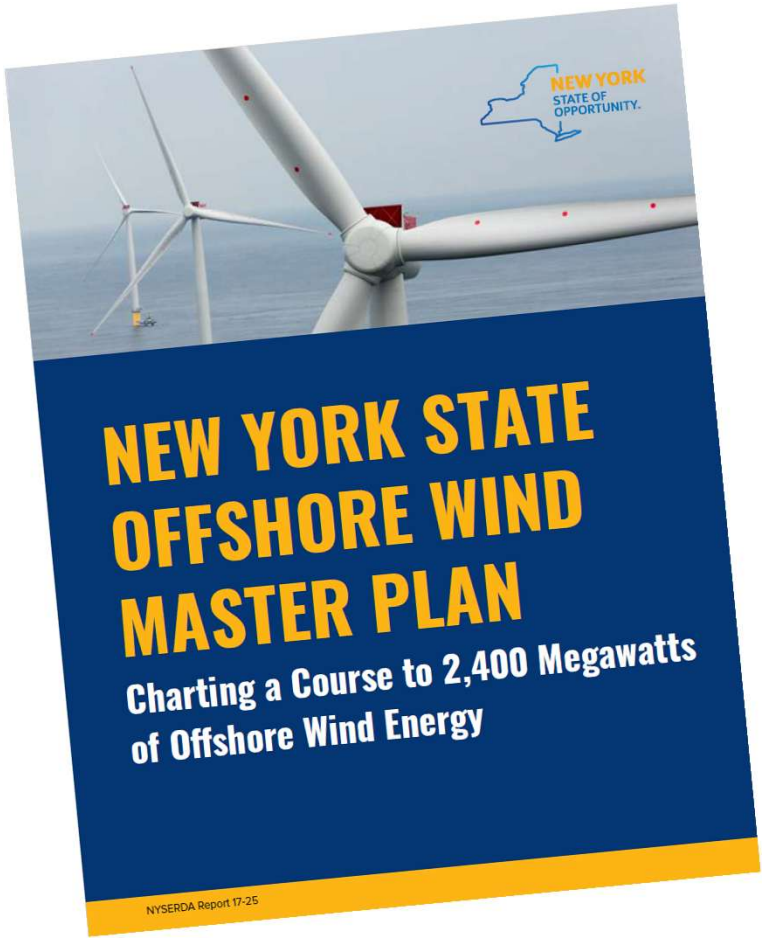
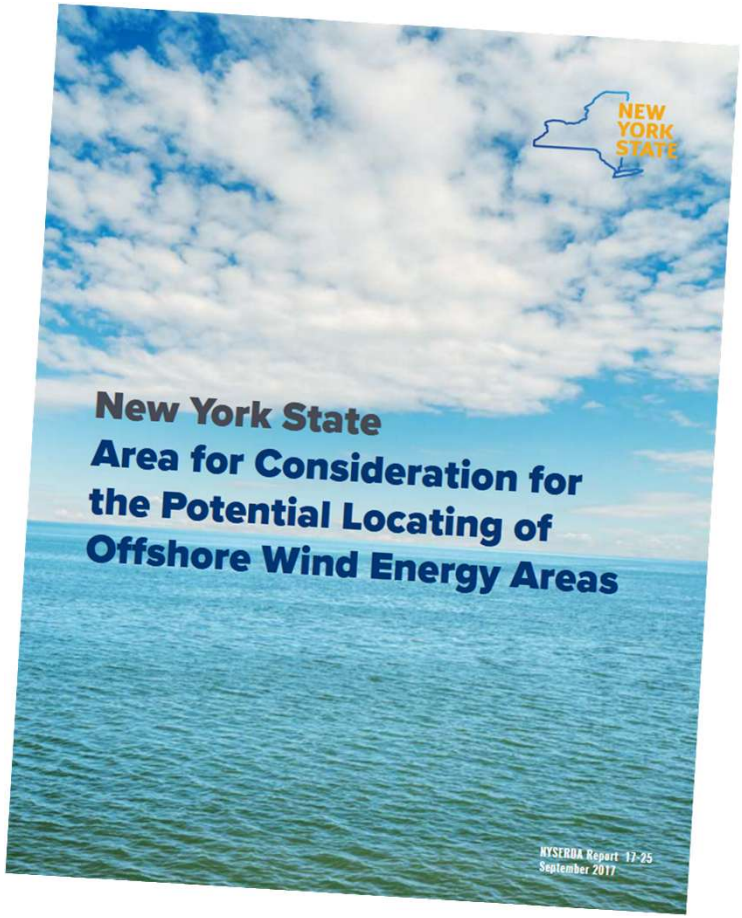
US Offshore Wind Siting

Lessons from the East Coast

Greg Matzat

Example: New York





https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/About-Offshore-Wind/Master-Plan

New York State Offshore Wind Master Plan 1.0

- Site identification, leasing strategies and timing
- Site assessment and site characterization pre-development activities
- Cost, benefit, interconnection and other studies
- Analysis and support ongoing Public Service Commission proceedings on offtake and transmission
- Stakeholder and community engagement

New York State Offshore Wind Master Plan Studies and Reports

1. Analysis of Multibeam Echo Sounder and Benthic Survey Data
2. Assessment of Ports and Infrastructure
3. Aviation and Radar Assets Study
4. Birds and Bats Study
5. Cable Landfall Permitting Study
6. Cables, Pipelines and Other Infrastructure Study
7. Consideration of Potential Cumulative Effects
8. Cultural Resources Study
9. Environmental Sensitivity Analysis
10. Fish and Fisheries Study
11. Health and Safety Study
12. Marine Mammals and Sea Turtles Study
13. Marine Recreational Uses Study
14. Offshore Wind Injection Assessment
15. Preliminary Offshore Wind Resource Assessment
16. Sand and Gravel Resources Study
17. Shipping and Navigation Study
18. U.S. Jones Act Compliant Offshore Wind Turbine Installation Vessel Study
19. Visibility Threshold Study
20. The Workforce Opportunity of Offshore Wind in New York

A. Area for Consideration for the Potential Locating of Offshore Wind Energy Areas
B. Offshore Wind Policy Options Paper
C. Outreach and Engagement Summary
D. Table of Permits and Approvals

Hot Issues: Fishing & Visibility

Studies and Outreach for Stakeholders

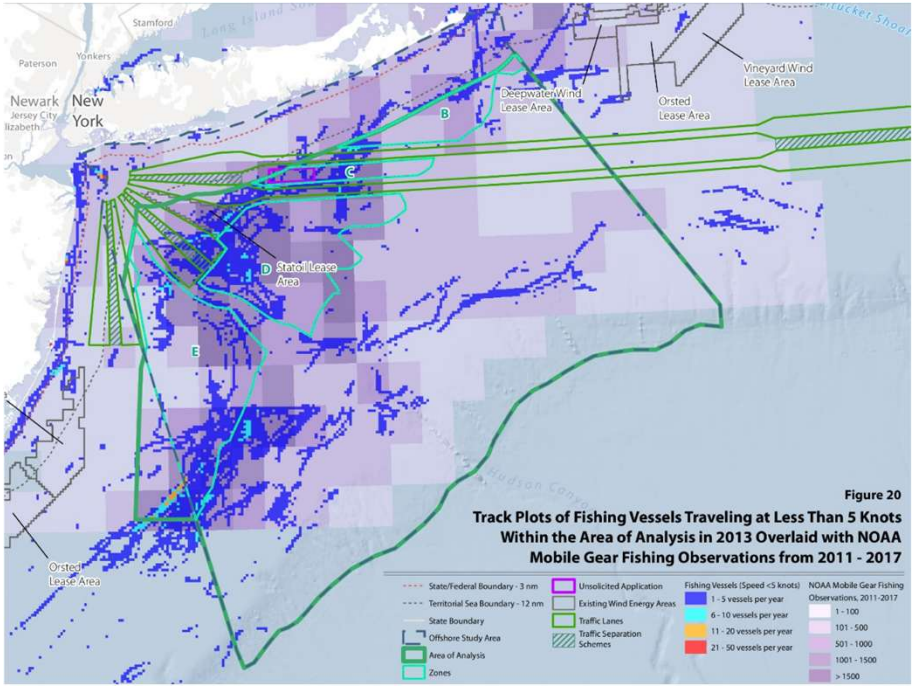


Figure 20
Track Plots of Fishing Vessels Traveling at Less Than 5 Knots Within the Area of Analysis in 2013 Overlaid with NOAA Mobile Gear Fishing Observations from 2011 - 2017

Time of Day	Distance From Viewer (Miles)				
	13.2	15	20	25	30
Morning	Clear 7.6%	Clear 7.6%	Clear 7.6%	Clear 7.6%	Clear 7.6%
	Partly Cloudy 2.2%	Partly Cloudy 2.2%	Partly Cloudy 2.2%	Partly Cloudy 2.2%	Partly Cloudy 2.2%
	Overcast 21.8%	Overcast 21.8%	Overcast 21.8%	Overcast 21.8%	Overcast 21.8%
	Visibility<10mi 8.4%	Visibility<10mi 8.4%	Visibility<10mi 8.4%	Visibility<10mi 8.4%	Visibility<10mi 8.4%
Mid-day	Clear 4.2%	Clear 4.2%	Clear 4.2%	Clear 4.2%	Clear 4.2%
	Partly Cloudy 1.8%	Partly Cloudy 1.8%	Partly Cloudy 1.8%	Partly Cloudy 1.8%	Partly Cloudy 1.8%
	Overcast 17.0%	Overcast 17.0%	Overcast 17.0%	Overcast 17.0%	Overcast 17.0%
	Visibility<10mi 3.6%	Visibility<10mi 3.6%	Visibility<10mi 3.6%	Visibility<10mi 3.6%	Visibility<10mi 3.6%
Afternoon	Clear 5.3%	Clear 5.3%	Clear 5.3%	Clear 5.3%	Clear 5.3%
	Partly Cloudy 1.9%	Partly Cloudy 1.9%	Partly Cloudy 1.9%	Partly Cloudy 1.9%	Partly Cloudy 1.9%
	Overcast 21.5%	Overcast 21.5%	Overcast 21.5%	Overcast 21.5%	Overcast 21.5%
	Visibility<10mi 4.6 %	Visibility<10mi 4.6 %	Visibility<10mi 4.6 %	Visibility<10mi 4.6 %	Visibility<10mi 4.6 %
Total Daylight Hours	100%	100%	100%	100%	100%

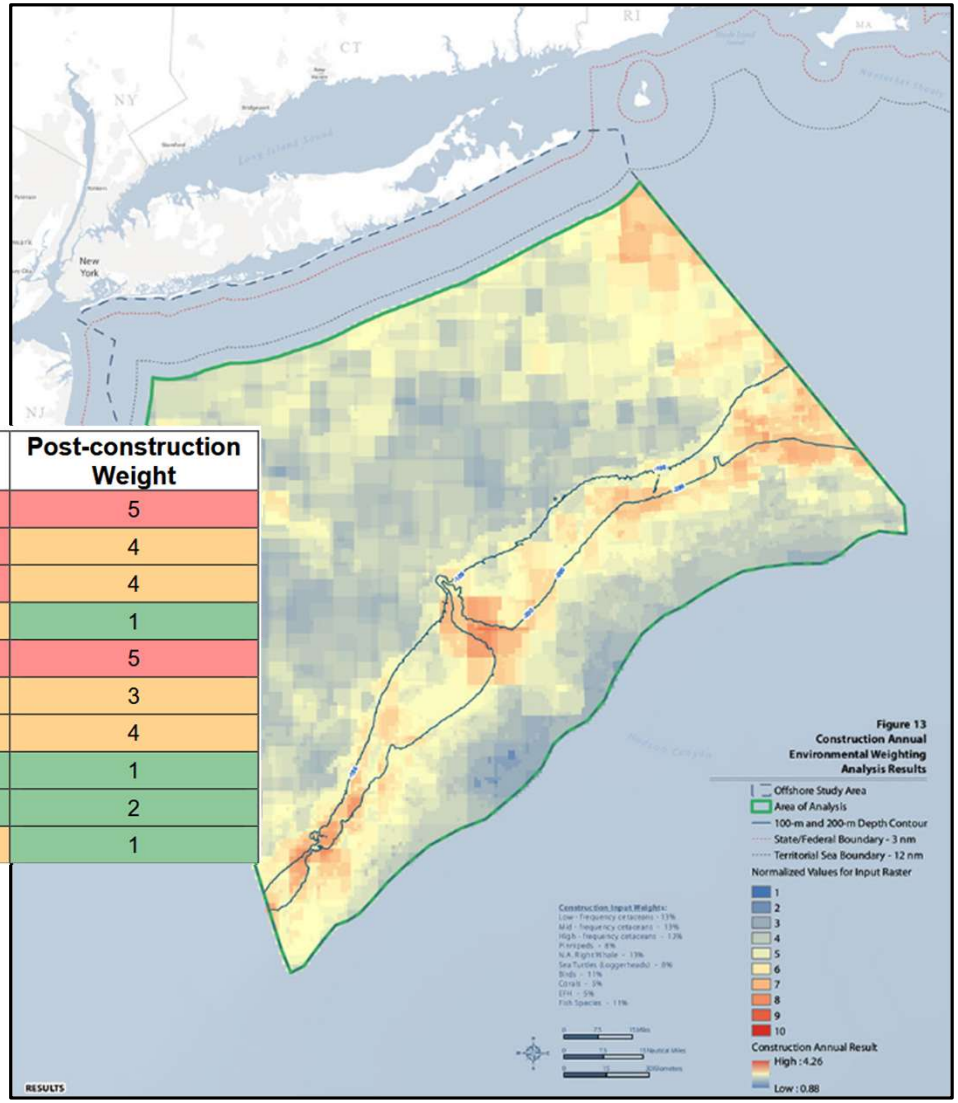
Key:

- Visible
- Not Readily Discernable
- Very Difficult to Discern/Not Visible

Environmental Sensitivity

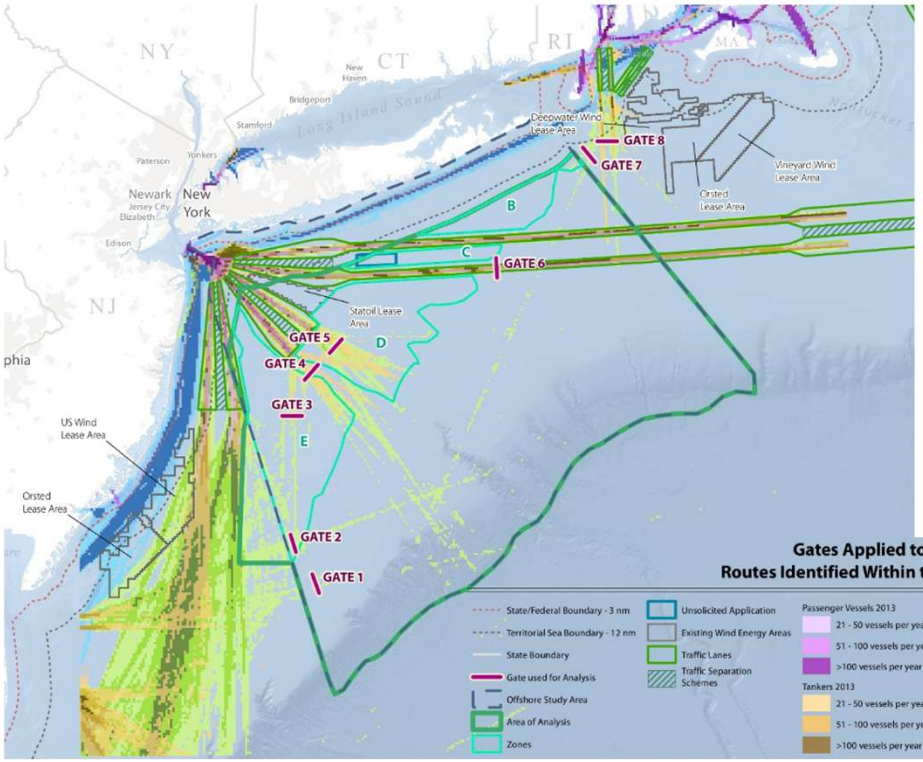
Quantifiable analysis

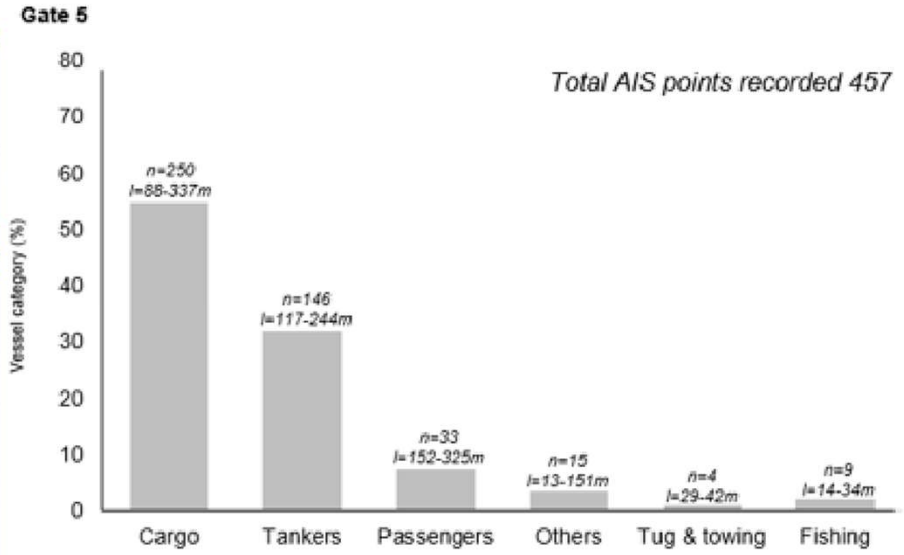
Receptor	Pre-construction Weight	Construction Weight	Post-construction Weight
Low-Frequency Cetaceans	4	5	5
Mid-Frequency Cetaceans	4	5	4
High-Frequency Cetaceans	5	5	4
Pinnipeds	2	3	1
North Atlantic Right Whales	4	5	5
Sea Turtles (Loggerheads)	3	3	3
Birds	1	4	4
Corals	2	2	1
Essential Fish Habitat	2	2	2
Fish Species	3	4	1



Shipping and Navigation Study

Scales, insights from new methodologies





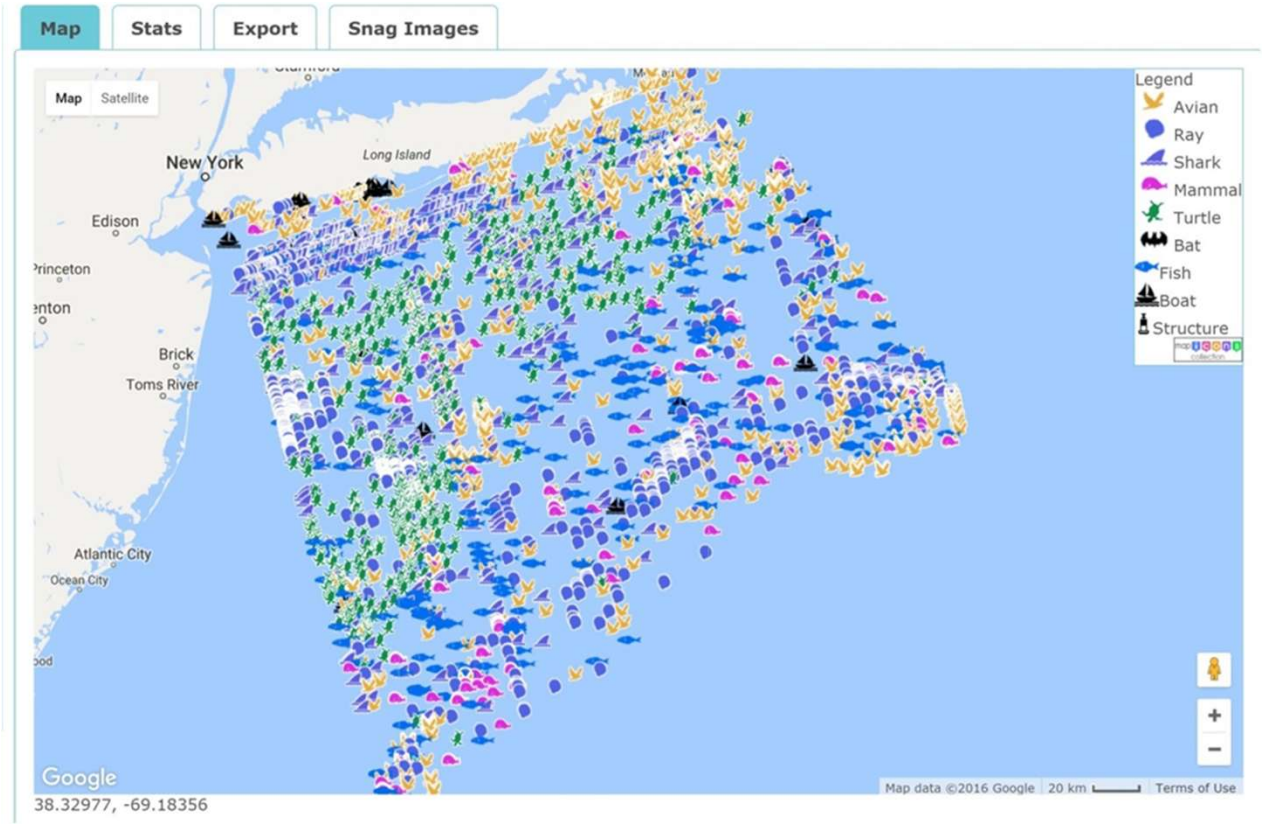
Site Assessment & Characterization

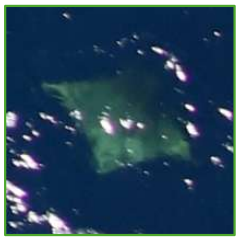
Pre-power procurement, increase developer interest, reduce timelines and costs

- Metocean Measurements
- Acoustic Surveys
- Oceanographic Surveys
- Geophysical Surveys
- Geotechnical Surveys
- Onshore Surveys & Land Use
- Aerial Surveys
- Endangered Species Assessment

Aerial Survey

Baseline Data

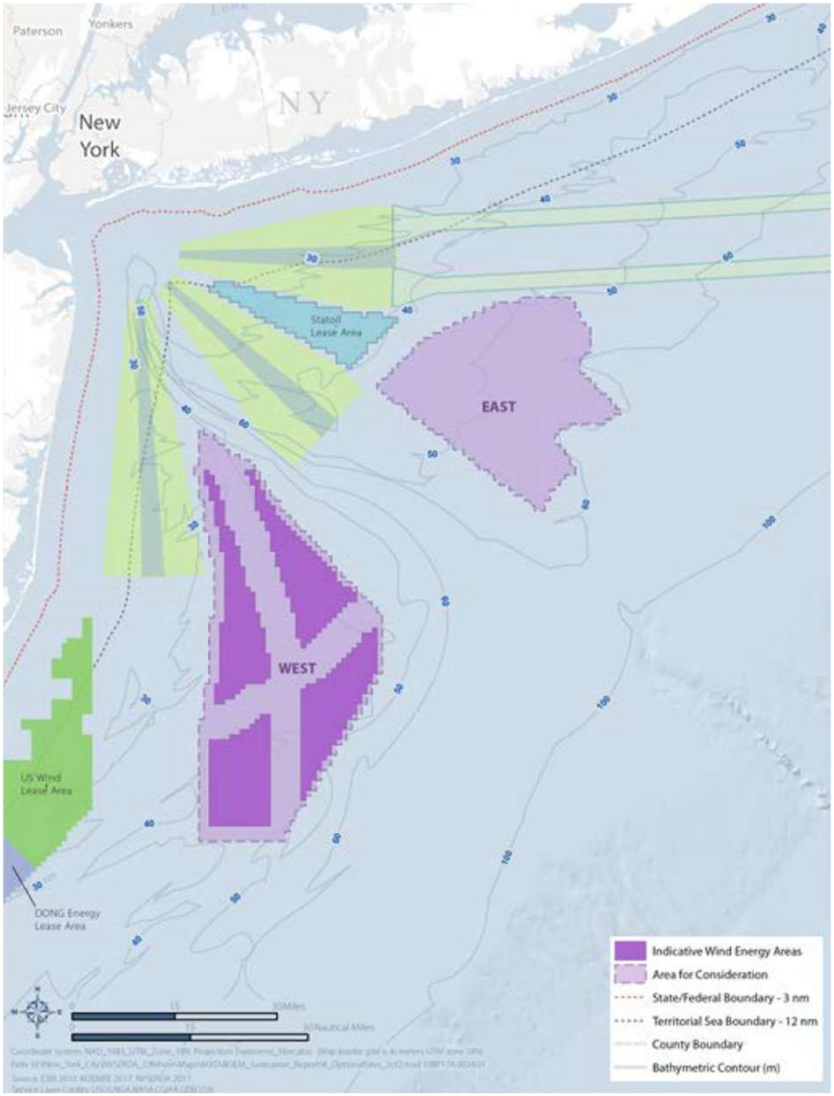




Area of Consideration and Indicative Wind Energy Areas

Requests to meet state targets

- Minimum number of WEAs
- Minimum area/capacity per WEA



Recommendations

- More detail to stakeholders early – If stakeholders learn about the extents of projects in the Construction and Operations (COP) approval stage, it is too late for meaningful change
- Ensure your data analysis and visualization convey meaningful insights, effectively highlight key findings and are easy to understand – Studies can go beyond BOEM's work, avoid qualitive results when possible
- Avoid contentious areas – Opposition will never go away
- Leave some capacity in each WEA on the table – Additional turbine positions will allow BOEM more options and flexibility for Alternatives to the Proposed Action for visibility, fishing and other concerns that develop
- Study moorings, cables and floating specific issues (WEA shapes, fishing impacts, etc.)