



# USACE Navigation Portal

Ned Mitchell, ERDC-CHL  
Navigation Portal Product Manager

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Navigation Portal Product Owner

Regional Sediment Management Program  
FY21 In-progress Review  
21 SEPT 2021



US Army Corps  
of Engineers



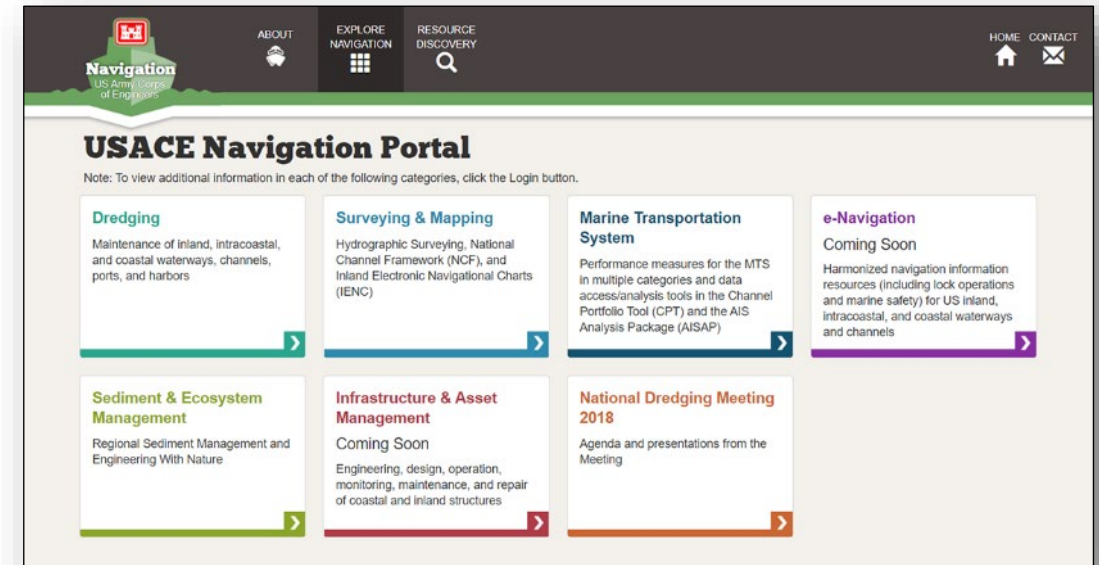
# USACE Navigation Portal

- Problem: no practical way to combine information and analysis capabilities from separate, targeted NAV tools and data sets

- Dated technology / lack of adaptability
- Inconsistent user interfaces
- Different data access methods/requirements
- Separate URLs, maps, and one-time software modules

- Objective

- Single access point for NAV tools and data
- Consistent look and feel across applications
- Enhanced functionality via state-of-the-art technology
- Integration of datasets and tools
- Extensibility → ensure long-term viability



- Approach

- Apply Congressionally directed funds (\$3.3M in FY21)
- Establish design and implementation guidelines (CorpsUI)
- Reengineer the legacy Navigation Portal
- Take advantage of new technologies and platforms
- Deploy to the Azure Cloud

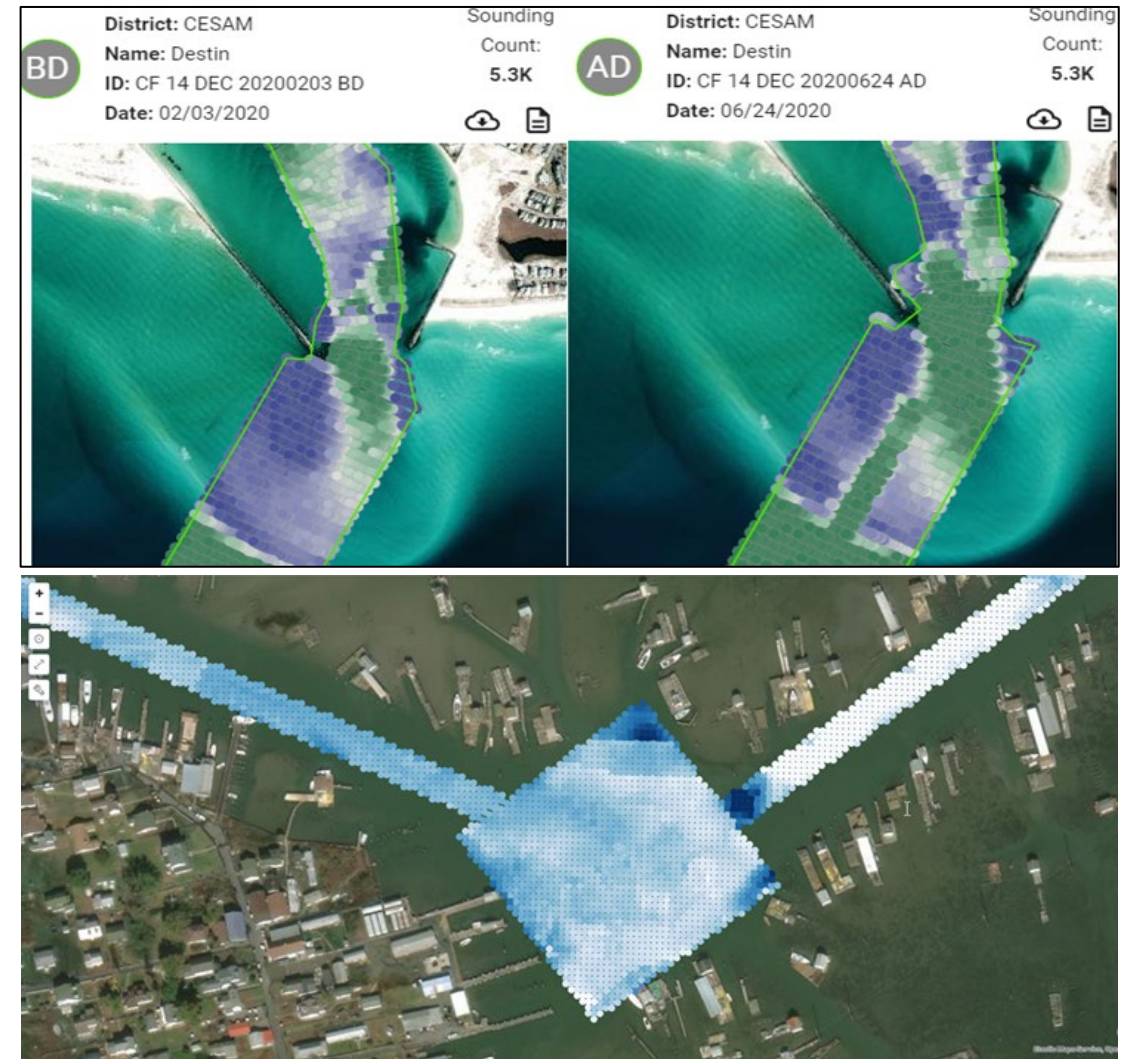
# USACE Navigation Portal

## ■ Project Team and Roles

- Ned Mitchell, Product Manager (ERDC)
- Josh Pritchard, Product Owner (CESAM-OP-J)
- Andrew Keith, Technical Lead (CESAM-OP-J)
- OptimalGEO Development Team, Data Ingest and UI/UX Design
- ERDC PIs for respective tools
- Field SMEs to identify key capabilities

## ■ Project Funding by Year

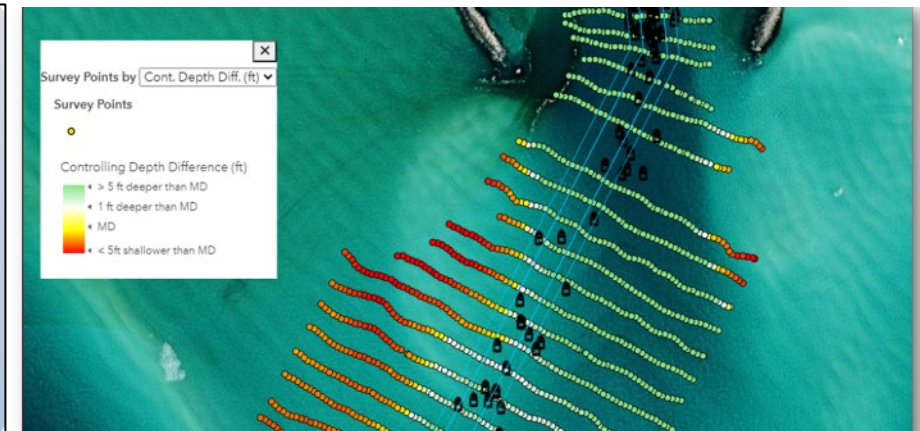
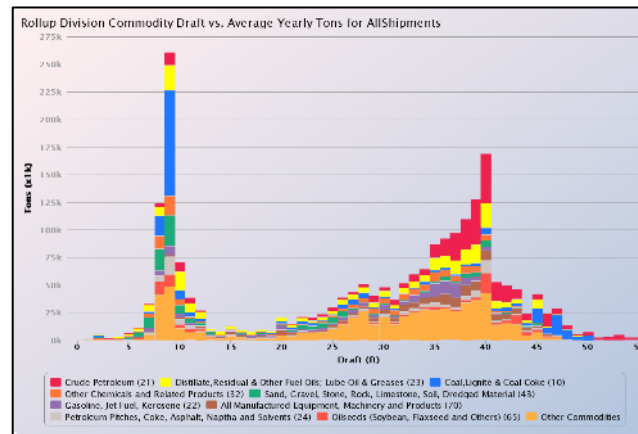
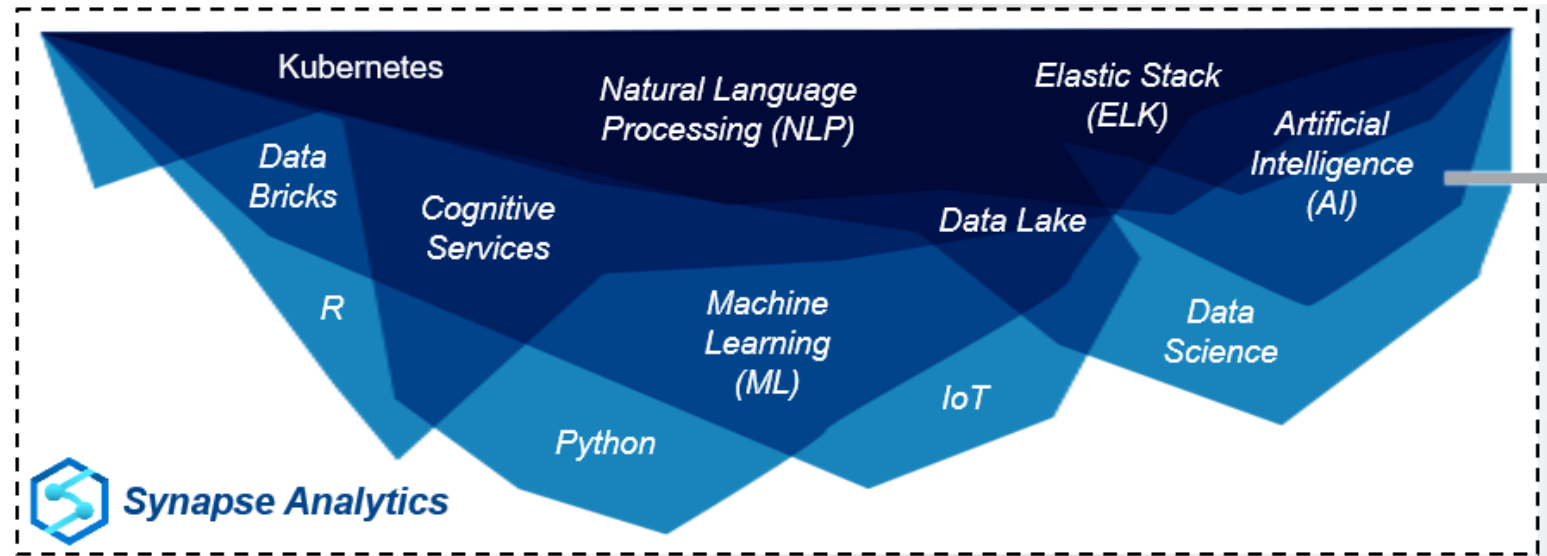
- Project Start: FY20 / Project End: FY23
- FY20: \$3,300K
- FY21: \$3,300K
- FY22: \$3,300K



# USACE Navigation Portal

## ■ Data/tools to be integrated from the following:

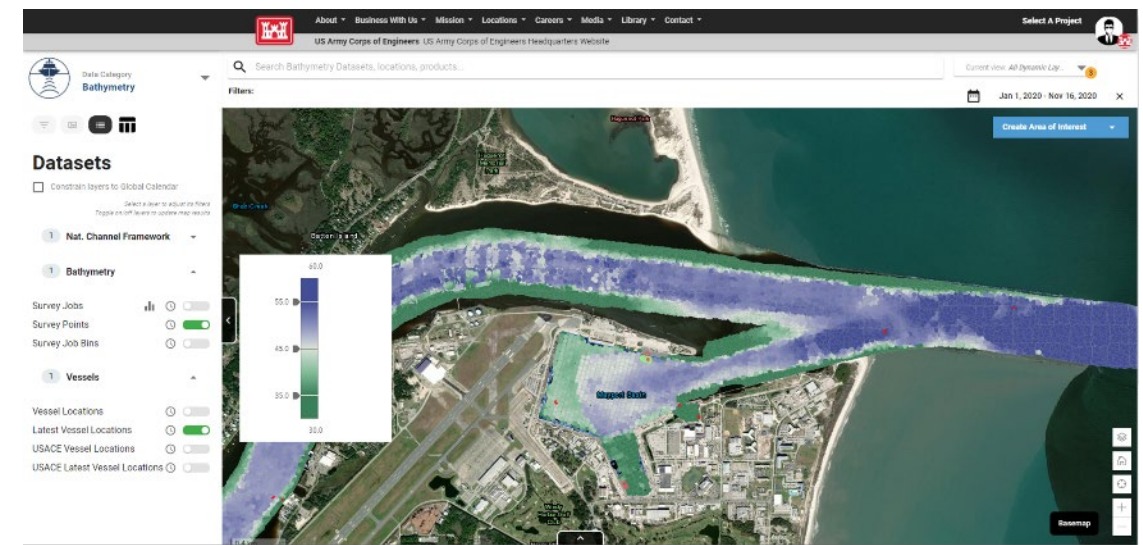
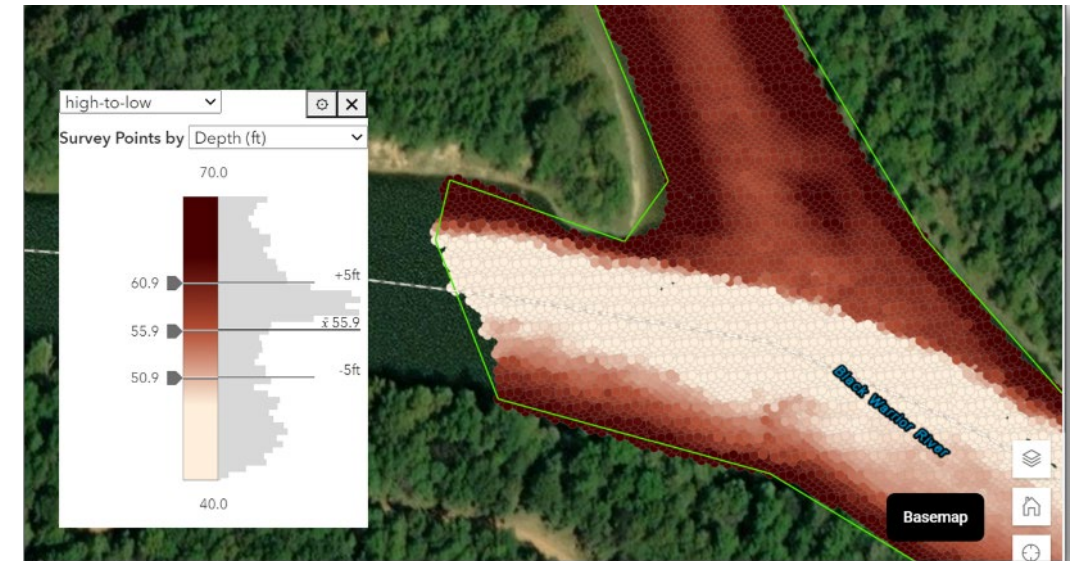
- Automatic Identification System Analysis Package (AISAP)
- eHydro/CSAT
- Offshore Dredge Material Disposal System (ODMDS)
- National Dredging Quality Management Program (DQM)
- Operations & Dredging Endangered Species System (ODESS)
- Additional data and tools (CPT, Wave/TideNet, SMT, etc.)



# USACE Navigation Portal


## Major FY21 Activities and Products

- Design and implementation guidelines (CorpsUI)
- Modernized Navigation Portal UI
- Web templates for developers to use to plug in new components
- Navigation Portal index catalog, using Elasticsearch
- CAC implementation and security for all restricted datasets
- Automated Navigation Portal DevSecOps process
- Migration of the Navigation Portal to the USACE Azure L4 Government Cloud
- 1 of 3 Government agencies nominated for the Microsoft Azure Elasticsearch Excellence Award
- Interim Authority to Test (IATT) on the USACE Azure L4 Government Cloud
- Minimum Viable Product: eHydro/CSAT, AISAP, and CPT into the live NavPortal site



# USACE Navigation Portal

US Army Corps of Engineers U.S. Army Corps of Engineers Headquarters Website



Select A Project 

Data Category **Bathymetry**

Search Bathymetry Datasets, locations, products...

Current view: All Dynamic Lay... 3

Filters:

Nov 12, 2019 - Nov 12, 2020  

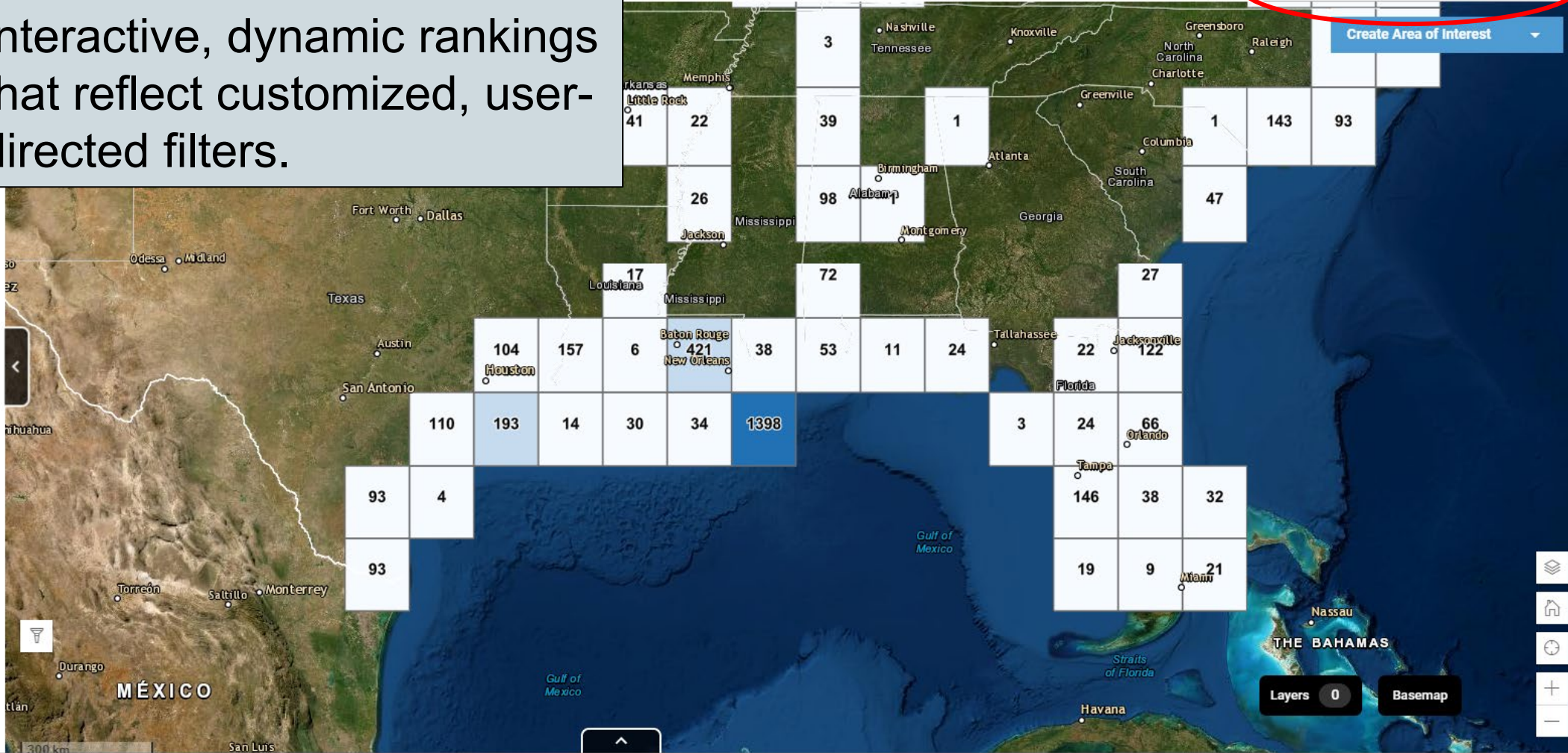
**5,998** Hydrographic Surveys

Search

USACE Divisions 5,998

Name	ID	Sort
Mississippi Valley Division	2,800	
South Atlantic Division	1,216	
Southwestern Division	770	
Northwestern Division	558	
Great Lakes and Ohio River Divis...	304	
North Atlantic Division	248	
South Pacific Division	102	

Interactive, dynamic rankings that reflect customized, user-directed filters.

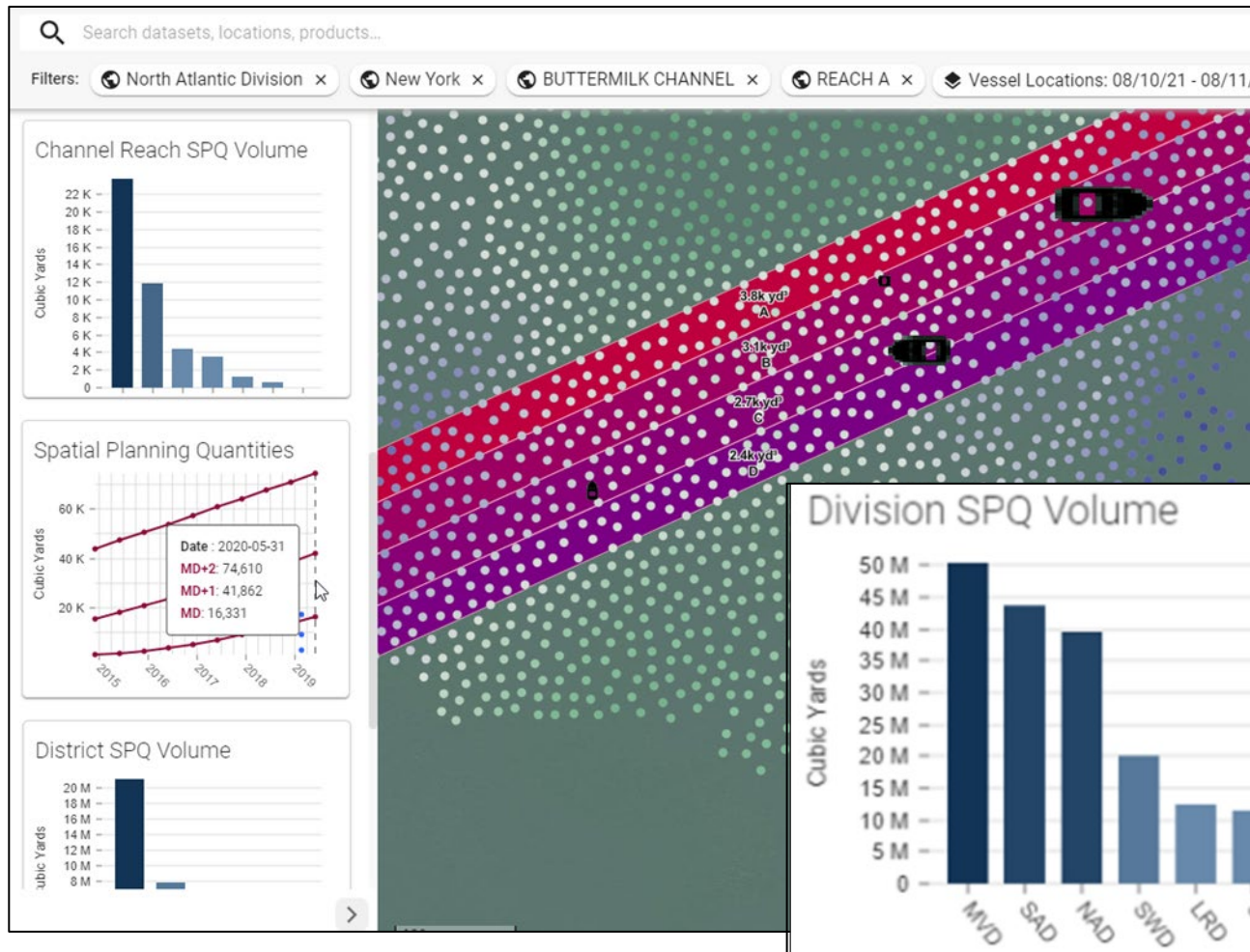


Map Data Grid (Approximate Values):

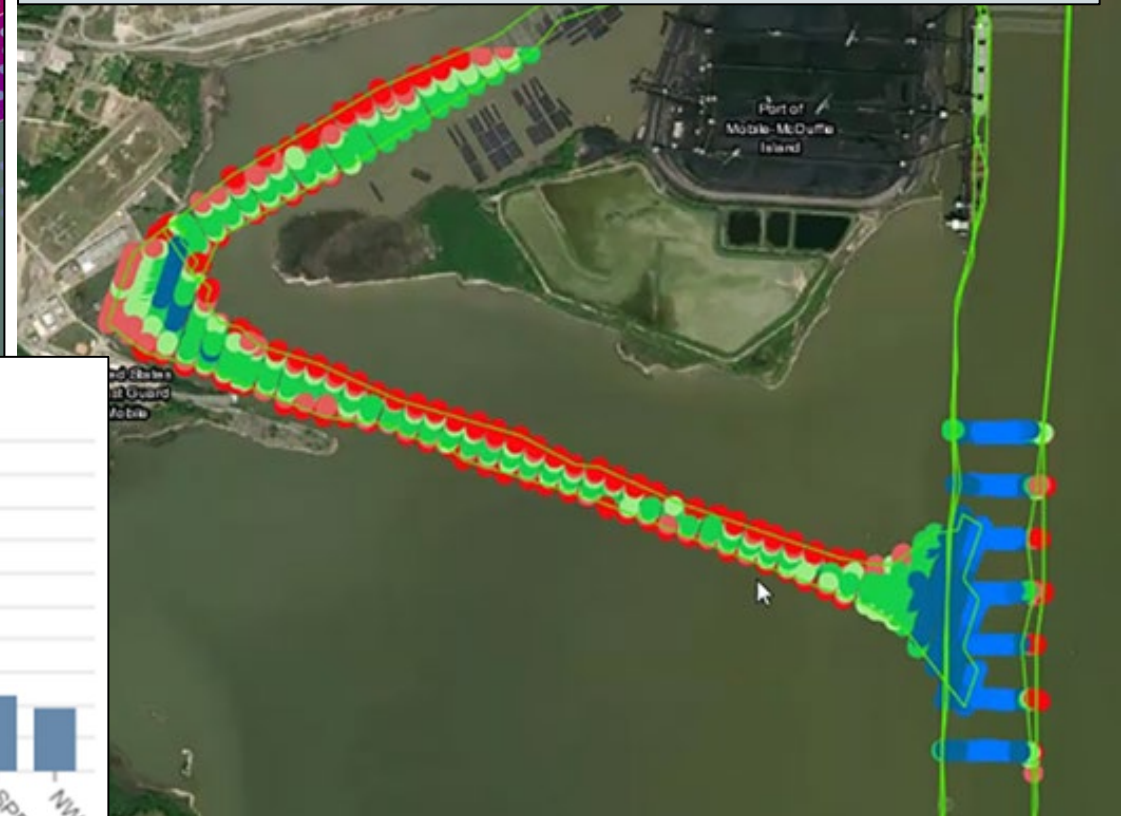
3	41	22	39	1	1	143	93
26	98	47	17	72	27	104	157
6	38	53	11	24	22	122	66
110	193	14	30	34	1398	3	24
93	4	146	38	32	19	9	21

Layers 0 Basemap

# USACE Navigation Portal

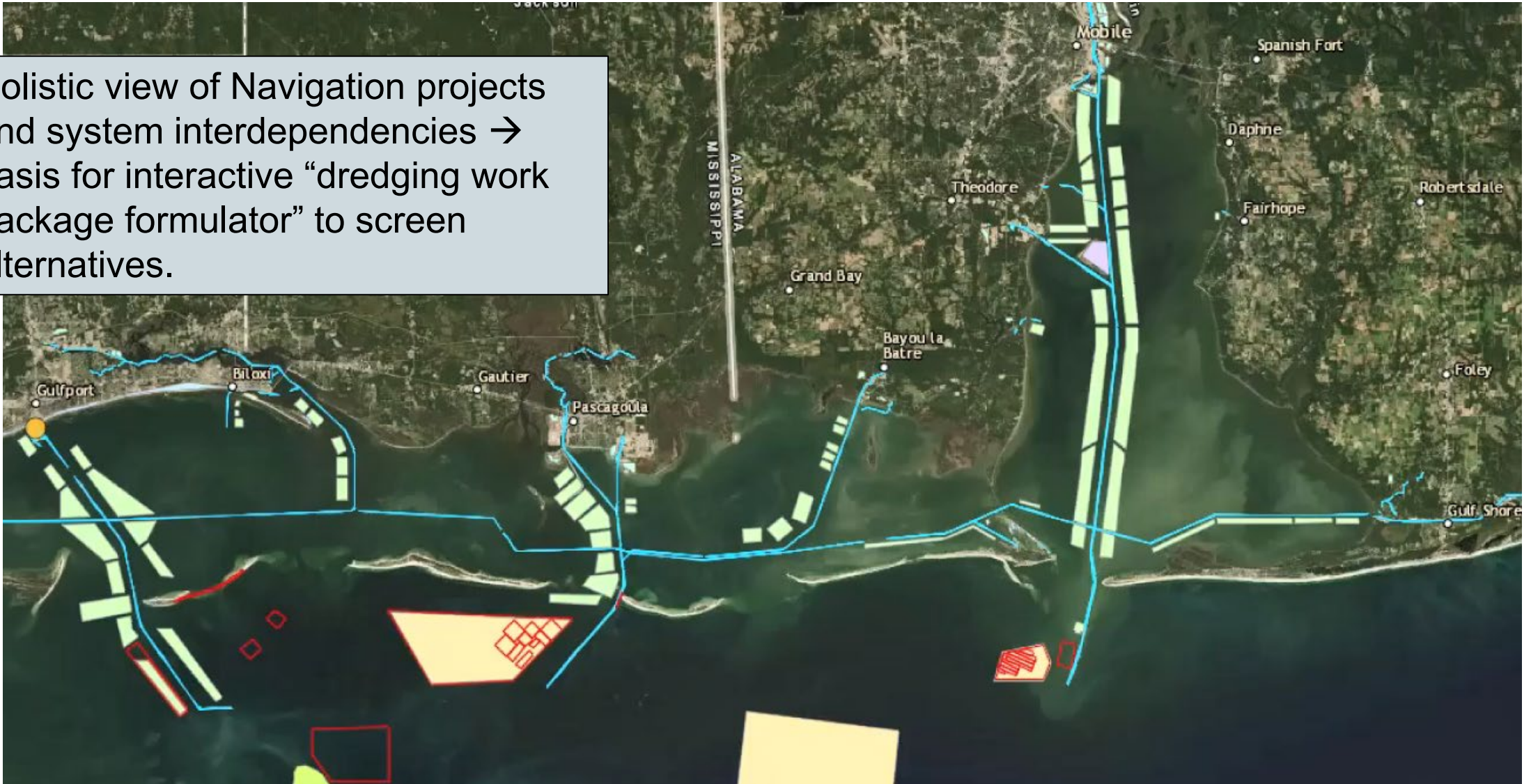


Mix of map visualizations, charts and graphs, and tabular depictions of relevant data sets reflecting user preferences.



# USACE Navigation Portal

Holistic view of Navigation projects and system interdependencies → basis for interactive “dredging work package formulator” to screen alternatives.



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# USACE Navigation Portal

The screenshot displays the USACE Navigation Portal interface. At the top, there is a navigation menu with options like 'About', 'Business With Us', 'Mission', 'Locations', 'Careers', 'Media', 'Library', and 'Contact'. The main header shows 'US Army Corps of Engineers US Army Corps of Engineers Headquarters Website' and a 'Select A Project' button. Below the header, there is a search bar and a filter section with 'Global Calendar' and '+ Add Filter'. The main content area features a map with a red line labeled 'Channel Area' and a blue line labeled 'Channel Reach'. A text box overlaid on the map states: 'Survey planning quantities (and many other metrics) seamlessly aggregated at a range of spatial scales.' Below the map, there is a list of USACE Divisions with columns for 'Name' and 'ID'. The list includes: Mississippi Valley Division (2,959), South Atlantic Division, Southwestern Division, Northwestern Division, Great Lakes and Ohio River Division, North Atlantic Division, South Pacific Division, and Pacific Ocean Division. At the bottom, there is a 'Channel Quarter' label and a 'Basemap' button.

**Channel Area**

**Channel Reach**

**Channel Quarter**

7,800  
Hydrographic Surveys

USACE Divisions

Name	ID
Mississippi Valley Division	2,959
South Atlantic Division	
Southwestern Division	
Northwestern Division	
Great Lakes and Ohio River Division	
North Atlantic Division	
South Pacific Division	
Pacific Ocean Division	

Survey planning quantities (and many other metrics) seamlessly aggregated at a range of spatial scales.

geo.channelreach.co CESAJ\_MP\_01\_MNS\_1

max geo.datetimestamp	Jun 1, 2020 @ 19:00:00.000
max sum_md_max	217,334
max sum_md_plus_1_max	446,252
max sum_md_plus_2_max	709,617

Filter by geometry

geo.channelquarter. CESAJ\_MP\_01\_MNS\_1\_A

Latest Survey Date	Jun 1, 2020 @ 19:00:00.000
max md	55,058
max md_plus_1	112,616
max md_plus_2	179,259

Filter by geometry

geo.channelquarter. CESAJ\_MP\_01\_MNS\_1\_B

Latest Survey Date	Jun 1, 2020 @ 19:00:00.000
max md	26,270
max md_plus_1	81,841
max md_plus_2	145,920

Filter by geometry

geo.channelquarter. CESAJ\_MP\_01\_MNS\_1\_C

Latest Survey Date	Jun 1, 2020 @ 19:00:00.000
max md	34,774
max md_plus_1	89,886
max md_plus_2	154,072

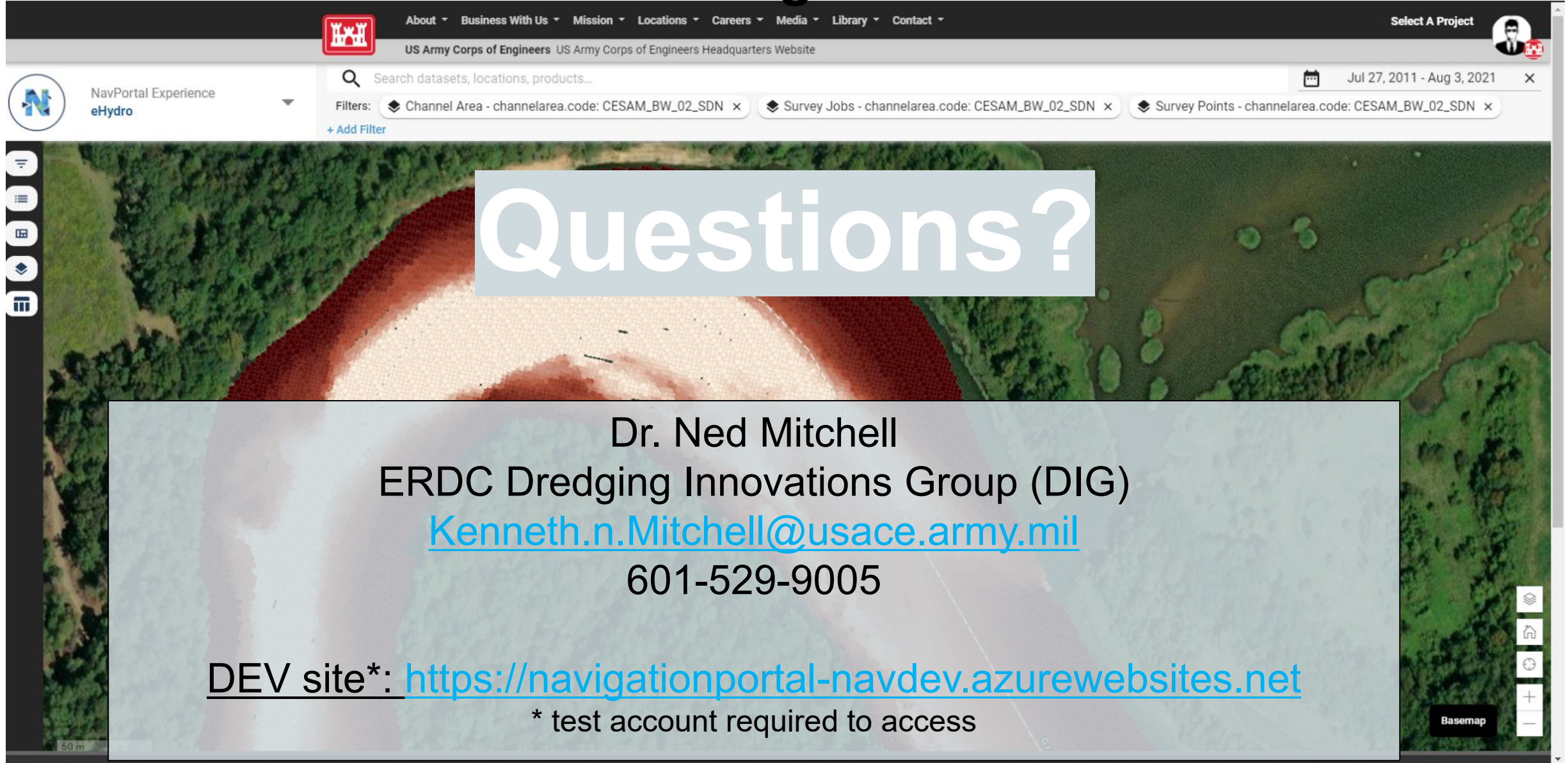
Filter by geometry

geo.channelquarter. CESAJ\_MP\_01\_MNS\_1\_D

Latest Survey Date	Jun 1, 2020 @ 19:00:00.000
max md	99,232
max md_plus_1	161,729
max md_plus_2	230,366

Filter by geometry

# USACE Navigation Portal



The screenshot shows the USACE Navigation Portal interface. At the top, there is a navigation menu with links for About, Business With Us, Mission, Locations, Careers, Media, Library, and Contact. The US Army Corps of Engineers logo is visible on the left, and a user profile icon is on the right. A search bar is present, and several filters are applied: Channel Area - channelarea.code: CESAM\_BW\_02\_SDN, Survey Jobs - channelarea.code: CESAM\_BW\_02\_SDN, and Survey Points - channelarea.code: CESAM\_BW\_02\_SDN. The main content area displays a map with a red and white overlay. A large, semi-transparent text box in the center of the map contains the word "Questions?". Below this, another semi-transparent text box provides contact information for Dr. Ned Mitchell, including his title, organization, email address, and phone number. At the bottom of this box, a DEV site URL is provided with a note that a test account is required for access.

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US Army Corps of Engineers US Army Corps of Engineers Headquarters Website

NavPortal Experience  
eHydro

Search datasets, locations, products...

Jul 27, 2011 - Aug 3, 2021

Filters: Channel Area - channelarea.code: CESAM\_BW\_02\_SDN x Survey Jobs - channelarea.code: CESAM\_BW\_02\_SDN x Survey Points - channelarea.code: CESAM\_BW\_02\_SDN x

+ Add Filter

# Questions?

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601-529-9005

DEV site\*: <https://navigationportal-navdev.azurewebsites.net>  
\* test account required to access

Basemap

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