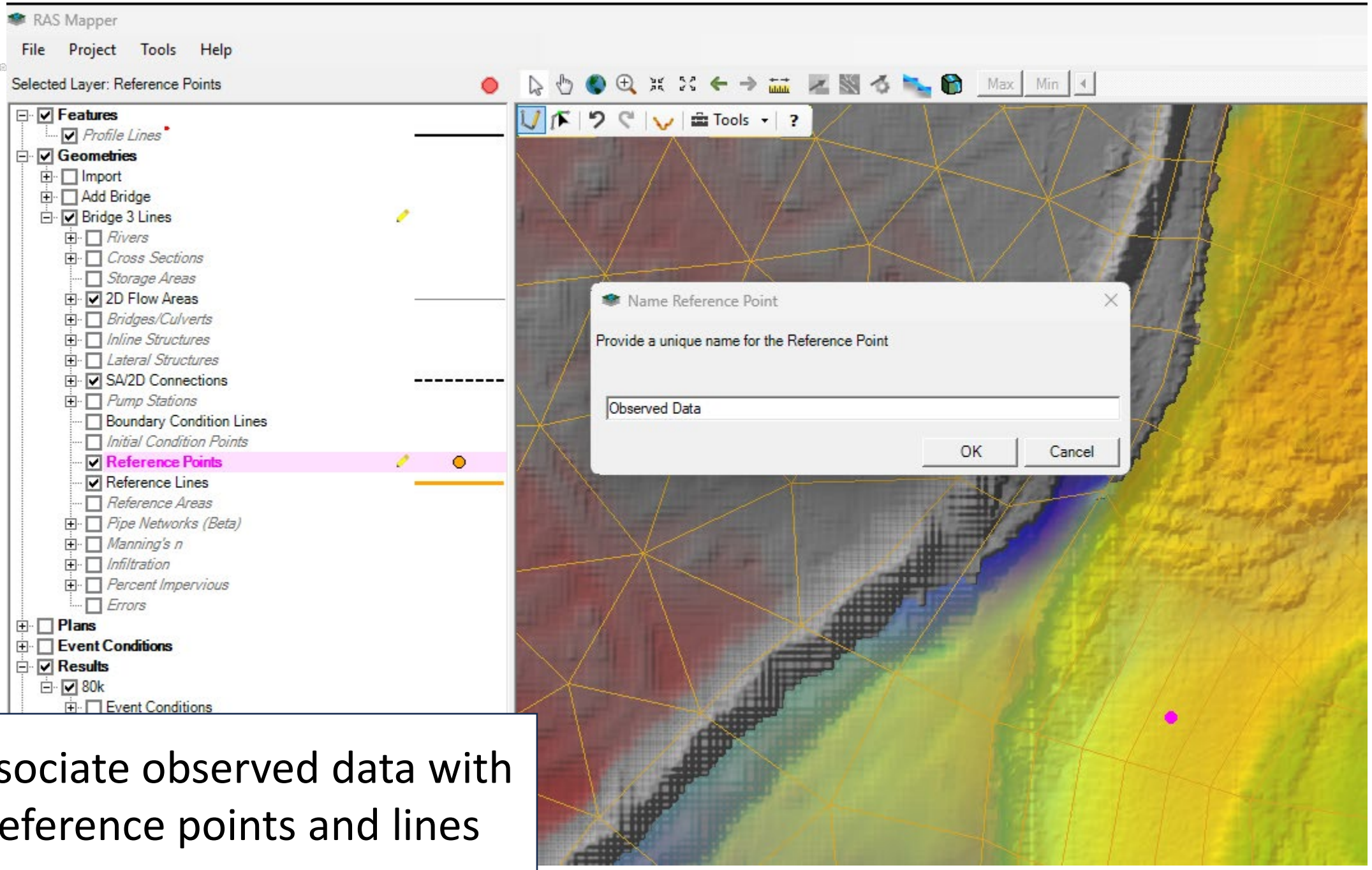


ID	Date	GMT	CMT	Flow (cfs)
P_2010	2\13\2023	18:12:53	13:12:53	115835
P_2011	2\13\2023	18:16:58	13:16:58	115237.2

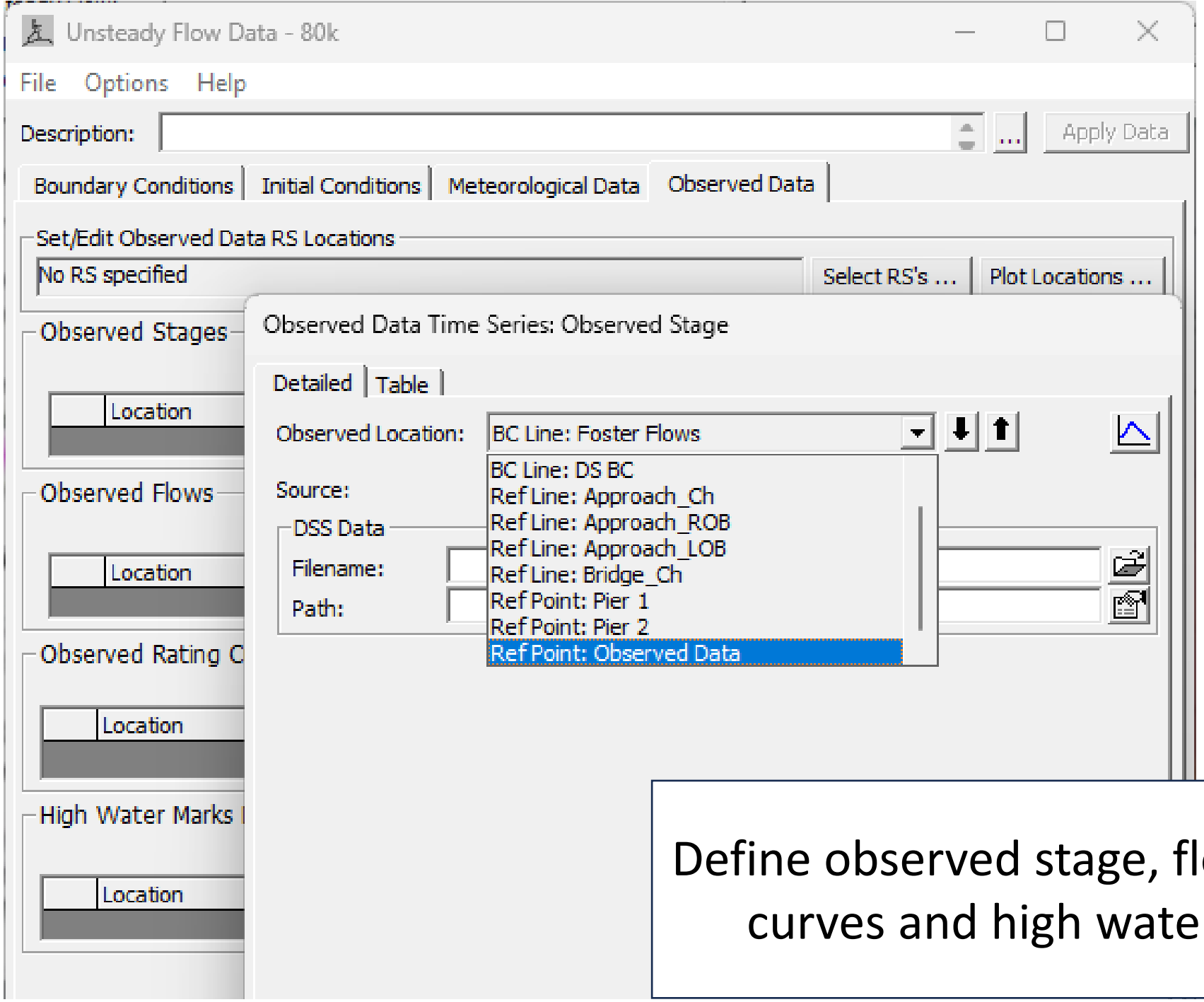




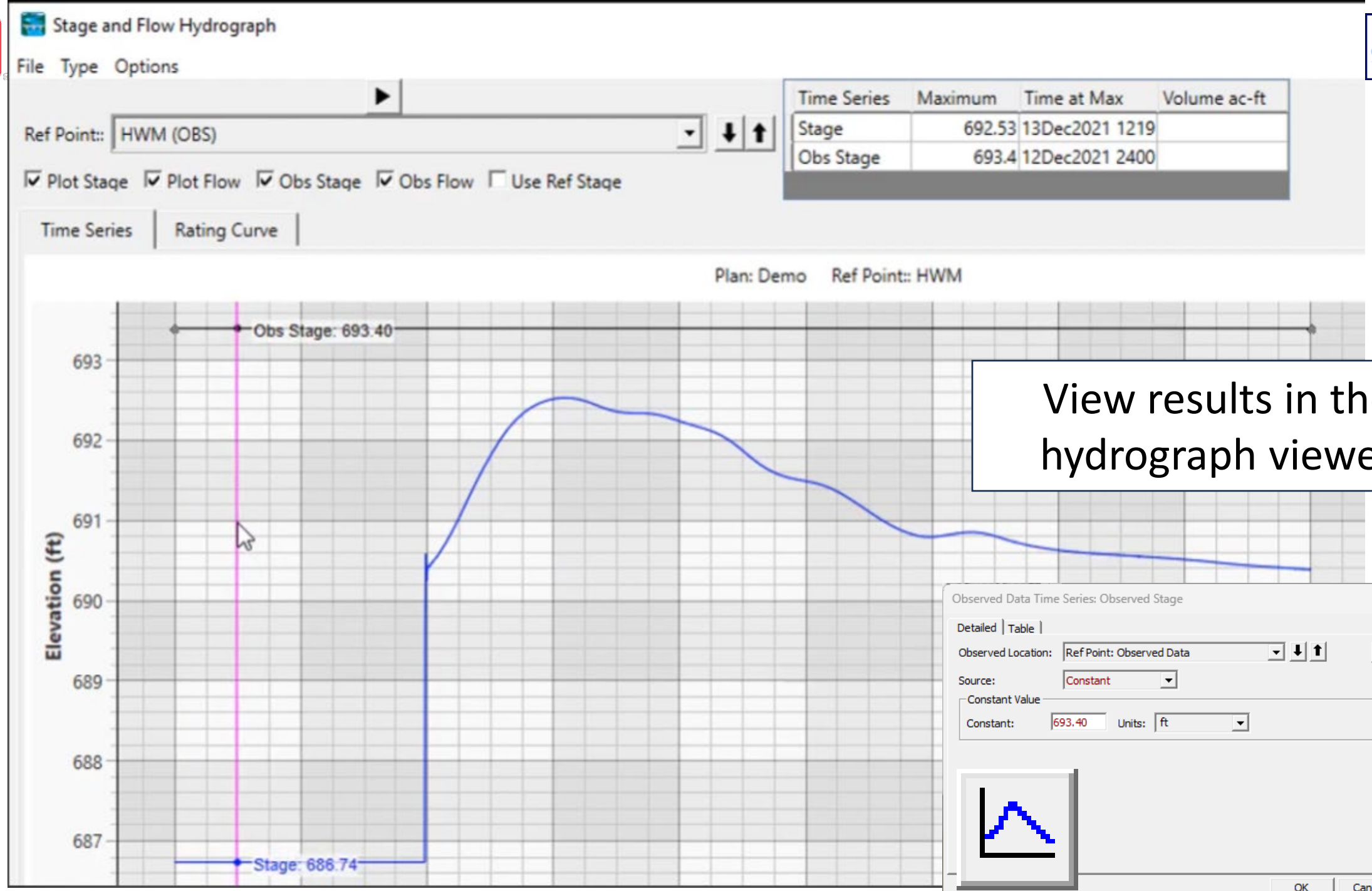
https://youtu.be/IRngdzc8xKg?si=8Bezv6HLV5SBDG0-



Associate observed data with reference points and lines

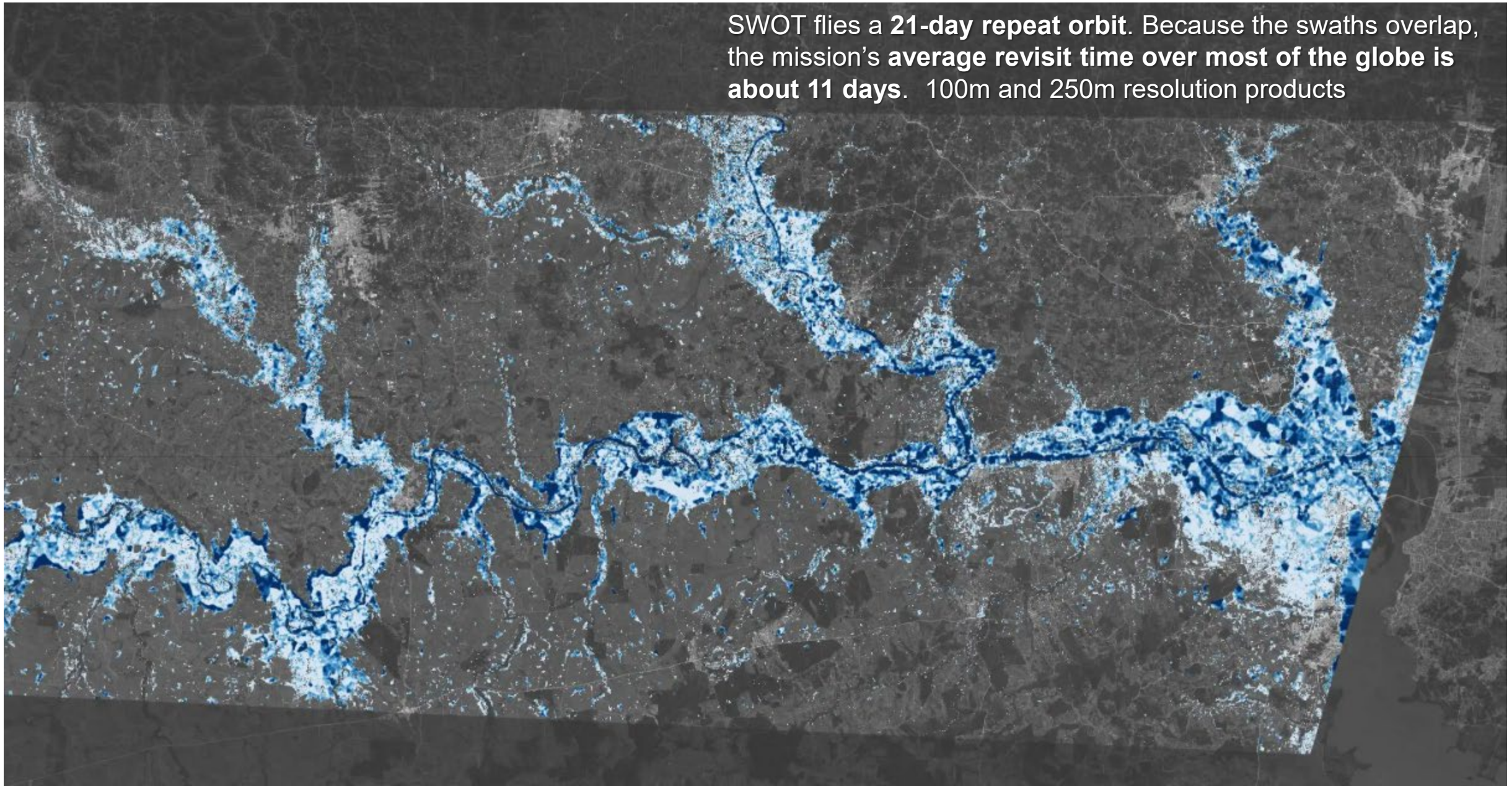


Define observed stage, flows, rating curves and high water marks



View results in the hydrograph viewer

Something We're Exploring: SWOT Data



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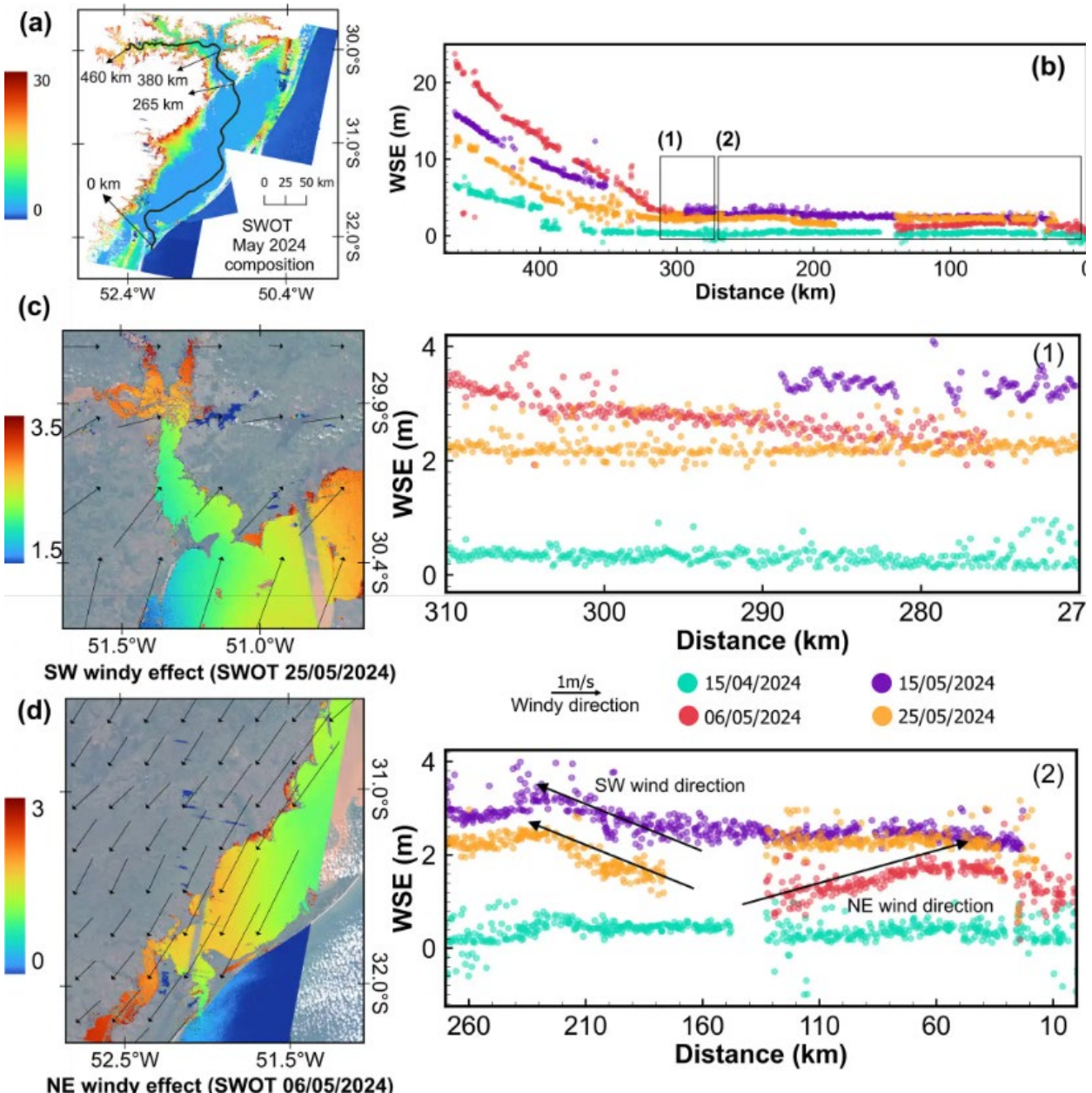
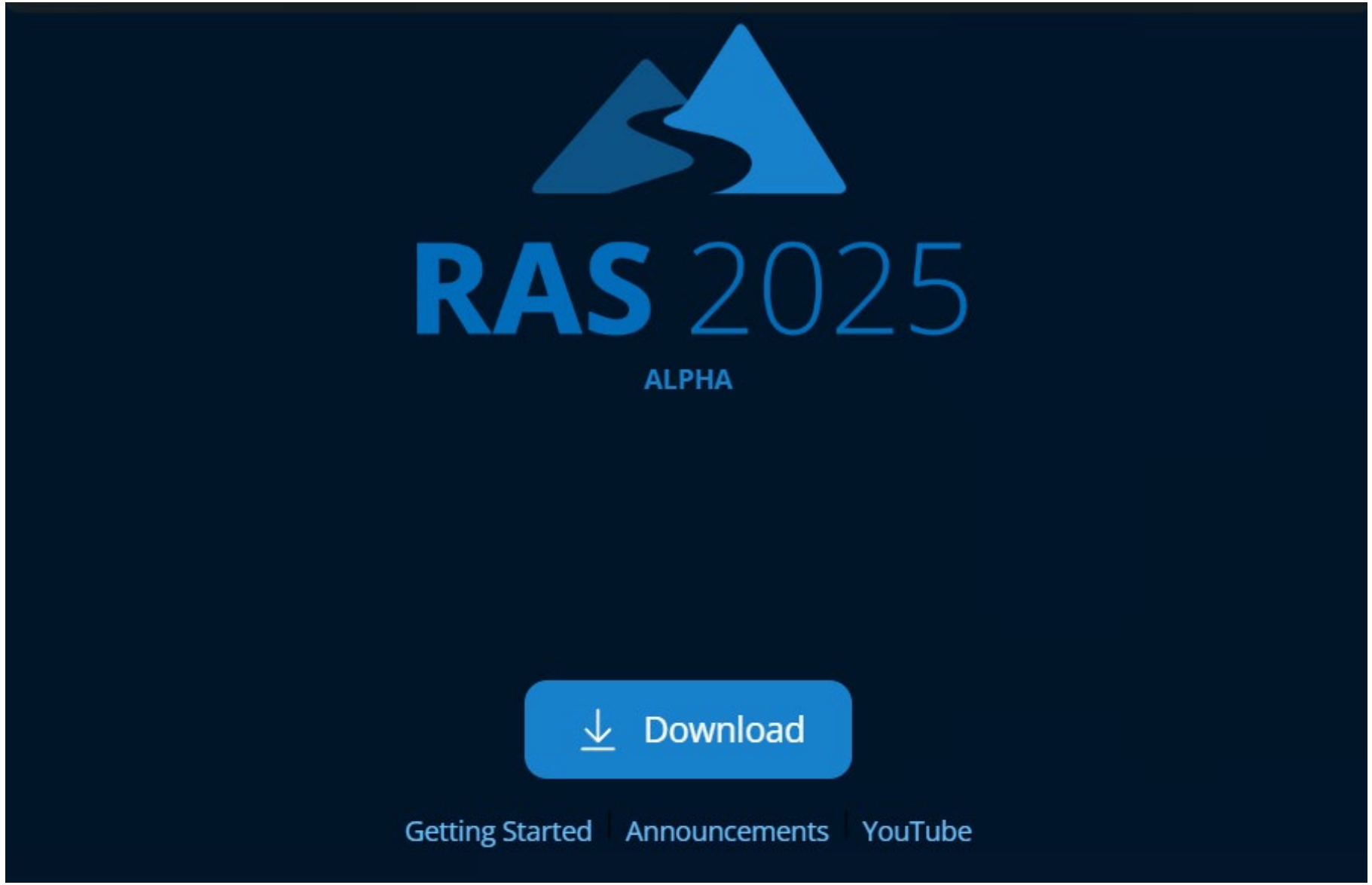


Download RAS2025 for Tomorrow



https://www.hec.usace.army.mil/software/hec-ras/2025/