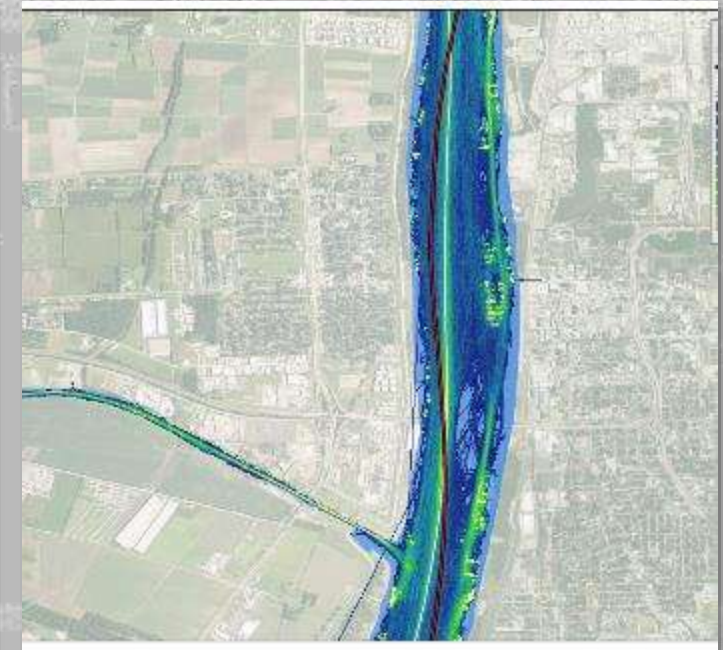


STATUS OF INLAND ENCS IN THE US

Denise LaDue
USACE IENC Program Manager
US Army Geospatial Center
Date: 22 OCT 2019

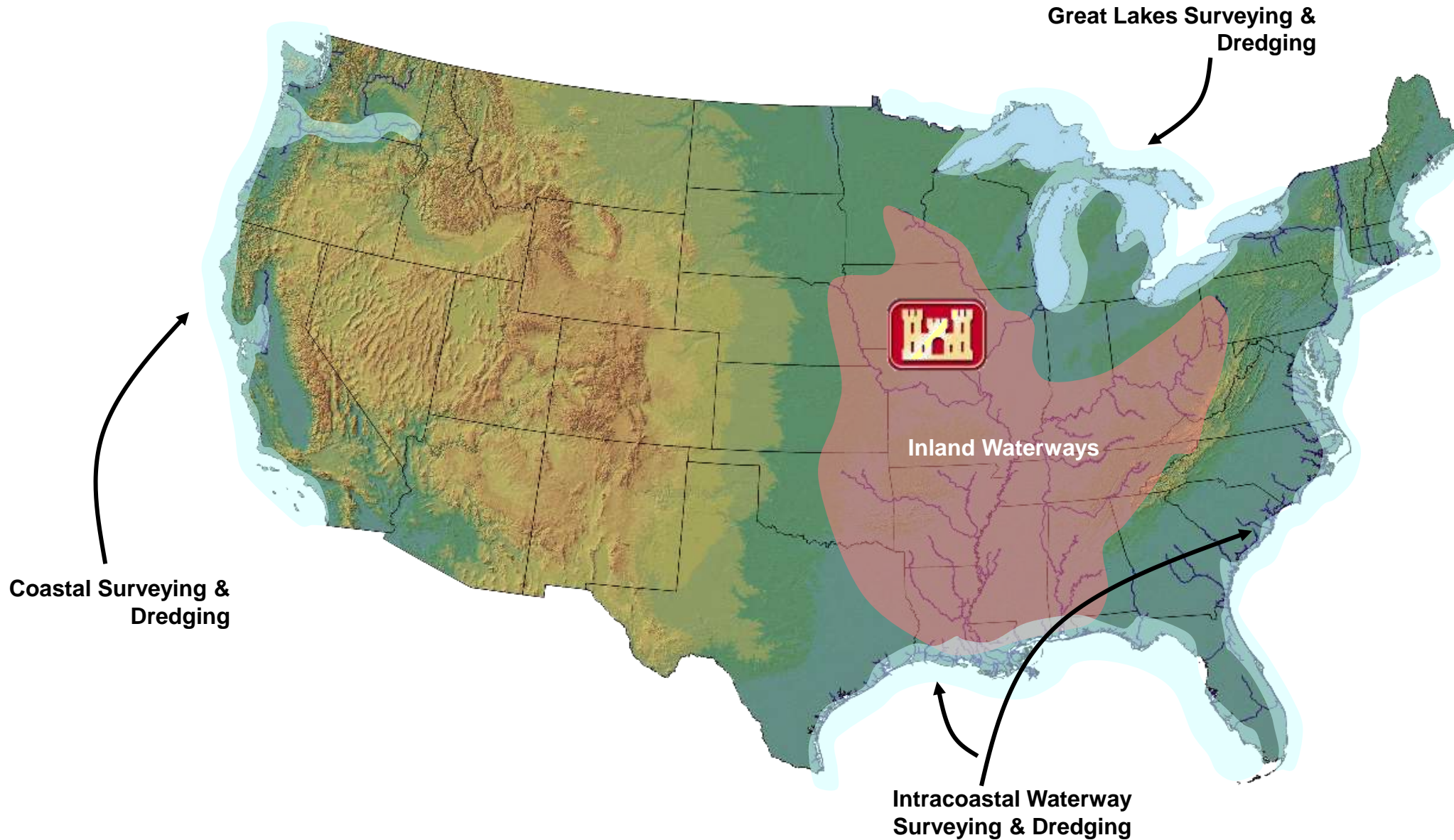


US Army Corps
of Engineers®





USACE NAVIGATION MISSION



IENC COVERAGE IN THE US



Western Rivers System

- 107 IENC cells covering over 11,000 km
- 21 Rivers
- 15 USACE Districts
- Charts are produced to the IENC 2.3 Standard
- All charts are reviewed monthly and updated, as necessary



IMPLEMENTATION OF IENC IN THE US



| River / Waterway | Miles | Kilometers | Inland ENC 2.3 (converted Jan. 2015) |
|------------------------------|--------------|---------------|---|
| Allegheny River | 45 | 72 | Published |
| Arkansas River | 445 | 716 | Published |
| Atchafalaya River | 118 | 190 | Published |
| Black Warrior River | 235 | 378 | Published |
| Cumberland River | 381 | 613 | Published |
| Green River | 108 | 174 | Published |
| Illinois Waterway | 337 | 542 | Published |
| Kanawha River | 91 | 146 | Published |
| Kaskaskia River | 36 | 58 | Published |
| Lower Mississippi River | 715 | 1,151 | Published |
| Missouri River | 733 | 1,180 | Published |
| Mobile / Tombigbee Rivers | 217 | 349 | Published |
| Monongahela River | 129 | 208 | Published |
| Ohio River | 981 | 1,579 | Published |
| Ouachita River | 351 | 565 | Published |
| Red River | 237 | 381 | Published |
| Tennessee River | 765 | 1,231 | Published |
| Tennessee-Tombigbee Waterway | 225 | 362 | Published |
| Upper Mississippi River | 866 | 1,394 | Published |
| White River | 245 | 394 | Published |
| Total | 7,260 | 11,684 | |



IMPLEMENTATION OF IENC IN THE US



IENC Data Download Services

– <http://ienccloud.us/>

– Products

- IENC Cells
- IENC Overlays
 - Buoys (updated weekly)
 - Hydro surveys

INLAND ELECTRONIC NAVIGATIONAL CHARTS

[HOME](#) [ABOUT](#) [BACKGROUND](#) [FEATURES](#) [LINKS](#) [CONTACT](#)

– Data Formats:

- IENC 2.3
- Shapefile
- KML
- GeoPDF
- Dynamic Web Services
- XML Catalogues

About

The U.S. inland navigation system consists of 8,200 miles of rivers maintained by the Corps of Engineers in 22 states, and includes 276 lock chambers with a total lift of 6,100 feet. The highly adaptable and effective system of barge navigation moves over 625 million tons of commodities annually, which includes coal, petroleum products, various other raw materials, food and farm products, chemicals, and manufactured goods (Reference Corps Navigation Data Center).

The shallow draft waterways have many unique characteristics and difficulties over coastal harbor and ocean navigation; river levels can change by over 30 feet in a seasonal cycle, the navigation channel can shift significantly within the river banks, and shifting yet ever present river currents pose constant challenges in these confined waterways. Electronic chart systems can offer significant benefits to vessels including accurate and real-time display of vessel position relative to waterway features, voyage planning and monitoring, training tools for new personnel and integrated display of river charts, radar, and Automatic Identification Systems.



2001

Year Established

700+

Data Products

7,260

miles of Electronically Charted Inland Waterways

15+...

Millions Data Products Downloaded



IMPLEMENTATION OF IENC IN THE US



Inland Waterway Carriage Requirement

- Presently there is no mandatory carriage requirement for electronic charts or systems on US inland waterways
- US Coast Guard NVIC* 01-16 change 1 provides that :
 - display of certain electronic charts and publications will meet—as an equivalency—the “marine charts,” “charts,” “maps,” or “publications” carriage requirements and provides for an equivalency for position fixing and plotting.

*NVIC – Navigation and Vessel Inspection Circular



IMPLEMENTATION OF IENC IN THE US

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Hydrographic Surveys

The hydrographic surveys provided by this application are to be used for informational purposes only and should not be used as a navigational aid. Channel conditions can change rapidly and the surveys may or may not be accurate. Click [help](#) for additional details.

[USACE Hydrographic Surveys \(eHydro\)](#) - Click here to access a list of hydrographic surveys that have been processed and uploaded by USACE Districts.

eHydro

- An enterprise Hydrographic Survey Processing within a GIS Framework
- Mission: To catalog, organize, and disseminate navigation related data efficiently and effectively
- Feature Management:
 - National Channel Framework (coastal)
 - Hydrographic Surveys (XYZ, Bathymetry raster)
 - Reports (Channel Condition & Channel Availability)
- Provides unrestricted access to all USACE hydrographic survey data



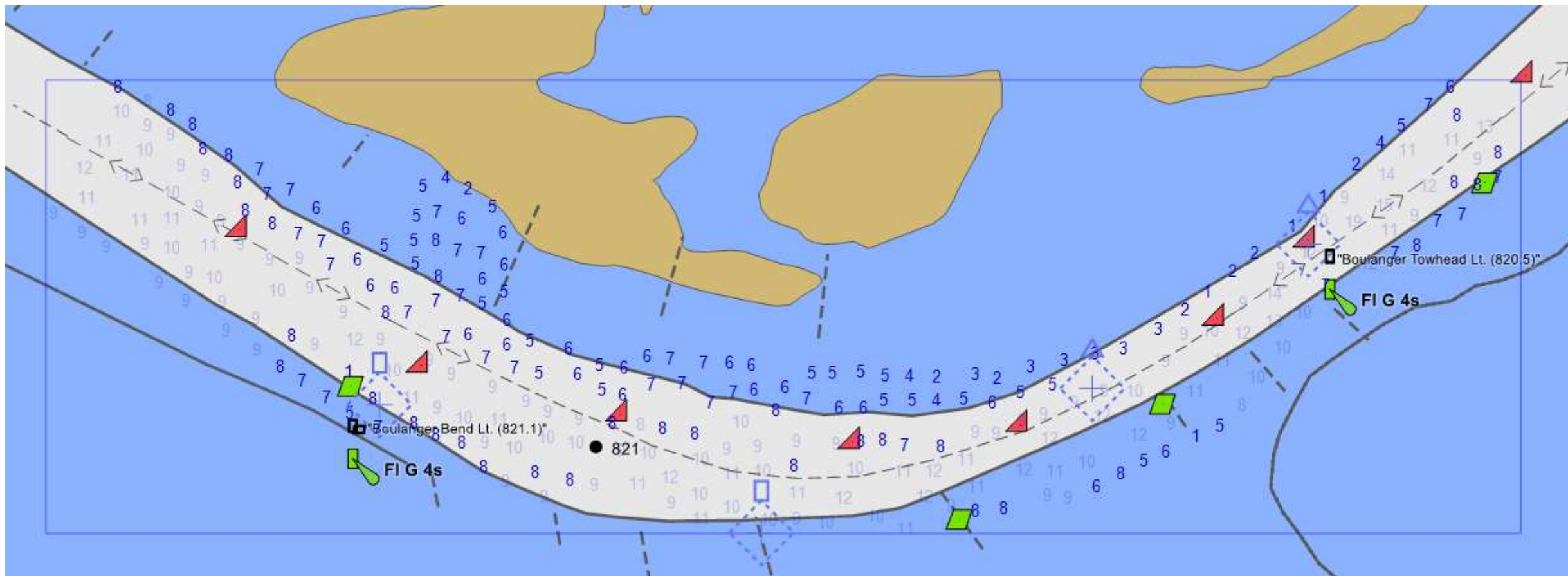
IMPLEMENTATION OF IENC IN THE US

8



eHydro

– Rose Point ECS – xyz display

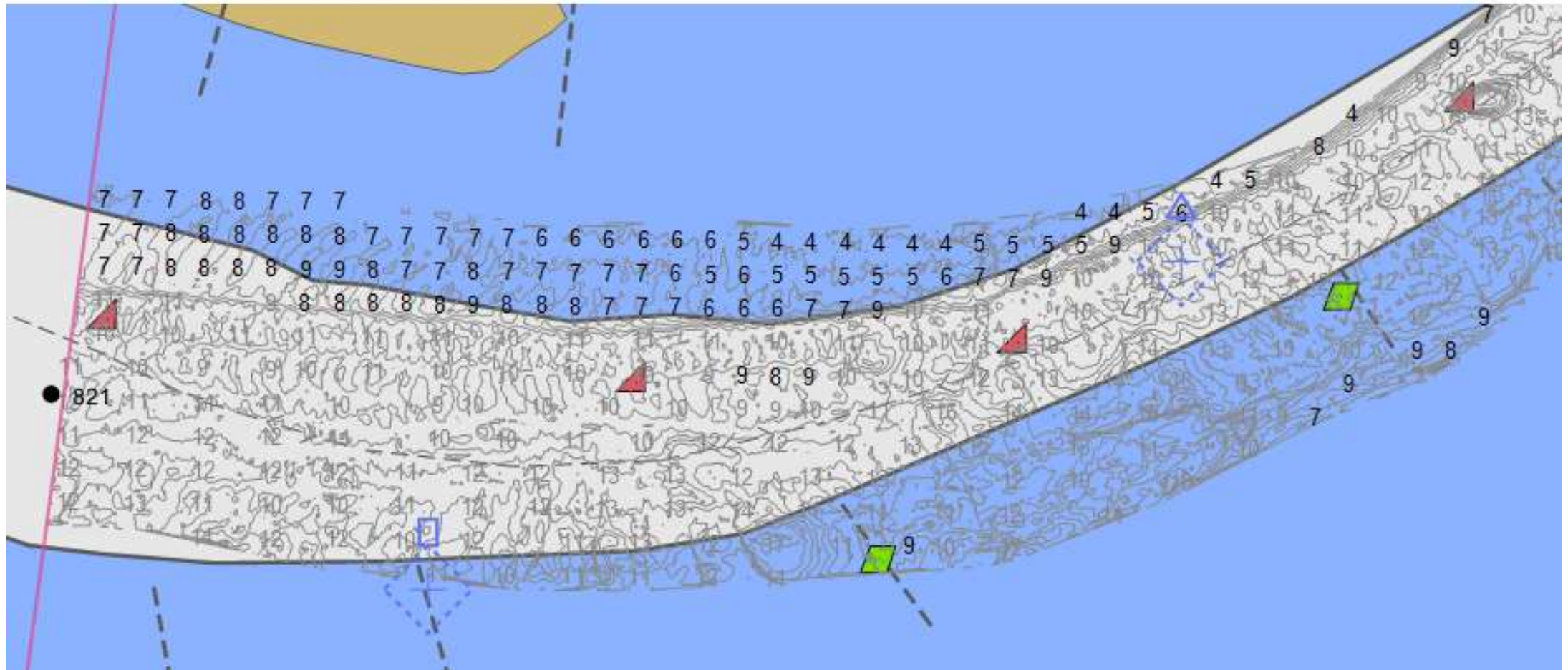




IMPLEMENTATION OF IENC IN THE US



eHydro
– Rose Point ECS – IENC Overlay



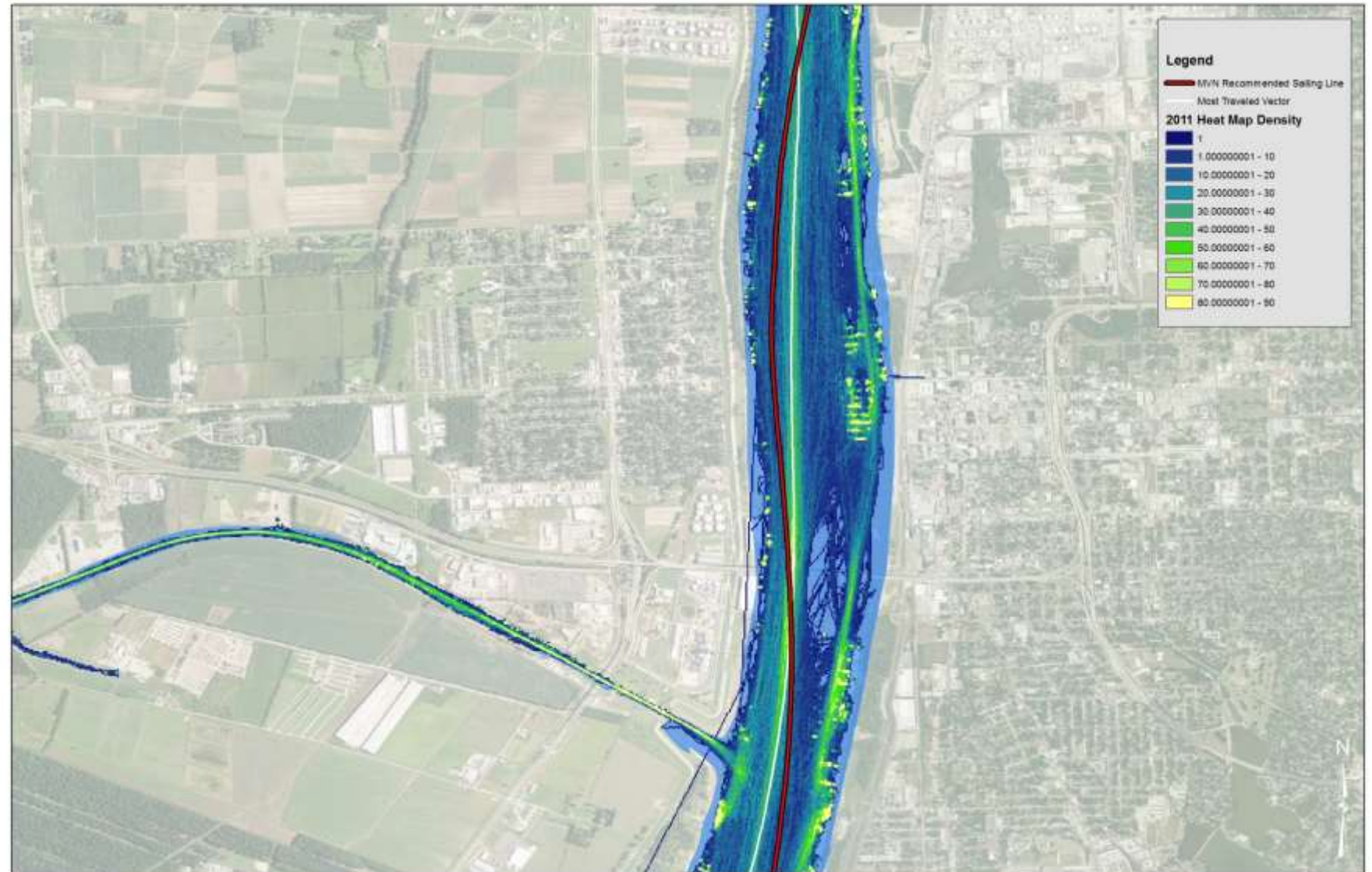


IMPLEMENTATION OF IENC IN THE US

10



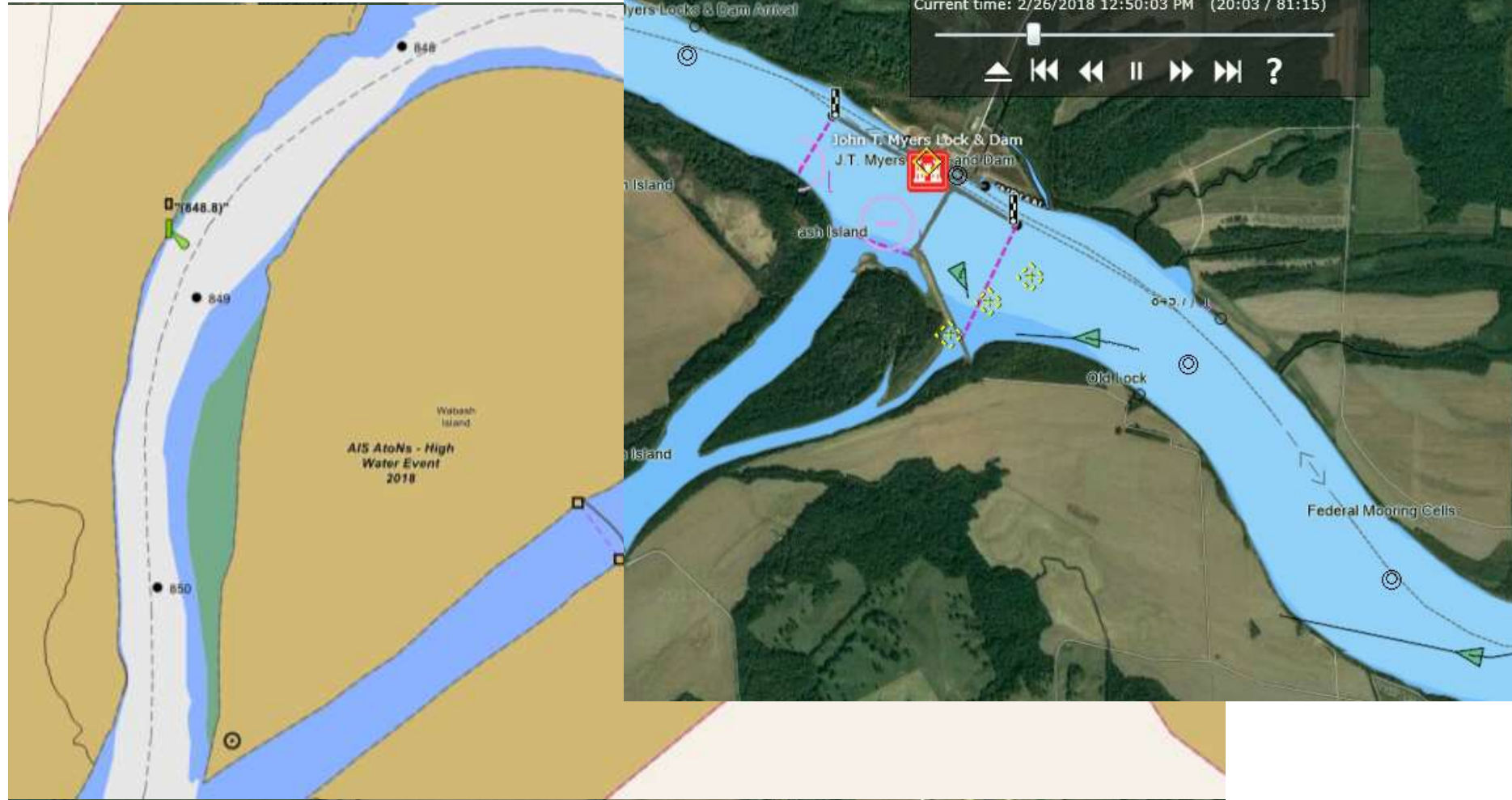
Automatic Identification
Services (AIS)
– Heat Maps for RECTRC



Automatic Identification Services (AIS)

– AtoNs

- Ohio River high water event
- J.T. Myers Locks & Dam
- Navigation over fixed weir





IENC ON-LINE FEATURE CATALOGUE



IENC Feature Catalog 2.4.0

[go to IENC Feature Catalogue 2.3.6](#)

Features:

Feature Name:

Acronym:

Feature Code:

Attributes:

Attribute Name:

Acronym:

Attribute Code:

- Available as IENC FC 2.3 & 2.4
<http://ienccloud.us/ienc/web/s-57/>



QUESTIONS?