



Channel Shoaling Analysis Tool (CSAT)



Description

The Channel Shoaling Analysis Tool (CSAT) calculates channel-shoaling volumes using historical channel surveys and uses the shoaling rates to predict future dredging volumes. The CSAT leverages ongoing efforts by the USACE to standardize the manner in which hydrographic surveys are uploaded and processed through its eHydro program. The CSAT estimates future localized shoaling rates through a hindcasting algorithm and is designed to incorporate new hydrographic surveys.

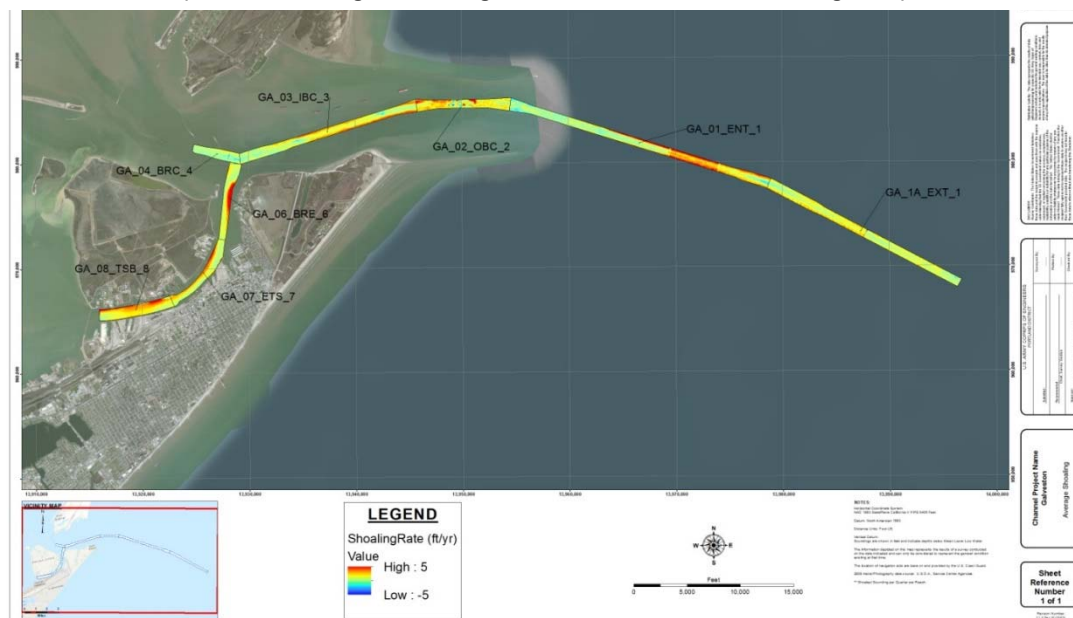
Example Studies

The CSAT has been run for USACE navigation channels that are high or medium tonnage around the coastal U.S.

Products

Average, maximum, and minimum shoaling rates are calculated for the different channel reaches. Volume tables are generated for varying depth and time increments which are used to provide predicted dredging requirements.

Average annual shoaling rate - spatial understanding of shoaling magnitudes (warm colors - higher shoaling rates; cool colors - lower shoaling rates).



Benefits

The shoaling rates are used to predict future volumes required for dredging at various depth and time intervals. The forecasted shoaling volumes from CSAT are combined with the detailed Waterborne Commerce annualized tonnage figures with the Channel Portfolio Tool (CPT), enabling a straightforward, quantitative comparison of cargo supported by dredging to any specified target depth to the requisite dredging costs

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