

Coastal Engineering Research Board Tasks and R&D Update

ERDC
Engineer Research and
Development Center

W. Jeff Lillycrop

Technical Director
Civil Works RD&T

*Advancing Science and Technology
in Support of Sustainable Solutions to
America's Water Resources Needs*



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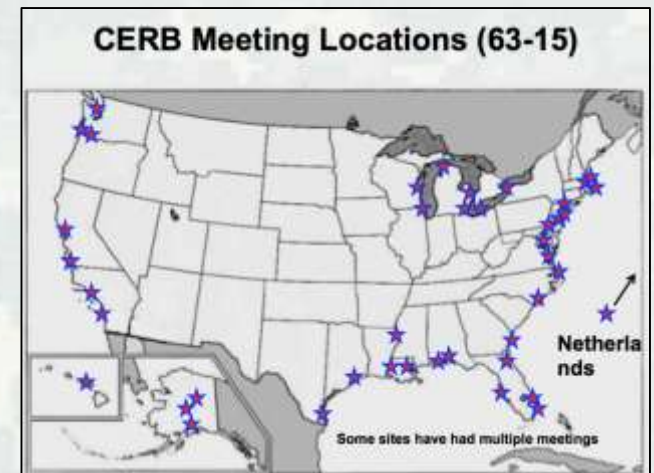


History of CERB

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



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MarTREC
Maritime Transportation Research Center

Coastal and Navigation Asset Management: System Optimization Based on Cargo Flows for the Houston-Galveston Navigation Channel

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Kenneth Ned Mitchell, PhD

Research Civil Engineer

ERDC Coastal and Hydraulics Lab

Vicksburg, Miss.

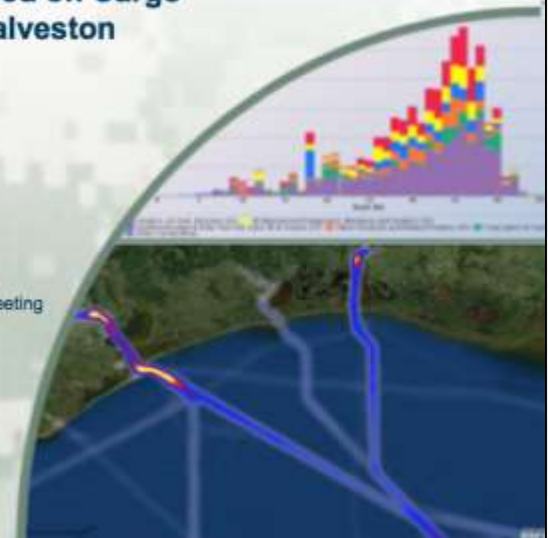
92nd Coastal Engineering Research Board Meeting

Galveston, Texas

2 Sept. 2015



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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

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Linda Lillycrop
USACE Engineer Research and
Development Center

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



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**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



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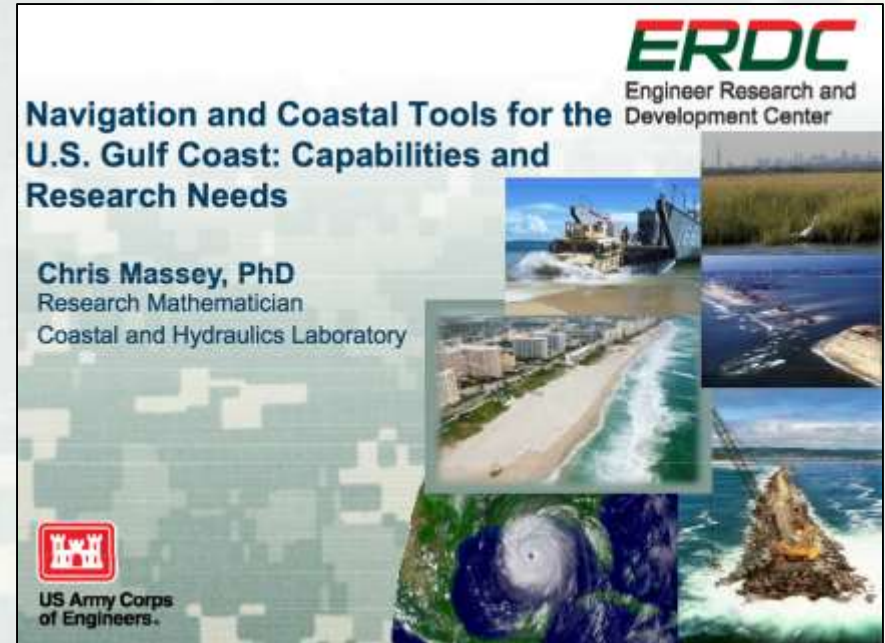


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Priority Coastal Research Needs



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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



Questions ???



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E-Navigation Implementation Status

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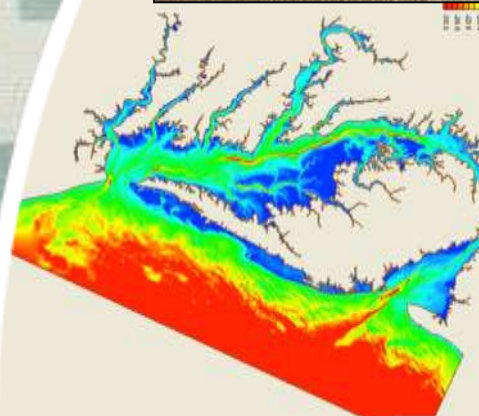
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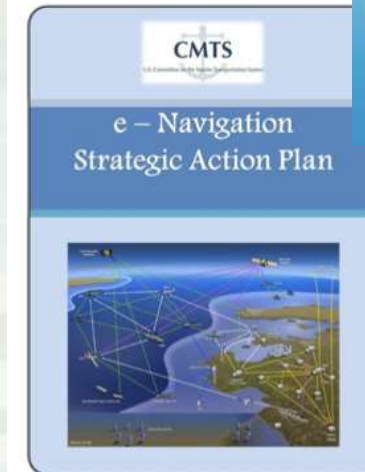
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U.S. e-Navigation Implementation

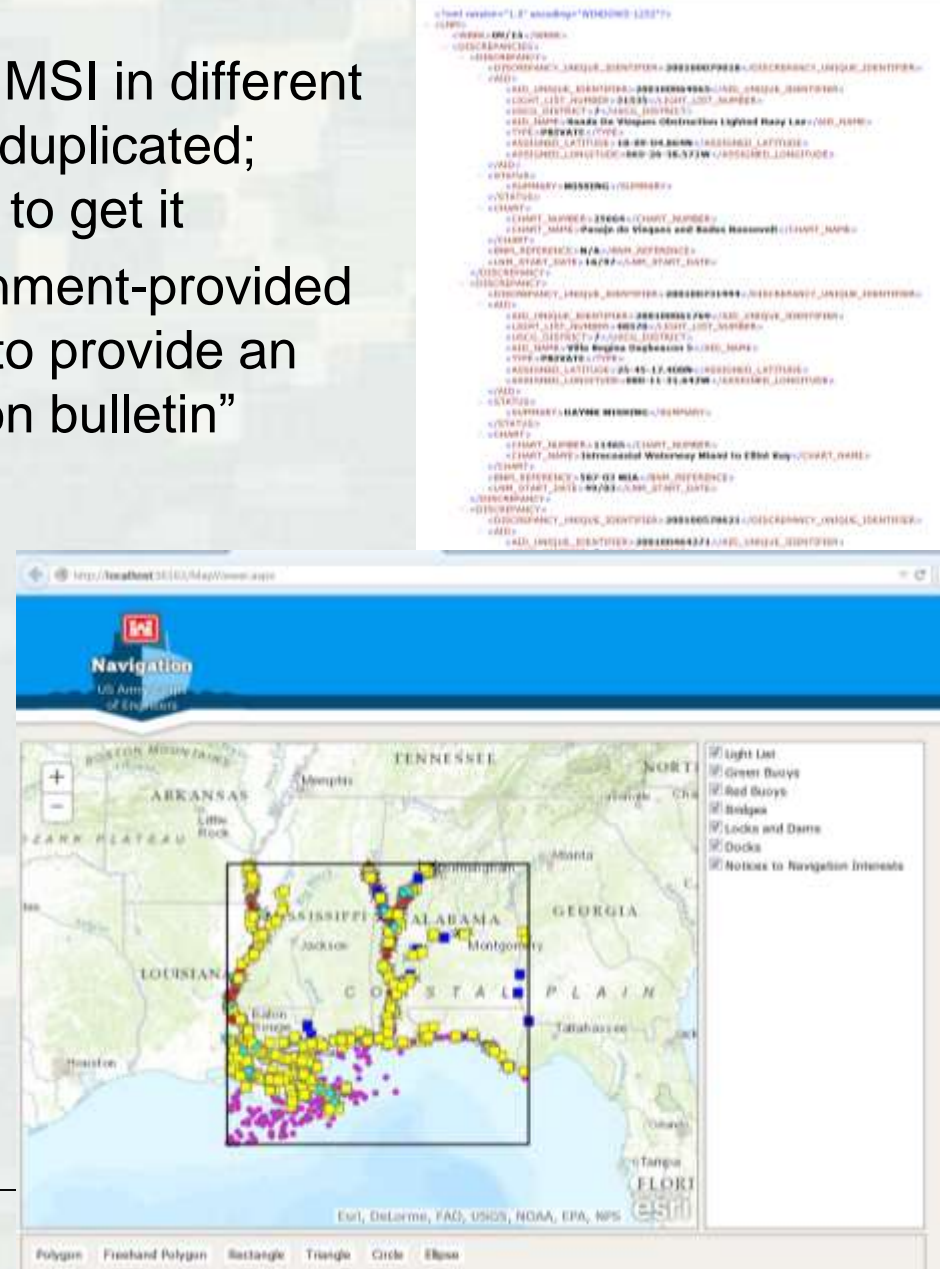
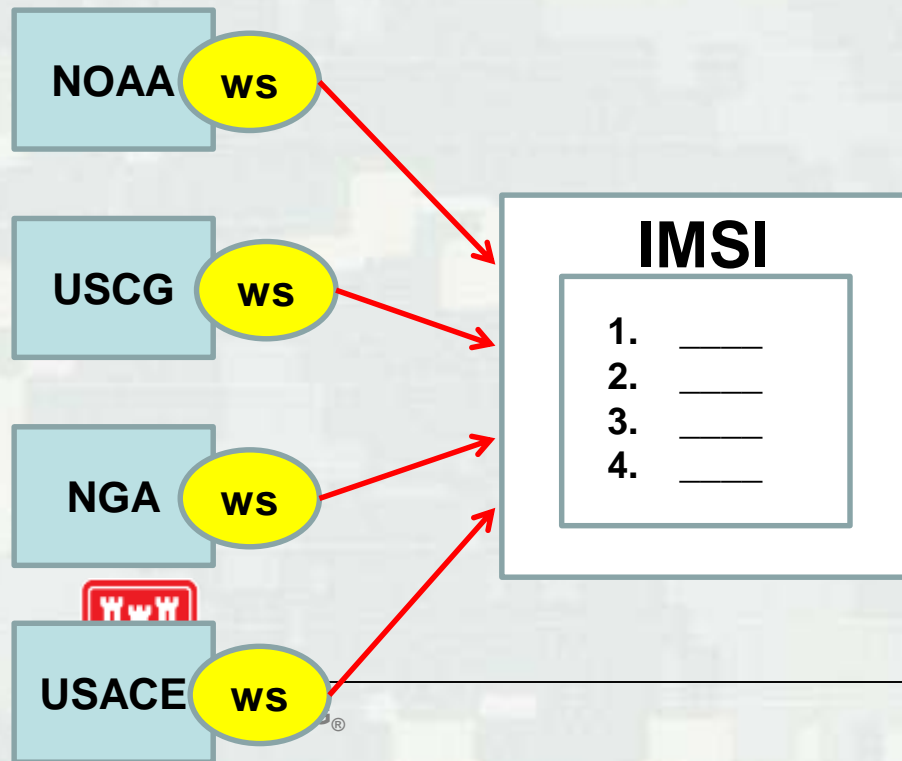
*“e-Navigation is the **harmonised collection, integration, exchange, presentation and analysis of maritime information** onboard and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment”*

- 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”



USACE Navigation Enterprise Data & Tool Access



<http://navigation.usace.army.mil>

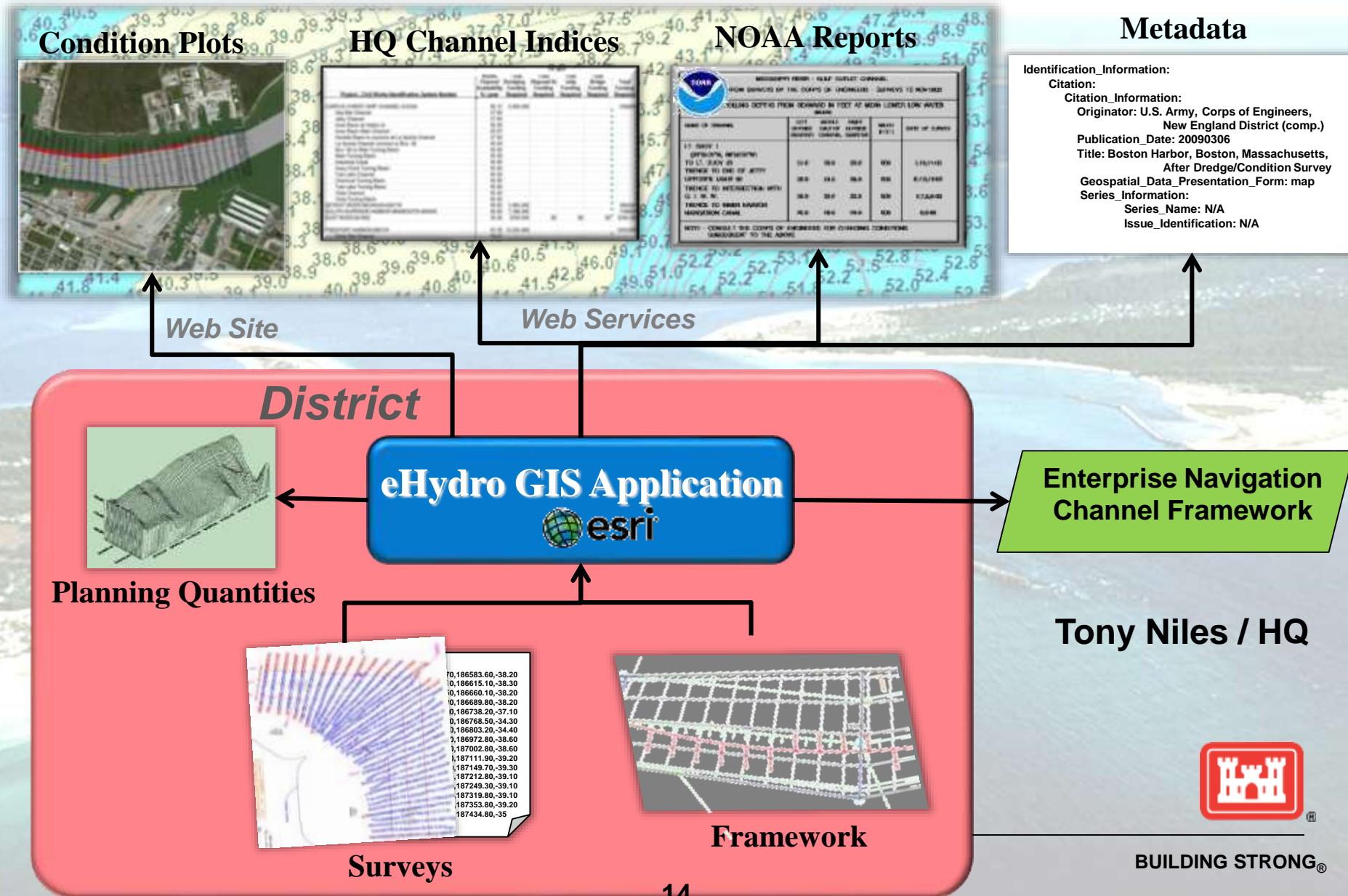


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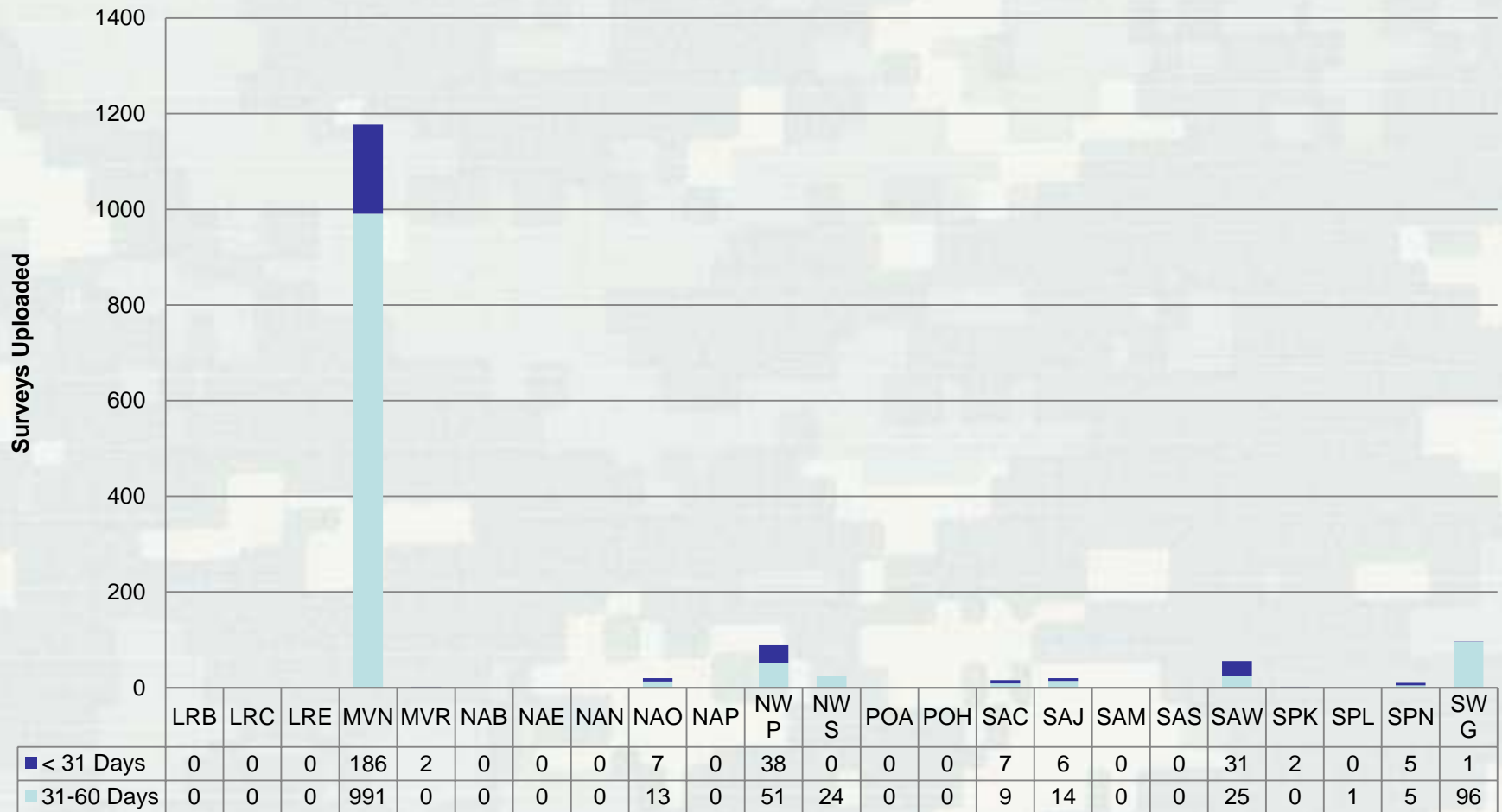
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eHydro Application and Reporting Process



Districts now actively using eHydro

eHydro Participation as of 25 August 2015



Future eHydro Tasks

Coastal

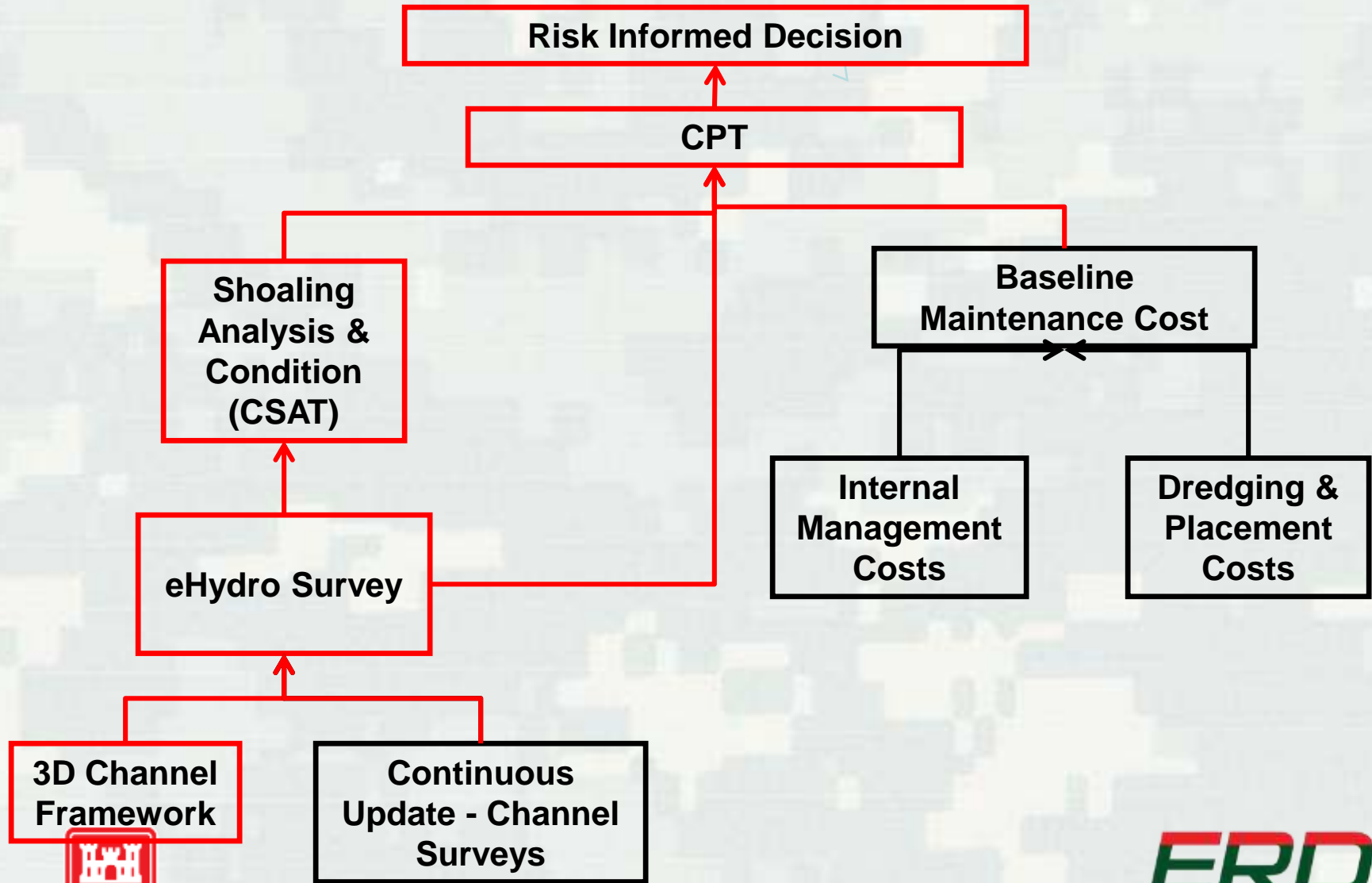
- Nav Site to allow downloads of all available, uploaded data
- Search Capabilities
- Programmatically build direct links to a channel project
- System Integrations in CPN, RMS, etc.

Inland

- Implement in first ½ FY16
 - ▶ Fishbone
 - ▶ IENC Overlays
- Continued coordination with all Inland districts
- Coordination with USCG



AM Nav Channel Work Flow



USACE Navigation Enterprise Data & Tool Access



<http://navigation.usace.army.mil>



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Questions ???



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