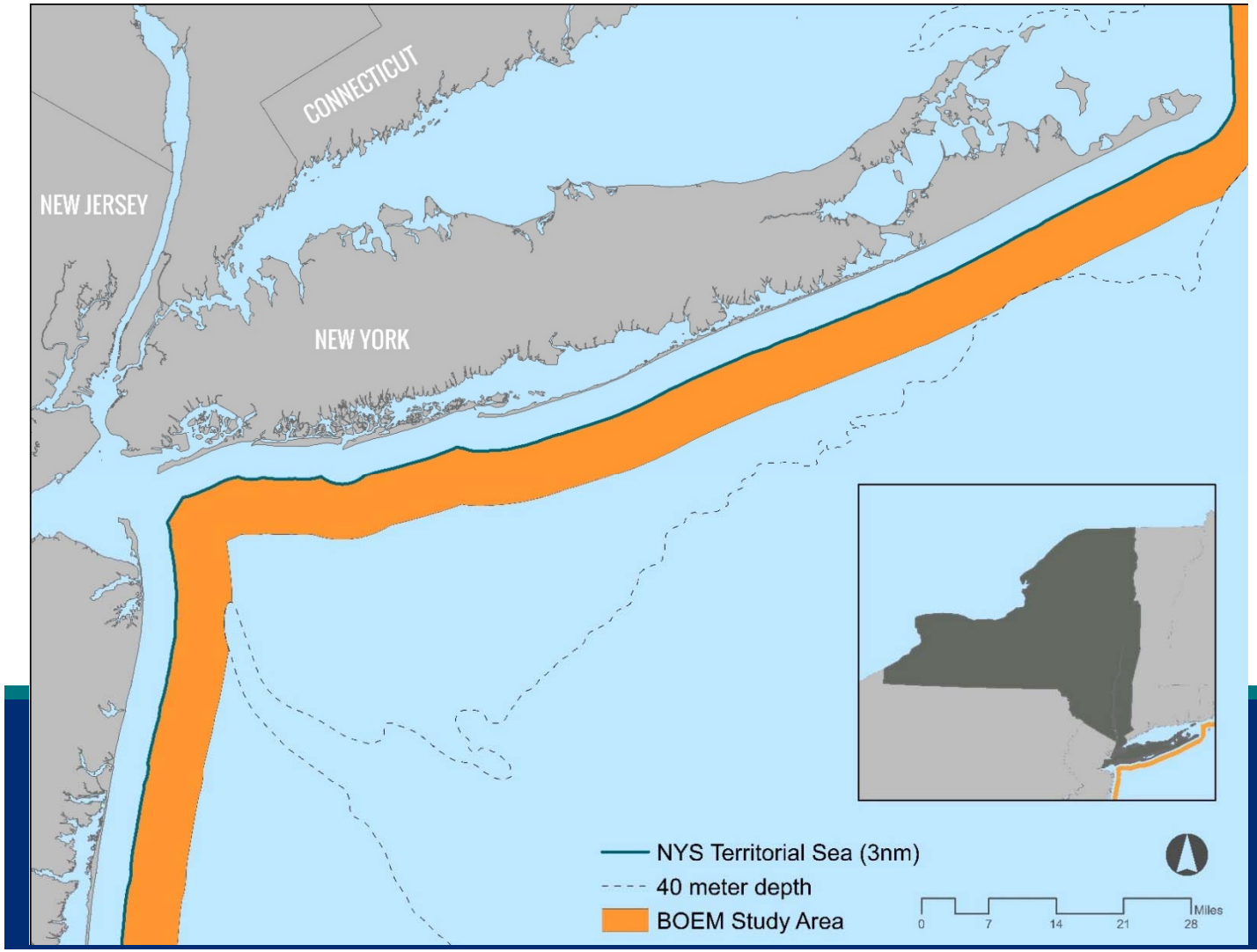
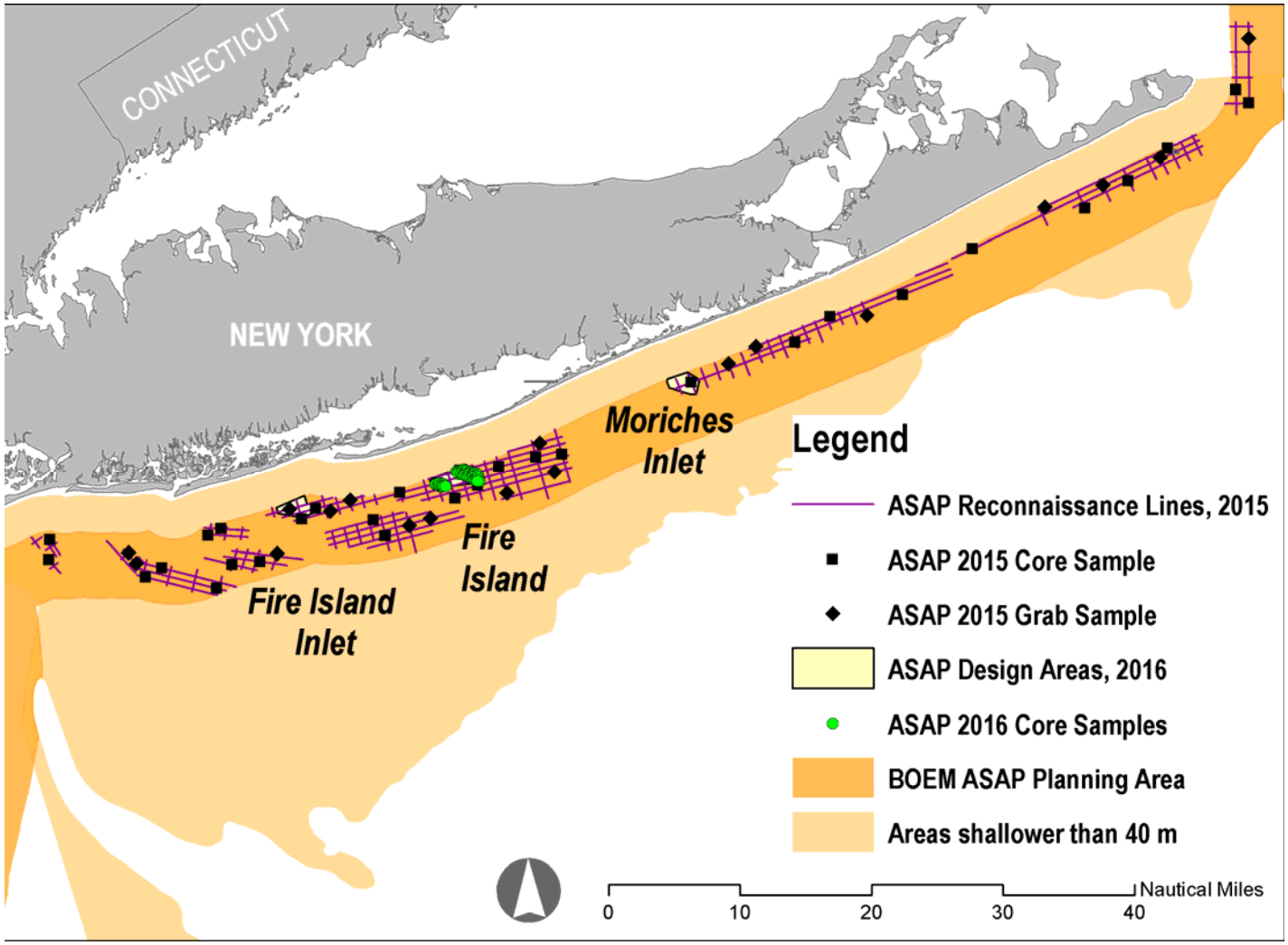
Assessment of Sand Resources Offshore New York

Department of State Office of Planning, Development & Community Infrastructure
Wilhelmina Innes, Mike Snyder, Jeff Herter, Barry Pendergrass, Carolyn LaBarbiera, Rebecca Newell, Peter Lauridsen, Alex Kuttesch

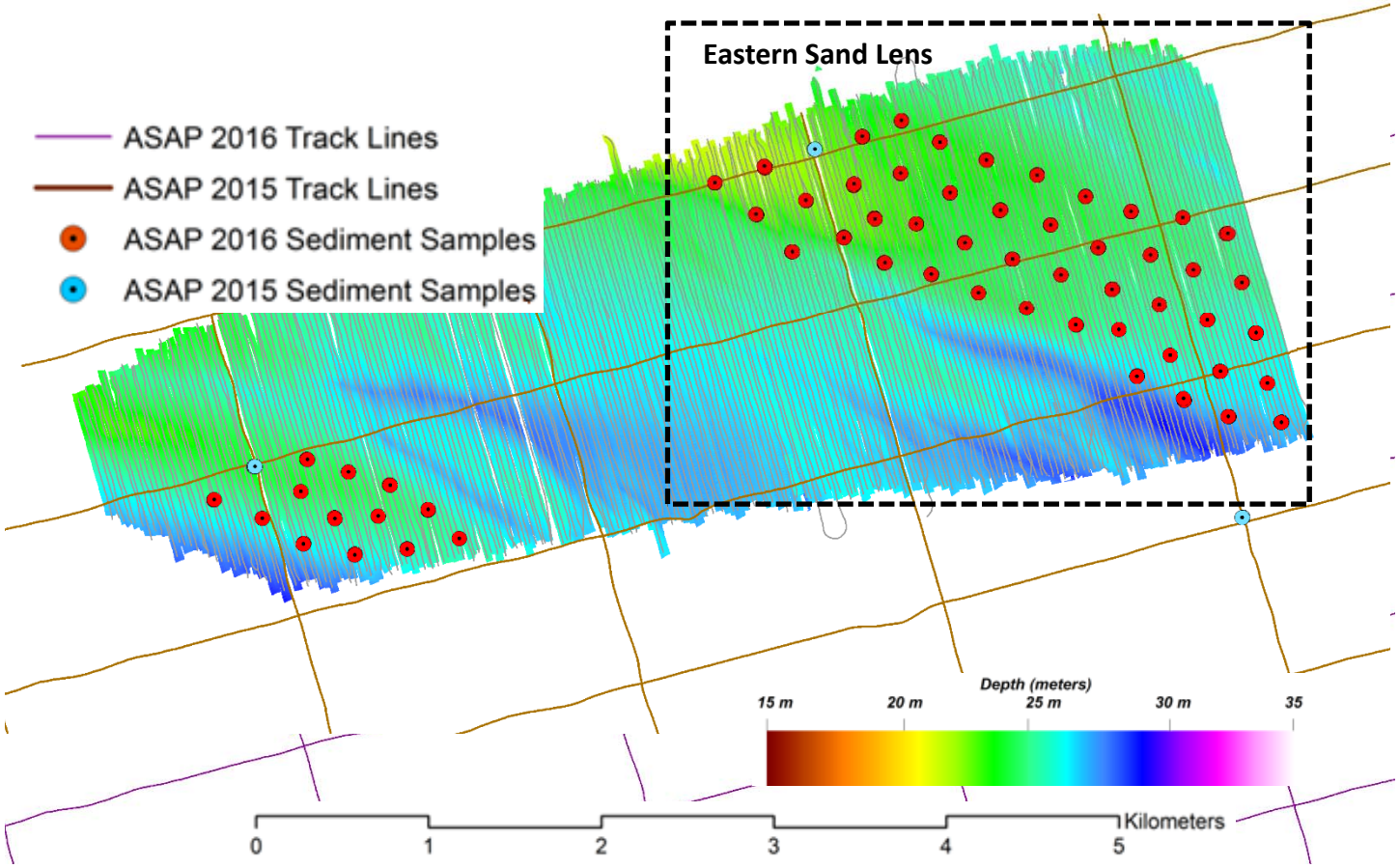
School of Marine and Atmospheric Sciences, Stony Brook University
Henry Bokuniewicz, Roger Flood, Robert Wilson, Justin Lashley, Yicheng Huang, Ian Dwyer

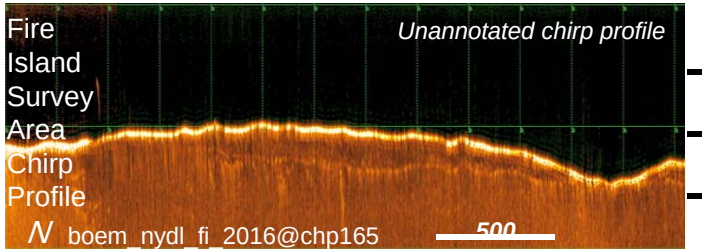
December 19, 2017

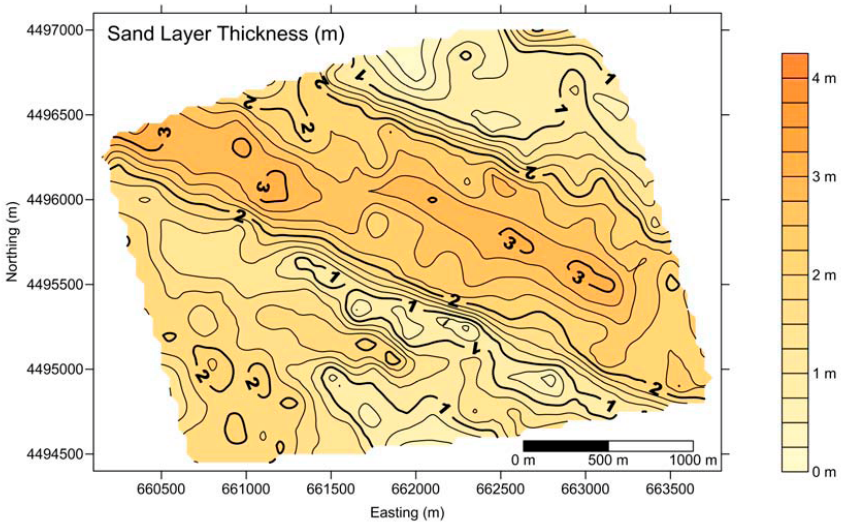

CONNECTICUT
NEW JERSEY
NEW YORK
NYS Territorial Sea (3nm)
40 meter depth
BOEM Study Area
0
7
14
21
28
Miles

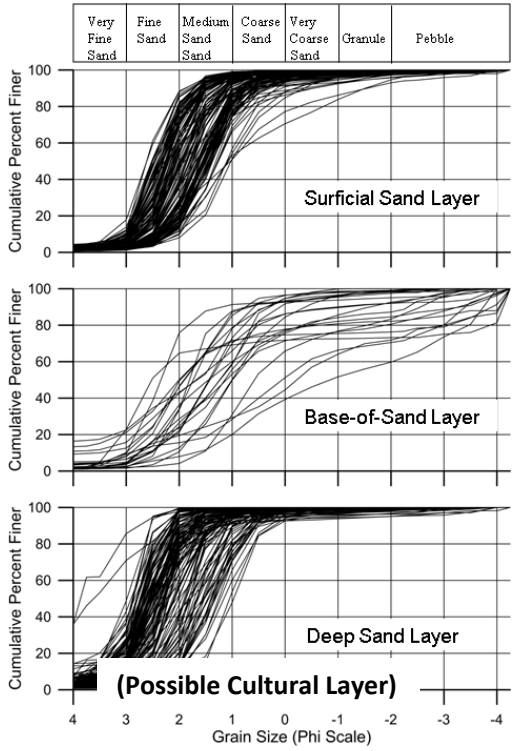

CONNECTICUT
NEW YORK
Moriches Inlet
Fire Island
Fire Island Inlet
Legend
ASAP Reconnaissance Lines, 2015
ASAP 2015 Core Sample
ASAP 2015 Grab Sample
ASAP Design Areas, 2016
ASAP 2016 Core Samples
BOEM ASAP Planning Area
Areas shallower than 40 m
0
10
20
30
40
Nautical Miles

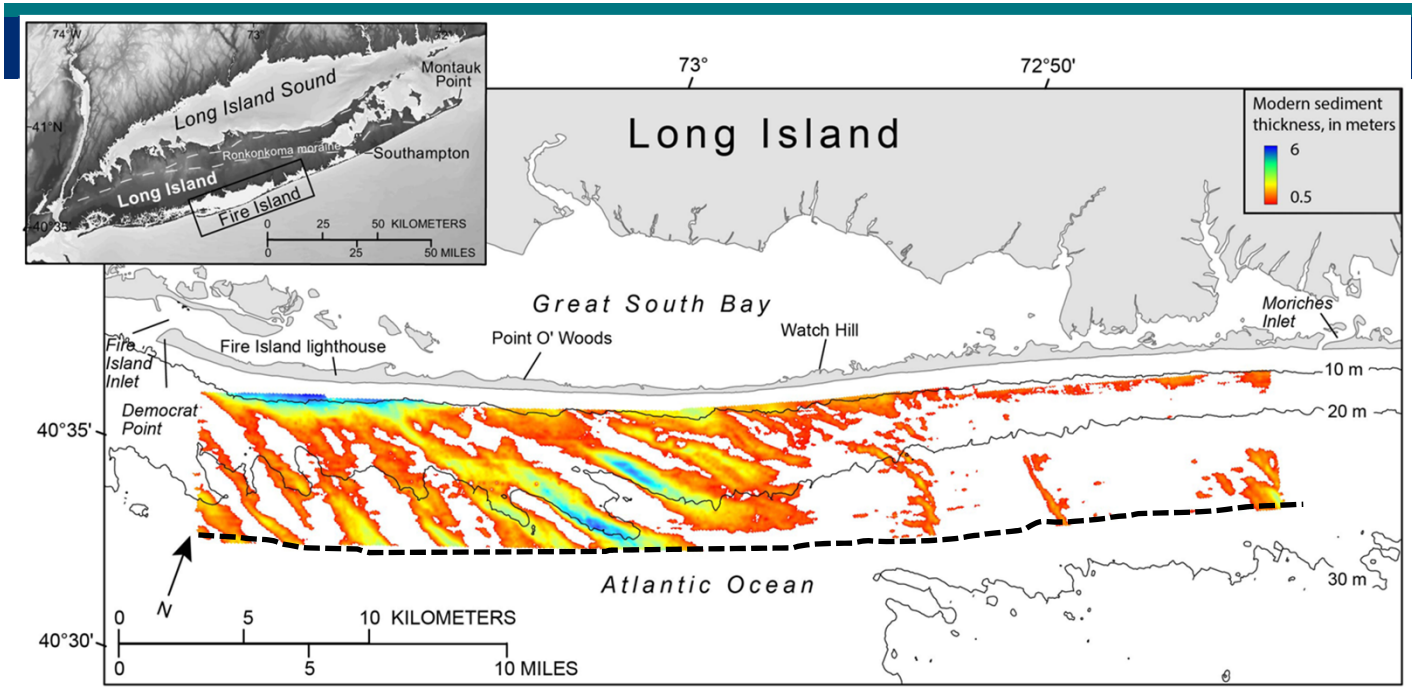
Fire Island Design Level Survey: BOEM ASAP, 2016




Fire Island Survey Area Chirp Profile
Unannotated chirp profile
boem_nydl_fi_2016@chp165
500
20
25
30
Water Depth (meters)


Sand Layer Thickness (m)
Northing (m)
Easting (m)
4497000
4496500
4496000
4495500
4495000
4494500
660500
661000
661500
662000
662500
663000
663500
0 m
500 m
1000 m
4 m
3 m
2 m
1 m
0 m


Very Fine Sand
Fine Sand
Medium Sand Sand
Coarse Sand
Very Coarse Sand
Granule
Pebble
Cumulative Percent Finer
Surficial Sand Layer
Base-of-Sand Layer
Deep Sand Layer
(Possible Cultural Layer)
Grain Size (Phi Scale)

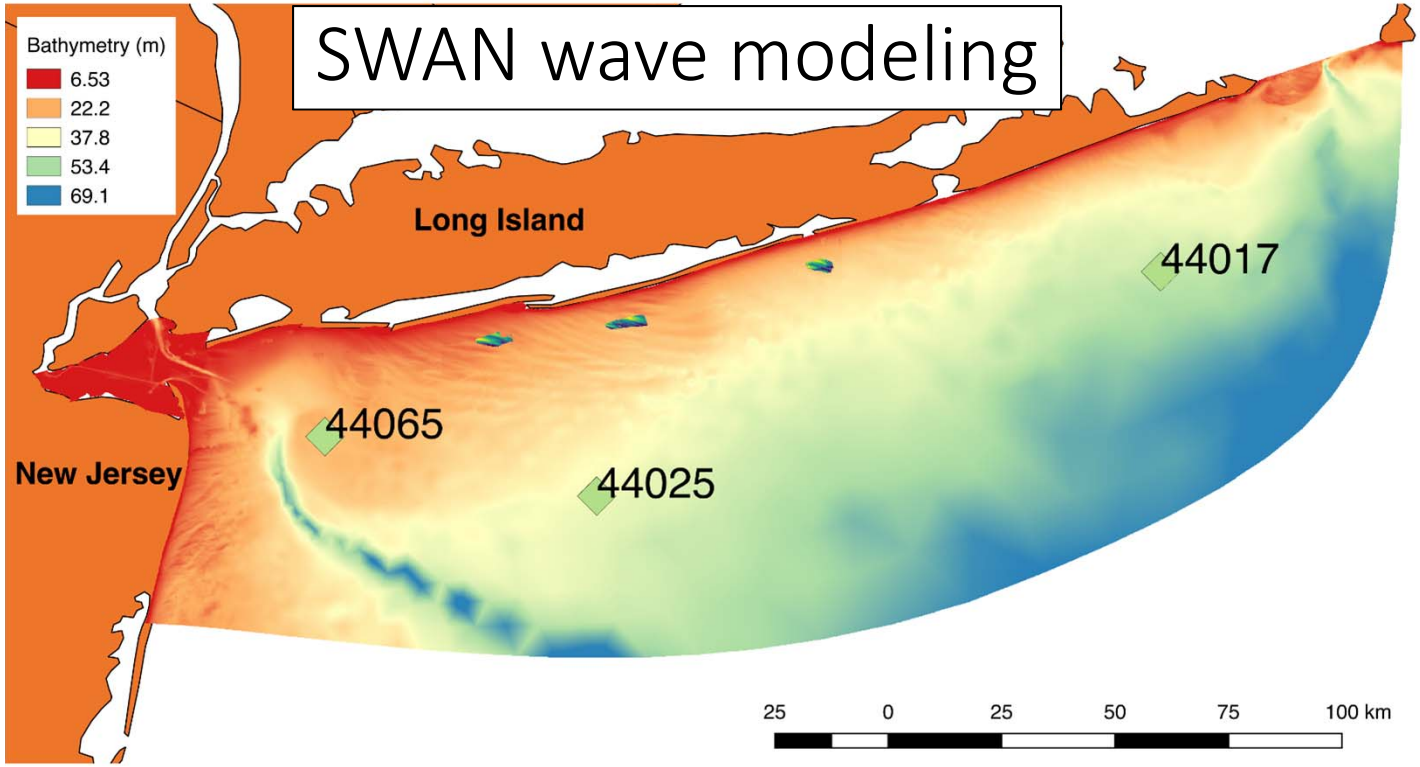


2nd Round Considerations

Bathymetry, sand thickness and volume calculation uncertainties & distribution of cores across 3 design-level sites

Additional data necessary to increase confidence in sand volume estimates plus more study and vetting of site locations and characteristics

NEW YORK STATE OF OPPORTUNITY. Department of State



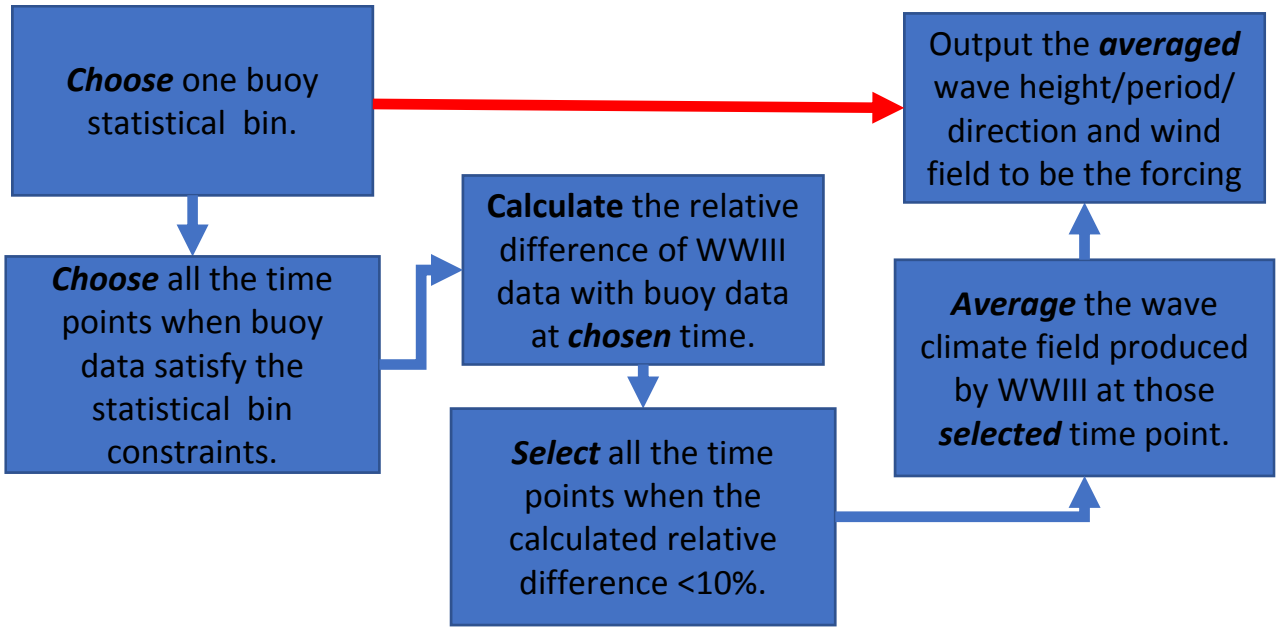
Assessment of the effects of the three potential borrow sites identified by BOEM on:

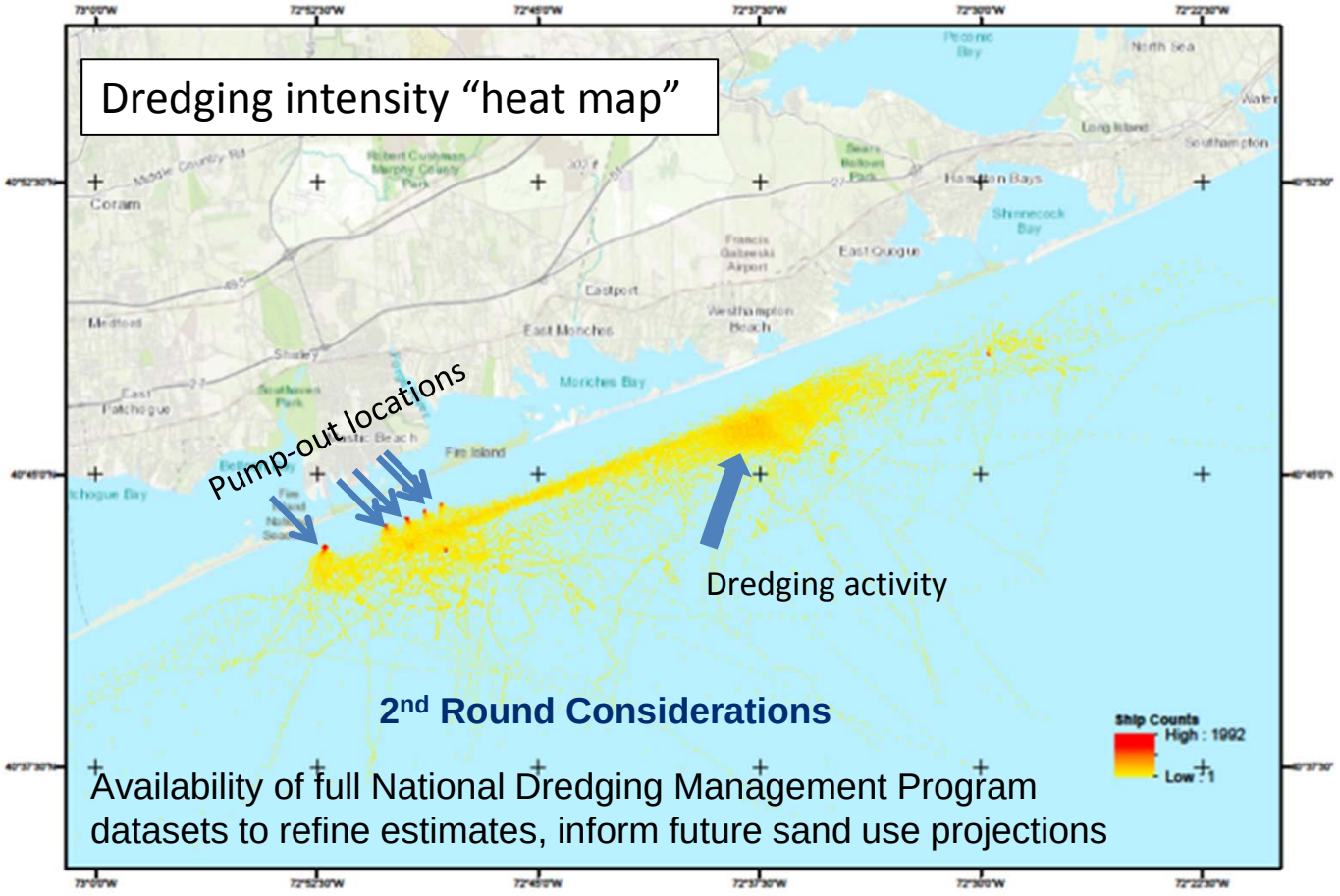
nearshore wave climate (θ, H_s) associated with wave refraction, wave breaking

long-shore sediment transport and transport divergence associated with changes in longshore component of wave energy flux

cross-shore sand transport associated with changes in velocity and acceleration skewness

Methods for defining forcing scenarios and extracting WaveWatch III data for open boundary and local wind forcing




Dredging intensity “heat map”
Pump-out locations
Dredging activity
2nd Round Considerations
Availability of full National Dredging Management Program datasets to refine estimates, inform future sand use projections
Ship Counts
High : 1992
Low : 1
Coram
Medford
East Patchogue
Fire Island
Moriches Bay
Eastport
East Moriches
Westhampton Beach
East Quogue
Shinnecock Bay
Hampton Bays
Southampton
Long Island
North Sea