

# Atlantic Coast Port Access Route Study (ACPARS)

AWEA Offshore WINDPOWER  
Conference 2012

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# Coast Guard Roles

- Safe and Efficient Navigation
  - Provide for safe access routes
    - Routing Measures / Limited Access Areas
    - Balance multiple uses
  - Navigation Systems
    - Aids to Navigation
    - Vessel Traffic Services
    - Regulated Navigation Areas
- Assist Lead Permitting Agencies (LPAs) as Cooperating Agency under NEPA



# Ports and Waterways Safety Act of 1972



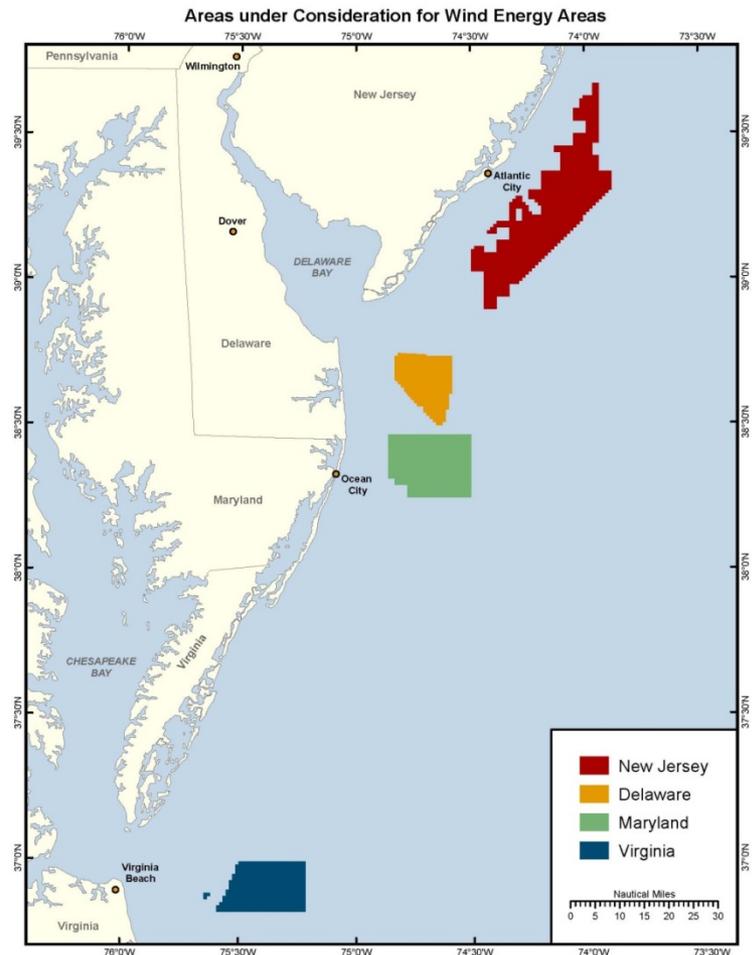
- Navigation, vsl safety & marine environment are issues of national importance
- Sec DHS (USCG) designate fairways & TSS
- Right of navigation is paramount in these areas
- Requires a study to determine potential traffic density & need for safe access routes prior to creating or modifying routing measures
- Normally focus on a single port



# Wind Energy Leasing



- Individual State Task Forces
- Identify priority wind energy sites to promote large scale development
- EA for leases are limited to site assessment and site characterization activities
- EIS conducted for final approval of Construction & Operations Plan

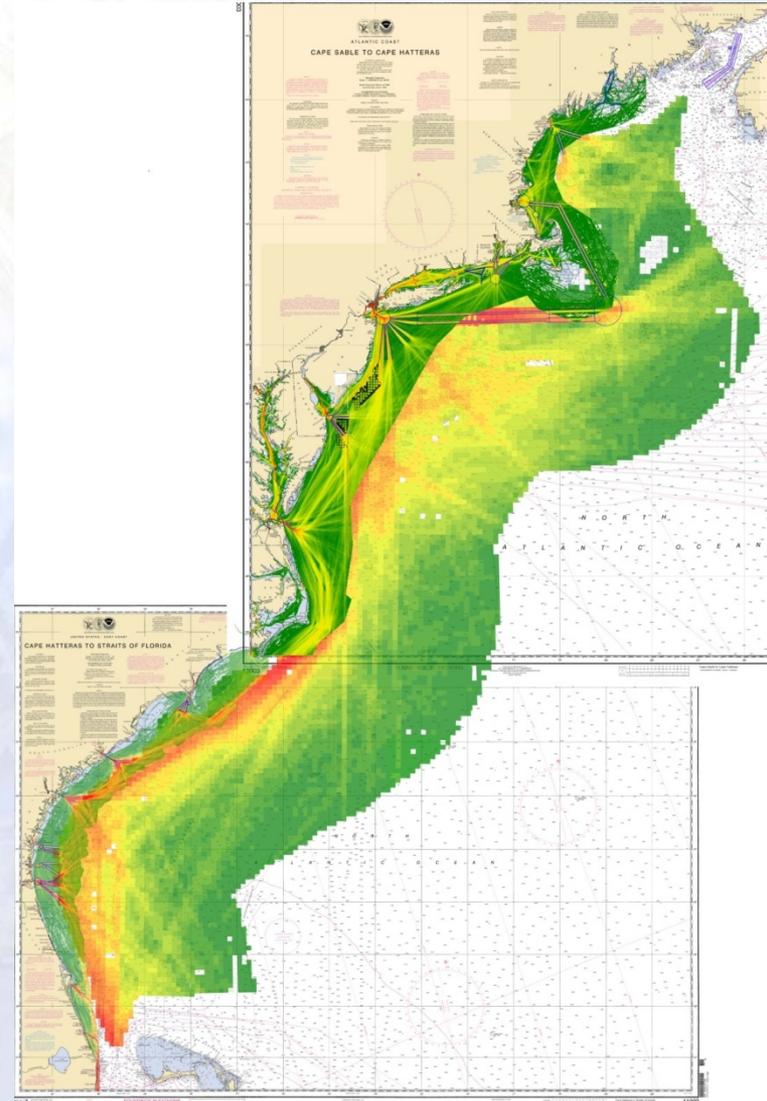




# Atlantic Coast PARS



- Marine Spatial Planning
  - Characterize existing MTS/Shipping Routes
  - Balance multiple uses
  - Ensure safe access routes
- Wind Energy Initiatives
  - Cooperating Agency
  - Navigational Conflicts
  - Cumulative Impacts





# ACPARS Workgroup

- Develop, in the near term, AIS products and provide other support as necessary to assist Districts with all emerging coastal and offshore energy projects
- Provide data, tools and/or methodology to assist in future determinations of waterways suitability for proposed projects
- Determine whether to modify or create Routing measures



# ACPARS Process Overview

- **Phase 1** - Data Gathering
- **Phase 2** - Determine existing shipping routes and apply the R-Y-G Methodology
- **Phase 3** - Modeling and Analysis
- **Phase 4** - Implementation of Study Results



# Phase 1- Data Gathering

## Determine Shipping Routes-AIS data

- AIS- Primary source of vessel transit data
- GIS Products- Heat Maps, Density Plots, Trackline plots
- Capability and Capacity shortfalls

## Public Comments

- Two Public Comment periods
- Received 128 submissions total
- 40% outside scope

## Outreach

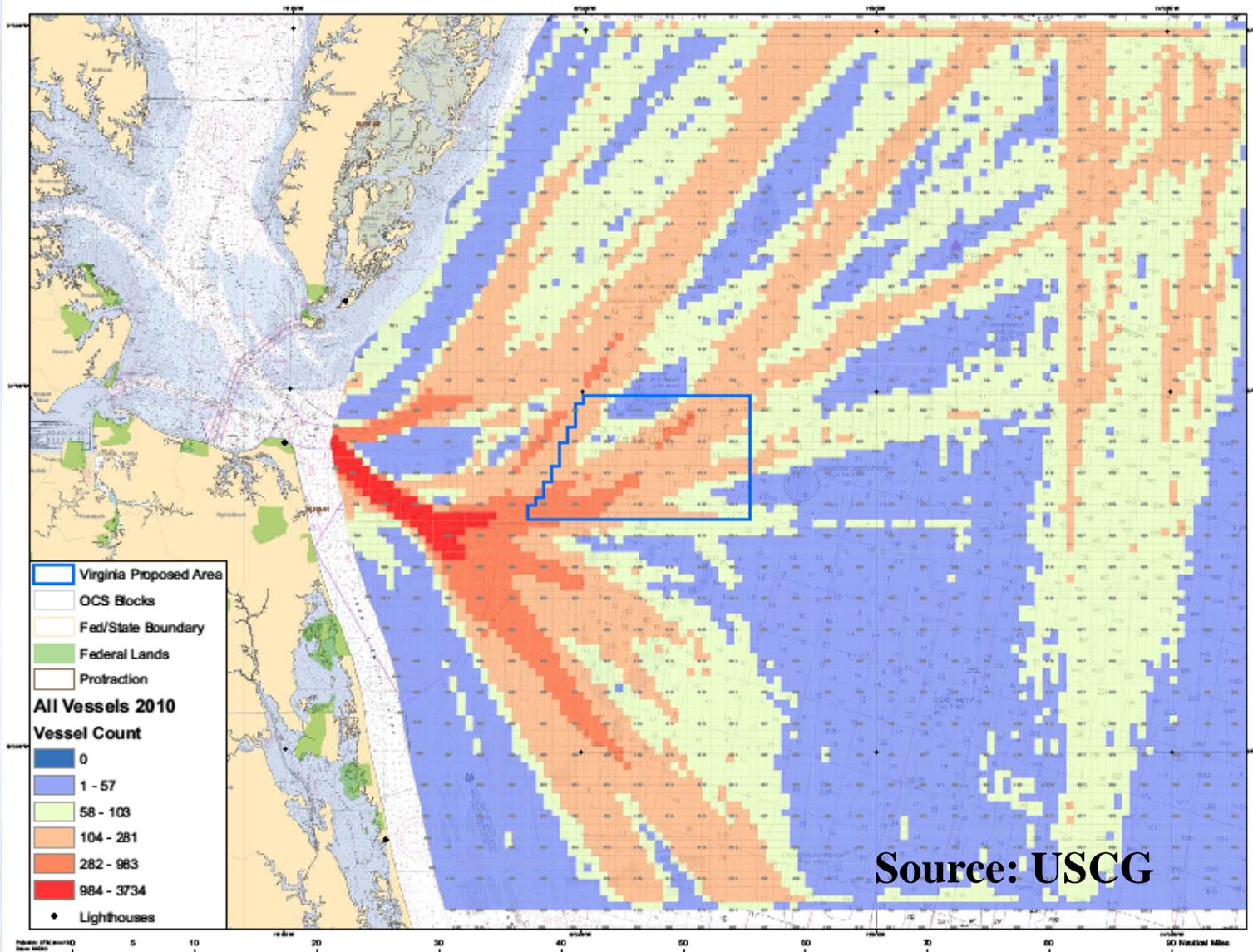
- Sector- port level meetings
- Industry Organizations
- Targeted outreach

## Gather MTS Data

- Importance of the MTS
- MARAD Marine Highways Program
- Panama Canal Expansion
- Energy Development

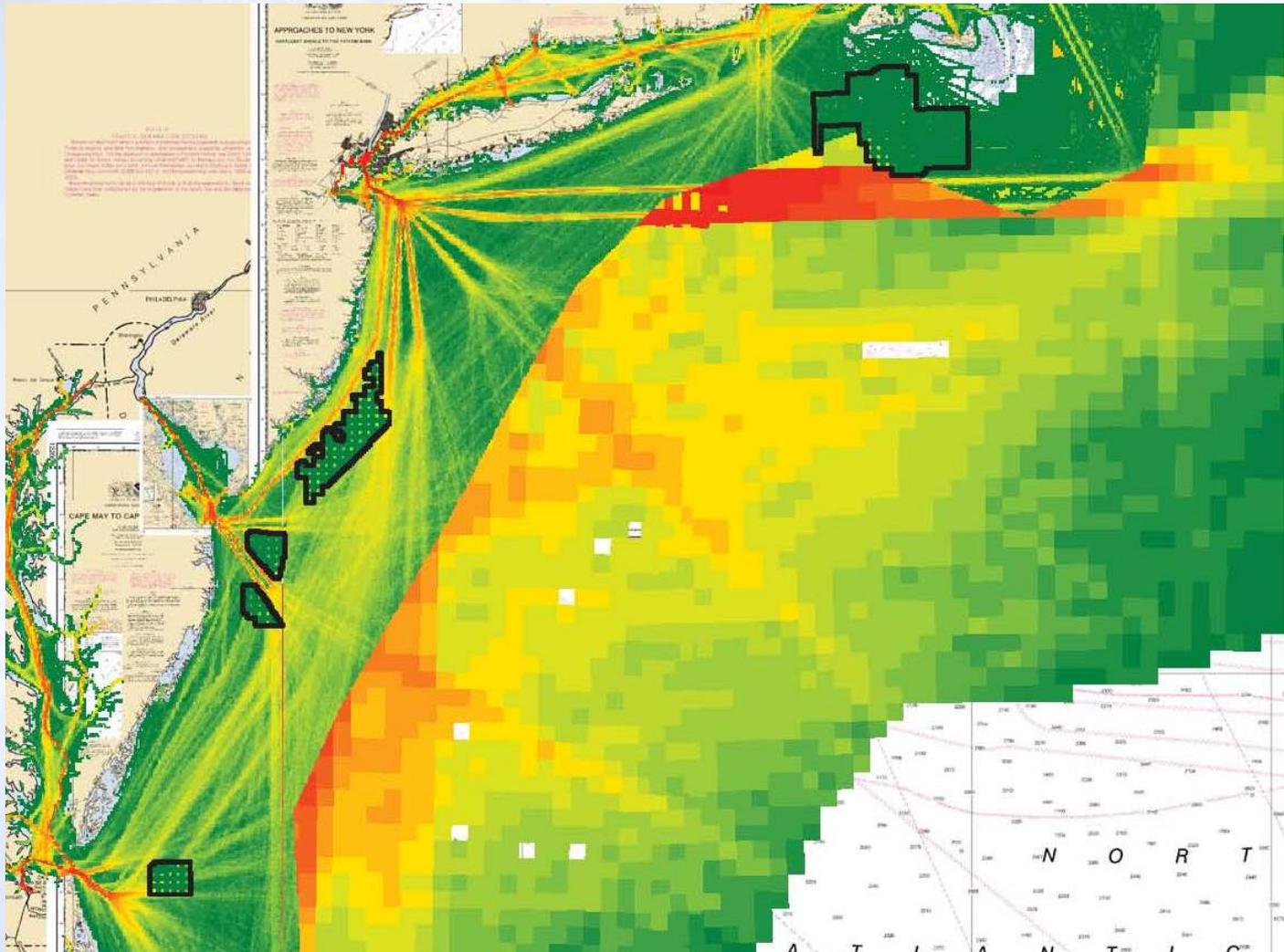


# Density Plot for Virginia





# Atlantic Coast VA to MA





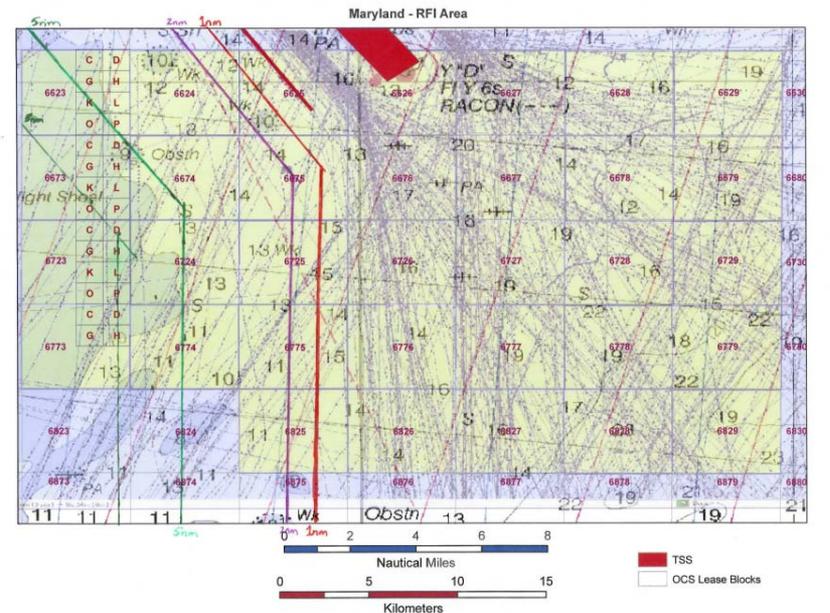
# Phase 2- Apply R-Y-G Methodology



Deliverable – R-Y-G determinations (pending more detailed analysis)

Apply maritime risk guidance from UK MGN-371

Determine port & coastal shipping routes





# UK Maritime Guidance Note

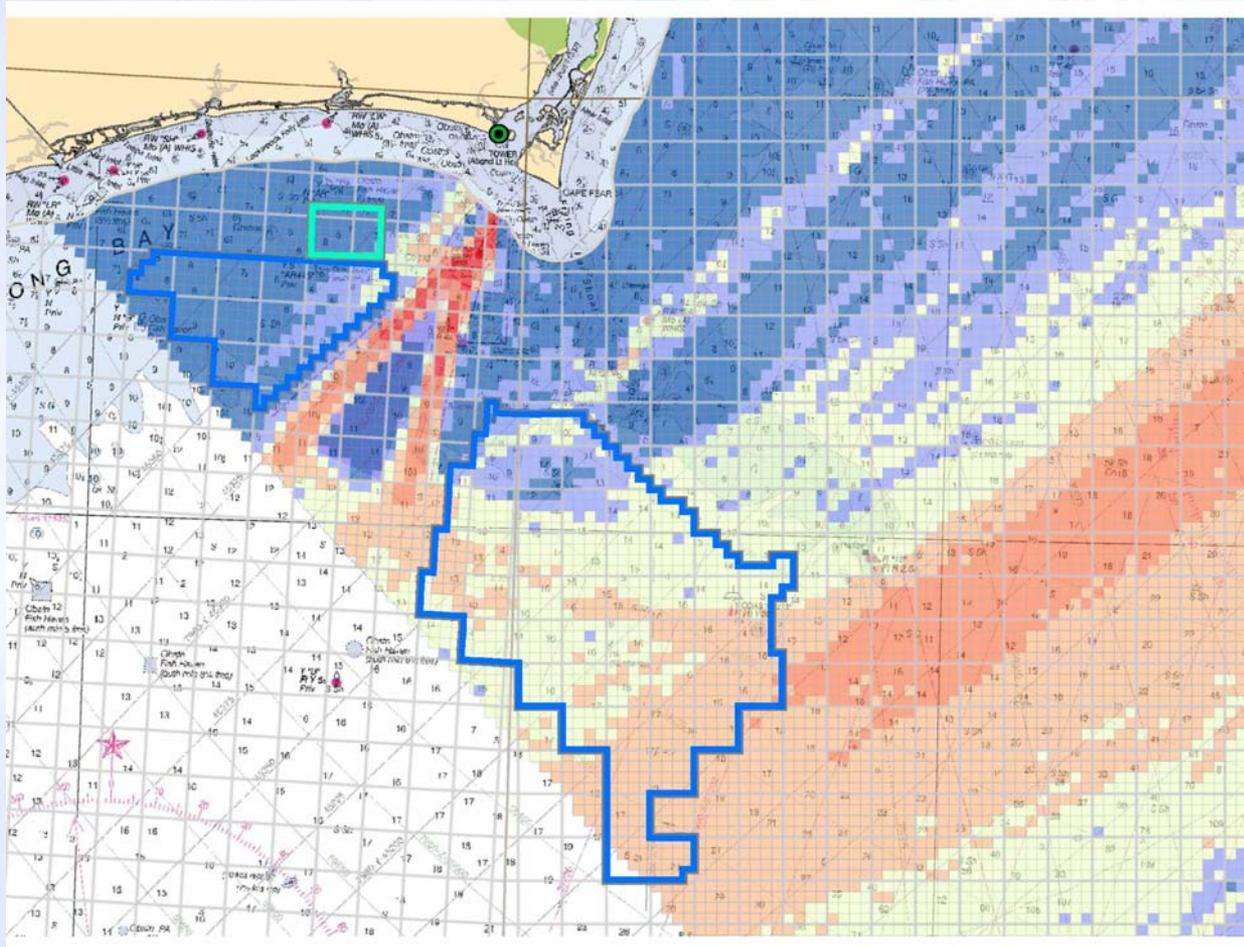
## MGN-371



Distance	Factors	Risk	
< 0.25 NM	Inter-turbine spacing = only small craft recommended	Very High	RED
0.5 NM	Mariner's high traffic density domain	High	
1.0 NM	Minimum distance to parallel boundary of TSS	Medium	YELLOW
1.5 NM	S band radar interference - ARPA affected	Medium	
2.0 NM	Compliance with COLREGS becomes less challenging	Medium	
> 2.0 NM	But not near a TSS	Low	
5.0 NM	Adjacent wind farm introduces cumulative effect. Distance from TSS entry/exit	Very Low	GREEN
10.0 NM	No other wind farms	Very Low	

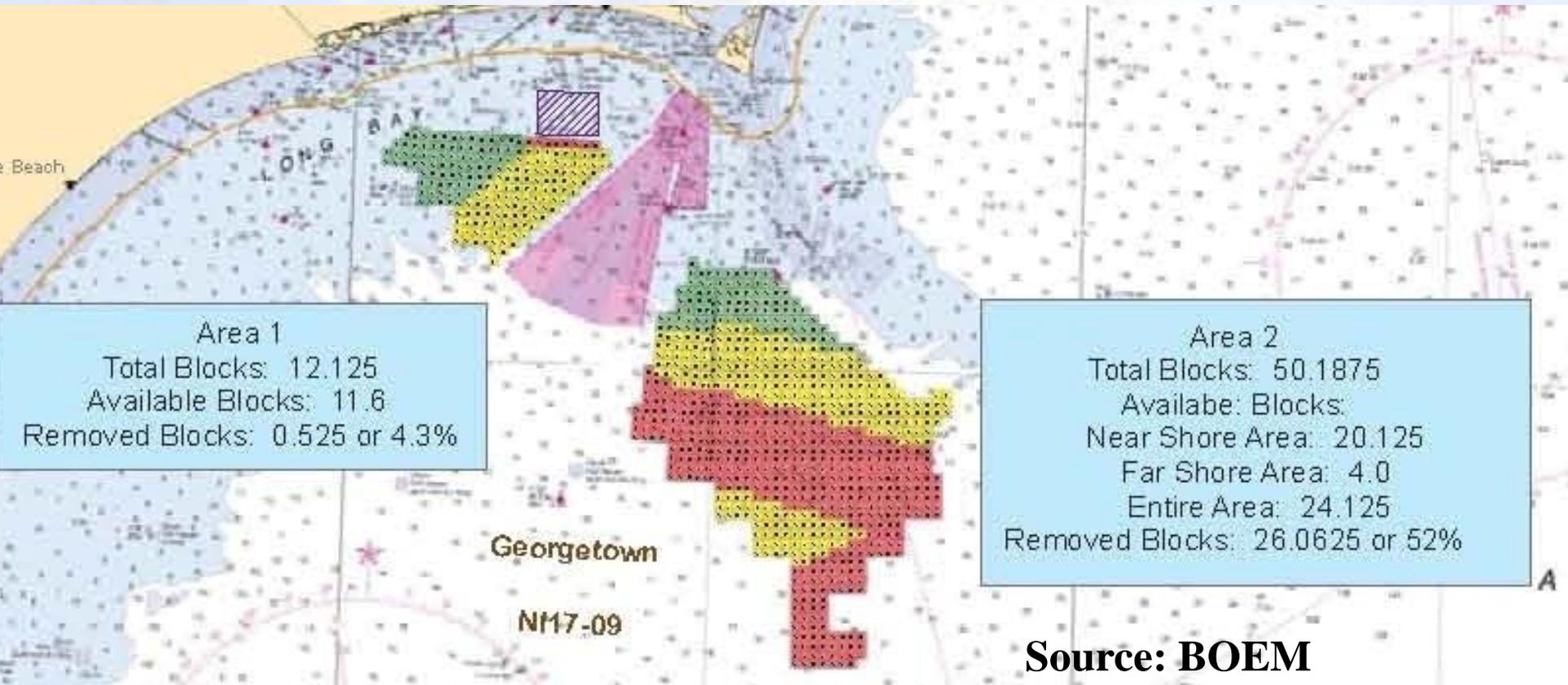


# NC Areas 1 and 2



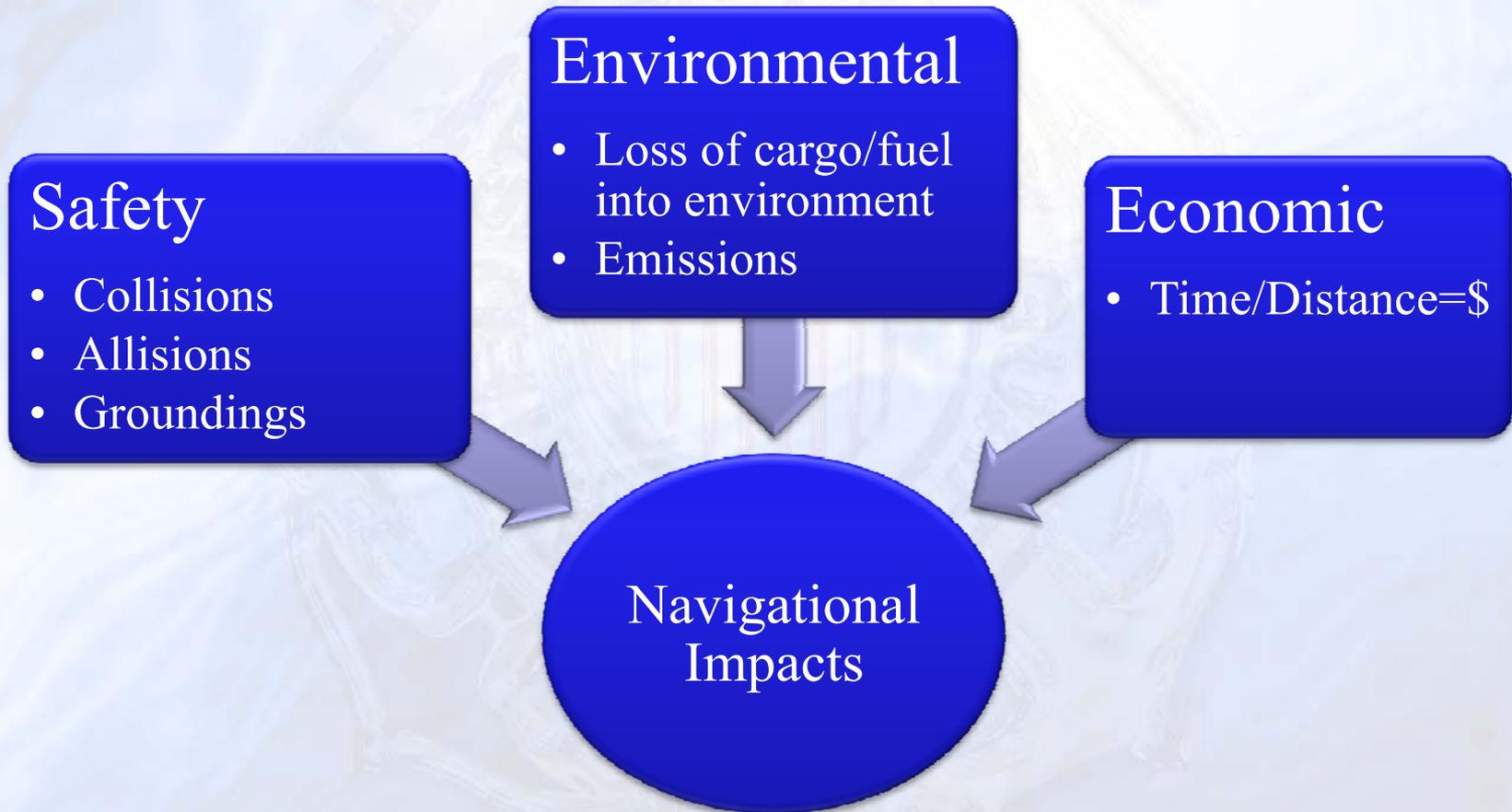


# R-Y-G Determination for NC Areas 1 and 2





# Impacts to Navigation





# Navigational Risk



**Wind Farms →  
Navigational Aid**

**Navigation Controls or  
Requirements**

**Routing Measures →  
Predictability**

**Increased Density  
Mixing Vessel Types  
Increased Sea State  
Radar Interference  
Obstructed View**



# Navigation Impacts

## Economic

- Time, Distance = Greater Expense

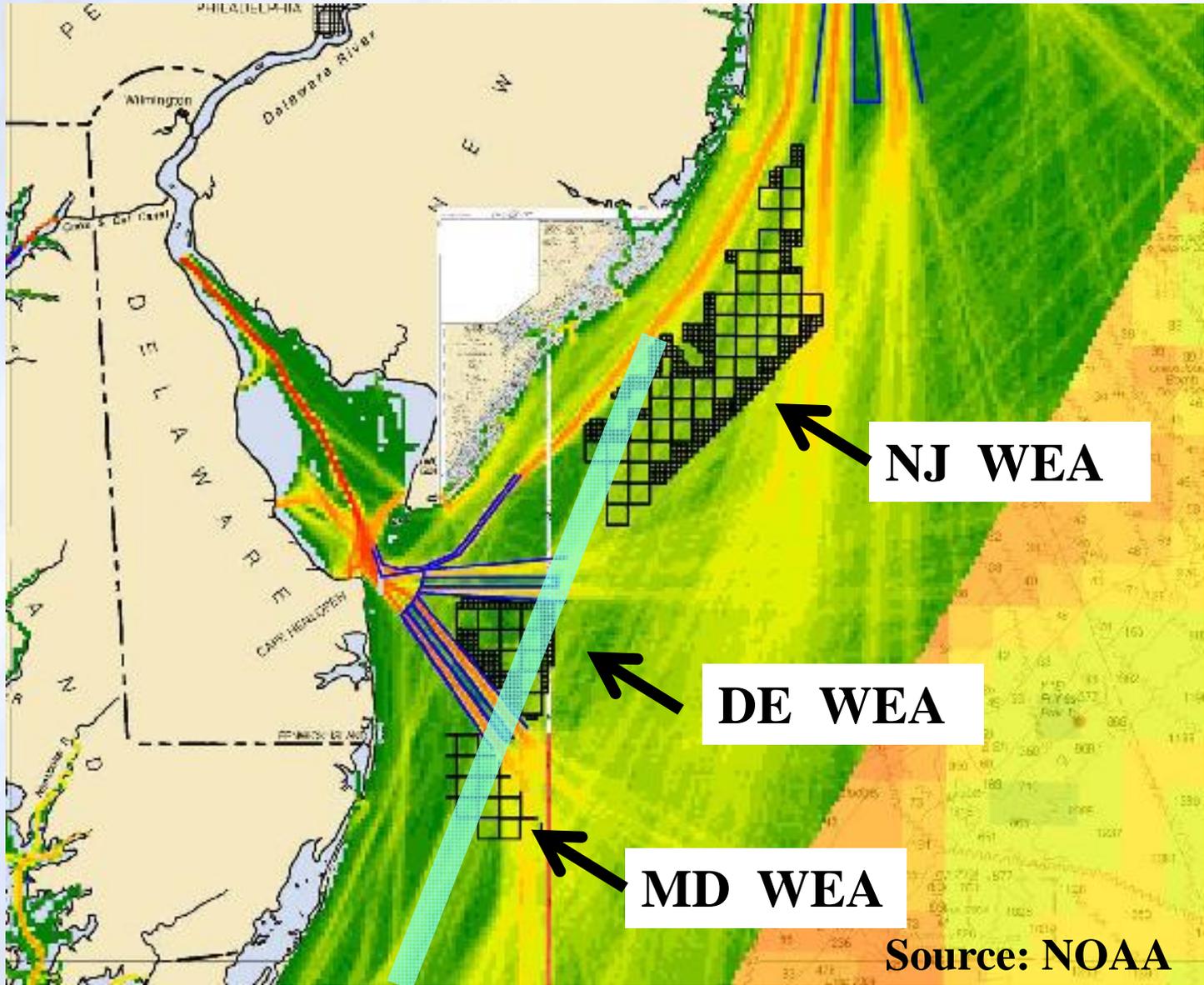
## Environmental

- Greater Fuel Burn
  - Carbon Footprint
- Greater Risk of Spills





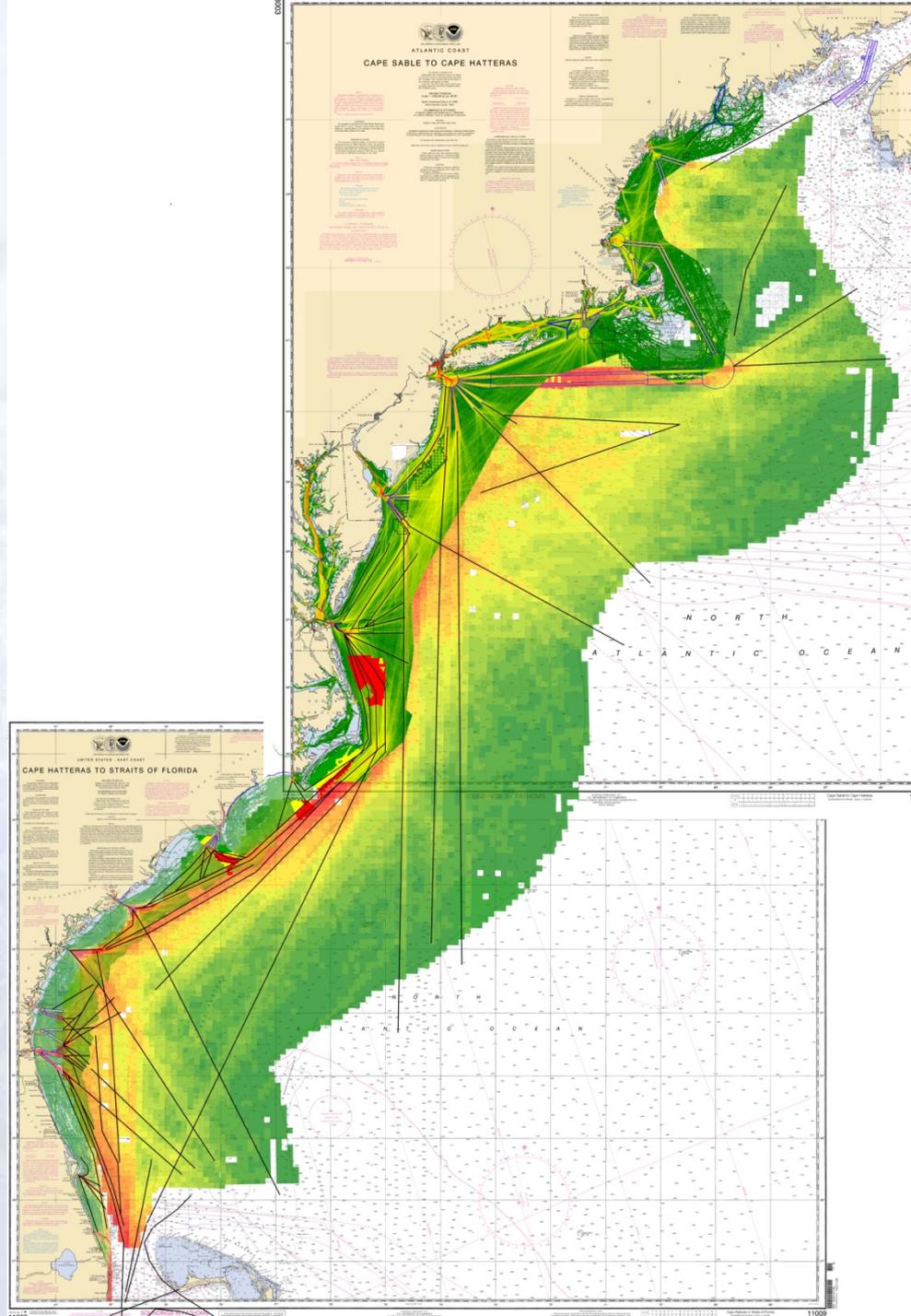
# Delaware Bay Entrance



Source: NOAA



# Historical Routes

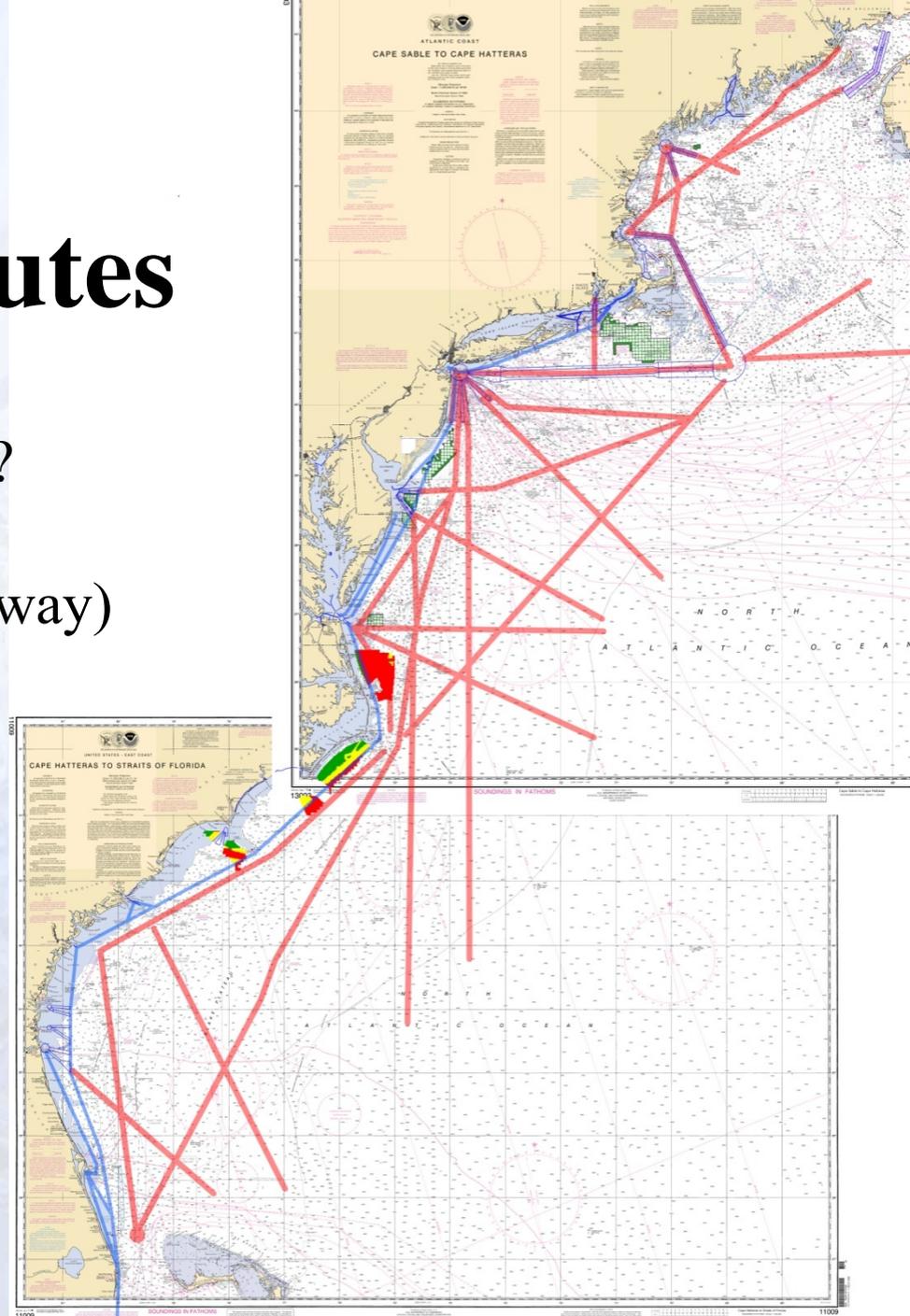




# Major Routes

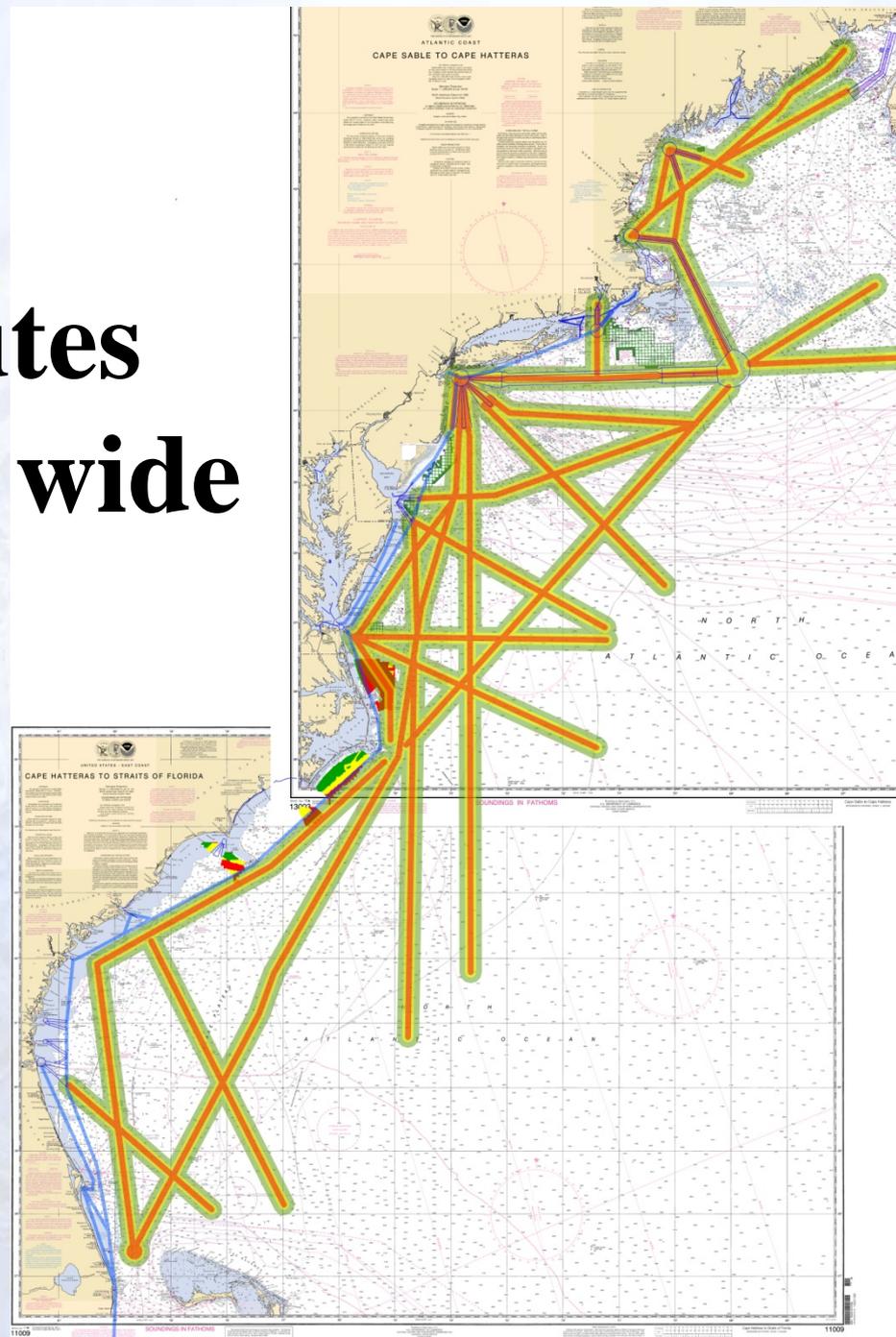
How do we determine?

- Number
- Type (TSS, Fairway)
- Width, Length
- Orientation
- $\Delta$  Density
- $\Delta$  Risk





# Major Routes 5, 10, 20 NM wide





# Where does that leave us?



- Any new structure in water will impact traffic
- Potential Routing System
  - Complex
  - Need better tools to refine
  - Conservative- quickly eats up all the “real estate”
- Gaps
  - AIS = all traffic?
  - Impact of re-routing traffic



## Phase 3- Modeling and Analysis

- Develop a GIS based model to predict traffic density and traffic patterns given alternative siting scenarios
- Evaluate mitigation measures
- Determine the resultant navigational safety risk
- BOEM contracted with Pacific Northwest National Laboratory (PNNL)



# Recommendations

- Consider vessel traffic early in the process
- Understand
  - Changes in risk
    - Collisions, Allisions, Groundings
    - New routes (wx, shoals, traffic, etc.)
  - Cumulative Voyage Impacts  
(time, fuel, costs, emissions)
- Review ACPARS Interim Report and comment as appropriate



# ACPARS Website

<http://www.uscg.mil/lantarea/ACPARS/>

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