History of CERB

Beach Erosion Board (1929 – 1963): “investigate and report on the subjects of sand movement and beach erosion at such localities as may be designated by the Chief of Engineers.”

Coastal Engineering Research Board (1963 – Today)

Mission: Recommends to the Commander, USACE, overall priorities of broad research areas in consonance with the needs of the coastal engineering field and the objectives of the Commander.
92nd CERB Meeting
Galveston, TX

**THEME:** Coastal Navigation – Driving the U.S. Economy by Integrating Marine Transportation Infrastructure with Natural Coastal Systems

**Meeting Concept:** Identify the U.S. Gulf region’s engineering challenges to enhance the resilience of coastal systems while sustaining critical marine transportation and the research and development needs to deliver innovative solutions to meet these challenges and opportunities.
92nd CERB Agenda

Technical Sessions
- Integrated Coastal and Navigation Systems of the Texas Coast
- Coastal Engineering with Nature and Regional Sediment Management
- Integrated Coastal and Navigation Systems

Field Trip
Stop #1 Integrated Petrochemical Facility, Navigation, and Structural Flood Risk Management Infrastructure, Port of Texas City
Stop #2 Beach Nourishment Project, Galveston Island
Stop #3 Port of Galveston Facilities and Cruise Terminal
Systems Optimization

Dredging Equipment / Environmental Windows Optimization of Navigation Systems in the Gulf of Mexico
Heather Nachtmann, Ph.D.
Kenneth N. Mitchell, Ph.D.
Chase E. Rainwater, Ph.D.
Corey Winton, Ph.D.
Fereydoun Adbesh, M.S.
92nd Coastal Engineering Research Board Meeting
September 2, 2015

Coastal and Navigation Asset Management:
System Optimization Based on Cargo Flows for the Houston-Galveston Navigation Channel
Kenneth Ned Mitchell, PhD
Research Civil Engineer
ERDC Coastal and Hydraulics Lab
Vicksburg, Miss.
92nd Coastal Engineering Research Board Meeting
Galveston, Texas
2 Sept. 2015

Innovative solutions for a safer, better world
Regional Sediment Management & Engineering With Nature

Use of USACE Enterprise Tools for Lifecycle Systems Management of Dredged Material: Houston Ship Channel & Gulf Intracoastal Waterway Pilot Project

Linda Lillycrop
USACE Engineer Research and Development Center

92nd Coastal Engineering Research Board Meeting
Galveston Island, TX
1-3 September 2015

USACE Engineering With Nature (EWN) and Regional Sediment Management (RSM) “Proving Grounds”

Dr. Todd Bridges
Senior Research Scientist
EWN Program Manager
Engineer Research and Development Center
Environmental Laboratory

Ms. Linda Lillycrop
USACE RSM Program Manager
Engineer Research and Development Center
Coastal and Hydraulics Laboratory

Coastal Engineering Research Board Meeting
Galveston, TX
1-3 September 2015
Priority Coastal Research Needs

The Future of Nearshore Processes Research: Implementing a Research Plan by the Nearshore Community
http://scripps.ucsd.edu/centers/nearshorefuture/Shore & Beach Coastal Forum

Editors: Nicole Elko, Falk Feddersen, Diane Foster, Cheryl Hapke, Jesse McNinch, Ryan Mulligan, H. Tuba Ozkan-Haller, Nathaniel Plant, & Brit Rauenheimer

Navigation and Coastal Tools for the U.S. Gulf Coast: Capabilities and Research Needs
Chris Massey, PhD
Research Mathematician
Coastal and Hydraulics Laboratory

US Army Corps of Engineers

Innovative solutions for a safer, better world
92nd CERB Take-Aways

1. Continue investment in “Systems” research and development of tools that help design and operate projects and regions.

2. Consider a Corps role in creating a National coastal R&D plan.

3. Link R&D with on-going District projects to focus research products and drive requirements with high priority needs.

3. Measuring, monitoring and data.
E-Navigation Implementation Status

W. Jeff Lillycrop
Technical Director
Civil Works RD&T

Advancing Science and Technology in Support of Sustainable Solutions to America’s Water Resources Needs
U.S. e-Navigation Implementation

“e-Navigation is the harmonised collection, integration, exchange, presentation and analysis of maritime information onboard and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment”

- PIANC Working Group 125
- IALA & IMO

- CMTS e-Navigation IAT
- PIANC Working Group 156
  - with US Subgroup
Enhanced Marine Safety Information (eMSI)

- Current state: Agencies provide MSI in different ways; information is sometimes duplicated; users need to go various places to get it.
- Goal: Coordinate various government-provided navigation information services to provide an “integrated navigation information bulletin”.

1. ____
2. ____
3. ____
4. ____
USACE Navigation Enterprise
Data & Tool Access

http://navigation.usace.army.mil
District

Planning Quantities

Surveys

Web Site

Web Services

Metadata

Identification Information:
Citation:
Originator: U.S. Army, Corps of Engineers, New England District (comp.)
Publication Date: 20090306
Title: Boston Harbor, Boston, Massachusetts, After Dredge/Condition Survey
Geospatial Data Presentation Form: map
Series Information:
Series Name: N/A
Issue Identification: N/A

HQ Channel Indices

Condition Plots

NOAA Reports

Enterprise Navigation Channel Framework

Tony Niles / HQ

eHydro GIS Application

Framework

esri

14
## Districts now actively using eHydro

### eHydro Participation as of 25 August 2015

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### Surveys Uploaded

- **< 31 Days**: 186
- **31-60 Days**: 991

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Future eHydro Tasks

**Coastal**
- Nav Site to allow downloads of all available, uploaded data
- Search Capabilities
- Programmatically build direct links to a channel project
- System Integrations in CPN, RMS, etc.

**Inland**
- Implement in first ½ FY16
  - Fishbone
  - IENC Overlays
- Continued coordination with all Inland districts
- Coordination with USCG
AM Nav Channel Work Flow

Risk Informed Decision

CPT

Shoaling Analysis & Condition (CSAT)

Baseline Maintenance Cost

Internal Management Costs

Dredging & Placement Costs

eHydro Survey

Continuous Update - Channel Surveys

3D Channel Framework

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USACE Navigation Enterprise Data & Tool Access

http://navigation.usace.army.mil
Questions ???