

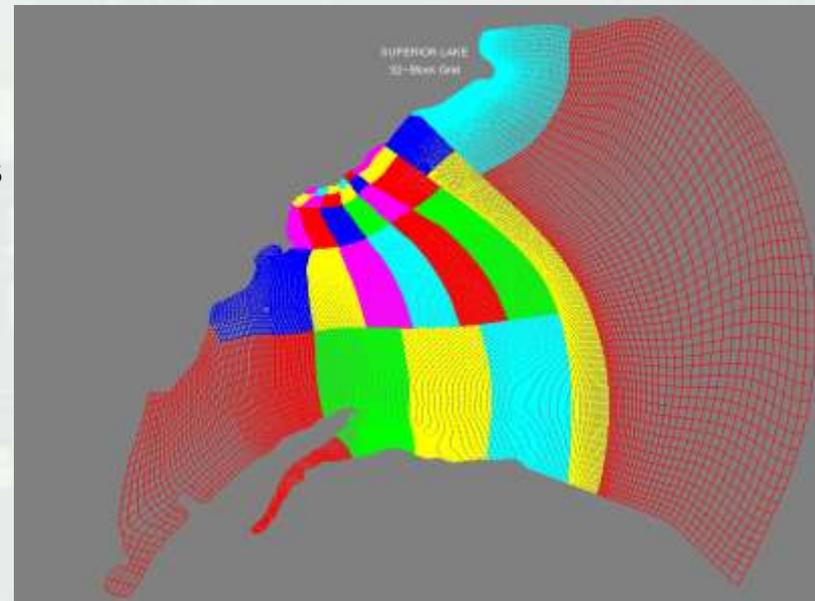
LTFATE/GSMB

PIs: E. Hayter, R. Chapman, J. Gailani

- Tool description: A three-dimensional, finite-difference, hydrodynamic and sediment transport model for mixed sediments. The model operates in highly stratified environments to predict the suspension and fate of sands, silts, and clays.
- Tool Input- hydrodynamic boundary conditions, waves, winds, bathymetry, sediment erosion properties, settling velocities

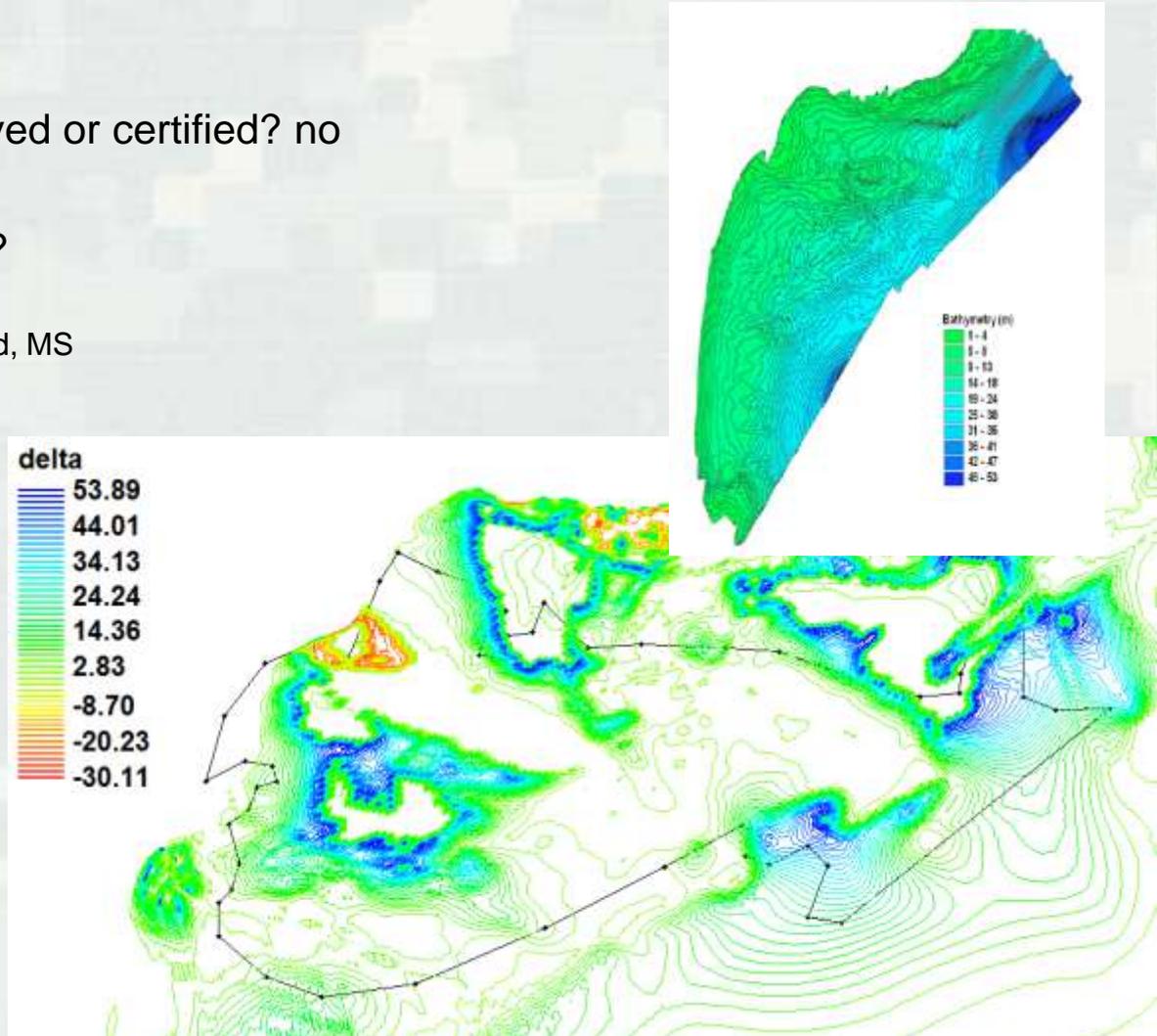
Tool Output – hydrodynamic conditions (water elevations, velocities, salinity, temperature) and sediment bed evolution (bathymetry, composition, erosion, deposition, water column TSS).

- How does the tool help the Districts OR
What question(s) does it answer for the Districts
 - ▶ Dredged material management
 - ▶ Beneficial uses of dredged material
 - ▶ Contaminated sediment transport
 - ▶ Channel infilling quantification and sources
 - ▶ Environmental protection
 - ▶ Other sediment transport issues



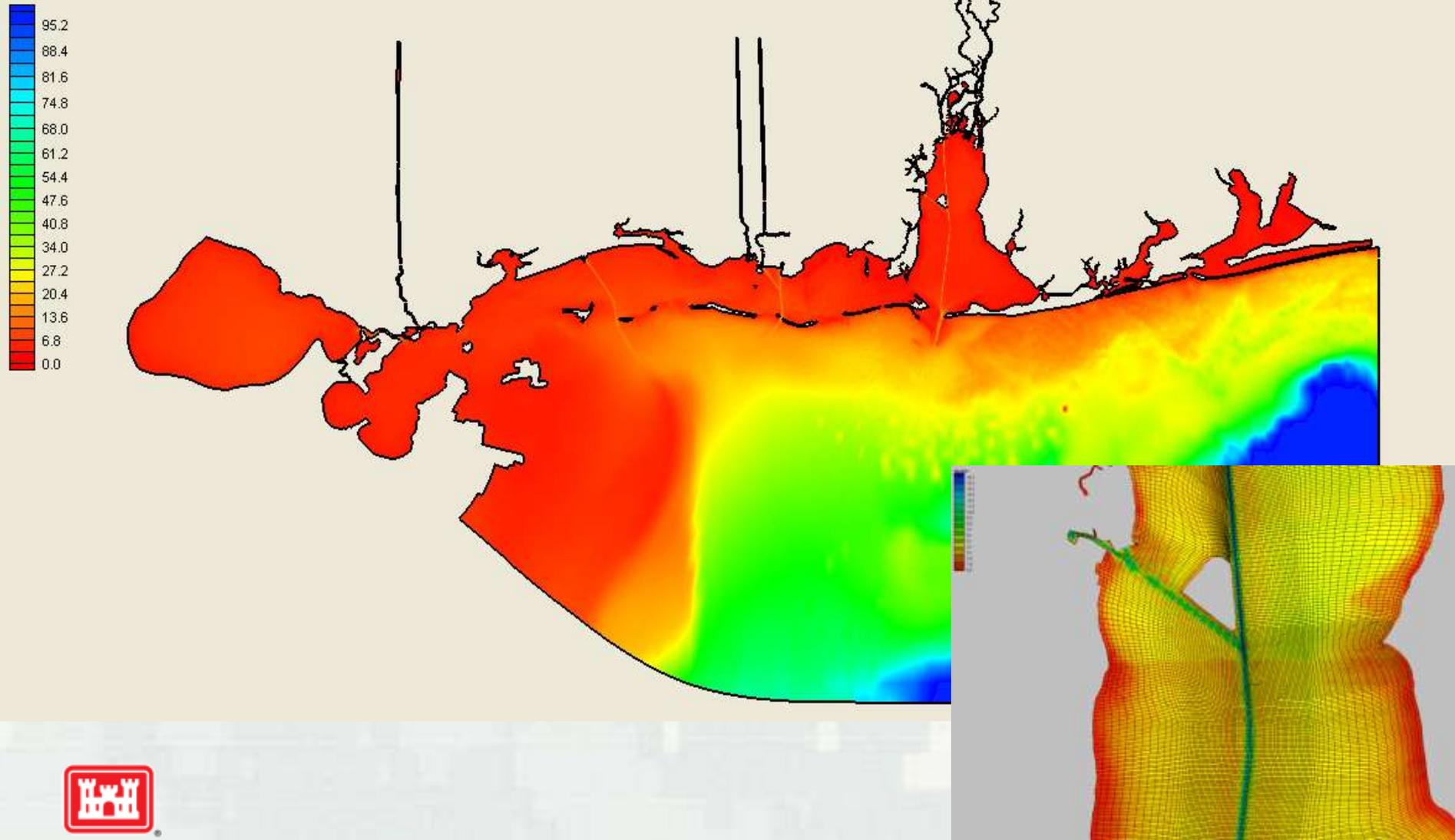
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- Status of the tool or model: Operational and being expanded to include wetland sediment transport
- If a model, has it been approved or certified? no
- Where has tool been applied?
 - ▶ Mobile Bay, AL
 - ▶ Bayou Casotte, Mississippi Sound, MS
 - ▶ Port of Anchorage/Knik Arm, AK
 - ▶ Duluth Harbor, MN
 - ▶ Keweenaw Peninsula, MI
 - ▶ Canaveral Harbor ODMDS, FL
 - ▶ Charleston Harbor ODMDS, SC
 - ▶ Calumet River and Harbor, IL
 - ▶ St Johns River, FL
 - ▶ James River, VA



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Mesh Module elevation



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Average Channel Sedimentation Rates (cy/day)*



Scenario Number	1	2	3	4
	TLP	Sensitivity Sim. 1	Sensitivity Sim. 2	Base Case (No-action)
Typical month	18	46	33	42
Active month	25	61	40	56
Hurricane Gustav	33	75	55	69
Hurricane Ida	30	70	52	64

*Averaged over 80,000 ft

