

Environmental Resources Offshore Wind Working Group

Wednesday, March 25, 2020

5:00 – 7:00PM

Agenda

- 5:00 Welcome, Introductions and Agenda Review (Commissioner McCabe)
- 5:10 Review of Prior Meeting outcomes
- 5:15 Discussion of Federal and State Interagency work, timeline and public engagement opportunities
 - BOEM (15 minutes)
 - DEP (15 minutes)
 - USCG (15 minutes)
 - BPU (5 - 10 minutes)
 - EDA (5 – 10 minutes)
- 6:15 Review of status of proposed Ocean Wind project and public engagement opportunities (Orsted)
- 6:45 Update on additional steps for Stakeholder Engagement and feedback (DEP)
- 6:50 Wrap-up and Review of Next Steps (Commissioner McCabe)
- 7:00 Adjourn

Goals of the Meeting

- Review what we heard at last meeting
- Enhance understanding of partner responsibilities and pathways to address concerns
- Identify discrete events for stakeholder engagement within each agency's OSW process
- Report on agency tools and focused stakeholdering
- Provide resources to Working Group to navigate OSW process in New Jersey

Concerns

Areas of concern or need for further information:

- Transit lanes
- Federal consistency
- Loss of usable space for (1) fishing and (2) vessel traffic
- EMF impacts
- Ecological impacts
 - Inshore communities
 - Horseshoe crab sanctuary
- Physical impacts
- Construction
- Sediment impacts
- Pollution
- Wildlife impacts (non-commercial species)

Need for better coordination with federal agencies, between state agencies and regionally

Partner Responsibilities

DOI-BOEM, NJDEP, USCG, NJBPU, NJEDA



New Jersey Offshore Wind Environmental Working Group Meeting

Wil Waskes & Brian Krevor
Office of Renewable Energy Programs

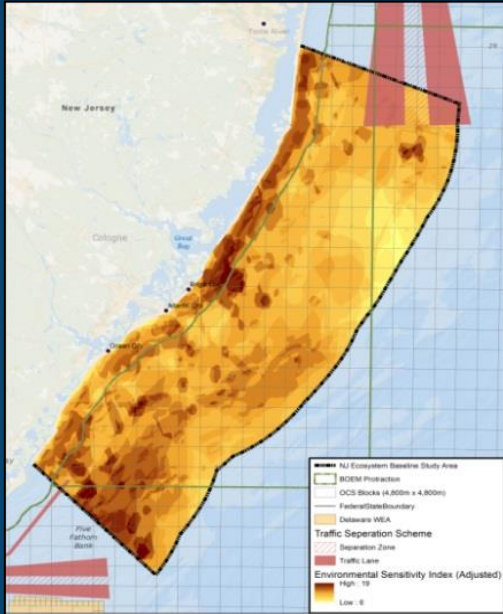
New Jersey Offshore Wind Environmental Working Group Meeting

March 25, 2020 | Webinar

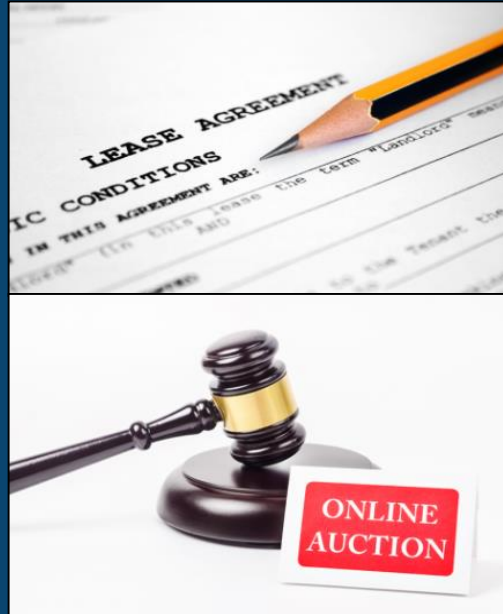


OCS Renewable Energy Authorization Process

Planning
& Analysis



Leasing



Site Assessment



Construction
& Operations



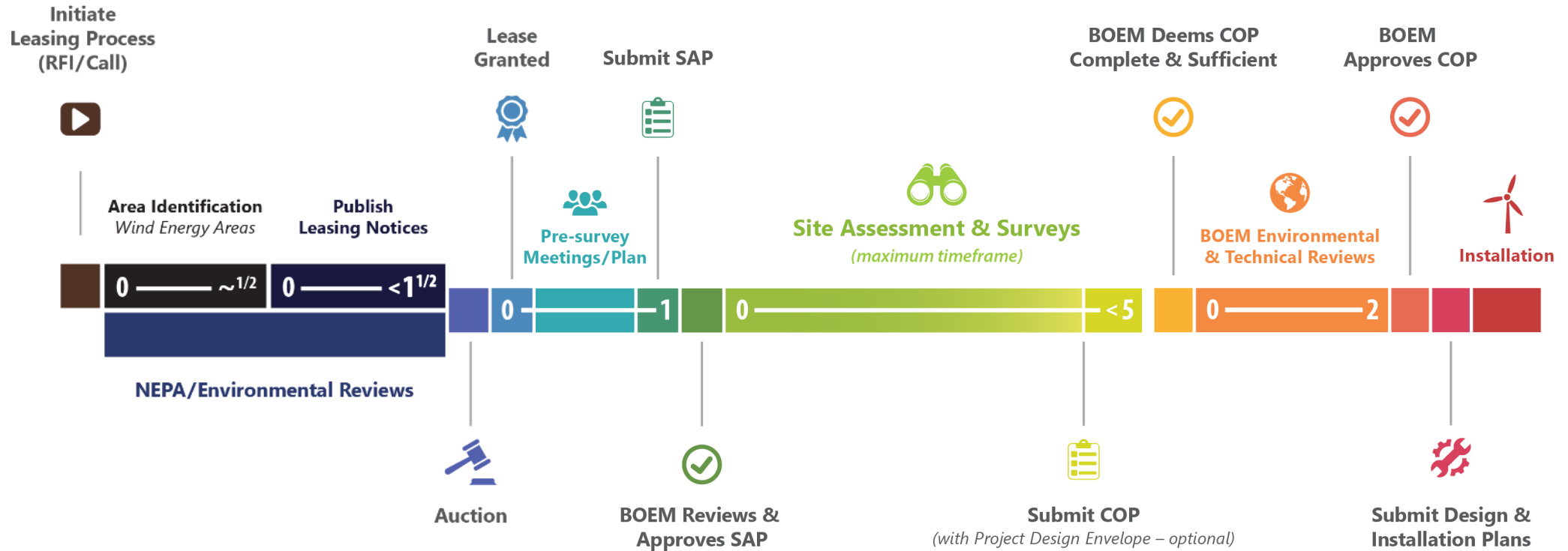
Renewable Energy Process: From Call to Operations

[Planning & Analysis]

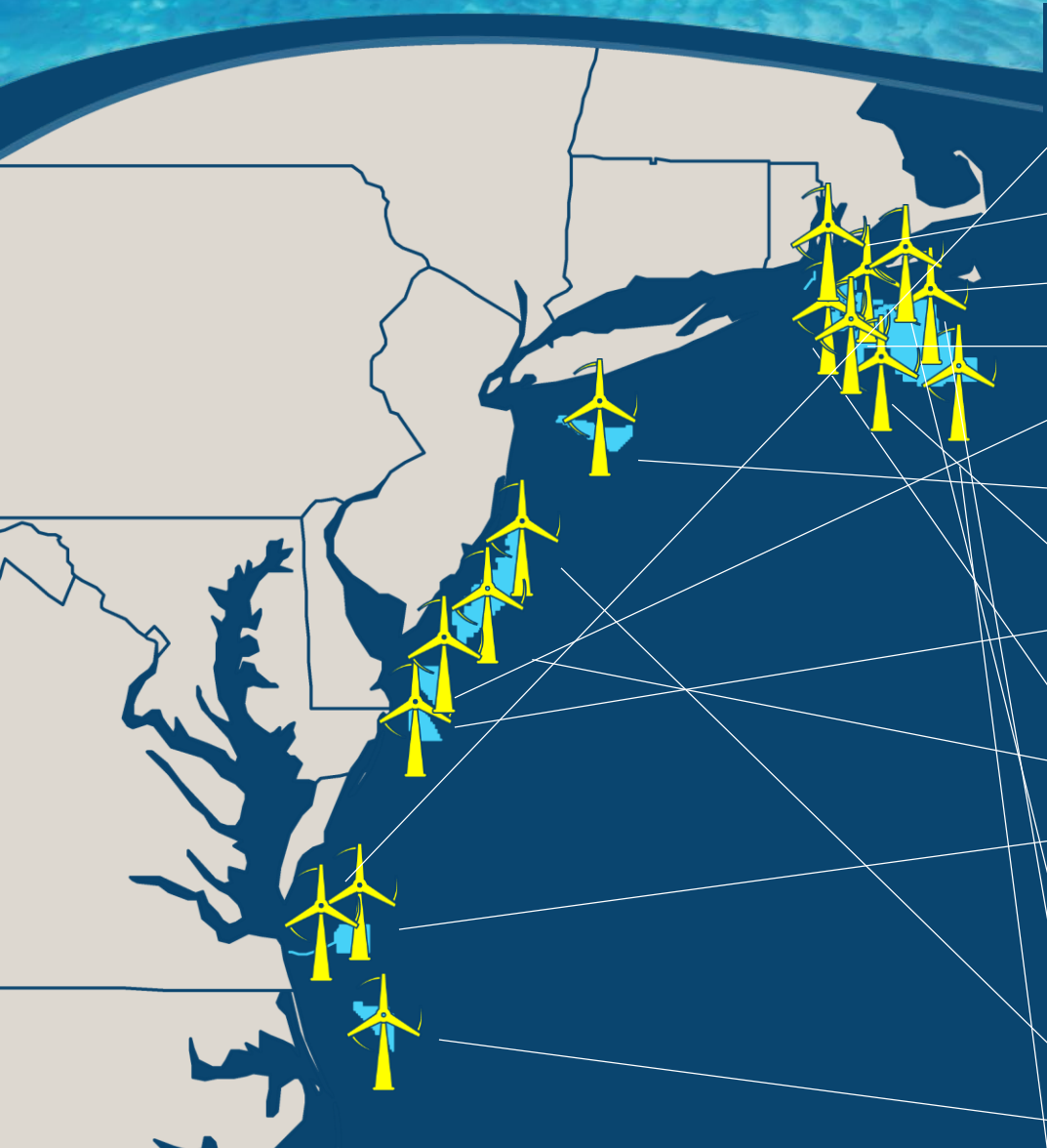
[Leasing]

[Site Assessment]

[Construction & Operations]



Atlantic OCS Renewable Energy: “Projects in the Pipeline”



	Project	Company
2020	Coastal Virginia Offshore Wind Pilot	
▼	South Fork	
▼	Vineyard Wind I	
▼	Revolution Wind	
▼	Skipjack Windfarm	
▼	Empire Wind	
▼	Bay State Wind	<small>An Ørsted & Eversource Initiative</small>
▼	U.S. Wind	
▼	Sunrise Wind	
▼	Ocean Wind	
▼	Coastal Virginia Offshore Wind Commercial	
▼	Park City Wind	
▼	Mayflower Wind	<small>A Shell and EDF Renewables joint venture</small>
▼	Atlantic Shores	
▼	Kitty Hawk	
2030	OCS-A 0522	

A New Jersey History

MAJOR MILESTONES

2005

Energy Policy Act

- Public Law 109-58 signed into law by President George Bush on August 8, 2005.
- Sec. 388 amends the Outer Continental Shelf Lands Act (OSCLA).



OCS-A 0473 (Deepwater Wind LLC)

- New Jersey Offshore Research Device (NJORD)
- Installed in November 2012;



2009

Interim Policy (IP) Leases

- Announced in 2007,
- 5-Year lease terms and provided
- No subsequent commercial rights.
- Expired in November 2014
- Decommissioned in October 2015.



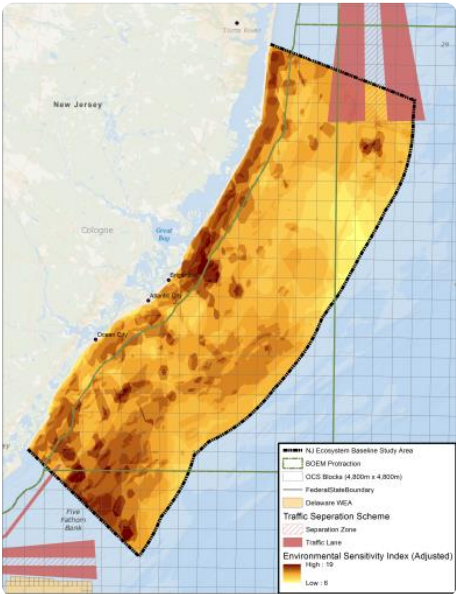
OCS-A 0472 (Fishermen's Energy)

- Wind Sentinel & Guardian
- Installed in September 2012 & May 2013

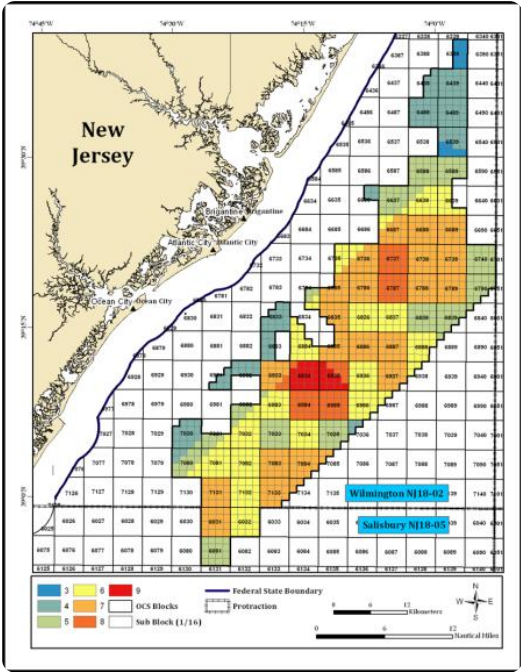
BOEM New Jersey Renewable Energy
Intergovernmental Task Force
Established

BOEM has held 7 Meetings or Webinars to
date: November 2009; May 2010; November
2010; December 2012; January 2014; April
2014; May 2016.

2009



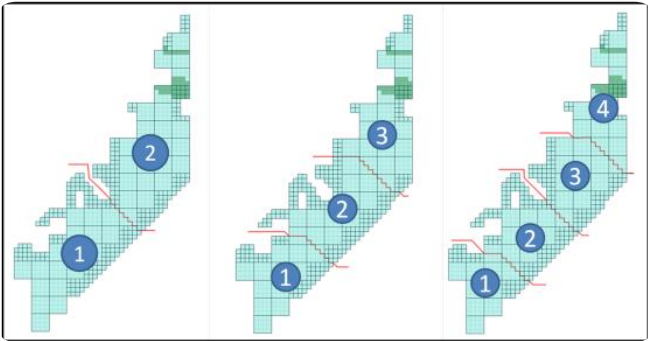
APRIL 2011



New Jersey Call For
Information and Nominations

BOEM received 11 nominations of
interest with varying interest in specific
areas (e.g. OCS blocks).

OCTOBER 2013

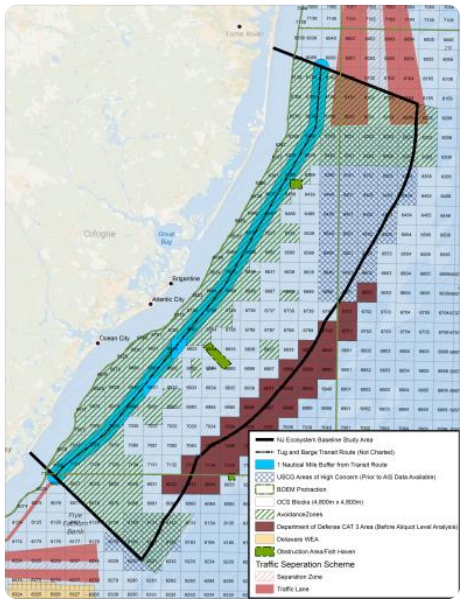


NREL Wind Resource
Assessment and Area
Delineation Report
NREL conducted an assessment to
identify and delineate possible leasing
areas. This information, a similar
assessment by Rutgers University and
Task Force input were used to inform
BOEM's decision.

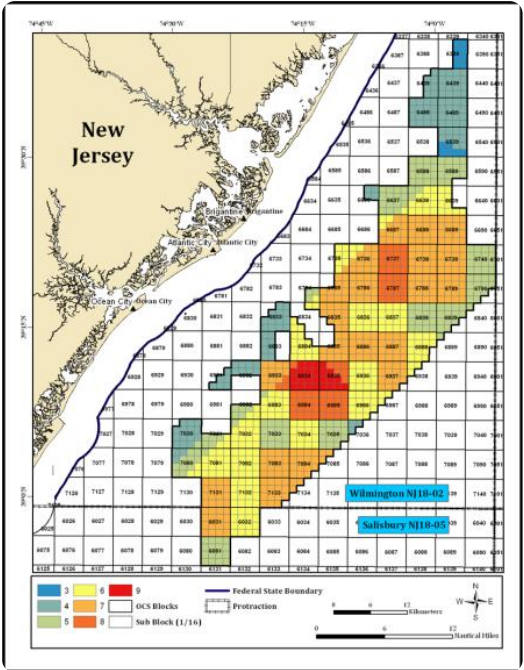
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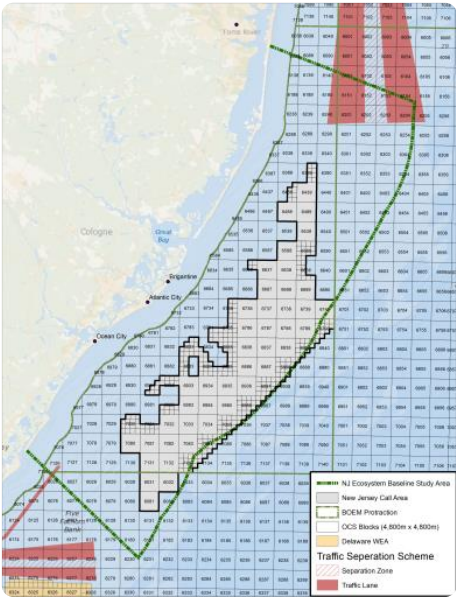
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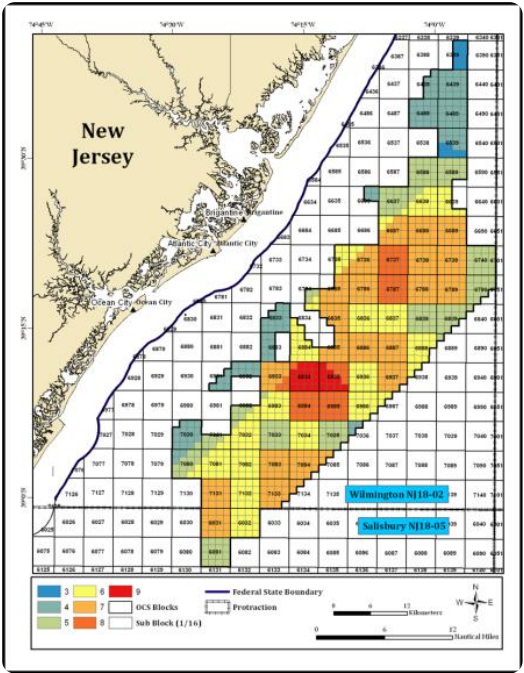
2009



OCTOBER 2013



APRIL 2011

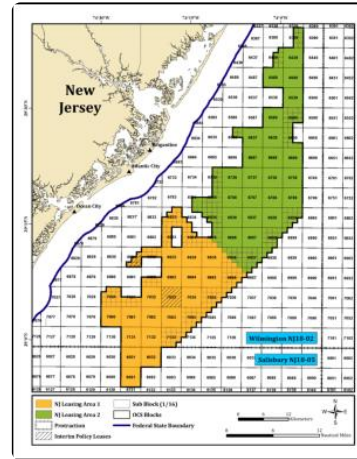


New Jersey Call For
Information and Nominations

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areas (e.g. OCS blocks).

Published Proposed Sale (PSN) Notice for Atlantic Wind Lease Sale Five (ATLW-5)

- Eastern blocks (elbow) removed to alleviate navigational concerns prior to publishing the PSN.
- Two new qualification packages received.



JUNE 2014

SEPTEMBER 2015



Published Final Sale Notice (FSN) for ATLW-5

- Ascending clock auction with a multifactor variable.
- %20 discount for either a Power Purchase Agreement or OREC order.
- Bidder eligibility limitation

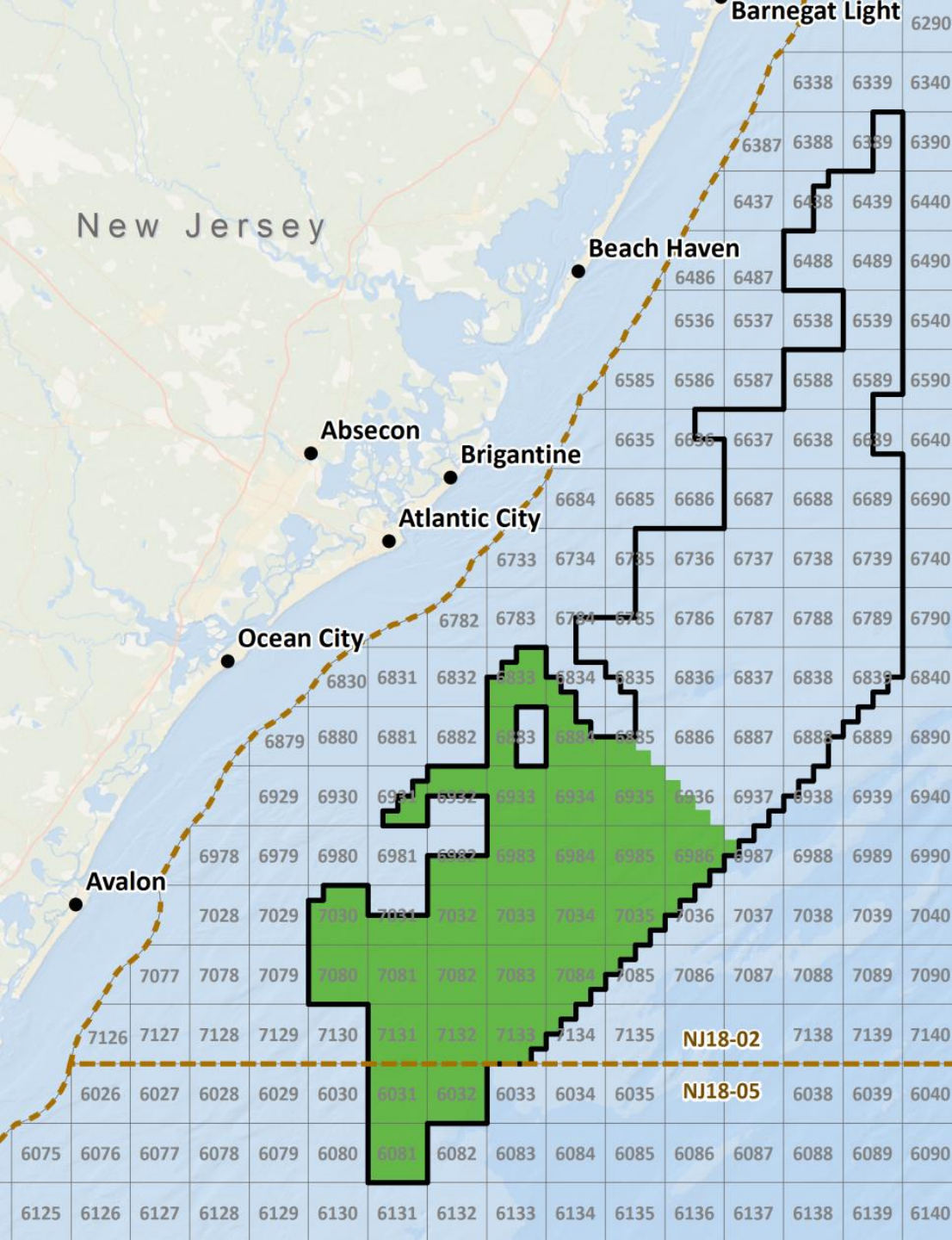
NOVEMBER 2015



Atlantic Wind Lease Sale Five (ALTW-5)

- 3 Bidders participated
- 7 rounds.
- OCS-A 0498 sold for \$880,715
- OCS-A 0499 sold for \$1,006,240.





OCS-A 0498 Ocean Wind, LLC

March 2016

Lease Execution

Lease assigned from RES America Developments Inc. to Ocean Wind LLC

April 2017

G&G Surveys

Start of geophysical and geotechnical surveys in support of the SAP & COP

May 2018

Site Assessment Plan

Deployment of two FLiDAR buoys

August 2019

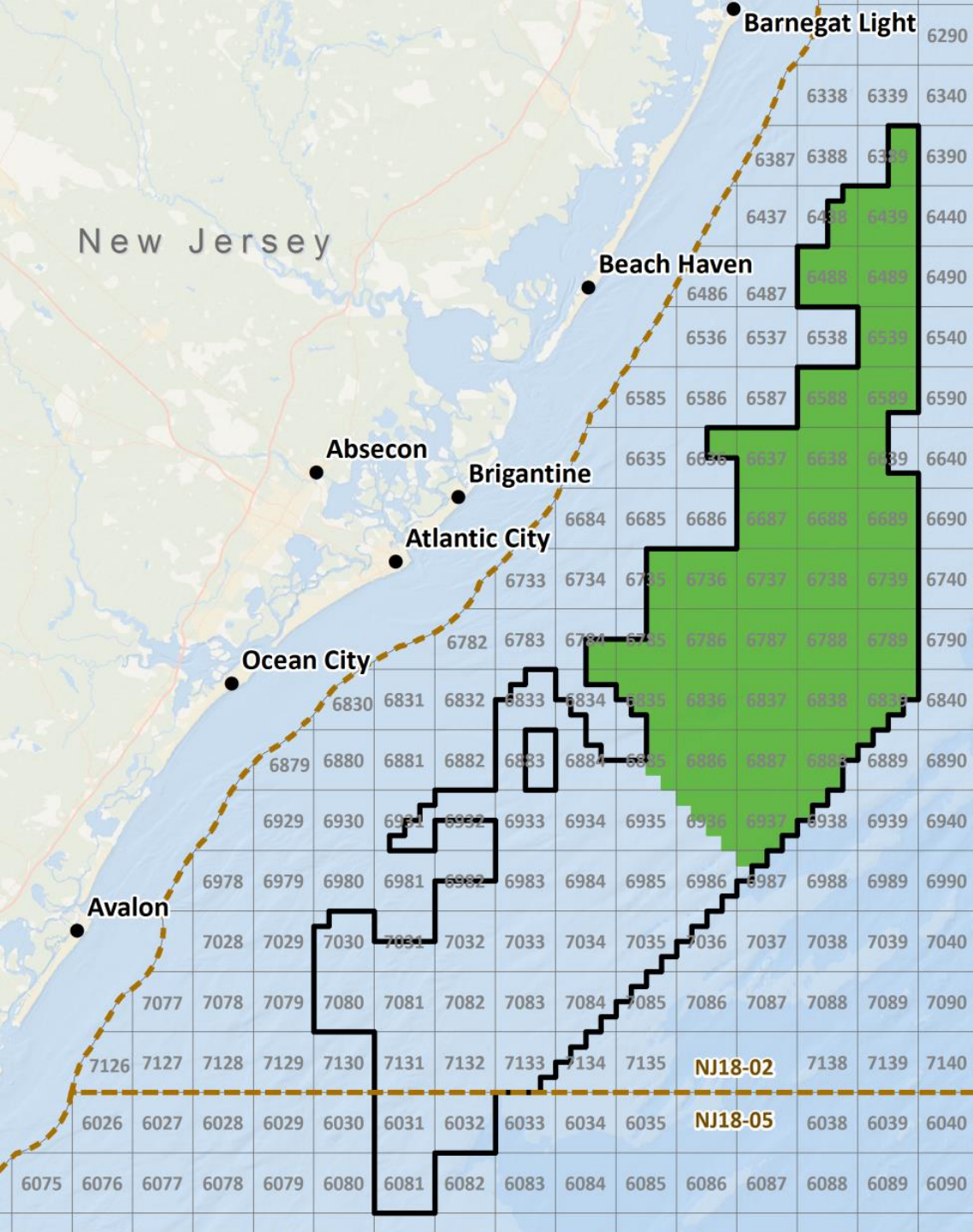
Construction and Operations Plan

Currently being reviewed for completeness and sufficiency to initiate NEPA review and other required consultations.

2020

Initiate Formal Review

Will start with the publication of a Notice of Intent to Prepare an EIS.



OCS-A 0499

Atlantic Shores Offshore Wind, LLC

March 2016

Lease Executed

The Effective Date of the Lease is March 1, 2016. Issued to US Wind, Inc.

November 2018

Assignment to ASOW

Assigned from US Wind, Inc. to EDF Renewables Development, Inc and then to Atlantic Shores Offshore, Wind, LLC

April 2019

August 2019

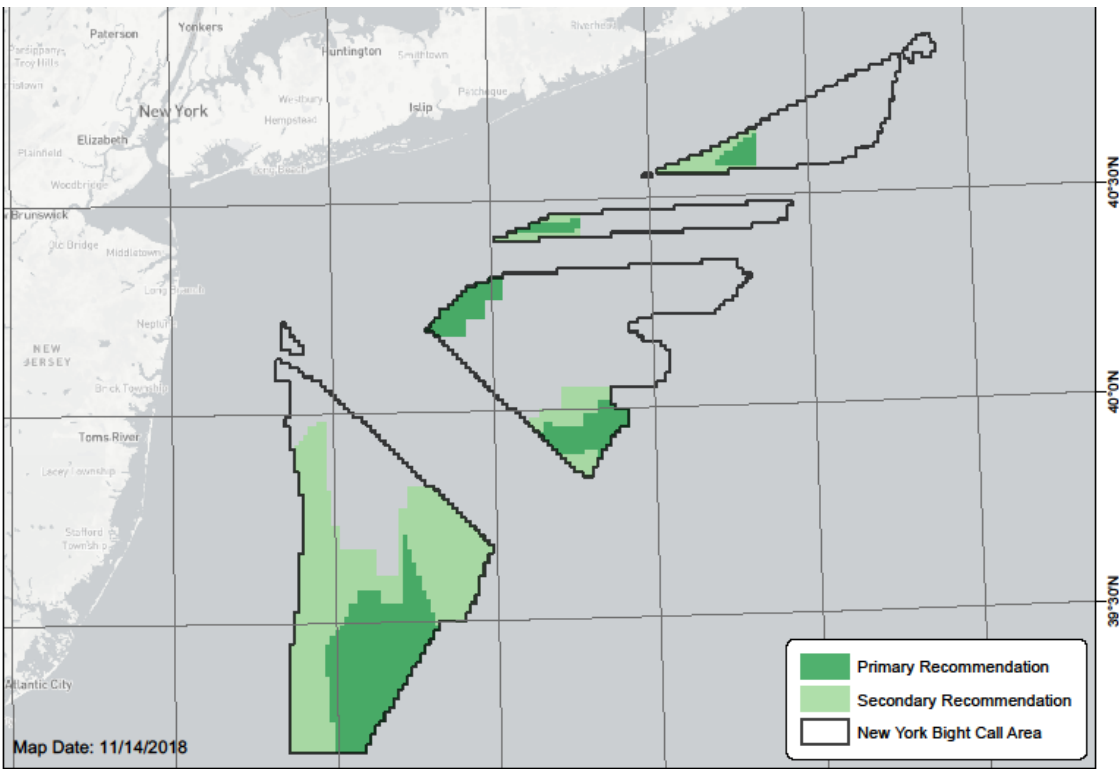
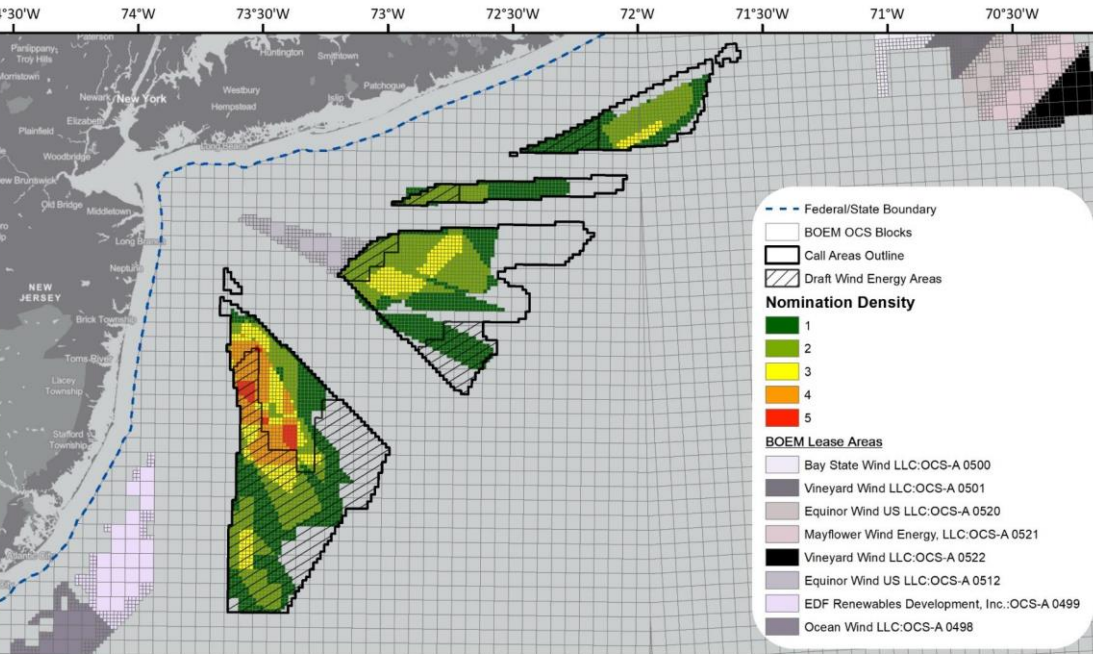
Start of G&G Surveys

No Site Assessment Survey Plan Submitted To Date

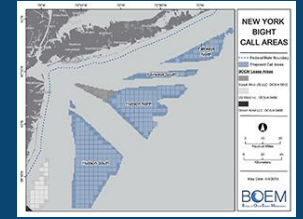
December 2020

Site Assessment Plan

Submitted December 2019 for two FLiDAR buoys
Expected Approval Spring 2020



New York Bight



November 2017

NY Bight Task Force Webinar

Discussion of New York's Areas of Considerations and BOEM Draft Call Areas

April 2018

Call for Information

Comment Period: Opened April 11th ; Closed July 30th

May 2018

NY Bight Task Force Meeting

Review Nominations, Comments Received and Discuss Paths Forward

September 2018

Public Meetings

Held in New Jersey, New York and Massachusetts with a focus on commercial and recreational fisheries

November 2018

NY Bight Task Force Meeting

Primary and Secondary Recommendations

The Road Ahead for the New York Bight

1

Announcement of Wind Energy Areas (WEA)

2

Publication of an Notice of Intent to Prepare an Environmental Assessment

3

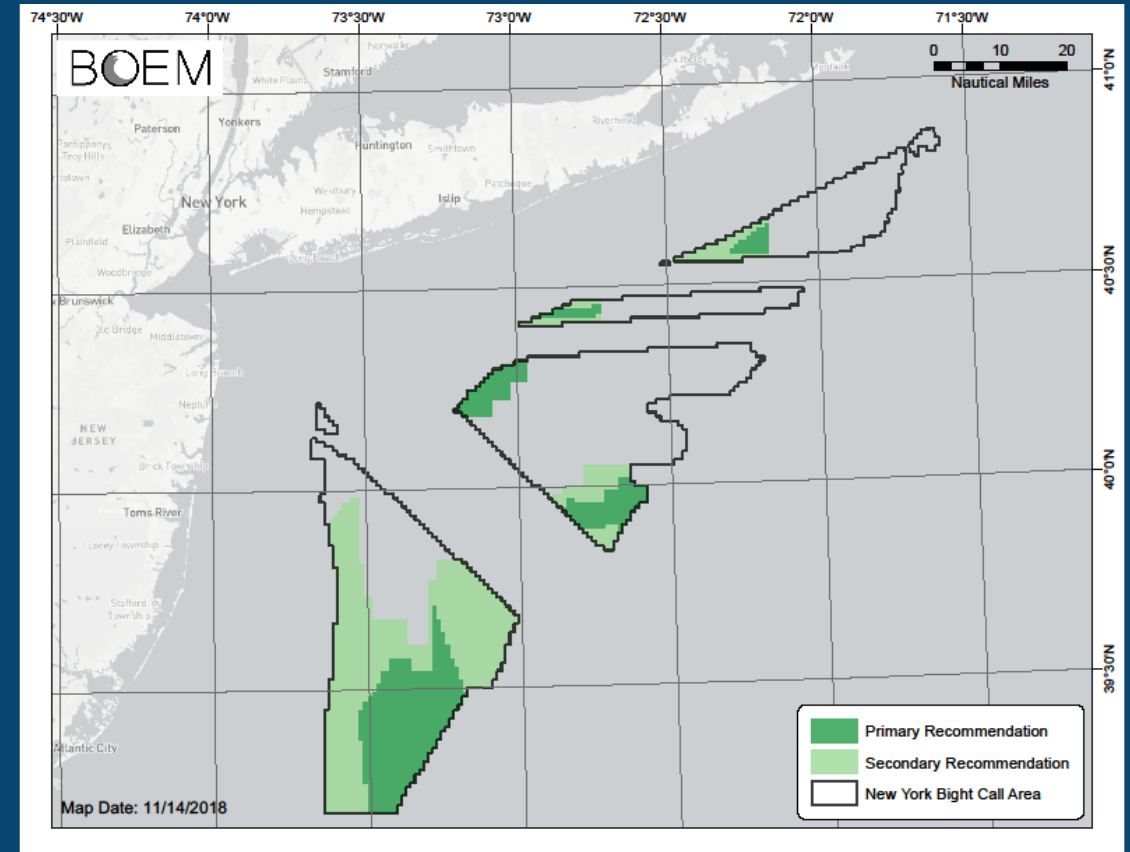
Task Force Engagement

Input on Leasing Notices

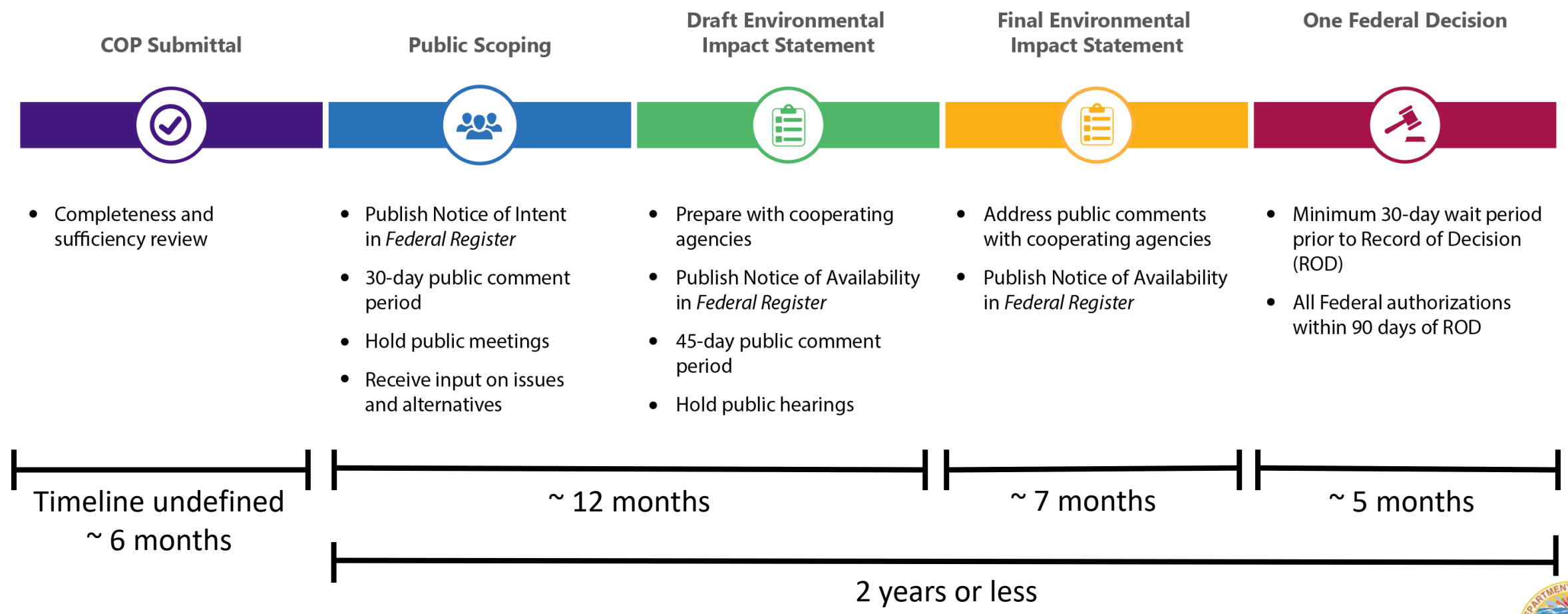
4

Publication of Proposed Sale Notice

Open For Public Comment



Proposed Environmental Review Schedule Overview



Executive Order 13807 (April 2017) – One Federal Decision (OFD)

- Sets a government-wide goal of no more than two years from Notice of Intent (NOI) to all Federal authorizations
- Ensures the Federal environmental review and permitting process for infrastructure projects is coordinated, predictable, and transparent
- Requires a single schedule, single EIS, and single record of decision

<https://www.whitehouse.gov/presidential-actions/presidential-executive-order-establishing-discipline-accountability-environmental-review-permitting-process-infrastructure/>

One Federal Decision MOU

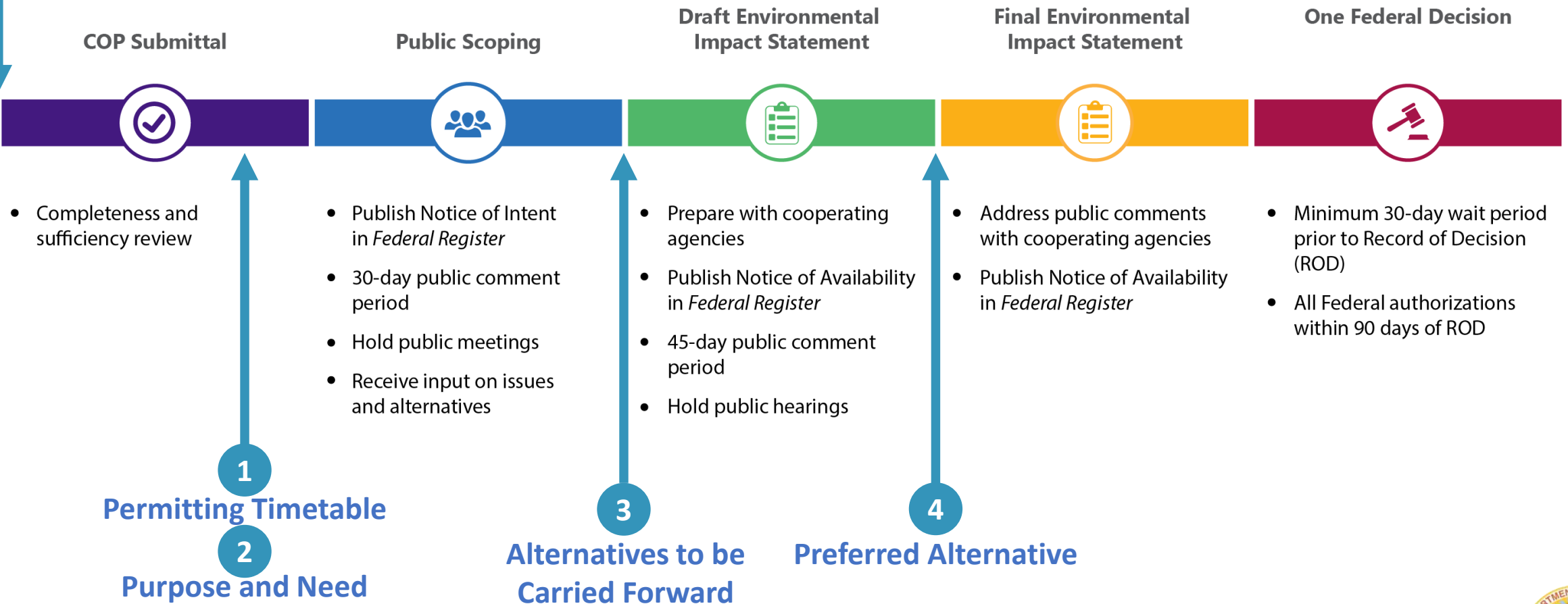
- Agreement between multiple Federal agencies on how to implement E.O. 13807
- Concurrence points
 - Permitting timetable (prior to publication of NOI)
 - Purpose and need (prior to publication of NOI)
 - Alternatives to be carried forward (during preparation of the Draft EIS)
 - Preferred alternative (likely after Draft EIS public comment period)
- Concurrence process
 - Drafts shared and discussed during interagency call(s), 10 business day formal concurrence period, and process for elevation, if necessary

<https://www.whitehouse.gov/wp-content/uploads/2018/04/MOU-One-Federal-Decision-m-18-13-Part-2-1.pdf>



“One Federal Decision” Concurrence Points and Interaction

Identify Cooperating and Participating Agencies



Fixing America's Surface Transportation Act (FAST-41)

- **Similar requirements to OFD (many OFD requirements adopted from FAST-41)**
- **Unique aspects of FAST-41:**
 - Established by congress, not an executive order
 - Optional for applicant, required to submit a FAST-41 Initiation Notice (FIN)
 - Federal Permitting Implementation Steering Council involvement
 - Coordinated Project Plan (CPP)
 - Possible fee in the future
 - Enhanced legal protection

<https://www.permits.performance.gov/about/fast-41>



Secretarial Order 3355 (August 2017)

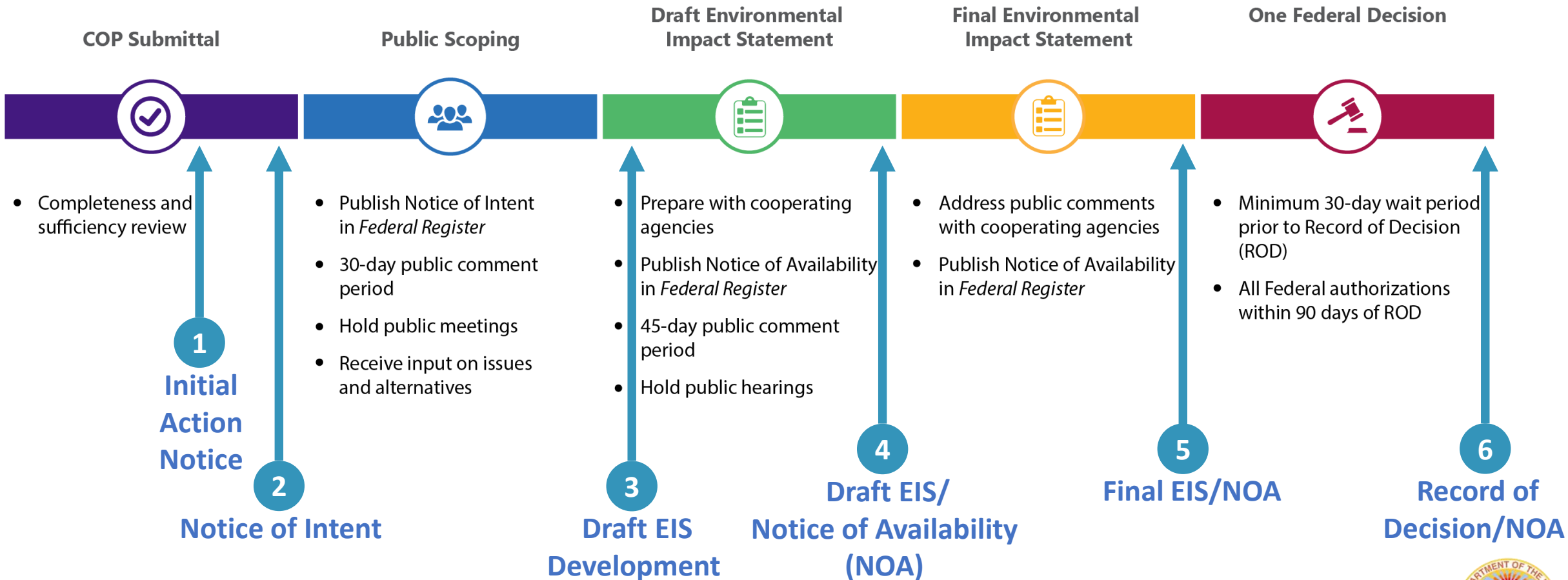
- **Establishes page limits**

- 150 pages for standard EISs; 300 pages unusually complex EISs
- Excludes appendices; likely to limit appendices in the future
- Exceeding 150 pages requires a waiver approved by the Deputy Secretary's Office

- **Establishes timeframes**

- One year from NOI to complete Final EIS
- "Major infrastructure projects" fall under OFD and maintain the two-year timeline
- Exceeding timelines requires a waiver approved by the Deputy Secretary's Office

Department of Interior Clearance Points



Atlantic OCS Renewable Energy: State Leadership



	Renewable Goals	Offshore Wind Goals (MW)	Offshore Wind: "Offtake" Awarded (MW) + Scheduled (MW)		
Massachusetts	35% by 2030	3,200	1,600	+	0
Rhode Island	38.5% by 2035	1,000	430	+	0
Connecticut	48% by 2030	2,300	1,108	+	0
New York	70% by 2030	9,000	1,826	+	2,500
New Jersey	50% by 2030	7,500	1,100	+	2,400
Maryland	50% by 2030	2,000	368	+	1,200
Virginia	30% by 2030	2,512	12	+	0
TOTAL	--	27,512 MW	12,544 MW		



Offshore Wind Challenges

- Commercial and recreational fishing
- Viewshed & visual Impacts
- Navigation and Safety
- Wildlife



A wide-angle photograph of an offshore wind farm at sunset. The sun is a bright, glowing orb on the horizon, casting a warm orange and yellow light across the sky. Numerous wind turbines are visible as dark silhouettes against the horizon line. The foreground shows the dark, choppy surface of the ocean with small waves.

Questions

The background features abstract, overlapping green geometric shapes in various shades of green, creating a modern and dynamic look. The shapes are primarily located on the right side of the slide, with some extending towards the left.

New Jersey Department of Environmental Protection

Offshore Wind Development

Megan Brunatti, Office of Permit Coordination & Review

NJDEP'S ROLE IN OFFSHORE WIND DEVELOPMENT

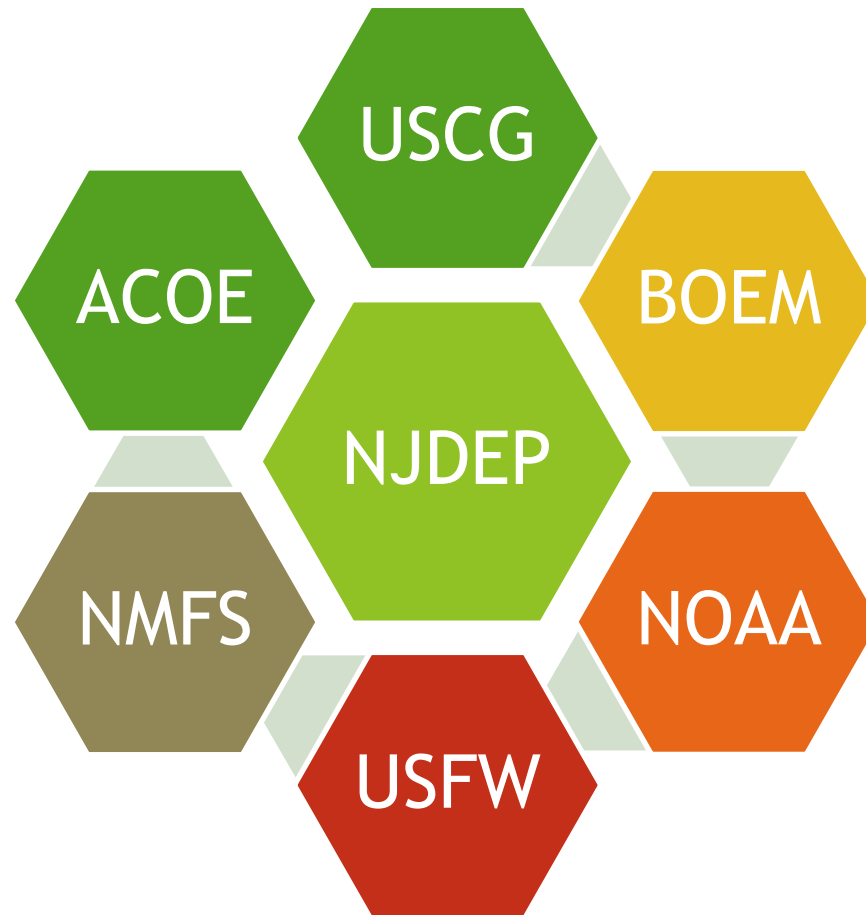
The construction and connection of offshore wind-related infrastructure on land and in water, including cables, transmission lines, sub-stations and ports; will require significant review and numerous DEP permits or approvals.



State Coordination



Coordination with Federal Partners



DEP Permits and Approvals

- ▶ **Green Acres Diversion(s)**
- ▶ **Use of State Owned Lands**
- ▶ **Historic Preservation**
- ▶ **Federal Consistency/Land Use Permits**
- ▶ **Stormwater/NJPDES**

Green Acres and State Owned Lands

Impacts to Green Acres encumbered park land or state owned lands for offshore wind development require a major diversion or a lease.

If the major diversion application is approved by the DEP Commissioner, the application also requires the approval of the State House Commission.

These processes both include a public hearing and opportunities for public comment.

Historic Preservation

DEP's State Historic Preservation Office consults with BOEM regarding cultural resource review, pursuant to Section 106 of the National Historic Preservation Act, as well as the Programmatic Agreement for Outer Continental Shelf Renewable Energy Activities Offshore New Jersey and New York.

Includes review of:

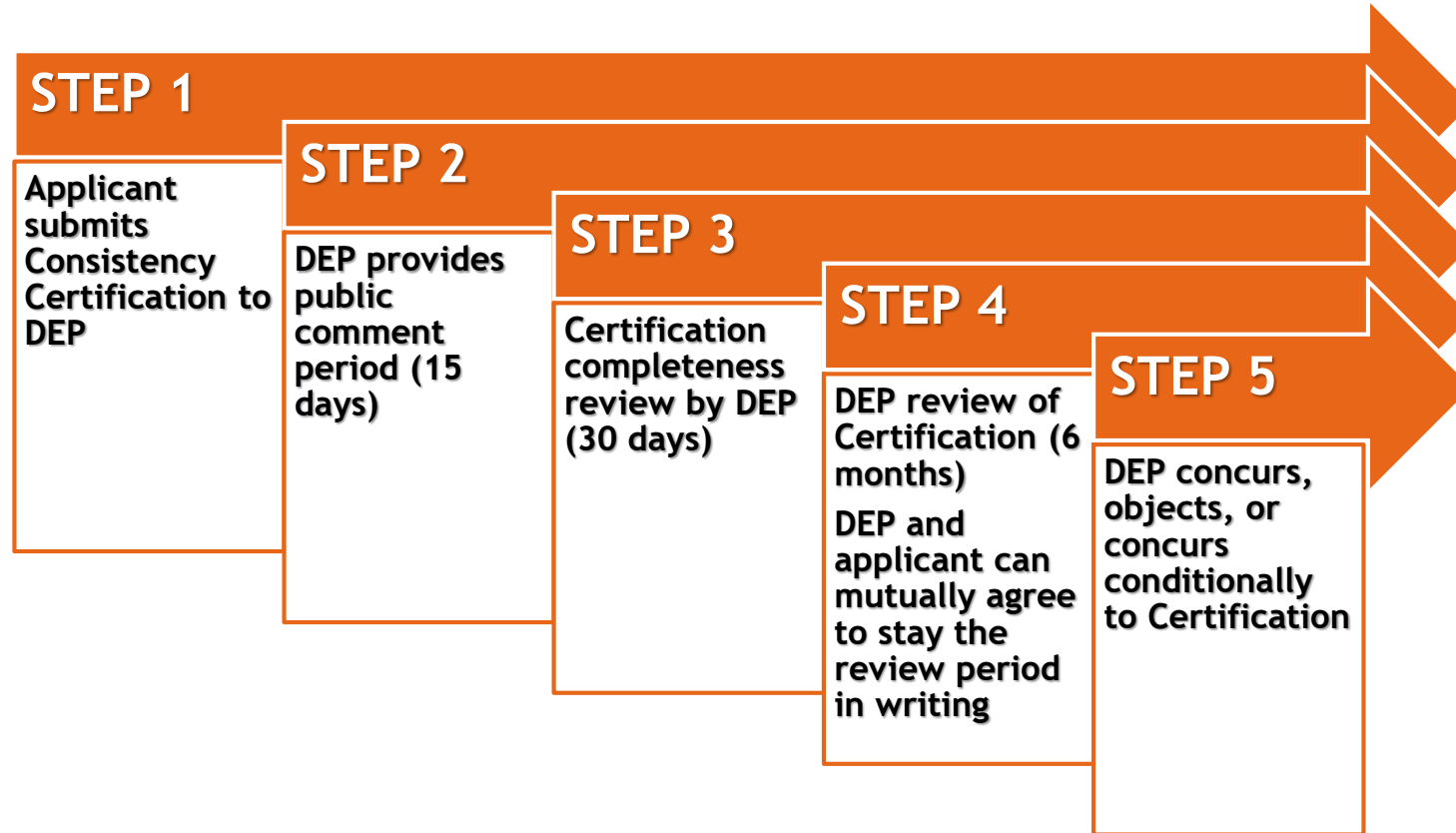
- ▶ Shipwrecks
- ▶ Historic properties and districts
- ▶ Visual impacts



Federal Consistency

- ▶ Federal consistency is the Coastal Zone Management Act (CZMA) requirement that federal actions that have reasonably foreseeable effects on any land or water use or natural resource of a state's coastal zone **must be consistent with the enforceable policies of that state's federally-approved Coastal Management Plan.**
- ▶ Activities not proposed or performed by a federal agency but requiring federal permits, licenses, or other forms of federal approval are subject to the CZMA (such as wind farms).

DEP's Federal Consistency Review Procedure



National Environmental Policy Act (NEPA)

Opportunities for public comment during the COP environmental review process:

1. Notice of Intent (NOI) to Prepare an Environmental Impact Statement (EIS)

2. Draft EIS

Separately, there will be a public comment process for any proposed and Final Lease Sale Notice for the proposed Wind Energy Areas in the NY Bight Lease Area.



NJ Coastal Management Program

Enforceable Policies

Rules

- Coastal Zone Management rules (N.J.A.C. 7:7)
- Freshwater Wetlands Protection Act rules (N.J.A.C. 7:7A)
- Stormwater Management rules (N.J.A.C. 7:8)
- NJ Pollutants Discharge Eliminations Systems rules (N.J.A.C. 7:14A, Subchapters 1, 2, 5, 6, 11, 12, 13, 15, 16, 18, 19, 20, 21, 24 and 25)
- Hackensack Meadowlands District Zoning Regulation (N.J.A.C. 19:4, portions of Subchapters 2, 3, 4, 5, 7, 8 and 9)

Statutes

- CAFRA (N.J.S.A. 13:19)
- Wetlands Act of 1970 (N.J.S.A. 13:9A)
- Waterfront Development Law (N.J.S.A. 12:5-3)
- Freshwater Wetlands Protection Act (N.J.S.A. 13:9B)
- Hackensack Meadowlands Reclamation and Development Act (N.J.S.A. 13:17)
- The Law concerning the transportation of dredged materials containing PCBs (N.J.S.A. 13:19-33)

DEP Land Use Permits

- ▶ In addition to the Federal Consistency Determination, offshore wind projects may need the following permits for the near- and onshore components; including cables, substations and port facilities:
 - ▶ CAFRA Individual Permit
 - ▶ WFD Individual Permit
 - ▶ Coastal Wetlands permit
 - ▶ Freshwater Wetlands permit
 - ▶ Flood Hazard Area permit
 - ▶ Tidelands Conveyance



DEP LAND USE APPLICATION REVIEW

Review includes consultation with other DEP programs (coordinated through Office of Permit Coordination)

Marine Fisheries Administration
Endangered and Nongame
Species Program



TIMING OF SUBMISSIONS

- Federal Consistency Determination is expected to be submitted to DEP and made public when BOEM publishes the COP (Construction & Operations Plan).
- Applicable State permit applications will likely be submitted later in the COP process once project details are more defined.



OPPORTUNITIES FOR PUBLIC COMMENT ON DEP PERMITS AND REVIEWS

- ▶ **FEDERAL CONSISTENCY**- within 15 days of publication in the DEP Bulletin of “Notice of Application”
- ▶ **CAFRA Individual Permits** - within 15 days of notice of application submission in DEP Bulletin(opportunity to request a public hearing)
- ▶ **AND** within 30 days of the start of the public comment period if a hearing is not requested; or within 15 days of the public hearing if one is held.
- ▶ **WATERFRONT DEVELOPMENT, COASTAL WETLANDS, FRESHWATER WETLANDS and/or FLOOD HAZARD AREA PERMIT**- within 15 days of publication in the DEP Bulletin of “Notice of Application”



Public comments are accepted throughout the review process; and outside of the public comment period; but sooner is better.

If comments are received too late in the review process, they may not be able to be considered in the Department's decision.



Important Links

► NJDEP Bulletin

<https://www.nj.gov/dep/bulletin>

► NJDEP Offshore Wind

<https://www.nj.gov/dep/ages/offshore/wind.html>

► BOEM NJ Activities

<https://www.boem.gov/renewable-energy/state-activities/new-jersey-activities>

► BOEM NY Bight Activities

<https://www.boem.gov/renewable-energy/state-activities/new-york-bight>



Questions?

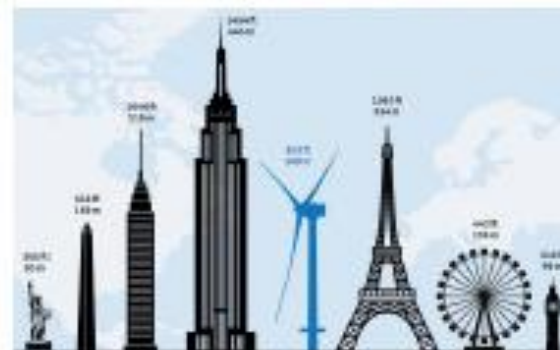
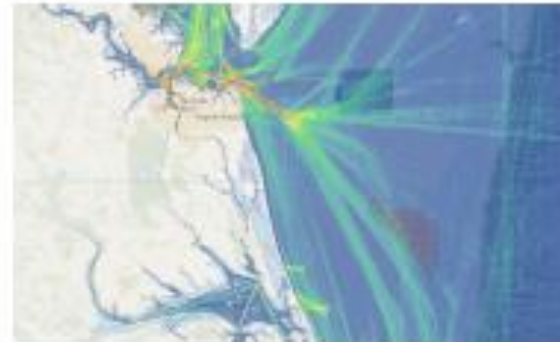


Coast Guard's Role in Offshore Wind and Related Studies and Proposals

New Jersey Offshore Wind
Working Group Webinar
March 25, 2020

Jerry Barnes
Mid-Atlantic Marine Planner
Aids to Navigation Manager

Potential Impacts



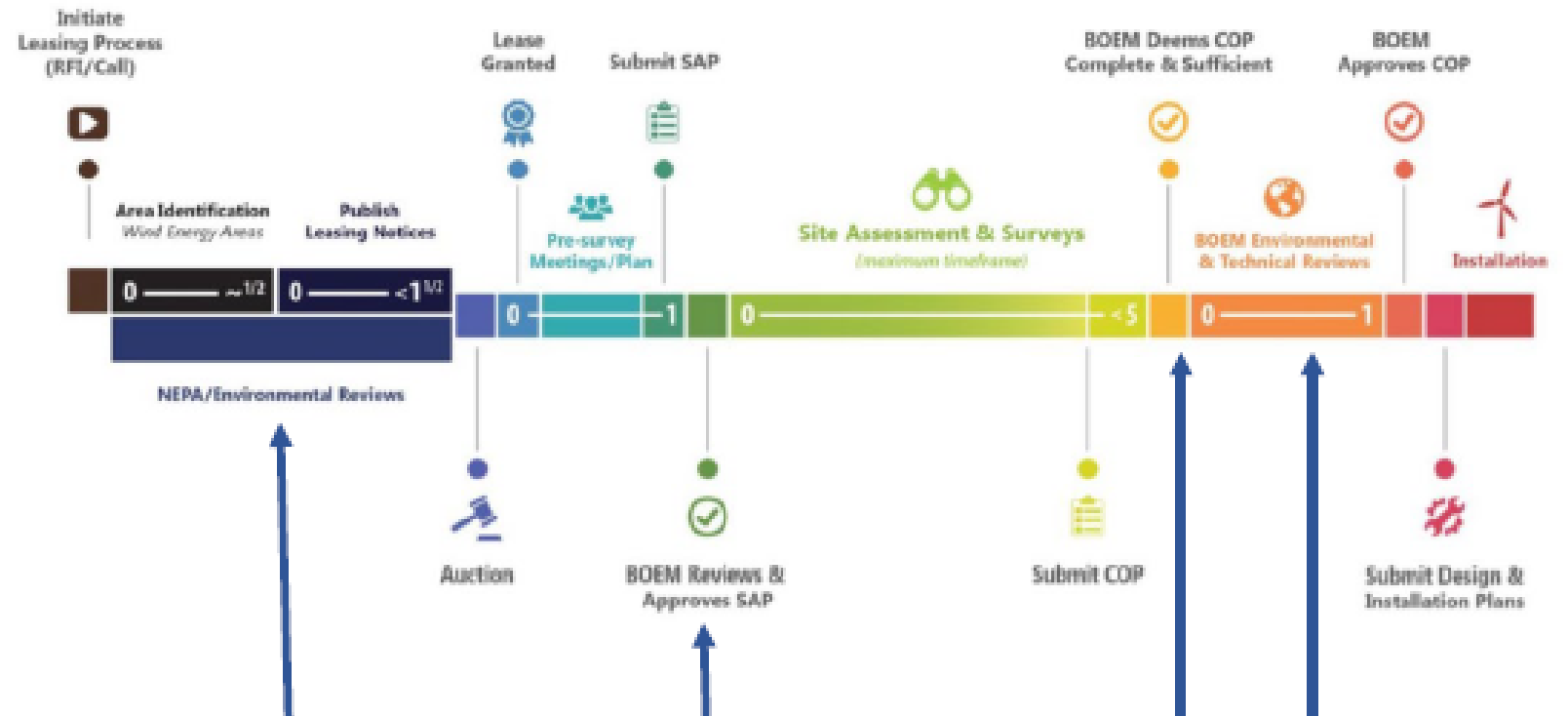
Cooperating agency under NEPA

- Navigation safety
- Marine transportation system
- Traditional uses of the waterway
- Coast Guard's ability to conduct its missions



Coast Guard and BOEM Collaboration

BOEM Leasing Timeline



BOEM provides the Coast Guard an opportunity to review the lessee's plans at multiple stages in the leasing process.

North – South Port Access Route Study

- USCG study commenced in 2011 and completed in 2017.
- Identified N-S navigation routes customarily used by ships engaged in commerce and recommended USCG establish fairways.
- ANPRM to establish N-S fairways expected in 2020.
- In 2019, USCG Director, Marine Transportation System, announced in Fed Register that CG Districts would prioritize and complete supplemental Port Access Route Studies for port approaches and international transit areas (i.e., East-West routes) associated within their areas of responsibility.



East - West Port Access Route Studies

- **Approaches to Chesapeake Bay, Virginia**

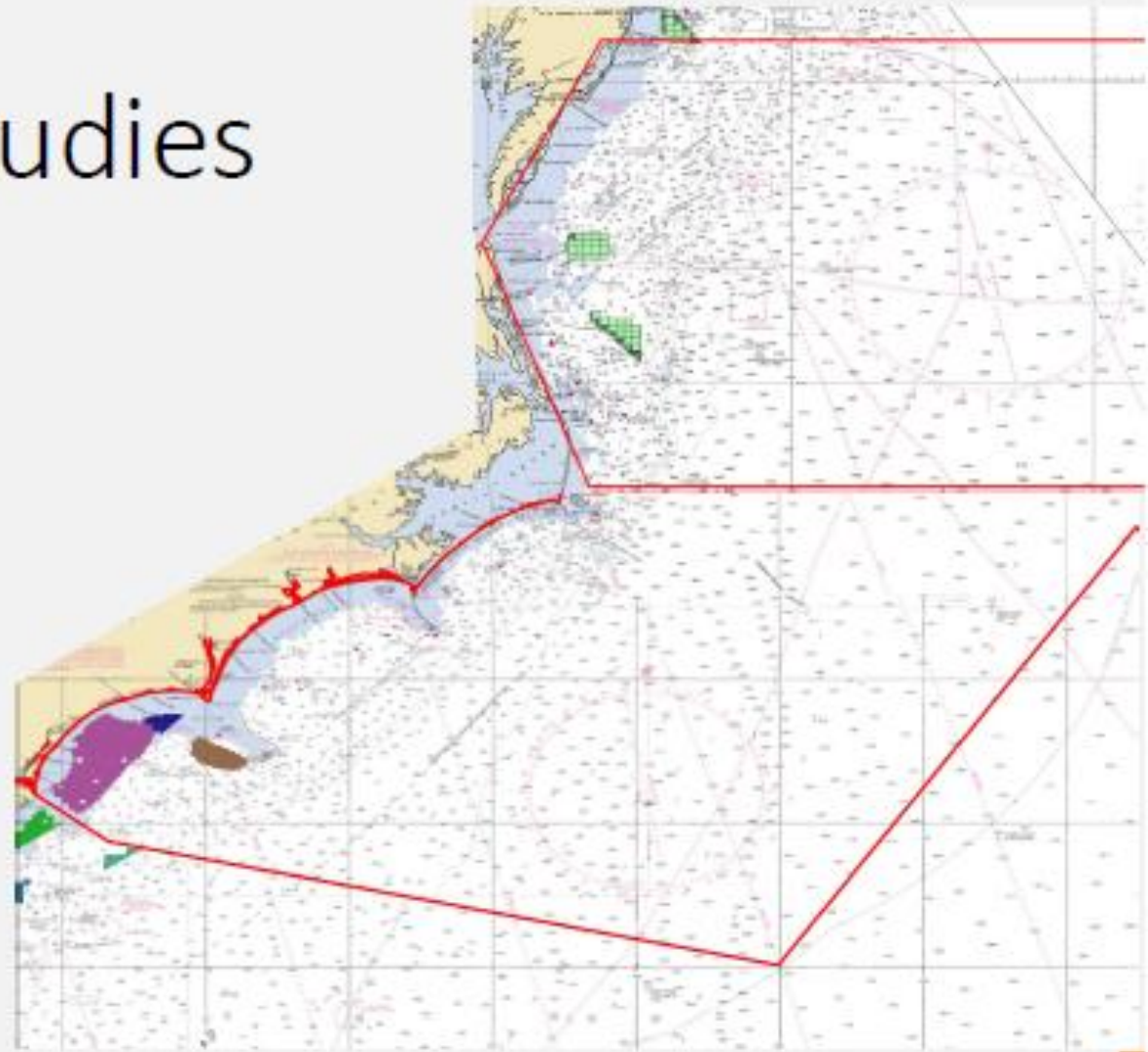
Notice of Study published Nov 27, 2019. USCG conducting AIS traffic analysis. 60 day comment period closed Jan 27, 2020. 13 comments received; industry supports establishment of fairways. Draft Final Report under development.

- **Approaches to Cape Fear River, Beaufort Inlet and North Carolina Seacoast**

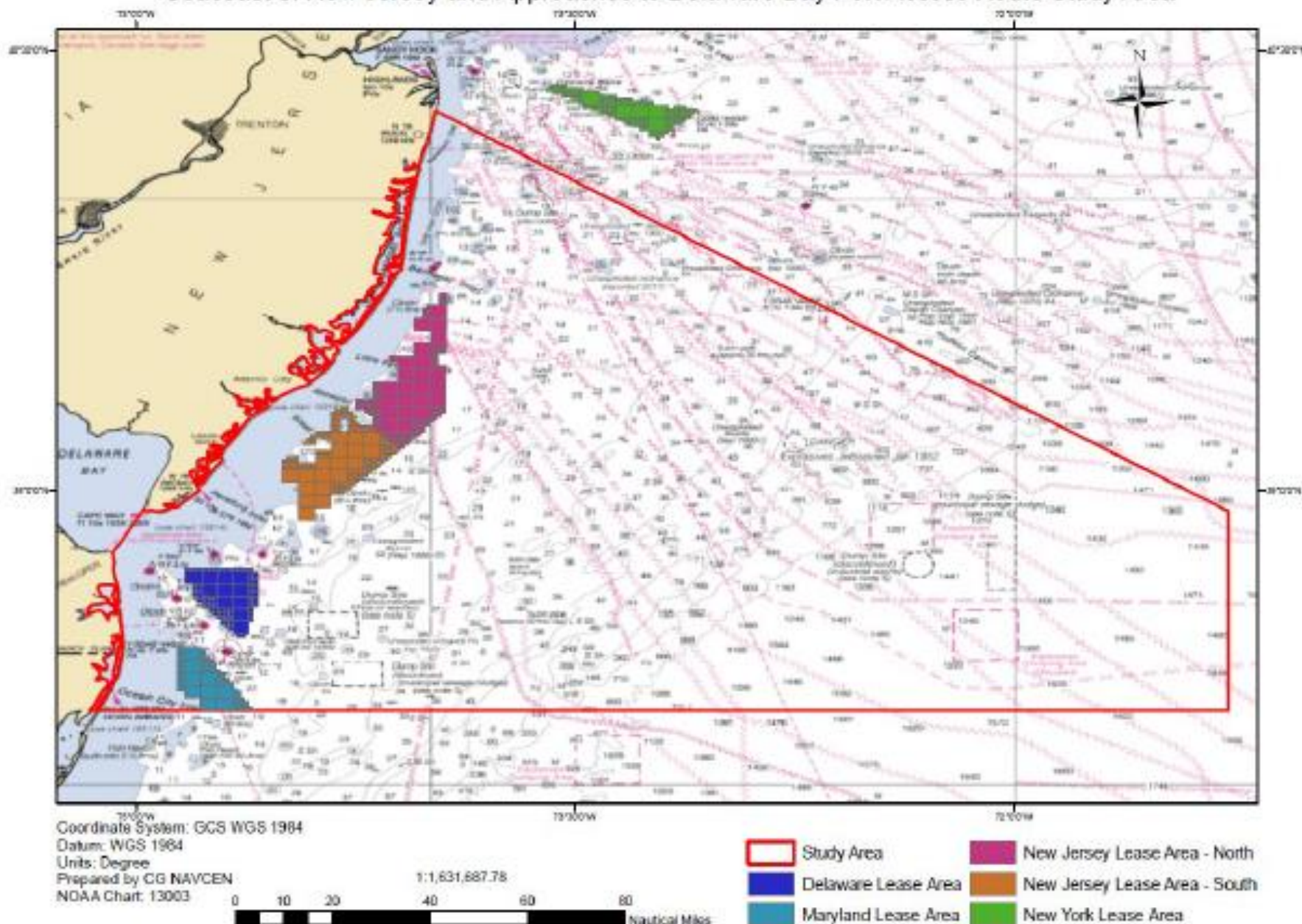
Notice of Study published Mar 18, 2020. Comments and related materials must be received on or before May 18, 2020. Requests for a public meeting must be submitted on or before Apr 17, 2020.

- **Approaches to Delaware Bay and New Jersey Seacoasts**

Notice of Study under development. Target publishing date May 1, 2020. (See next slide)



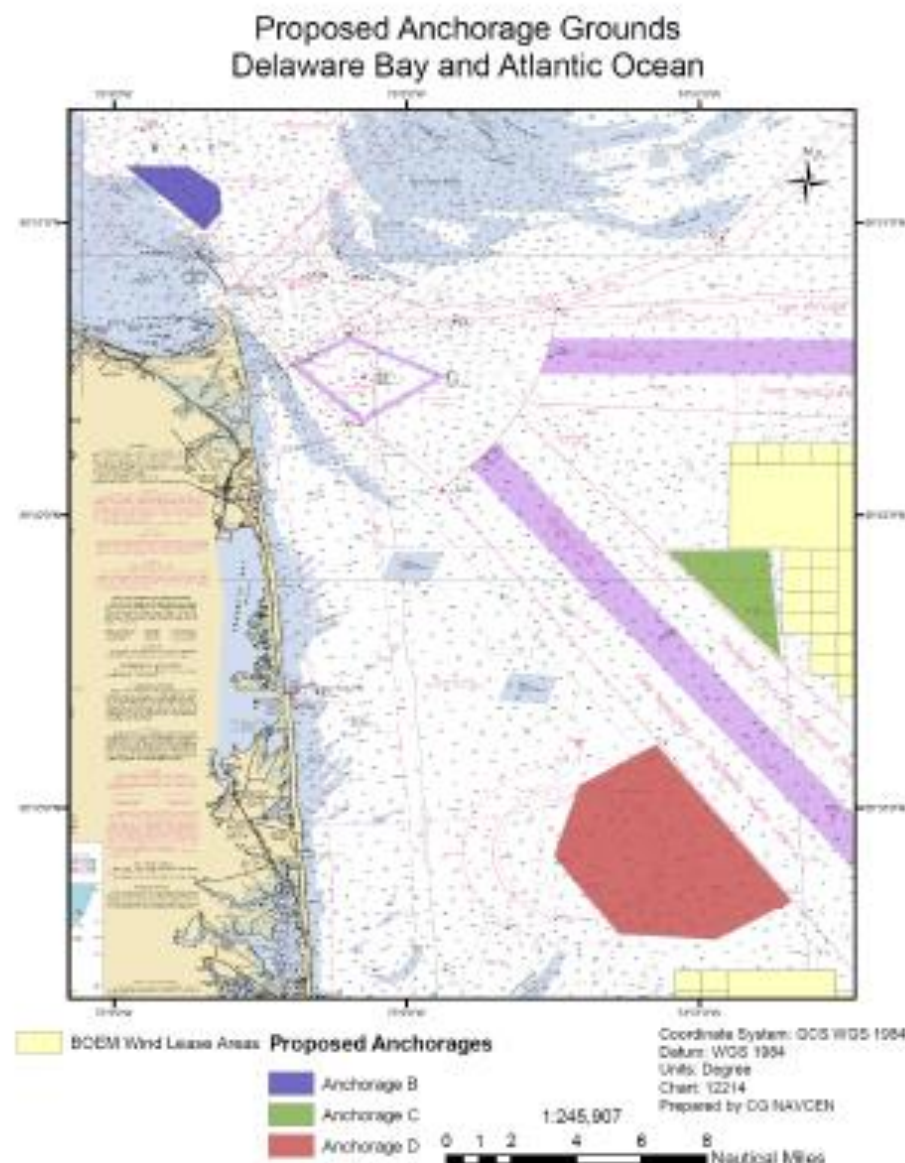
Seacoast of New Jersey and Approaches to Delaware Bay Port Access Route Study Area



Purpose: To determine whether existing or additional vessel routing measures are necessary along the seacoast of New Jersey and approaches to the Delaware Bay, Delaware. The PARS will consider whether existing or additional routing measures are necessary to improve navigation safety due to factors such as planned or potential offshore development, current port capabilities and planned improvements, increased vessel traffic, existing and potential anchorage areas, changing vessel traffic patterns, weather conditions, or navigational difficulty. The aim of vessel routing measures is to reduce the risk of casualties. Examples of potential measures include traffic separation schemes, two-way routes, recommended tracks, deep-water routes, precautionary areas, and areas to be avoided. The recommendations of the study may lead to future rulemakings or appropriate international agreements.

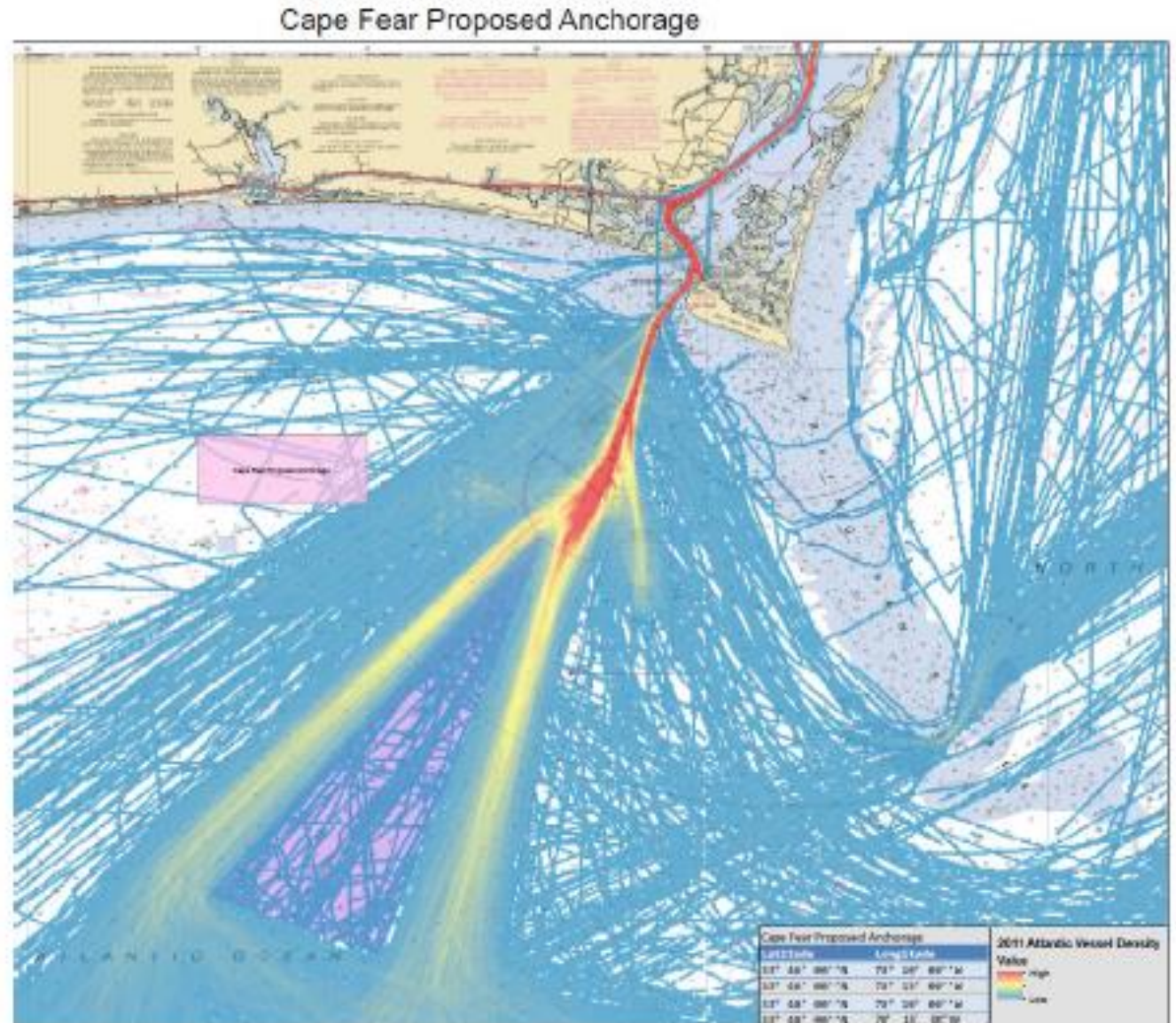
Anchorage Grounds; Delaware Bay and Atlantic Ocean

- Notice of Inquiry published Nov 29, 2019 with 60-day comment period. Comment period ended Jan 29, 2020.
- Notice responds to industry request to establish three new anchorage grounds as potential wind energy leases remove traditional anchorage areas from use.
- Proposed anchorage grounds are outside wind energy lease areas but would impact developers' planned transmission line routes.
- 42 comments received. Initial review of comments indicates significant concern from wind farm developers, wind farm trade associations and environmentalists.



Anchorage Grounds; Cape Fear River Approach, North Carolina

- Notice of Inquiry drafted seeking public feedback on the need to establish new anchorage grounds in the approach to the Cape Fear River, and to modify the Lockwoods Folly Inlet explosives anchorage.
- Notice is in response to the need to preserve areas traditionally used for anchoring as BOEM looks to lease wind energy areas offshore southern NC and northern SC.
- Traditional anchorage areas and proposed location are outside wind energy lease areas but may impact potential transmission line routes.







NJ Board of Public Utilities



BPU Updates

OSW Strategic Plan

- OSW Strategic Plan being updated to incorporate the 7,500 MW goal
- BPU working closely with NJDEP and NJEDA

Second OSW Solicitation

- Building on lessons learned from first solicitation
- Issue solicitation Q3 2020
- Anticipated awards Q2 2021



BPU Updates

OSW Solicitation Schedule

Solicitation	Capacity Target MW	Issue Date	Submittal Date	Award Date	COD
1	1,100	Q3 2018	Q4 2018	Q2 2019	2024
2	1,200	Q3 2020	Q4 2020	Q2 2021	2027
3	1,200	Q3 2022	Q4 2022	Q2 2023	2029
4	1,200	Q2 2024	Q3 2024	Q1 2025	2031
5	1,400	Q2 2026	Q3 2026	Q1 2027	2033
6	1,400	Q1 2028	Q3 2028	Q1 2029	2035



BPU Updates

Opportunities for Public Engagement

- Strategic Plan
 - Draft Strategic Plan will be issued for public comment
 - Written comments
 - Public meeting and webinars
- Second Solicitation
 - Draft solicitation guidance document will be released for public comment
 - Written comments
 - Public meeting and webinars



BPU Updates

Questions?

NEW JERSEY ECONOMIC DEVELOPMENT AUTHORITY & OFFSHORE WIND

NJEDA



choose:
newjersey



New Jersey Economic Development Authority (NJEDA) serves as the State's principal agency for driving economic growth.

Mission: The New Jersey Economic Development Authority (NJEDA) **grows the state's economy and increases equitable access to opportunity** by:

- Supporting **high-quality job creation**;
- **Catalyzing investment**; and
- Fostering **vibrant, inclusive community development**.

NJEDA works in partnership with a diverse range of stakeholders to implement programs and initiatives that **improve quality of life, enhance economic vitality**, and strengthen New Jersey's **long-term economic competitiveness**.





New Jersey is taking a value-oriented approach to procurement, including considering economic and environmental benefits of offshore wind development

To receive Offshore Renewable Energy Credits (ORECs), Developers must demonstrate positive economic and environmental benefits for New Jersey



ECONOMIC BENEFITS

In-state activity from construction, operations and maintenance, and equipment purchases

In-state impacts from employment, wages, indirect business taxes, and output, with a particular emphasis on manufacturing employment



ENVIRONMENTAL BENEFITS

Greenhouse gas reductions
Other reduced emissions

New Jersey has a suite of financing and incentive programs, including a \$100M offshore wind tax credit program



Financing and support tools

- Small and medium sized business loans
- Loan guarantees
- Tax-exempt bond financing (for manufactures and port developments)
- Brownfield and Contaminated Site Remediation Program
- Business Action Center (Site selection, one-stop permitting, and advocacy)
- Workforce development and job training grants



Incentive programs

- Angel Investor Tax Credit program
- Technology Business Tax Credit Transfer program
- Salem County & Urban Enterprise Zone Energy Sales Tax Exemption



Offshore wind industry development tools

- Offshore Renewable Energy Certificate (OREC) Program
- Offshore Wind Energy Tax Credit Program
- Workforce Development & Job training programs (P.L. 2018, c.17)
- Events to support industry partnering

For full program information, visit NJEDA.com

Offshore Wind Supply Chain Registry

Program Overview

The free, searchable registry creates a profile of each business, including their contact information and core competencies, and makes the information available to other businesses and projects throughout the offshore wind industry.

480+ businesses have joined the registry

Resource for companies looking to buy from and partner with NJ-based firms

Registers you in the Business Network for Offshore Wind's national supply chain registry

Receive special invitations to offshore wind events and resources

“

Governor Murphy has set a bold vision for 100 percent clean energy by 2050 and businesses up and down the supply chain will be a driving force behind achieving this critical goal

- Tim Sullivan
CEO, NJEDA

We'd love to connect with you!



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Agenda

- 5:00 Welcome, Introductions and Agenda Review (Commissioner McCabe)
- 5:10 Review of Prior Meeting outcomes
- 5:15 Discussion of Federal and State Interagency work, timeline and public engagement opportunities
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Ocean Wind

Leading the Way Towards New Jersey's
Clean Energy Future

Ørsted

Ørsted is the global leader in offshore wind

Over **5,600 MW** in operation

Over **4,300 MW** under construction

~1,150 turbines spinning world-wide

25 offshore wind farms in operation

1991 → **2019**
25+ years of experience and unparalleled track record

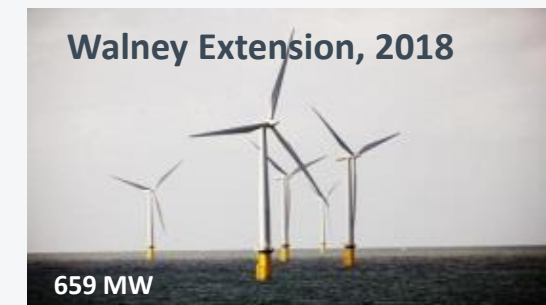
The world's **first**



America's **first**



The world's **largest**



Ørsted U.S. Offshore Wind

Attractive and geographically diverse portfolio of offshore wind assets: potential for 8-10GW



In Operation

Block Island Wind Farm: 30MW

Awarded

Revolution Wind (50-50 JV w/ Eversource): 704MW (400MW to RI, 304MW to CT)

South Fork Wind Farm (50-50 JV w/ Eversource): 130MW

Sunrise Wind (50-50 JV w/ Eversource): 880MW

Ocean Wind (with the support of PSEG): 1,100MW

Skipjack Wind Farm: 120MW

Coastal Virginia Offshore Wind (EPC contract): 12MW demo project

Under Development

Bay State Wind (50-50 JV w/ Eversource)

Constitution Wind (50/50 JV w/ Eversource)

Garden State Offshore Energy (50/50 JV with PSEG)

Ocean Wind

Awarded by the NJ BPU in June 2019

- 1,100 MW - the **largest** offshore wind farm in the U.S. to date
- 15 miles off the coast of Atlantic City to minimize visual impacts
- Will create thousands of construction jobs
- Will power over half a million NJ homes

Schedule

Ongoing	Stakeholder engagement
Ongoing	Project engineering and design
2019	COP submitted to BOEM
2022	Permit approvals received
2022	Onshore construction begins
2023	Offshore construction begins
2024	Project brought online

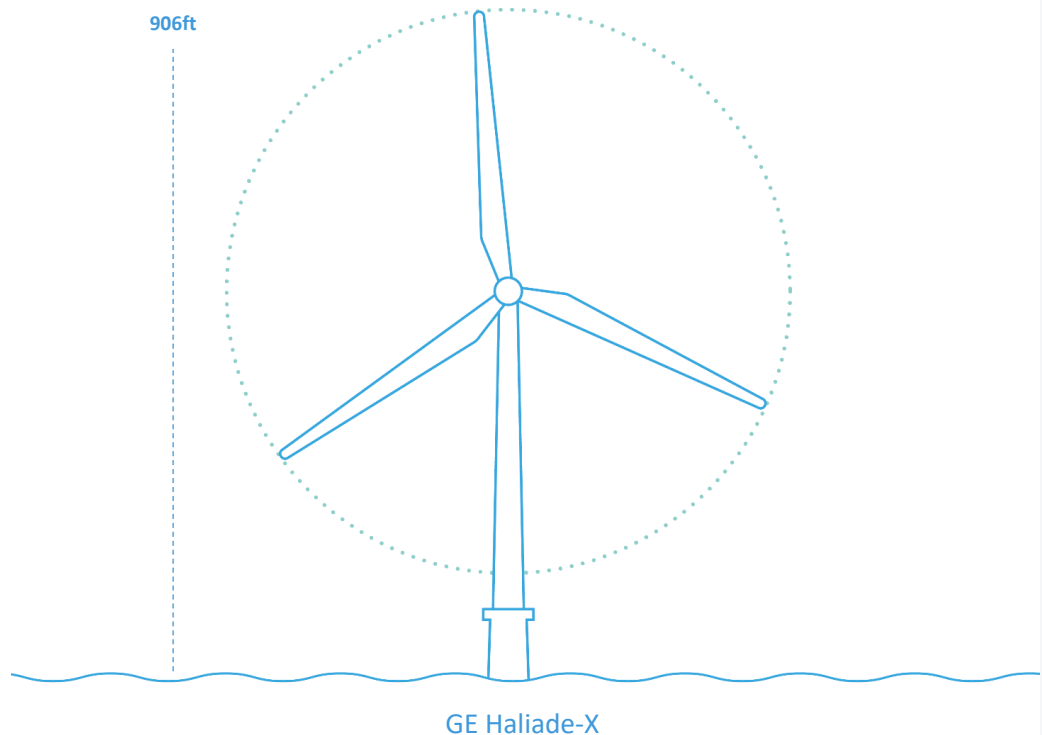


Ocean Wind turbine

GE Haliade-X 12 MW offshore wind turbine

Haliade-X

- 12 MW offshore wind turbine, the most powerful and efficient offshore wind turbine in the world to date
- Each blade on the turbine is 351 feet long sweeping a total area of 409,000 square feet
- One turbine can generate 67 GWh annually, 45% more annual energy production than the most powerful machines on the market today
- Distance between water and rotor tip when in lowest position approximately 90 ft
- Nacelle height of 512 ft
- Top tip height of 906 ft
- Rotor diameter of 788 feet



Economic & Community Development



Opened New Jersey office in Atlantic City in May 2018

Thousands of construction jobs for the three-year construction lifecycle; O&M facility with 69 employees for 25+ years

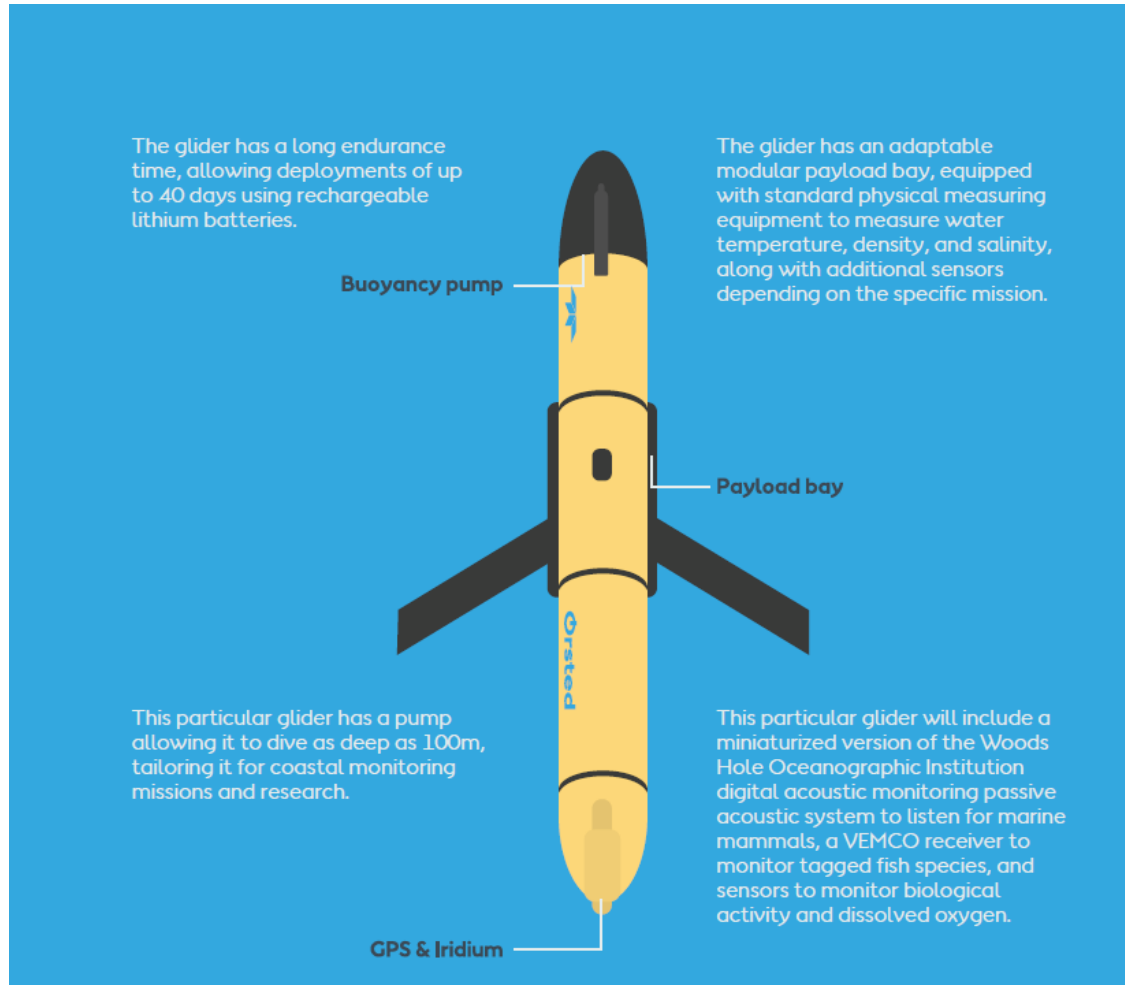
Signed MOUs with Rutgers, Rowan, Montclair, and Stockton Universities

\$15 million dedicated to the Pro-NJ Grantor Trust to enable MBE/WBE/small business entry to the offshore wind industry and advance coastal infrastructure development

Partnered with JINGOLI's Competitive Edge to establish workforce development and training program

Already working with a variety of NJ companies to support the Project

Marine Mammal Detection System: Ecosystem and Passive Acoustic Monitoring (ECO-PAM) Project



A three-year project designed to:

- Better understand the habitat and behavior of the North Atlantic right whale in offshore wind lease areas.
- Provide better protection of the North Atlantic right whale during the survey, construction, and operation phases of its US offshore wind projects.
- Work jointly with Rutgers University, the University of Rhode Island (URI), and the Woods Hole Oceanographic Institution (WHOI).

The project will use data from two sound detection buoys deployed by the WHOI and one experimental buoy deployed by URI. In addition, a glider deployed by Rutgers will provide real-time oceanographic data and detections of marine mammal vocalizations.

Ørsted built a strong integrated end-to-end business model

Ørsted Offshore core competencies



- ✓ Ability to **design and optimize** projects with a '**total life-cycle cost of wind farm**' mindset
- ✓ Experience and expertise along the entire value chain allow for **better understanding and management of risks**
- ✓ End-to-end model reduces LCoE through **fast** feedback and **learning** across the entire organization

Engagement across the spectrum of stakeholders



Local community –

Engagement early and often in the local communities near the project location



NGOs –

Local, state, regional, and national non-profits



Fishing –

Commercial and recreational, plus shore-side supply chain



Academic –

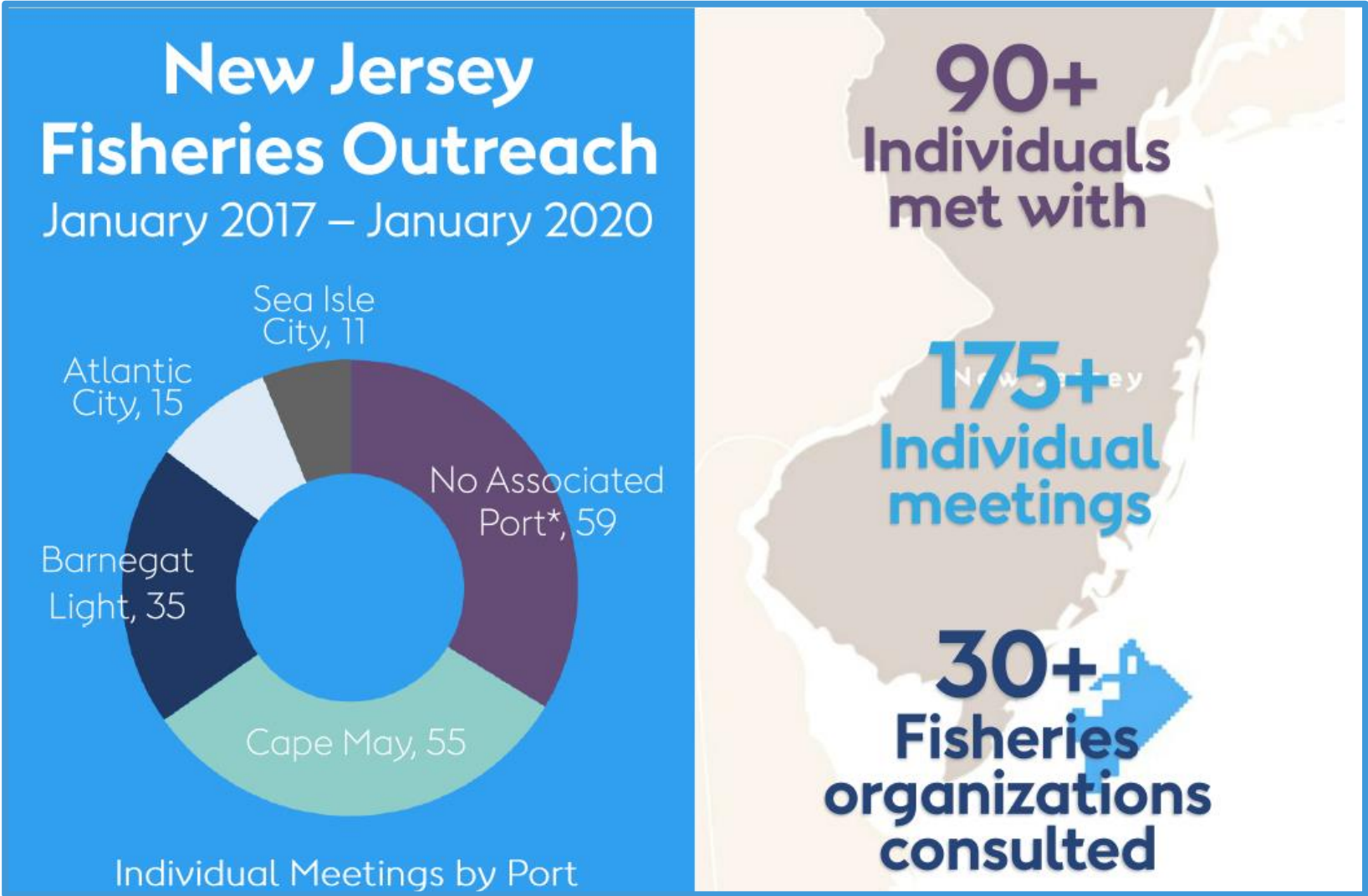
University, college, and other academic partners



Research and Development –

National labs, research institutions, private entities

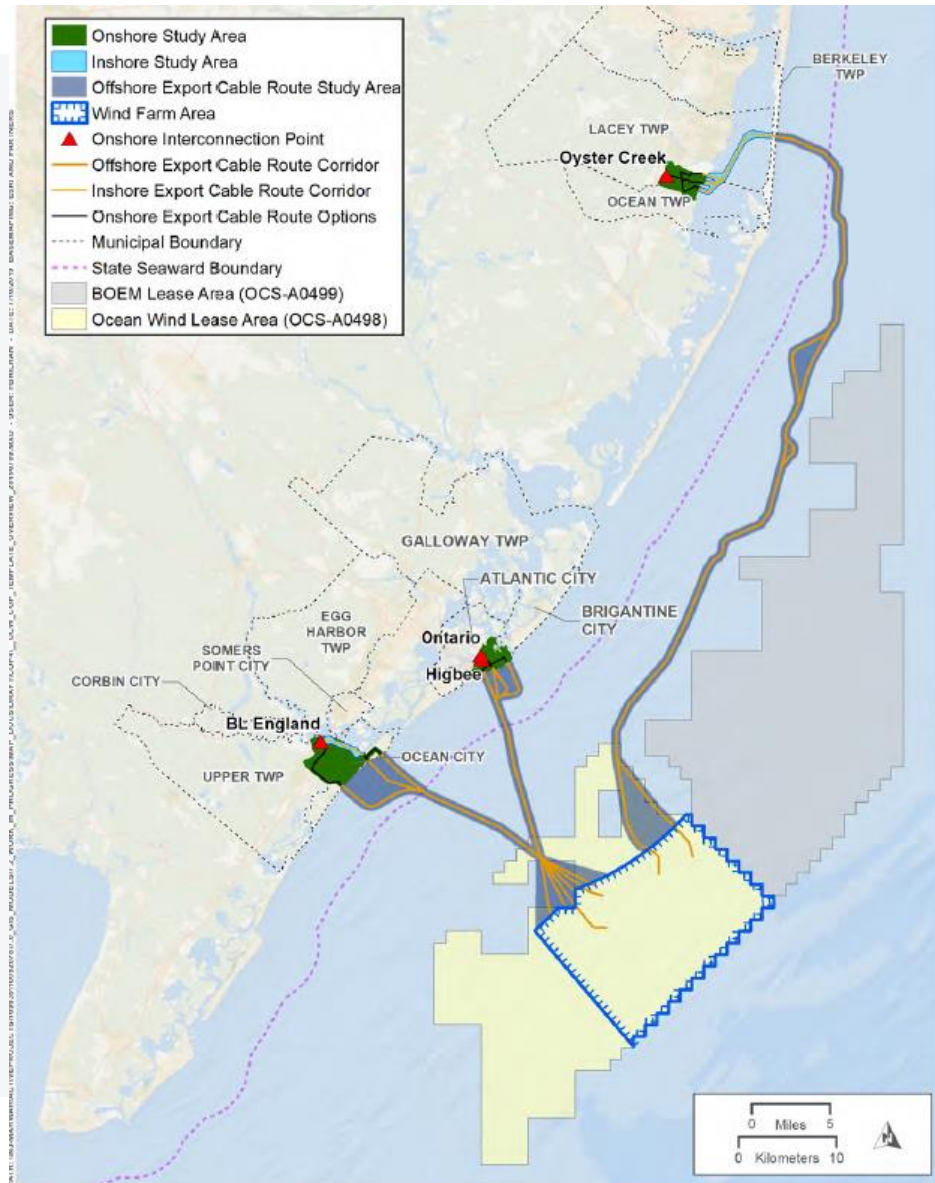
Fisheries engagement: Our goal is coexistence



Ocean Wind – Permitting Overview

- Overview
 - Terrestrial
 - Offshore
- Cable routes
- Construction and Operation Plan (COP)
- National Environmental Policy Act (NEPA)
- Other State and Federal Approvals

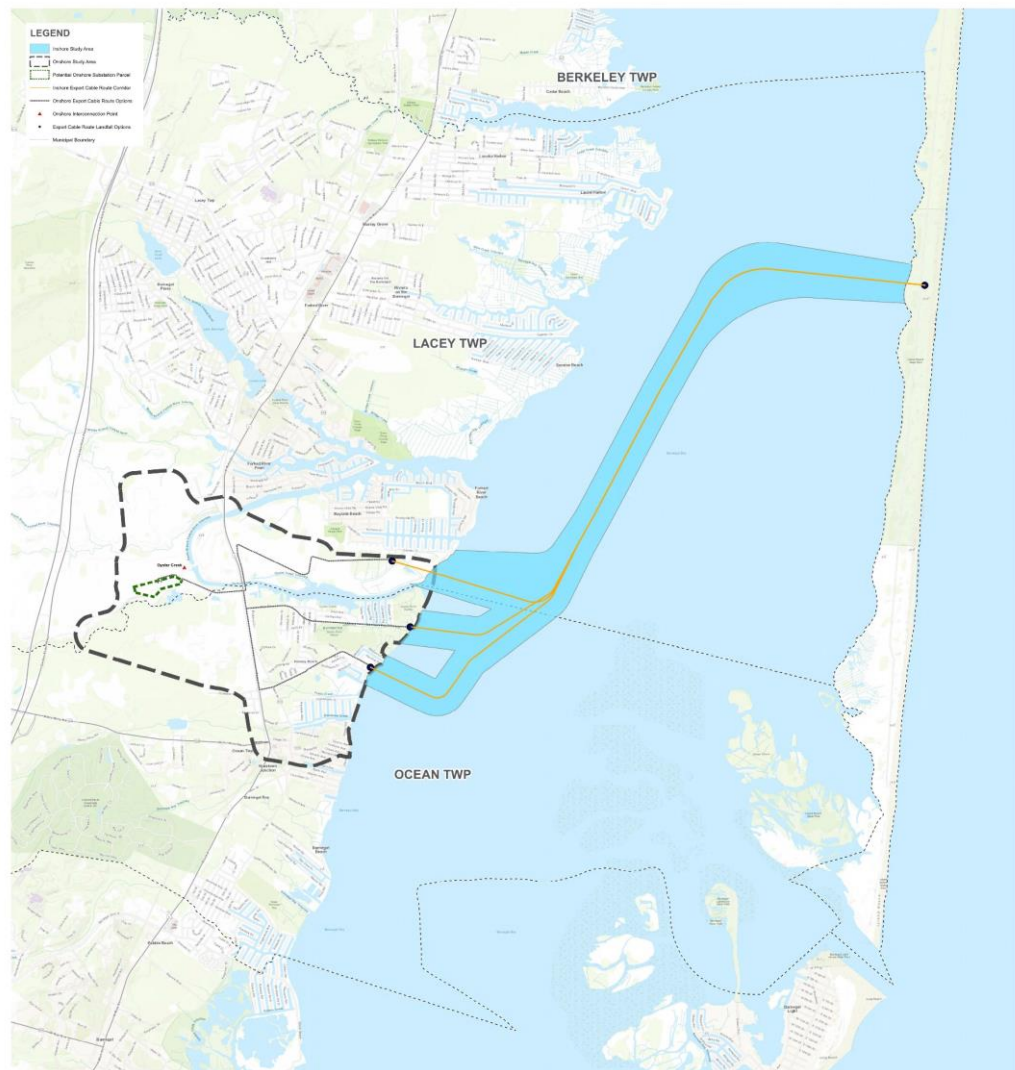
Project Overview



Onshore Project Description:

- 3 points of interconnection (POI)
 - Oyster Creek (Lacey Township)
 - BL England (Upper Township)
 - Higbee/ Ontario (Atlantic City)
- Onshore cable routes were developed to utilize existing, disturbed rights of way and the majority of cables would be buried.
- Routes were developed in discussion with local township officials
- Several indicative routes have been developed for each POI. They will continue to be evaluated as we receive data on Geotech (soils) and existing utilities

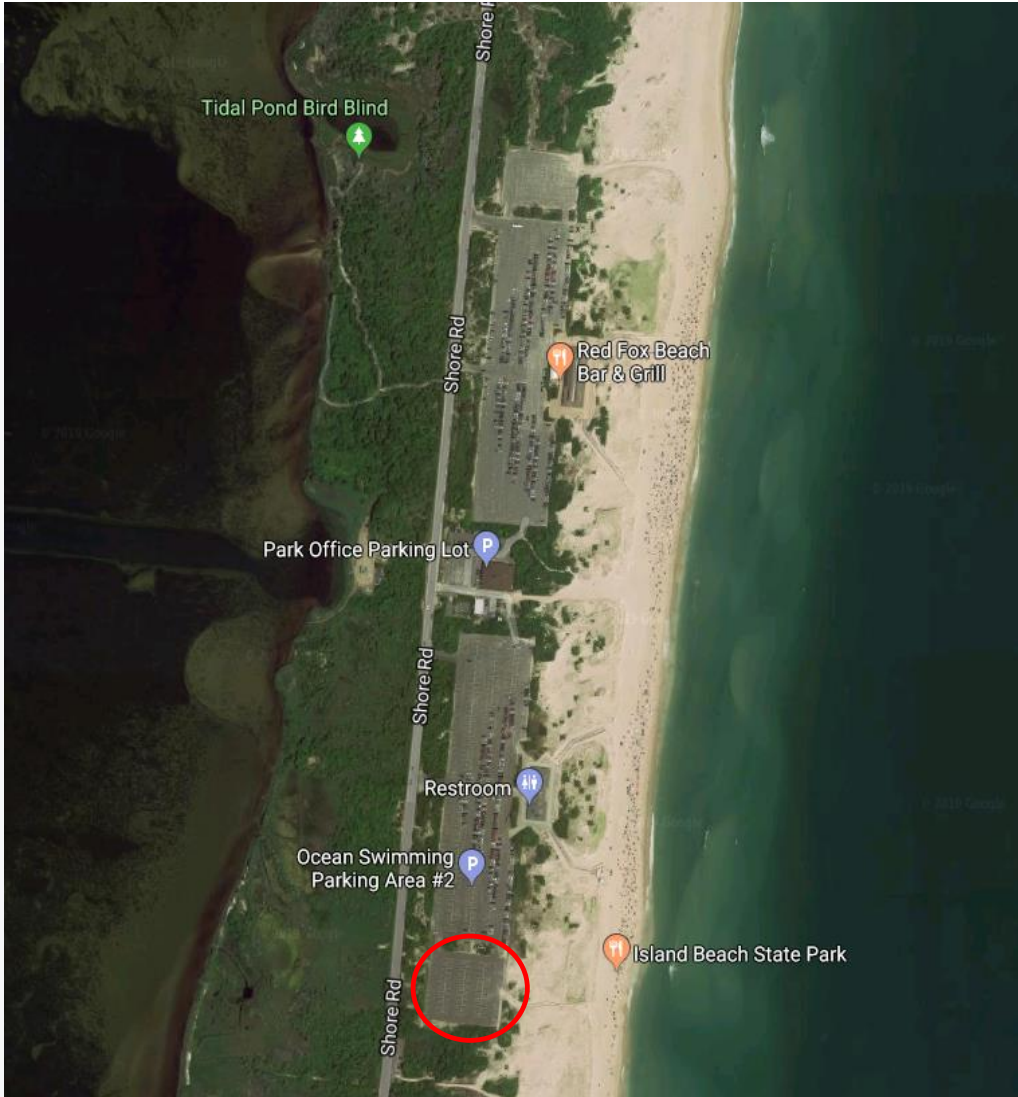
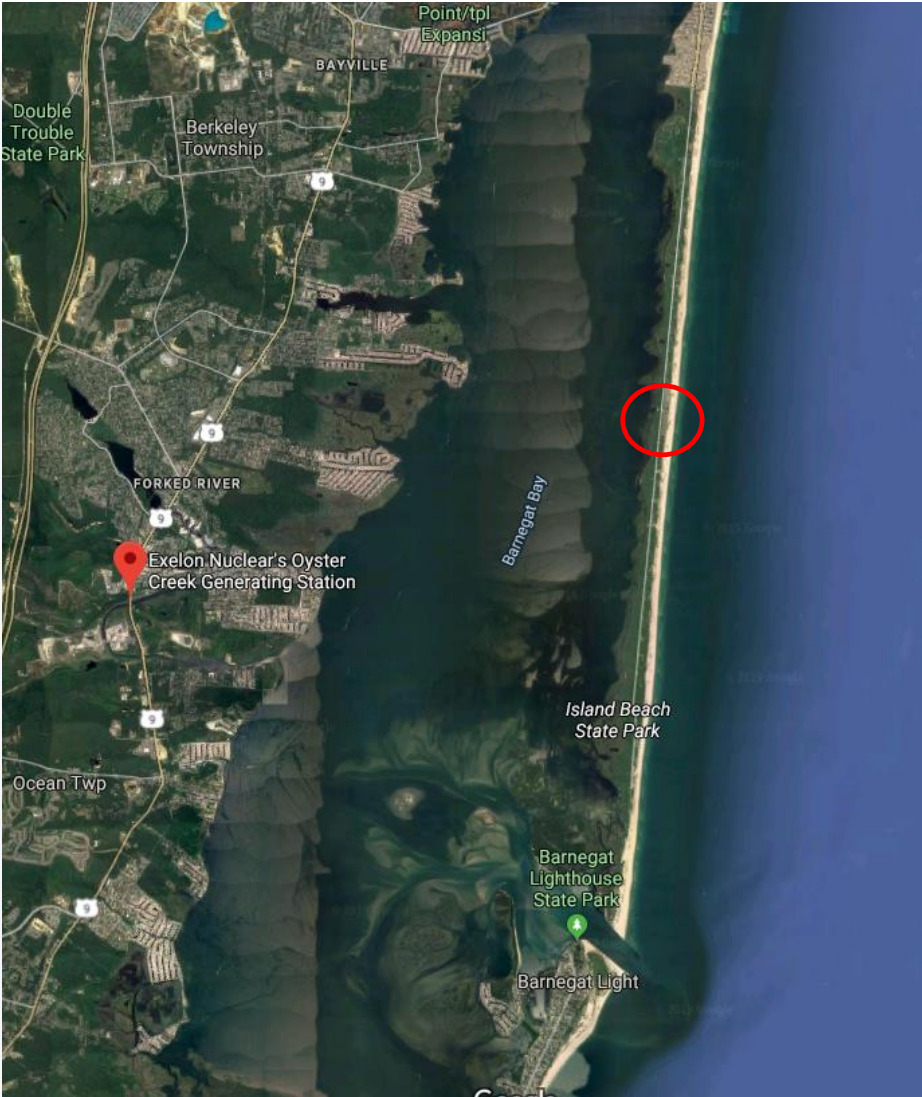
Oyster Creek – Ocean County



Island Beach State Park

- Horizontal Directional Drill (HDD) used to cross under Island Beach State Park
 - Drill set up in parking lot of IBSP
 - Requires lease of DEP Managed Lands (20 year lease) for buried cables
- Barnegat Bay- exact method and route of cable burial to be determined based on:
 - Geotech data being gathered now
 - Shellfish habitat and submerged aquatic vegetation in the Bay
- USACE burial requirements (4-6 feet) beneath the Intracoastal Waterway

Island Beach State Park



Oyster Creek – Ocean County



- Select one of three potential landfalls via HDD:
 - Finninger Farm – Holtec property, Lacey Twp
 - Bay Parkway, Twp of Ocean
 - Lighthouse Drive, Twp of Ocean
- Route follows Route 9 before entering substation property via private road (JCP&L) ending at substation parcel
- Ørsted to construct new substation to connect to existing substation at Oyster Creek

Atlantic City Landfall Option – Higbee

Atlantic City

Three general landfall areas via HDD are being evaluated

AC beaches are under the USACE nourishment program requiring

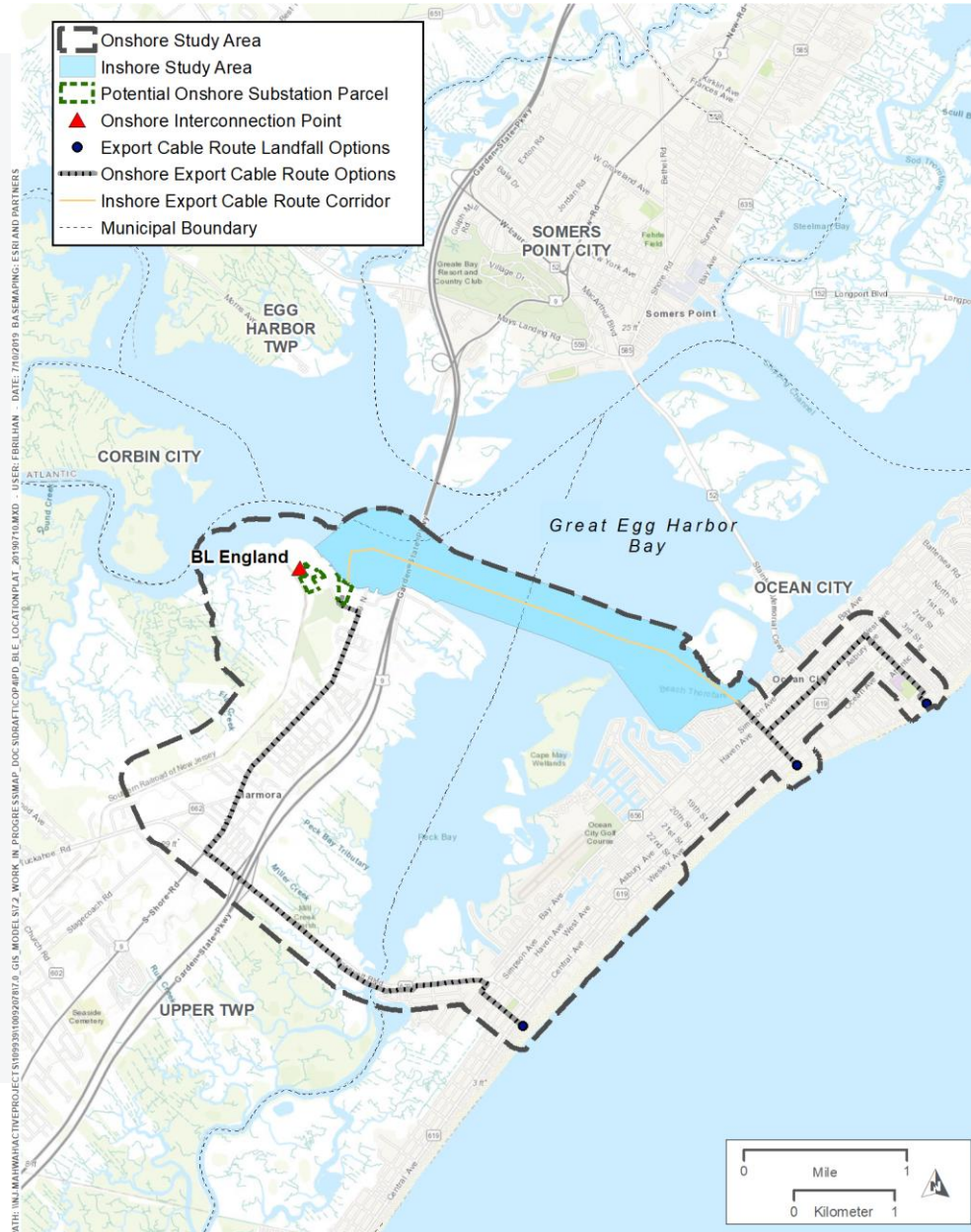
- Section 408 Permit
- 27 ft burial depth

AC beaches are Green Acres encumbered requiring

- Green Acres “major subsurface diversion”



Ocean City Landfall Option – BL England



Ocean City

OC beaches are under the USACE nourishment program requiring

- Section 408 Permit, 27 ft burial depth

OC beaches are Green Acres encumbered requiring

- Green Acres “major subsurface diversion”

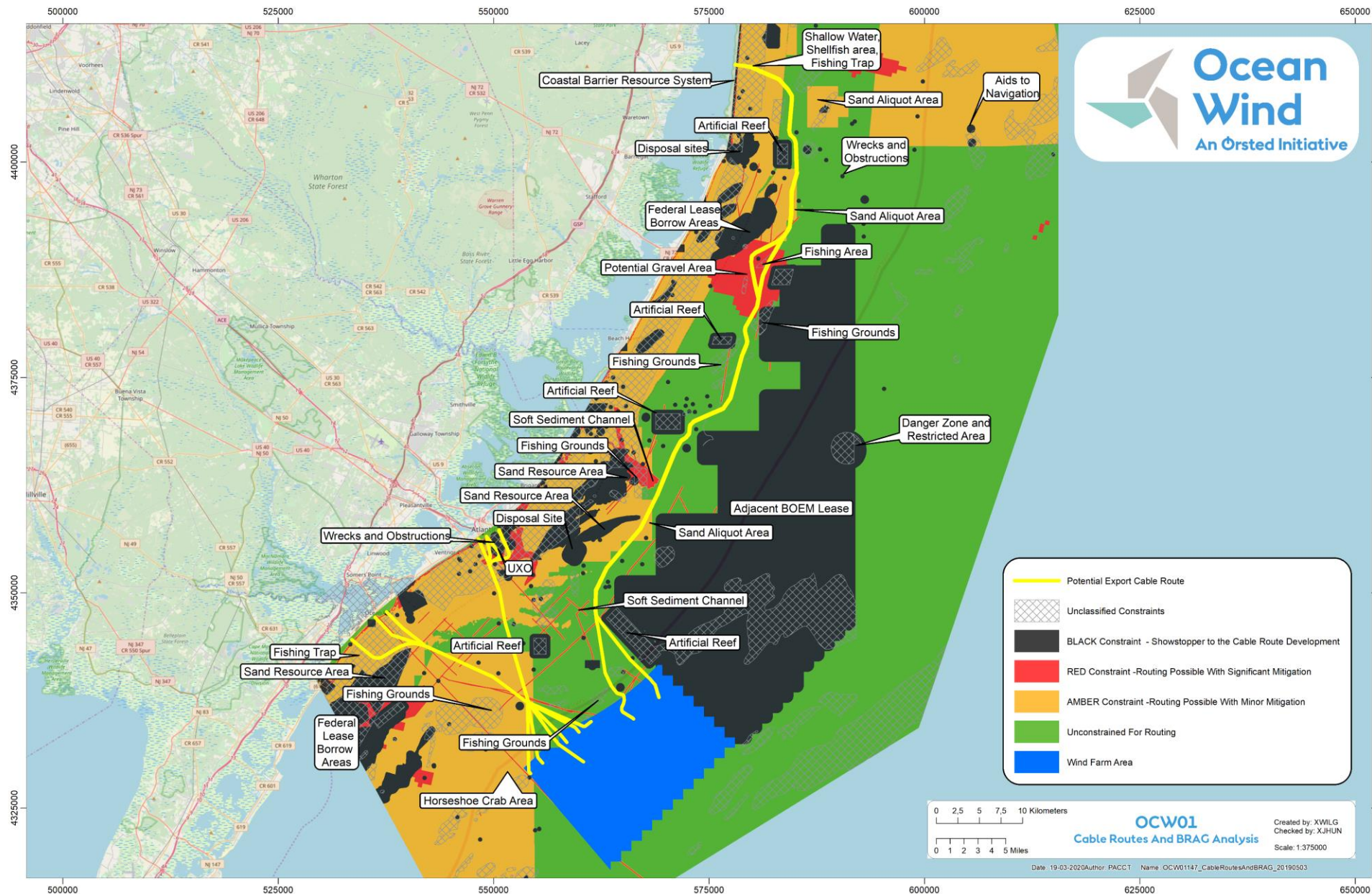
– Select one of three potential landfalls:

- 5th Street
- 13th Street
- 35th Street

– 5th Street and/or 13th Street landfalls utilize a Bay crossing to Beesley’s Pt.

– 35th Street continues on Roosevelt Blvd into **Upper Township** and then North Shore Road to BL England

Offshore cable routing



Construction and Operations Plan (COP)

The COP must demonstrate that you have planned and are prepared to conduct the proposed activities in a manner that conforms to your responsibilities as a lessee⁺.

The COP must include the results of the following surveys*:

- Shallow hazards
- Geological survey relevant to the design and siting of your facility
- Biological
- Geotechnical survey
- Archaeological resources
- Overall site investigation

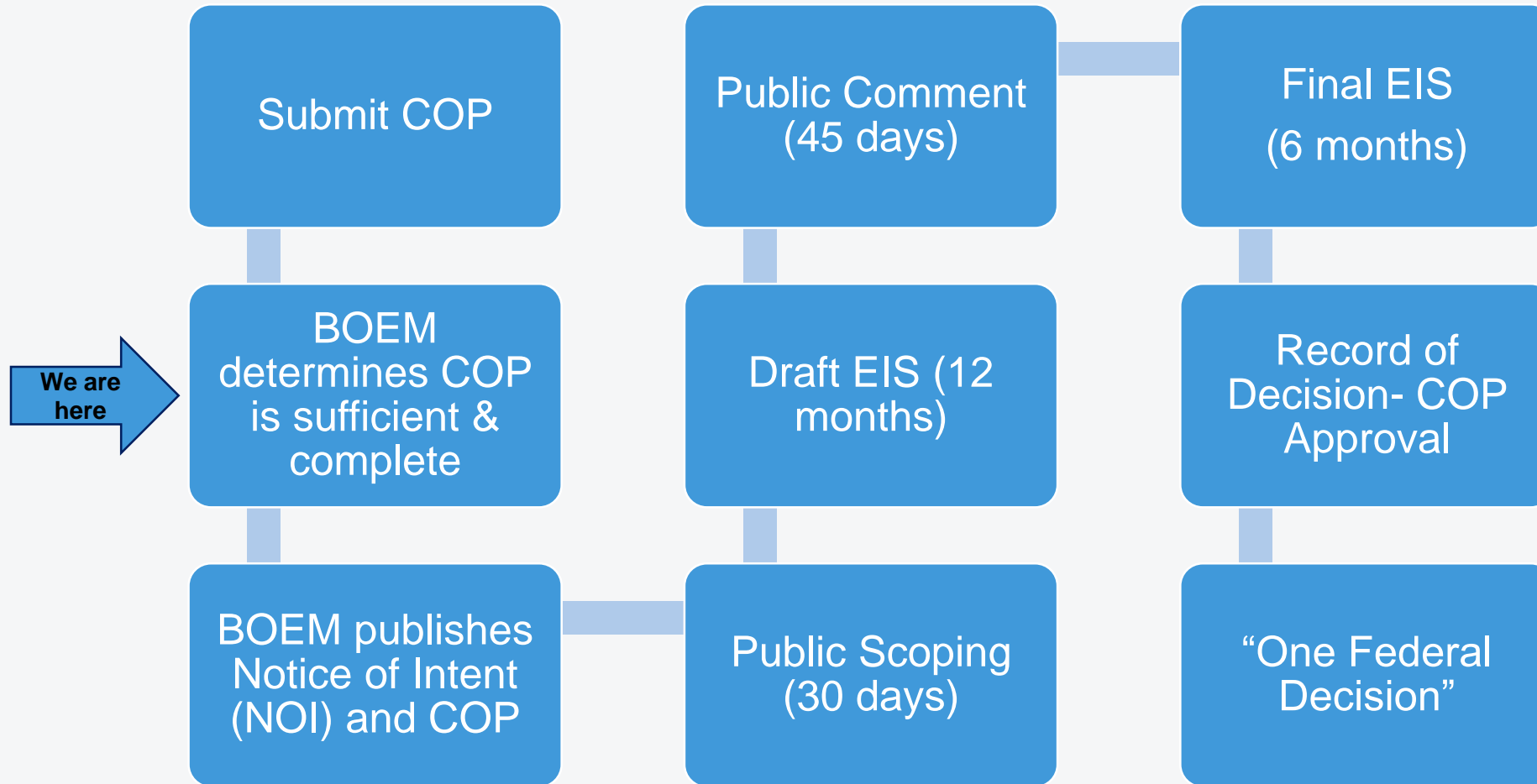
⁺30 CFR 585.105(a)

^{*}30 CFR 585.626(a)

Construction and Operations Plan (COP)

Type of Information	Including:
Hazard information	Meteorology, oceanography, sediment transport, geology, shallow geological or manmade hazards
Water Quality	Turbidity and total suspended solids from construction
Biological resources	Benthic communities, marine mammals, sea turtles, coastal and marine birds, fish and shellfish, plankton, seagrasses and plant life
Threatened & Endangered Species	As defined by the Endangered Species Act
Sensitive biological resources or habitats	Essential fish habitat, refuges, preserves, special management areas identified in coastal management programs, sanctuaries, rookeries, hard bottom habitat, chemosynthetic communities, calving grounds, barrier islands, beaches, dunes and wetlands
Archaeological resources	As required by the National Historic Preservation Act
Social and Economic resources	Employment, existing offshore and coastal infrastructure (including major sources of supplies, services, energy and water) land use, subsistence resources and harvest practices, recreation, recreational and commercial fishing *including typical fishing seasons, location and type), minority and lower income groups, coastal zone management programs, and viewshed
Consistency Certification	As required by the Coastal Zone Management Act regulations
Other resources, conditions and activities	As identified by BOEM

Federal Approval Process- ~2 years from NOI



Example of Other Federal Approvals

Agency	Jurisdiction
U.S. Environmental Protection Agency (EPA)	Air emissions
U.S. Army Corps of Engineers (USACE)	Activities within Waters of the U.S.
Federal Aviation Administration (FAA)	Navigable Airspace
U.S. Coast Guard	Navigable Waterways
National Marine Fisheries Service (NMFS)	Fisheries, Marine Mammals, Endangered Species
U.S. Fish and Wildlife Service (USFWS)	Federally T&E Listed Species and Migratory Birds
Department of Defense	Military Operations

Individual NJ State Approvals

- Waterfront Development
- Coastal Zone Consistency
- Wetlands
- Tidelands
- Flood Hazard Area
- Water Quality
- Stormwater
- Park Lands, Preserved Lands
- State threatened and endangered species – Timing Restrictions
- Green Acres



Questions?

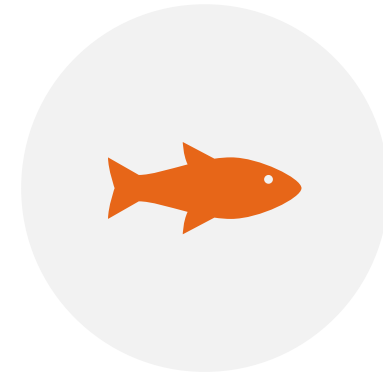
DEP: Additional Steps for Stakeholder Engagement



UPDATED OFFSHORE WIND
WEBSITE



EMF WHITE PAPER



RUTGERS STUDY AND
STAKEHOLDER OUTREACH ON
ECOLOGICAL BMPS

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