



Towing Vessel Delays and Barge Lane Navigability along the Houston Ship Channel, Texas

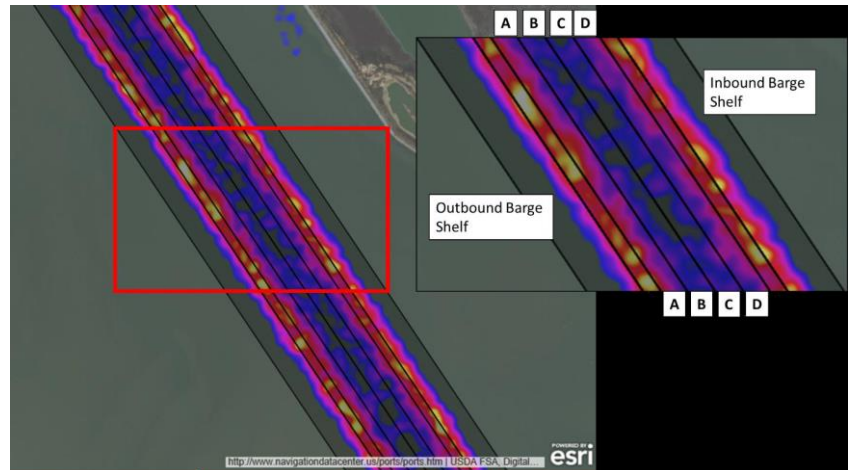
ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS

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Response Summary:

This effort supported the USACE Galveston District (SWG) concerning questions of a possible drawdown effect and subsequent hazardous navigable conditions experienced by towing vessels transiting the barge lanes on either side of the Houston Ship Channel (HSC). The study looked at barge shelf utilization rates by towing vessels, transits by direction and classification of vessel passing/overtaking events, and the degree of track linearity for towing vessels that are overtaken by oceangoing vessels while transiting the HSC. Towing vessels were observed to stay within the barge shelves and side slope portions of the full channel cross-section roughly 65% of the time while utilizing the main deep-draft channel roughly 35% of the time. Towing vessel transit durations were found to be positively correlated with the number of passing/overtaking events with oceangoing vessels, though further study is needed to isolate any causative relationships. Finally, a linear regression analysis was used to show that median R^2 values for towing vessel track lines change with the number of oceangoing vessel encounters.

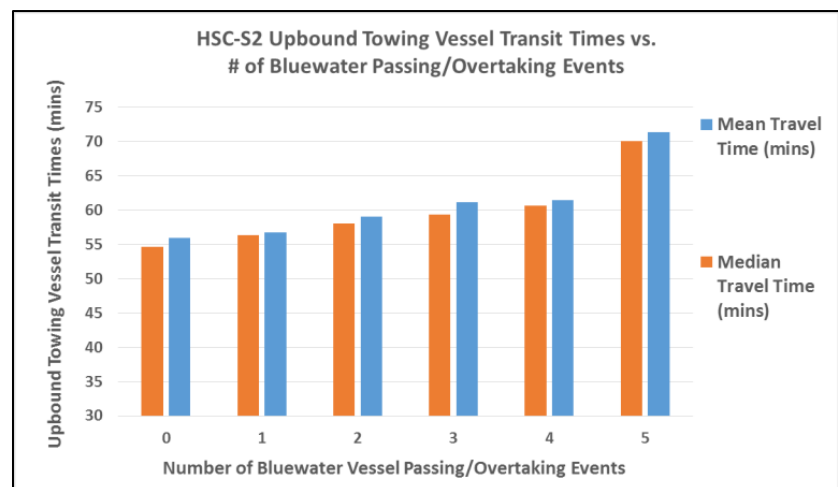


Period of Performance:

The project started in January of 2018 and the final report was delivered in July of 2018.

Benefits of the Response to the USACE Dredging/Navigation Program:

This effort demonstrated the utility of archival Automatic Identification System (AIS) vessel position reports for quantitative analysis of the prevalence of vessel interactions within federal navigation projects. A more comprehensive, in-depth study is needed to more fully develop causation findings for hazardous navigable conditions encountered by towing vessels in the HSC due to encounters with the larger oceangoing vessels.



Deliverable:

A technical summary document was submitted to SWG that explained the underlying methodological approaches taken and also presented the quantitative findings.

Providing environmental and engineering technical support to the U.S. Army Corps of Engineers Operations and Maintenance navigation and dredging missions



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