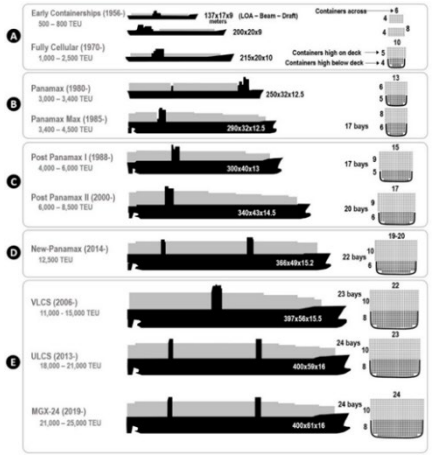
Houston Ship Channel Improvement Project (HSCIP): A Cost Effective and Technically Defensible Sampling Strategy for a 43 Mile-Long Study Area

ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS BUILDING STRONG®

Response Summary:

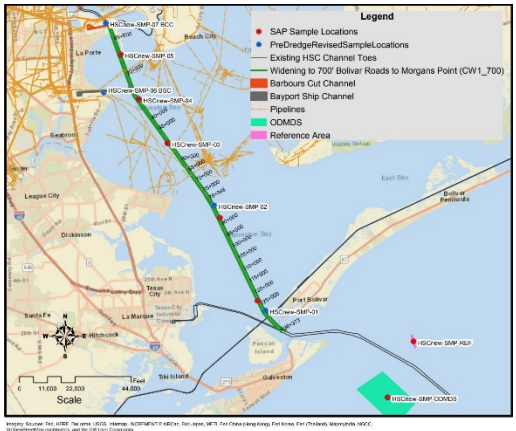


Improvements in container ship construction and the widening and deepening of the Panama Canal has led to larger and larger container ships transporting greater quantities of goods. Each port in the United States has an authorized Federal Ship Channel that is a specific width and depth. Traditional approaches to sampling of maintenance dredge materials have been to take grab samples of unconsolidated, shoaled-in materials within regularly spaced areas known as dredge material management units (DMMUs). Instead of this approach, representative samples for MSPRA Section 103 testing were obtained by coring transects to dredge prism depth from representative locations selected as part of the geotechnical boring review. The approach, developed cooperatively with USEPA Region 6 and SWG, required only 5 samples adequately characterize the 43 miles of the Bay reach segment of the main ship channel.

Period of Performance:

July 2021 – September 2021

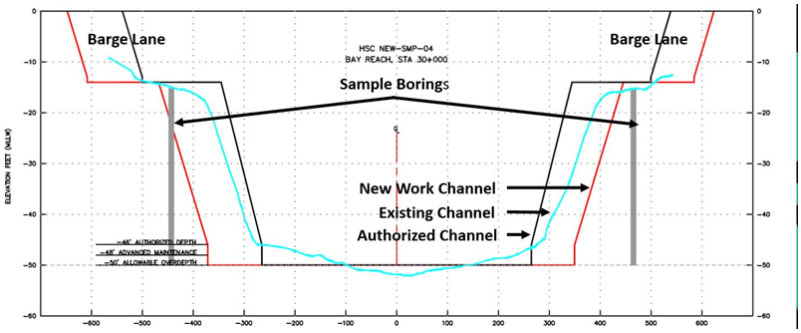
Benefits of the Response to the USACE Dredging/Navigation Program:



The USACE Dredging/Navigation Program benefits from the development of new technically defensible methods to characterize large study areas. The DOTS Technical Note provided the opportunity to condense the study data into a concise, succinct summary.

Deliverable:

The DOTS response resulted in a technical note that condensed extensive laboratory data generated as part of the MSPRA Section 103 testing and evaluation into a concise accounting of a novel, cost effective and technically defensible approach to collecting representative samples within the 43 mile-long Bay Reach of the HSC.



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

Dr. Cheryl R. Montgomery, Ms. Michelle Bourne, Dr. Brooke N. Stevens
Environmental Laboratory • Cheryl.R.Montgomery@usace.army.mil, Michelle.Bourne@usace.army.mil, Brooke.N.Stevens@usace.army.mil

DOTS ID: DOTS-21-R37