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

Heather Perez, GISP
Eastern Research Group, Inc. (ERG)

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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
  - Smaller Category 1/2 vessels
    - Fishing vessels
    - USCG
  - Port
    - Hoteling
    - Maneuvering
  - Underway
    - Cruising
    - RSZs
Geospatial Data Elements

• Spatial Representation
  – Federal waters
  – State waters
  – Inland waterways
  – Great Lakes

• Activity Data
1996 – County Level Representation

- 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
1999 – New Underway Allocation

Counties with Underway CMV Emissions in the 1999 National Emissions Inventory
2002 – Modified Coastal Allocation

- Inland waterways: USACE waterway network
- Coastal waters: shoreline length
2005 – Federal Waters
Challenges in Inland Waterways

Hardin County, IL
14%

Crittenden County, KY
86%
2008 – Port Shapefiles

Chicago
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!

Heather Perez
Heather.Perez@erg.com
919-468-7892

Richard Billings
Richard.Billings@erg.com
919-468-7812

Laurel Driver
Driver.Laurel@epa.gov
919-541-2859