



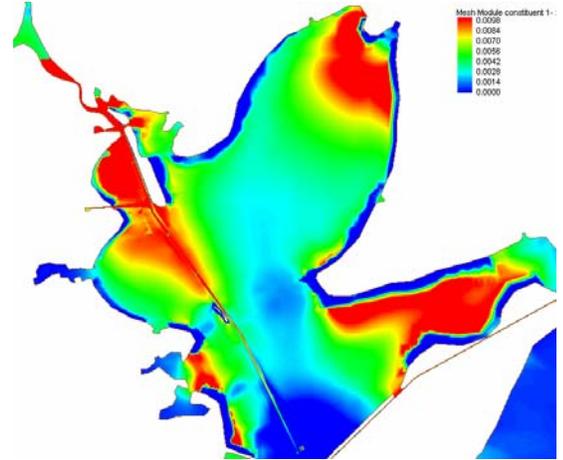
US Army Corps
of Engineers®

Engineer Research and
Development Center

Houston-Galveston Ship Channels Sedimentation Study, Phase 2

Description

The U.S. Army Engineer District, Galveston, recently enlarged the Houston Ship Channel in depth and width. The results of a previous study determined that the dredging should have been only about 20-30% higher than for the pre-enlarged channel. This implies that the large increase observed in the shoaling is due to other considerations, such as dredge disposal escape, channel dimension equilibrating, or vessel impacts on the shoaling. This preliminary study used the sediment model in an unvalidated state for early results to aid planning. A more general validated tool will be able to estimate the causes of the shoaling with the enlarged channel and suggest approaches to reduce the deposition rate. A full sediment model of the area will be useful to direct decisions to try to reduce dredging and dredging costs. Knowing that there are many factors that contribute to sediment transport, the logical next step is to develop and validate the sediment model. With a validated sediment model, testing and decision making can be made while considering many factors simultaneously.



Issue

In order to validate the sediment model, a comparison to historic dredging records and rates of shoaling as well as to suspended sediment concentrations must be performed. Suspended sediment concentrations were applied at the San Jacinto and Trinity Rivers based on field measurements and the flows and tide drove the sediment transport.

Products

Final products are a published CHL technical report and a validated sediment model of the Galveston Bay and Houston Ship Channel area from the Gulf of Mexico inward to approximately Houston, TX.

Supporting Technology

TABS-MDS hydrodynamic, salinity, and sediment model.

Benefits

The results of this project will provide a sediment model of the Houston Ship Channel to be used as an engineering tool to help determine why the shoaling has increased since the channel was enlarged and whether this increase will continue or cease with time.

Sponsors

US Army Corps of Engineers, Galveston District.

Point of Contact

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Partners

US Army ERDC; US Army Corps of Engineers; Port of Houston Authority.