

# **The Evolution of Geospatial Data Elements for Commercial Marine Vessels in the EPA's National Emission Inventory**

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# National Emissions Inventory (NEI)

- Point, area, and mobile sources in the U.S.
- Commercial Marine Vessels (CMV)
  - Large Category 3 vessels
    - Tankers
    - Containerships
  - Port
    - Hoteling
    - Maneuvering
  - Smaller Category 1/2 vessels
    - Fishing vessels
    - USCG
  - Underway
    - Cruising
    - RSZs



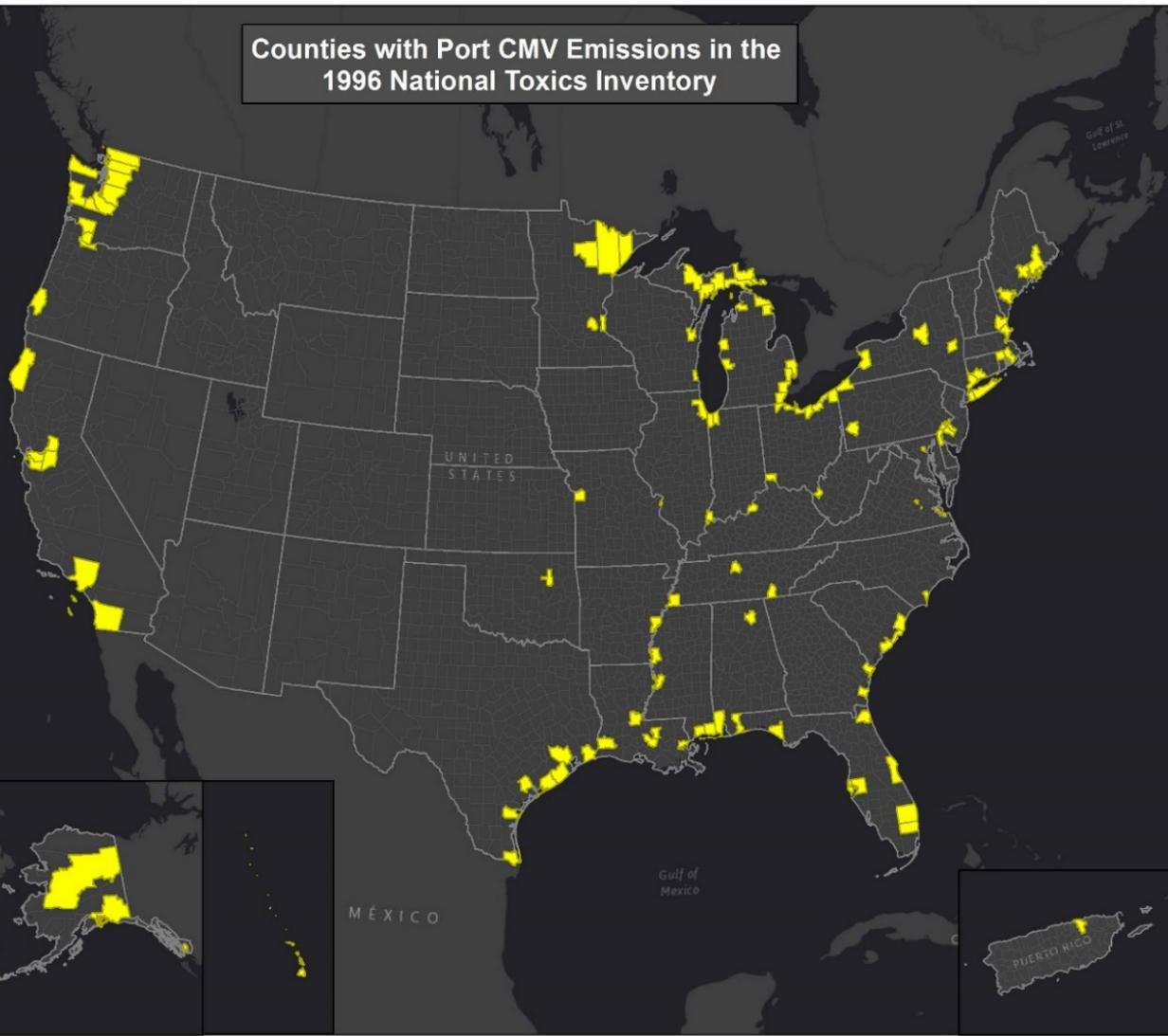
# Geospatial Data Elements

- Spatial Representation
  - Federal waters
  - State waters
  - Inland waterways
  - Great Lakes
- Activity Data

# 1996 – County Level Representation



Counties with Port CMV Emissions in the 1996 National Toxics Inventory

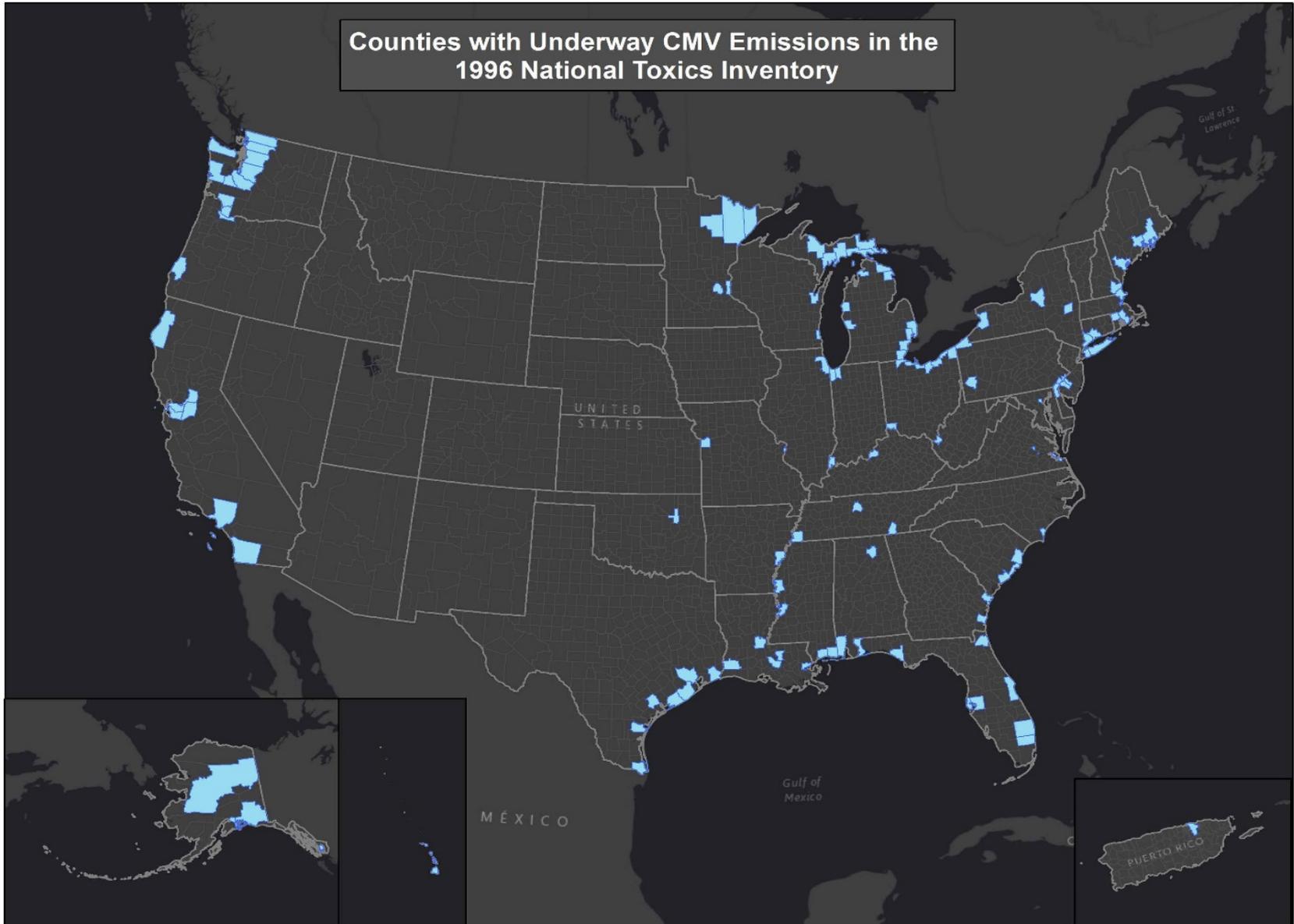


- 150 largest ports
- Fuel-based activity data

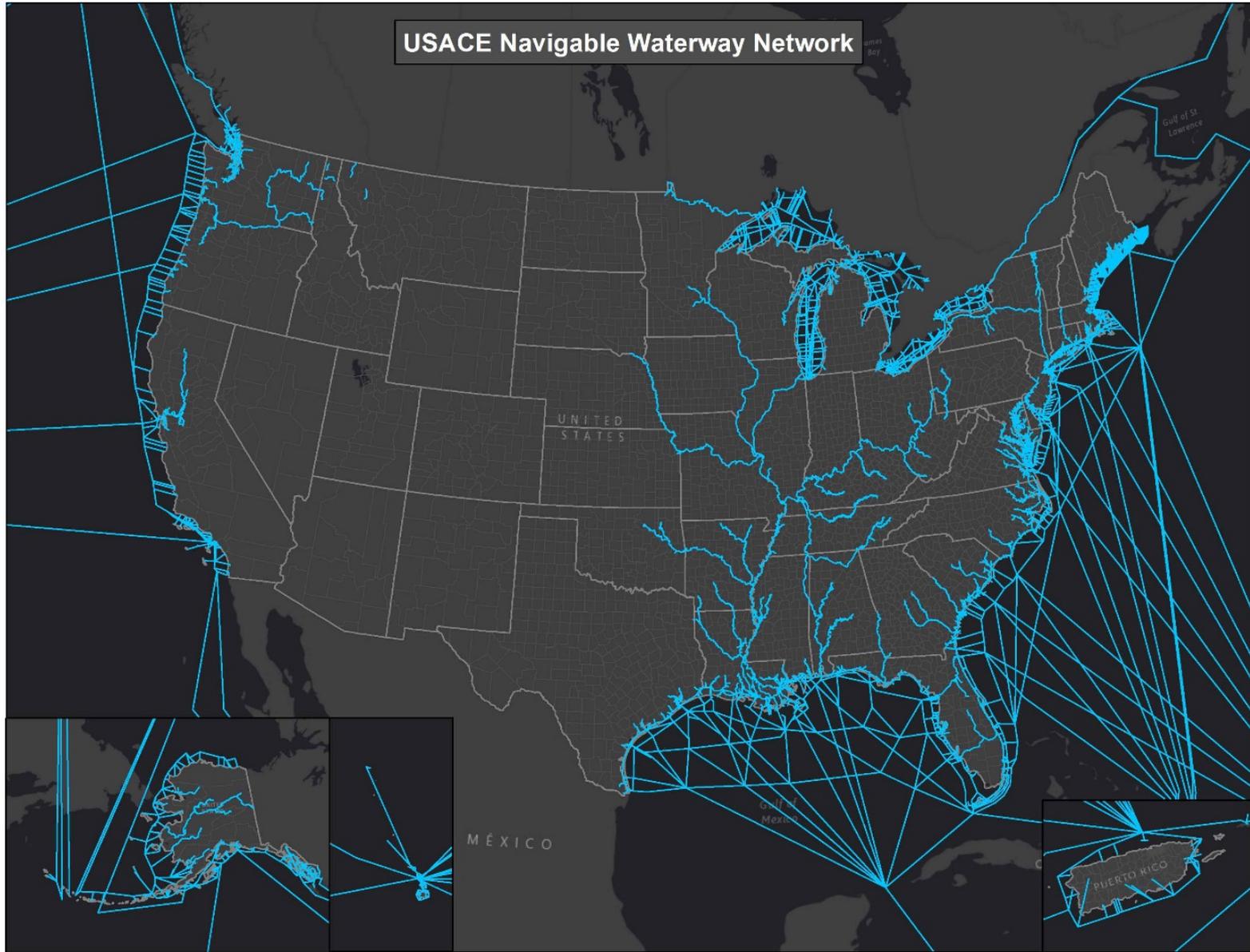
# 1996 – County Level Representation



Counties with Underway CMV Emissions in the 1996 National Toxics Inventory



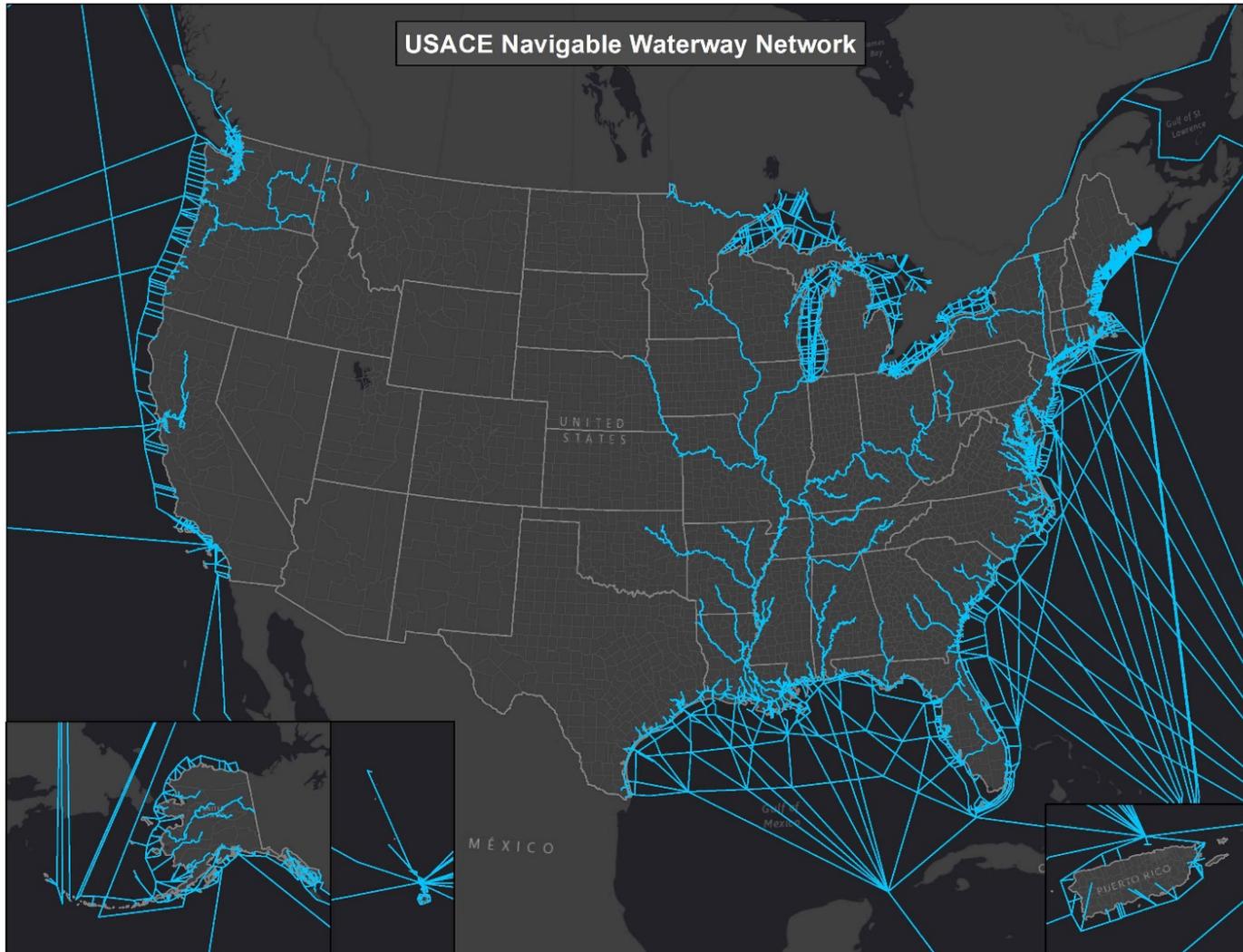
# 1999 – New Underway Allocation





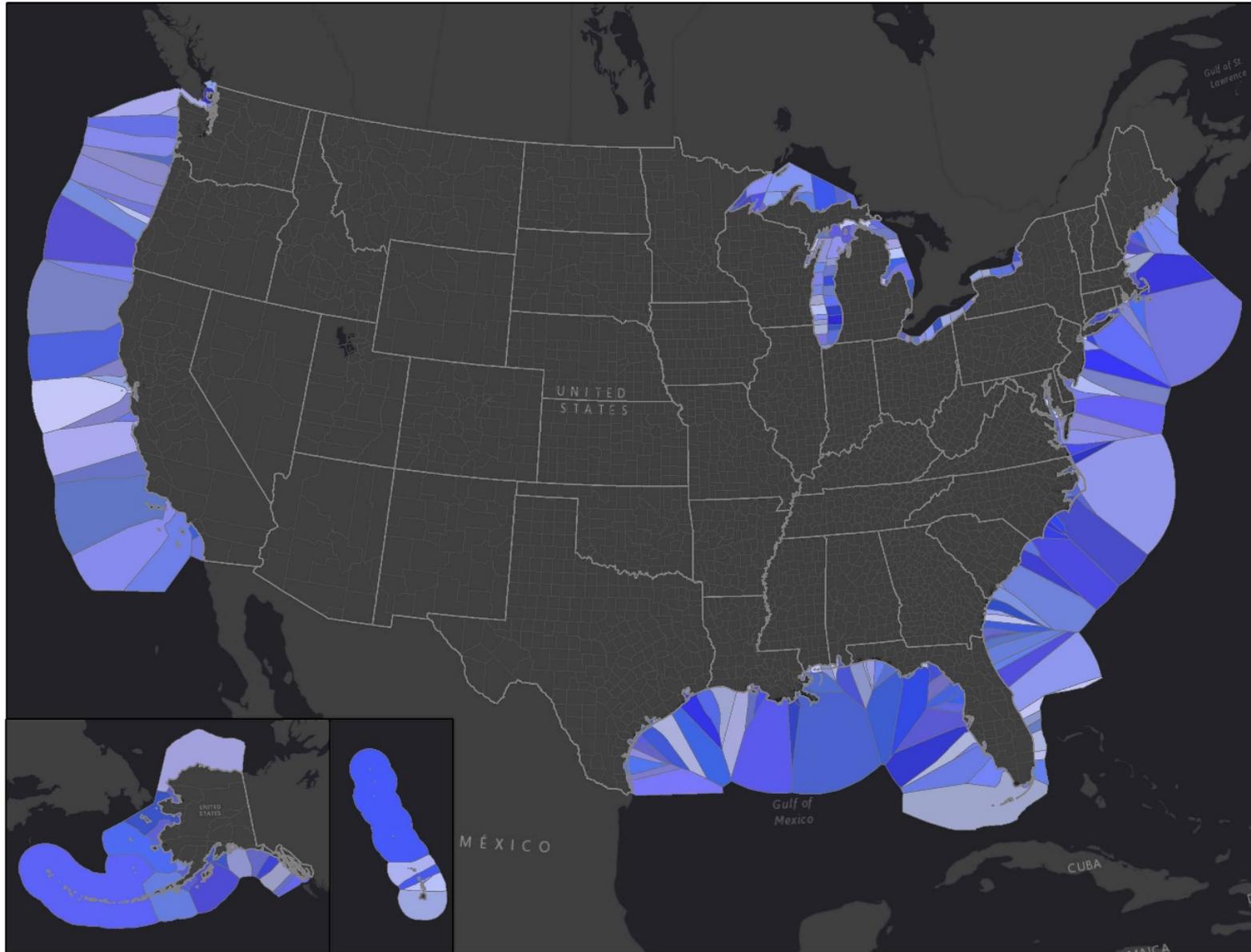


# 2002 – Modified Coastal Allocation

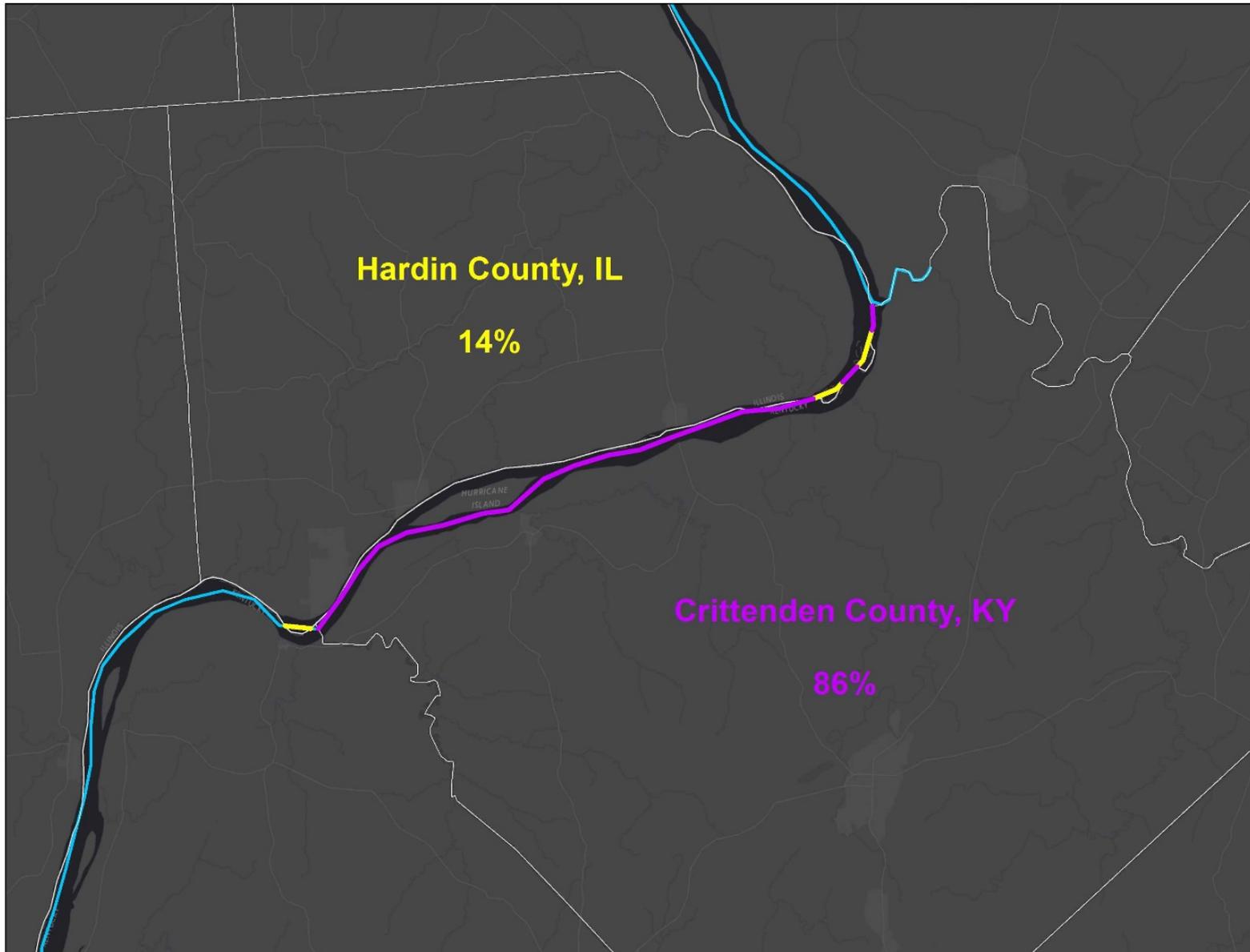


- Inland waterways: USACE waterway network
- Coastal waters: shoreline length

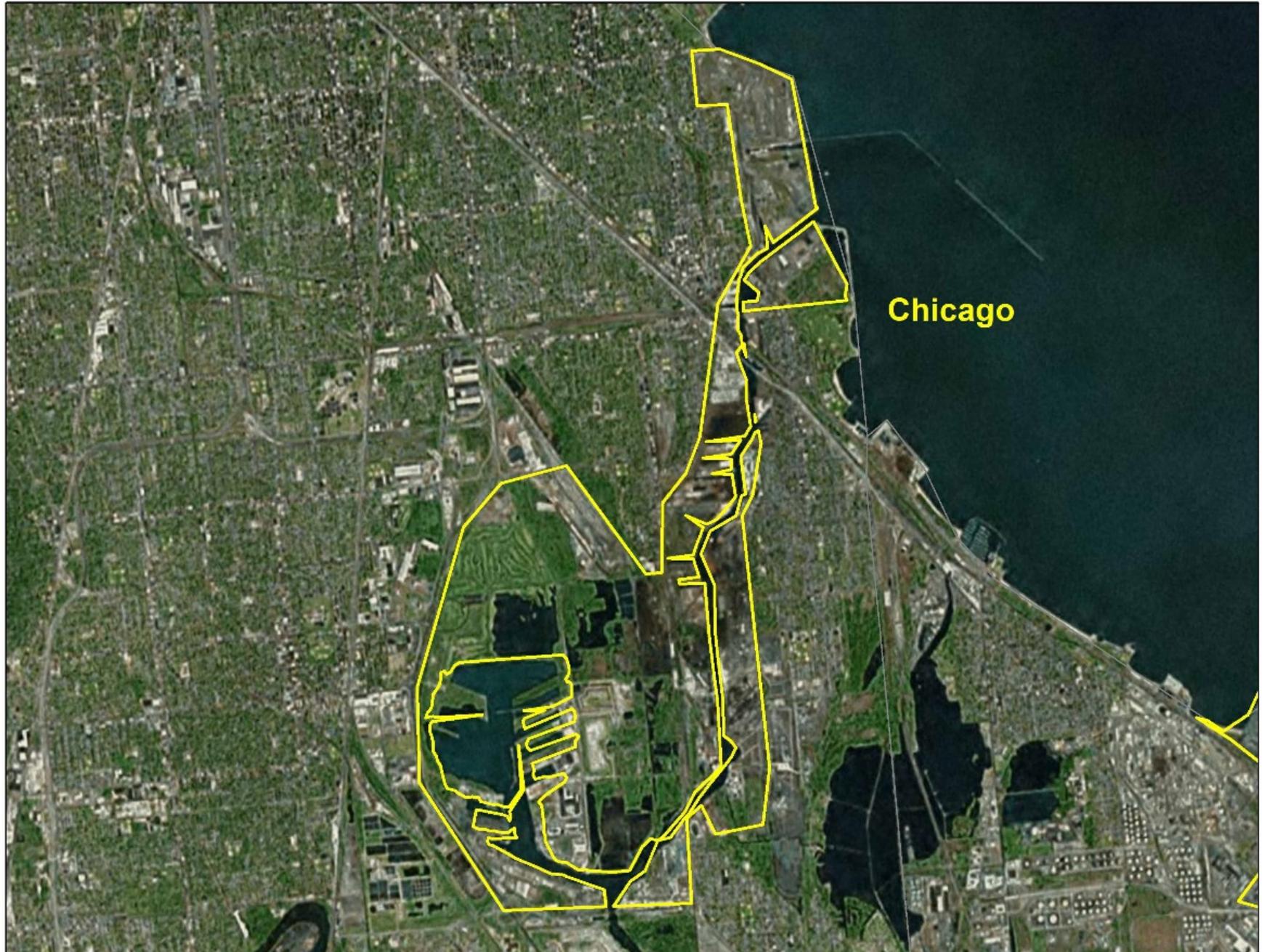
# 2005 – Federal Waters

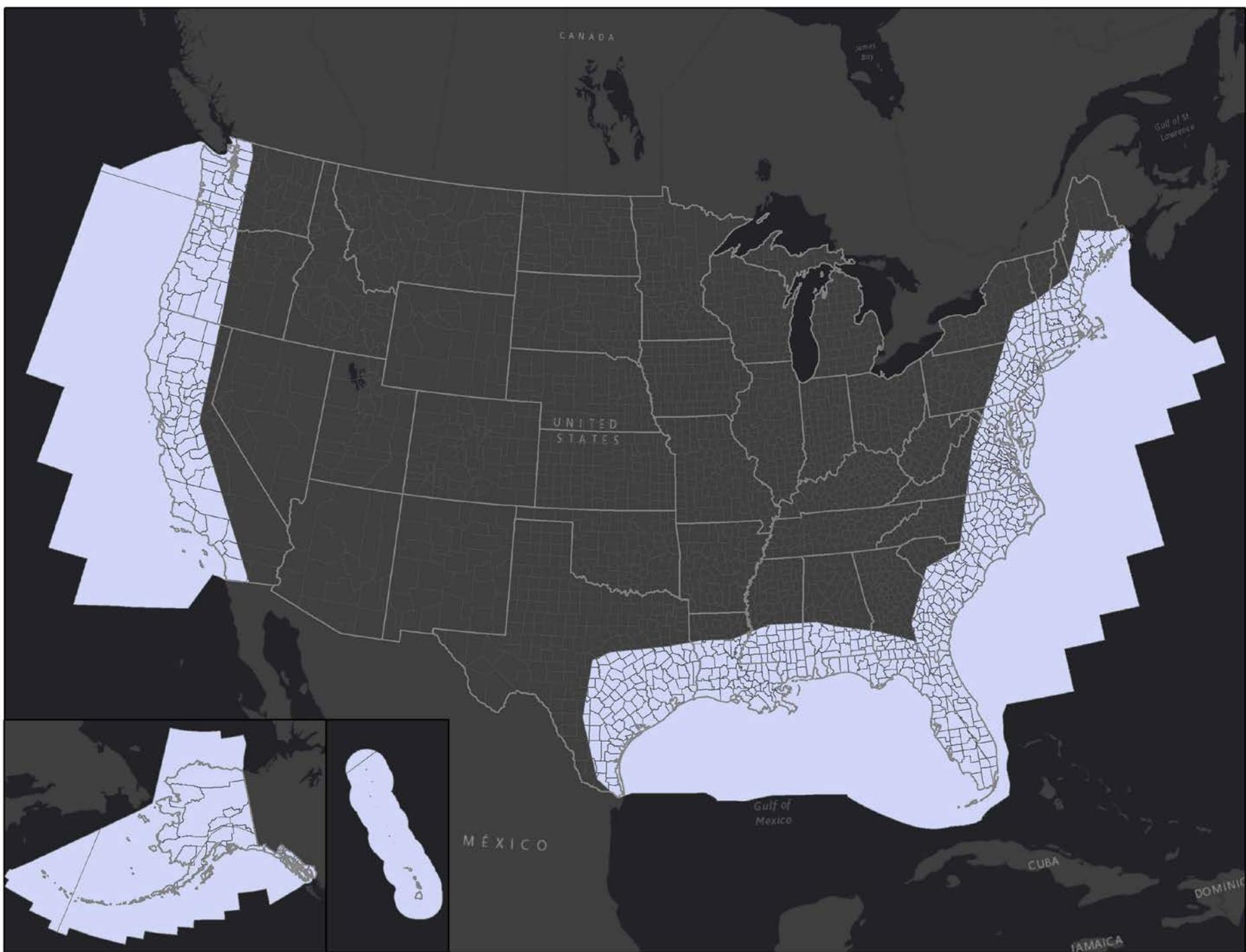


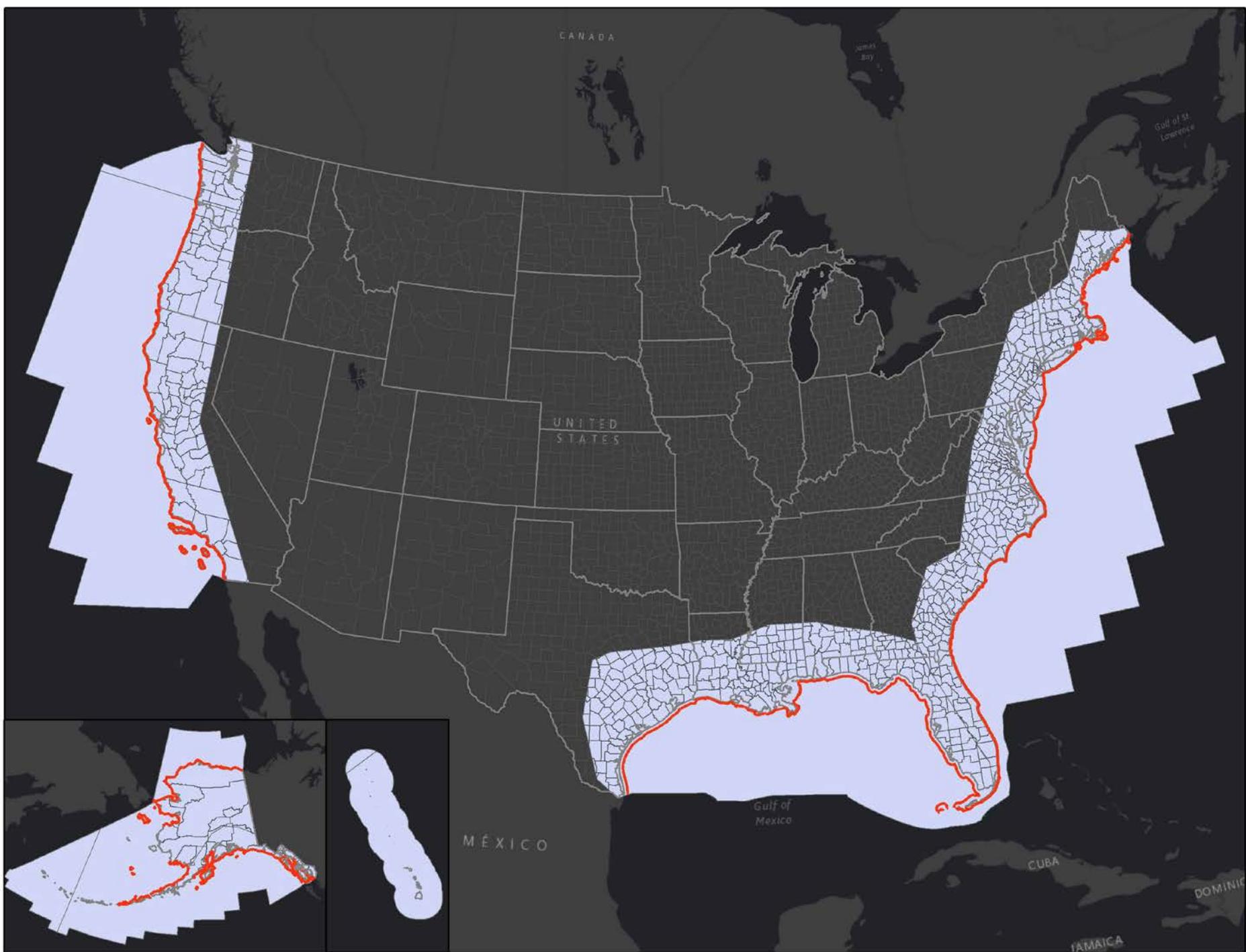
# Challenges in Inland Waterways

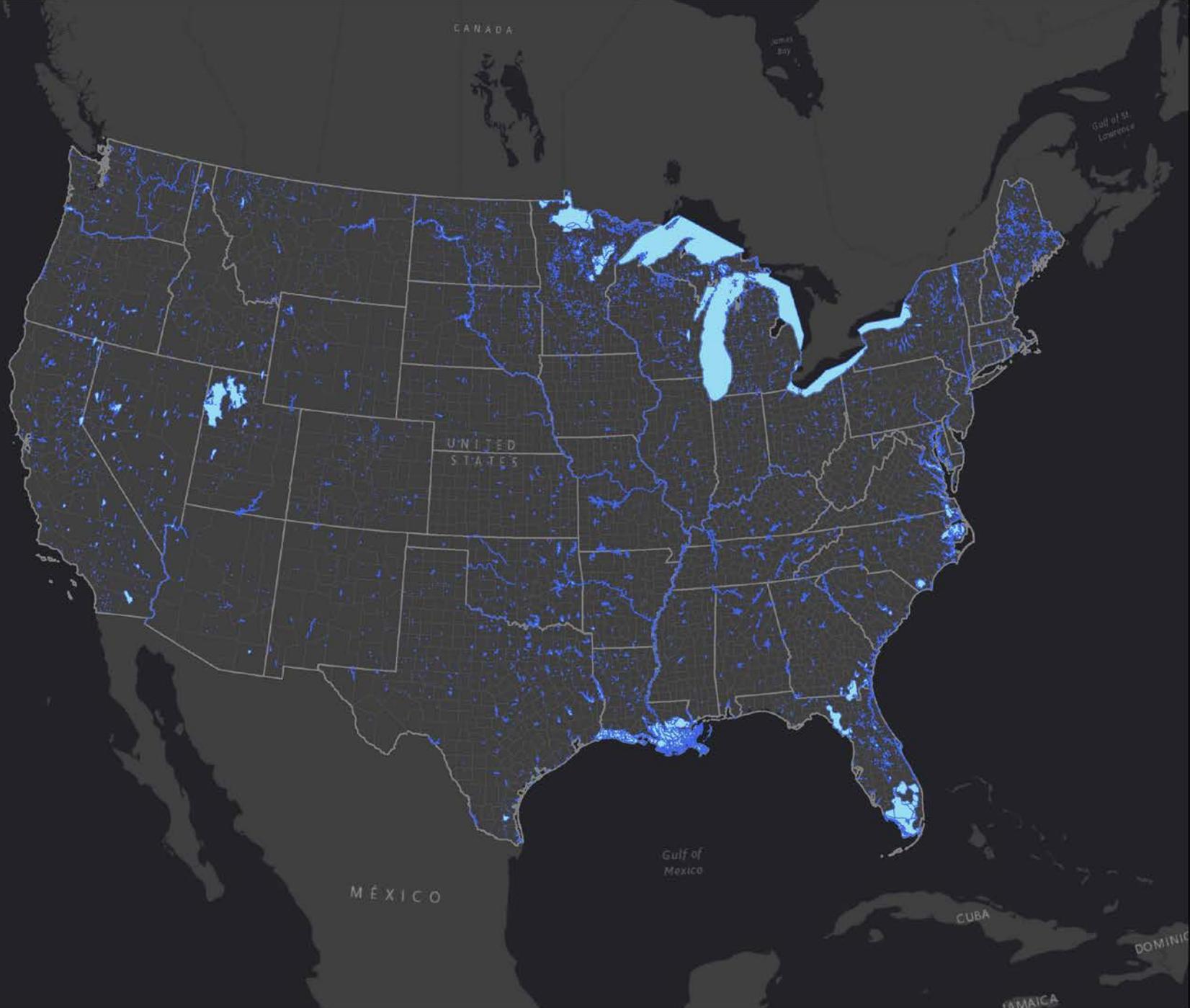


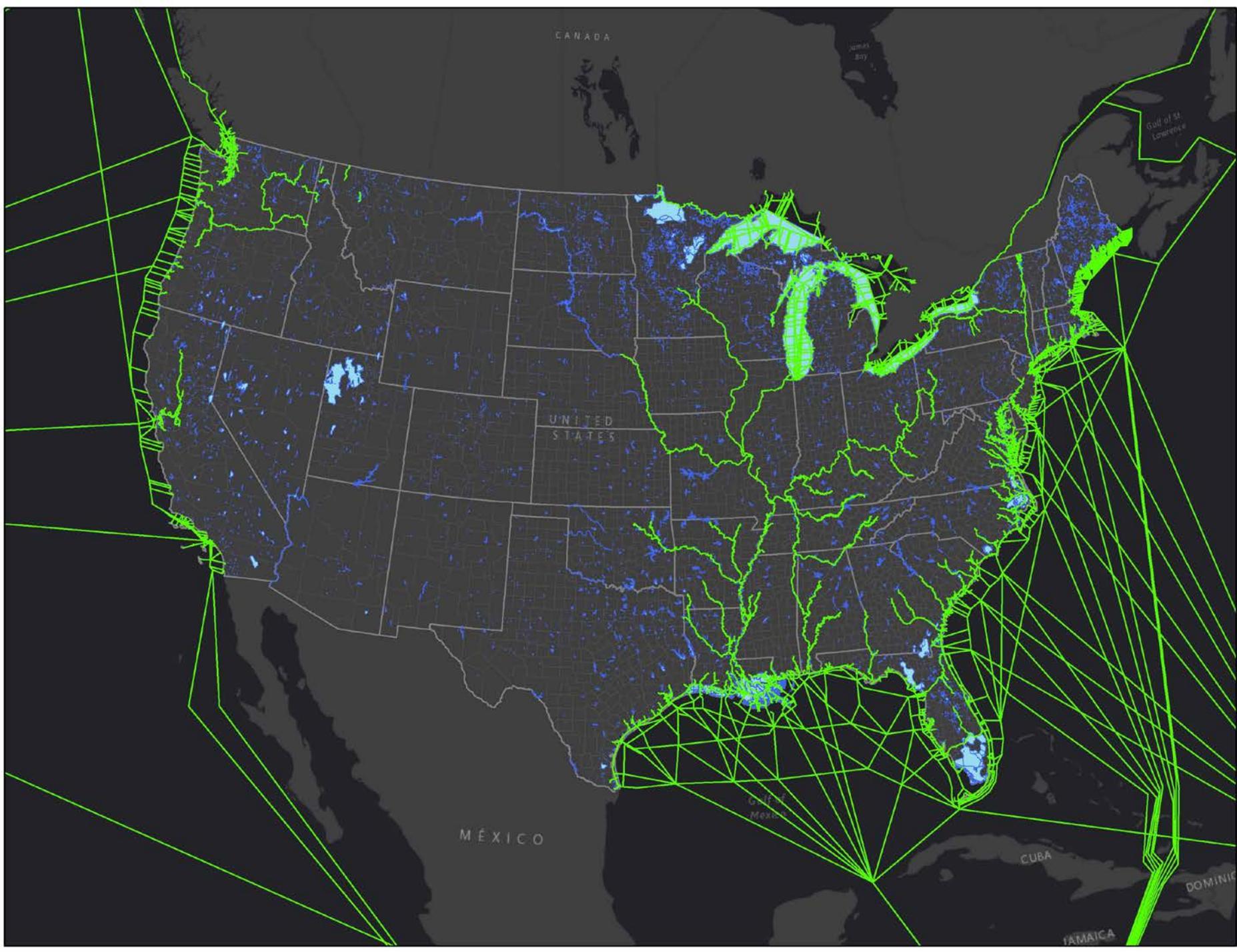
# 2008 – Port Shapefiles



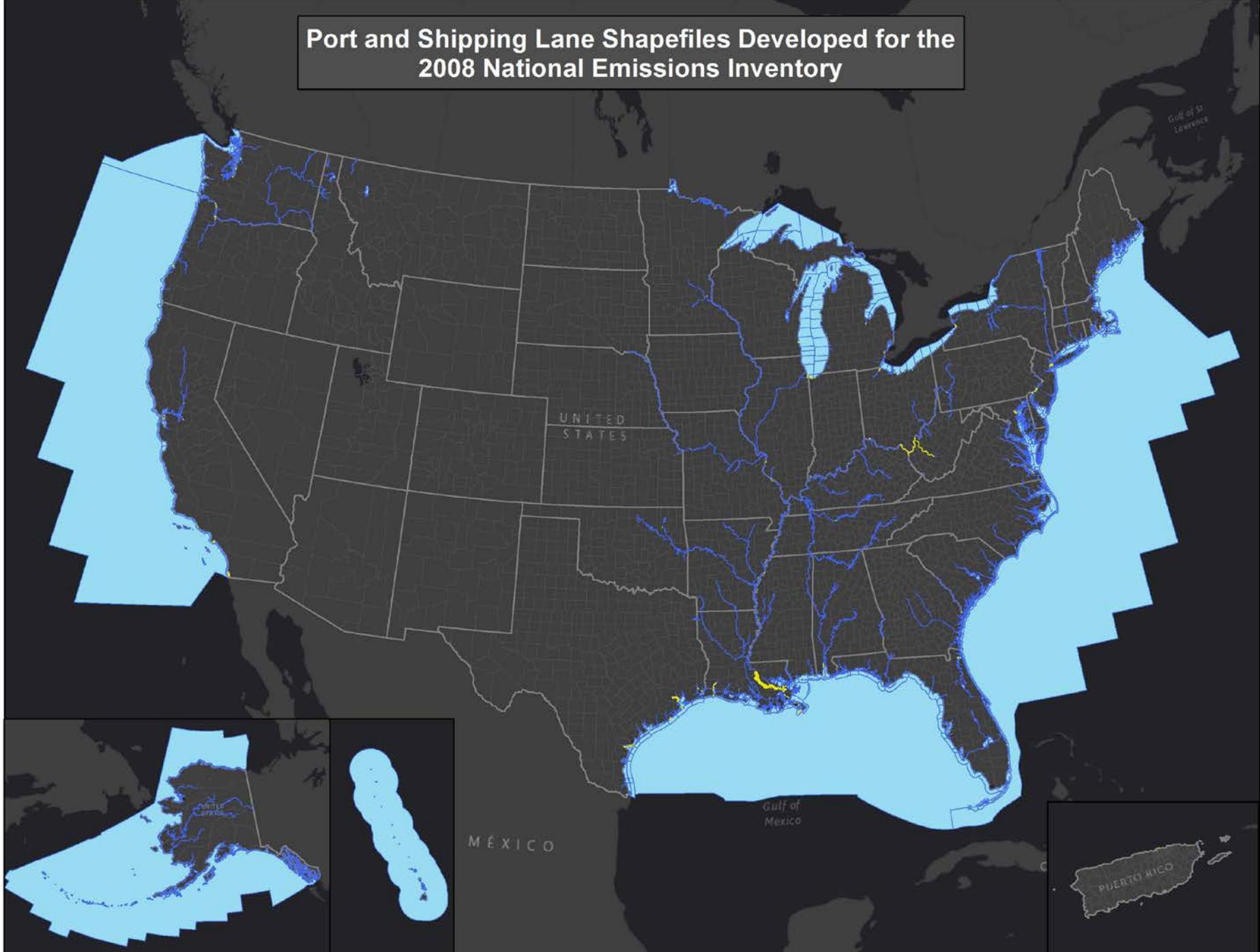








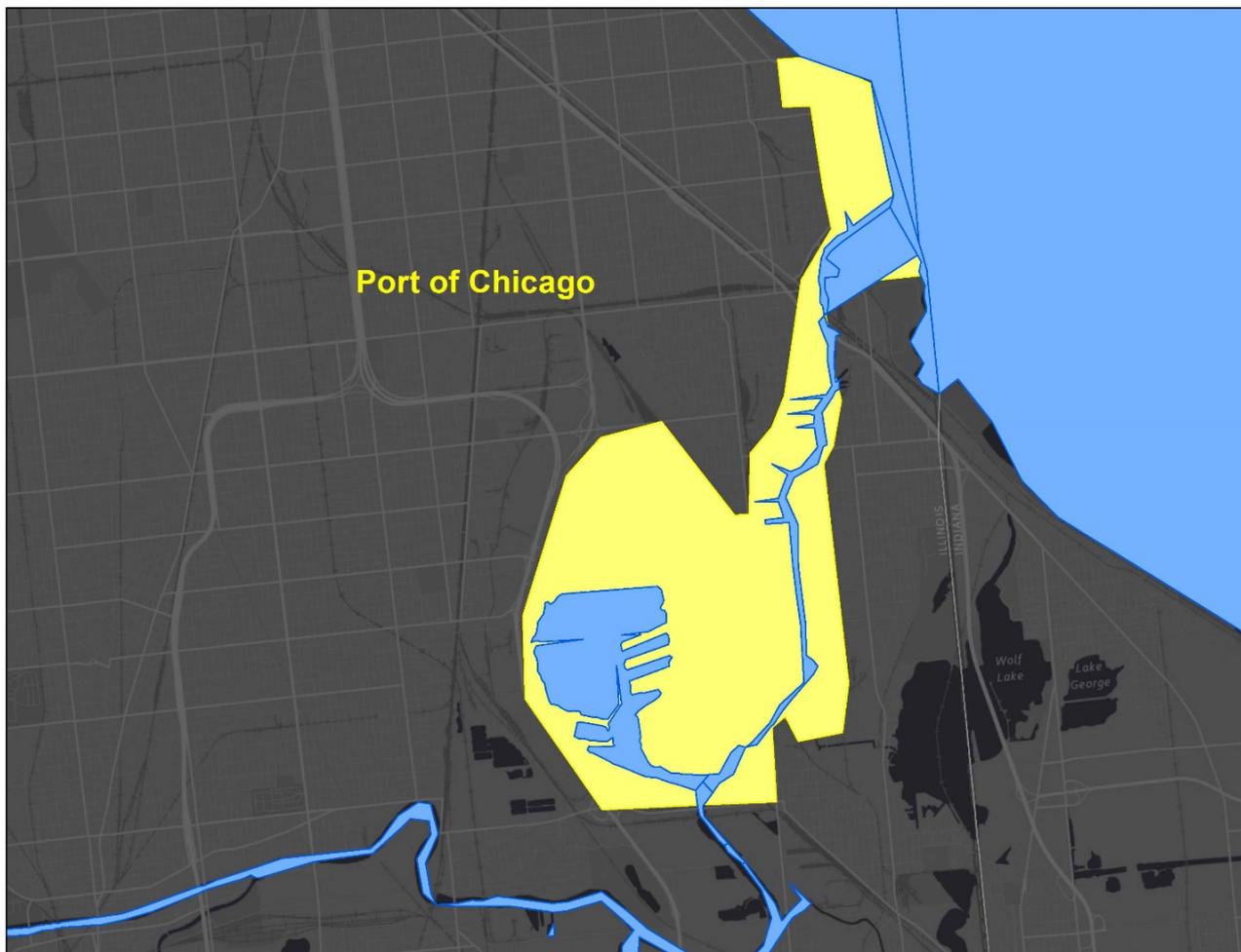
**Port and Shipping Lane Shapefiles Developed for the  
2008 National Emissions Inventory**



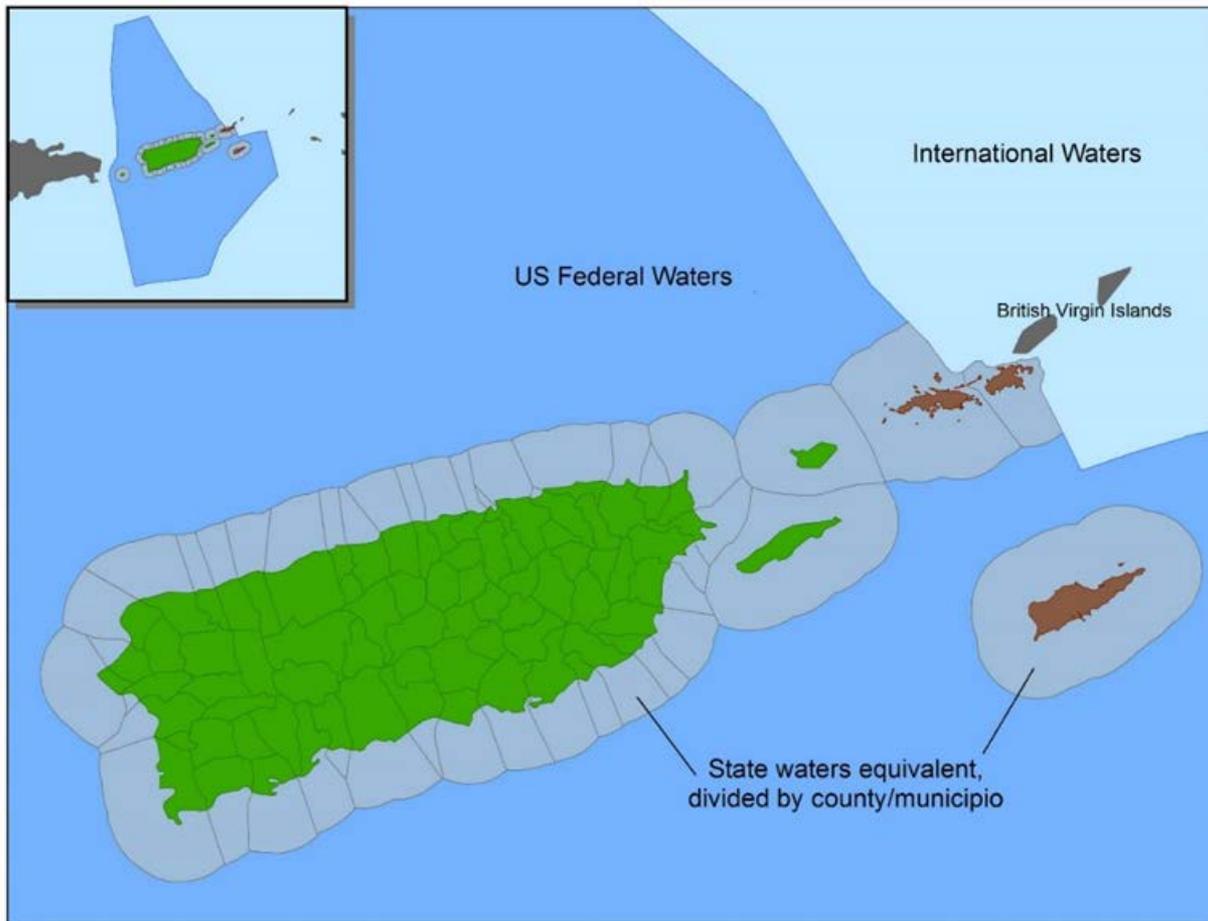


# 2008 Custom Port and Underway Shapefiles

- Emissions in/near water
- State waters accurately represented
- Federal waters included
- County FIPS



# 2008 – 2014 Additions and Revisions

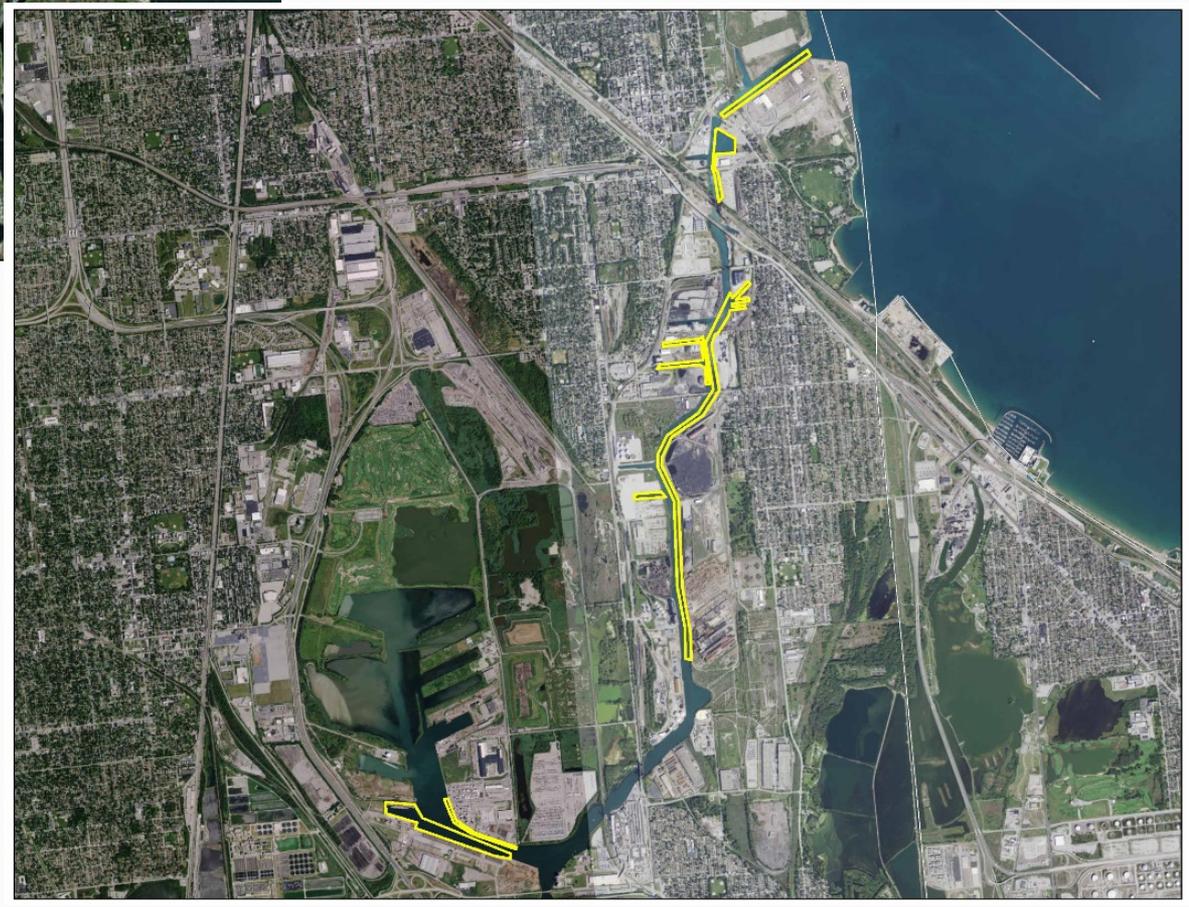
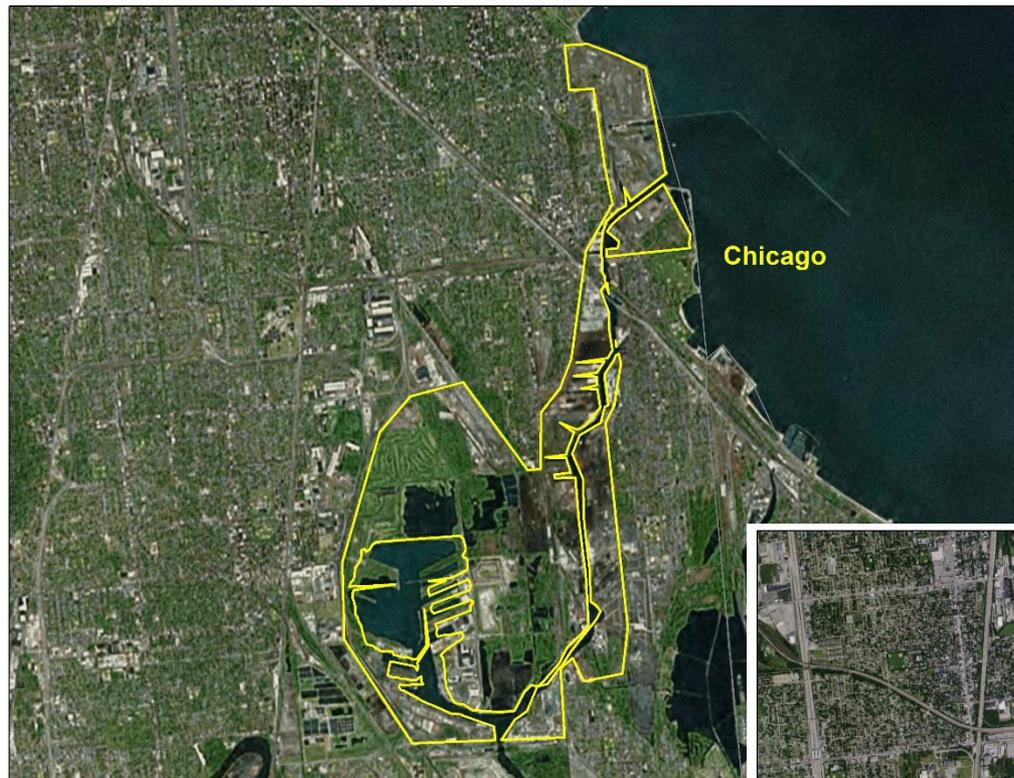


- Port of Huntington
- Port Angeles offshore anchorage
- Port and underway additions
- Additional ferry ports
- Puerto Rico and U.S. Virgin Islands



## 2014 – New Port Shapes

- Water-based
- Brand new ShapeIDs
- Simplified for modeling
- Single-part features
- Facilitate county sums
- 489 ports and 889 individual shapes
- All previous shapes retired





# Moving Forward

- New Activity Data
- Revised spatial allocations
- Shipping lane revisions
- Additional ports
- U.S. Territories



# Thanks!

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