

**MARINERS' ADVISORY COMMITTEE
FOR THE BAY AND RIVER DELAWARE
MEETING
June 14, 2018 MINUTES**

The Regular Quarterly Meeting of the Mariners' Advisory Committee for the Bay and River Delaware was held June 14, 2018 at the Ristorante La Veranda Philadelphia. Captain Stuart Griffin presided over the meeting. The meeting was called to order at 1100 hours and there were 55 members, associates and interested parties in attendance.

I. Welcome

Captain Stuart Griffin welcomed members and guests to the meeting and reported that the Minutes from the March meeting have been posted on the MAC website.

II. Reading of the Minutes

Captain Michael Nesbitt moved that the reading of the March 2018 Minutes be dispensed with and be approved as is. Jean Cureton seconded. All approved.

III. Report of the Treasurer

MAC Treasurer Rick Iulucci reported a current balance of \$11,013.23.

IV. Membership Report

On behalf of Membership Chairman, Captain John Gazzola, Captain Rick Iulucci welcomed The following new members: Advantage Engineers and Deepwater Wind.

Captain Griffin announced and welcomed Robert Hintz of Genesis Marine as our guest today.

V. Army Corps of Engineers (ACOE)

Tim Rooney reported on the following distribution:

Philadelphia District Corps of Engineers
Project Status Update
Mariners Advisory Committee for the Delaware River and Bay
14 June 2018

Delaware River, Philadelphia to Sea & Main Channel Deepening

The Upper Reach B contract was awarded to Norfolk Dredging Company for \$50 Million. Norfolk Dredging Company has completed dredging for this season and demobilized their equipment.

The upper Reach E contract was awarded to Dutra Dredging Company for \$32.6 Million. Current Schedule has Dutra Group completing dredging operations in the month of July 2018.

Rock Removal portion of the Delaware River Deepening was awarded to Great Lakes Dredge and Dock Company (GLDD) for \$91 million on 30 September 2015. The Blasting Barge Apache completed the third blasting season. The schedule for forth blasting is to be determined pending funding from Corps HQs and the local Cost Share Partner. Recently announced Work Plan Funds of \$14M have provided to the District to continue the Main Channel Deepening's construction.

This year's annual maintenance dredging is scheduled for advertisement on 13July2018, Bid Opening 17August2018, Award Contract 7September2018 with Notice To Proceed (NTP) 21September2018. This year's maintenance will include removal of shoaling in New Castle, Deepwater Point, Cherry Island, and Marcus Hook Ranges. This year's contract is going to include two (2) Options. Option 1 is perform Wilmington Harbor dredging operations in January 2019. Option 2 is for dredging operation in the southern half of Marcus Hook Anchorage to 45 +1ft allowable overdepth.

Delaware River, Philadelphia to Trenton

Other than channel exams there are no planned maintenance activities for this project.

Wilmington Harbor

A contract for maintenance dredging of both the 35-foot and 38-foot project channels and turning basin was advertised on 23 May 2018 with bids being accepted 26 June 2018. The NTP for this work will be issued on or about 31 July 2018. The dredged material will be placed into the Pedricktown North disposal area.

Salem River

H&L Contracting completed the Salem River Contract to 16ft+. This was accomplished through an extremely challenging winter season. Salem River received \$100,000 in Work Plan Funds. The District is going to pursue utilizing one of the Government Owned Dredges to apply these funds directly to maintain critical edge shoals within the project.

Schuylkill River

Work Plan Funds have fully funded Base Bid and Option for the Schuylkill River Project. The Government is planning to advertise the maintenance dredging contract for the 33ft Federal Channel this week. The current schedule has Bid Opening on 17July2018, Award Contract on 7August2018 with NTP anticipated for 28August2018 pending acceptable bids.

Dredge McFarland

The Government-owned Dredge McFarland has returned to the Fort Mifflin Docks on 13June2018. The Dredge McFarland is scheduled to begin Delaware River dredging operations on 15June2018. Current priority of the Dredging Orders have the Dredge McFarland performing maintenance dredging in Tinicum Range with placement of dredged material at Fort Mifflin's CDFs. The Dredge McFarland will perform around the clock maintenance dredging for the next two (2) weeks and is scheduled to complete the remaining thirty (30) training days for this fiscal year in the month of July.

Following a discussion with ACOE's Jeff McAlees and Tim Rooney, Captain Griffin alerted the MAC that the port community may need to be proactive in supporting the USACE Philadelphia District in its efforts to secure funding to make up a funding shortfall that could adversely impact the completion schedule of the main channel deepening project.

VI. NOAA

John Stepnowski, NOAA PORTS, reported on the following sensors:


Ship John Shoal Light has limited access due to pier damage. Status: Making contact with the owner for repairs.

Brandywine Light's current meter was damaged in a storm. Status: The gangway is just now walkable to the light.

Brown Shoal Light current meter was also damaged in a storm. Status: Being replaced in July.

Rachel Medley, NOAA Charting, reported that the Delaware River has obtained CATZOC A classification for its survey data. She added that the ACOE has named the Delaware River as the first body of water that has highest quality data encoded in the electronic navigation charts system.

Katie Kirk, NOAA Oceanographer, lead for current meter survey reported on the following distribution:



First U.S. federal channel using USACE survey data receives improved quality classification from NOAA

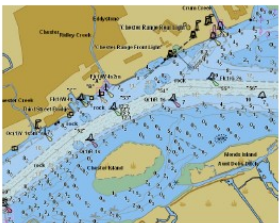
The U.S. federal channel in the Delaware Bay is vital to maritime commerce, leading deep draft vessel traffic to and from the major ports of Wilmington, Delaware, Philadelphia, Pennsylvania, and Camden, New Jersey. To navigate this federally maintained waterway safely and efficiently, mariners rely on the surveyed depths displayed on nautical charts. The U.S. Army Corps of Engineers (USACE) Philadelphia District regularly surveys this area, utilizing sophisticated techniques and equipment to map the depths of the seafloor. NOAA's Office of Coast Survey, in turn, adds quality classifications to these channel depths and displays them on the nautical chart.

The portion of the federal channel from Newbold Channel Range down to the mouth of the Delaware Bay is the first waterway in the U.S. to have an improved quality classification assigned to USACE survey data—category of zone of confidence (CATZOC) A2. Improving survey quality and upgrading the CATZOC classification allows operators to accommodate smaller margins of error while still ensuring that navigating maritime approaches and constrained environments remain safe. These decreased tolerances allow ships to maximize their loads, ultimately increasing inbound and outbound cargoes.

Industry depending on the type of cargo the ship is carrying. For instance in Long Beach, California, for every extra foot of draft allowed by the port, tank vessels can add \$2 million of extra product. As ships load cargo, the draft of the ship increases—in the case of the Delaware River, the draft cannot exceed the 45-foot controlling depth (once USACE completes dredging) or the ship will run aground.

Shipping companies and insurance underwriters determine the maximum draft allowed for a vessel during transits of waterways in U.S. ports, adding a margin of error to the draft for safety. In some cases a safety margin of 25-30% may be added, ultimately resulting in dollars lost for the shipping and terminal operators. Not to mention, negating the expense and time involved in dredging a channel. The navigational tolerances are determined using guidelines that include the known quality of survey data in a particular waterway. The better the quality of the survey, the lower the risk associated with the ship transit, resulting in additional cargo loading per transit.

Allowing additional draft. What's it worth?
Upgrading how NOAA encodes USACE channel depth data reduces additional safety margins applied to the draft of large ships during transit and berthing operations. The USACE District Philadelphia is in the process of deepening the Delaware River from Philadelphia to the sea, with a controlling depth in the federal channel from 40 feet to 45 feet (from Beckett Street Terminal north the channel remains authorized at 40 feet). Every foot of draft represents a significant dollar amount in the shipping



NOAA ENC of the Delaware River near Chester, Pennsylvania.



View of the Delaware River from MSC Gayane outbound off Fort Mifflin Range. Credit: Captain J. Stuart Griffin, Mariners' Advisory Committee Chairman (MAC) and Delaware River and Bay Pilot.

What is CATZOC?

Survey data within an electronic navigation chart (ENC) is encoded with a data quality indication known as CATZOC. CATZOC quality helps the mariner determine the accuracy of charted conditions on the seafloor at the time of the last survey. In particular, the mariner should understand that nautical chart data, especially when displayed on navigation systems and mobile apps, possess inherent accuracy limitations. CATZOC quality designations, A1-D, are the specifications that were met at the time of the survey.

Currently all federal channels are designated as a CATZOC B if the USACE has collected the data. This is a recent development as previously all federal channels were designated as a CATZOC 'U' for Unassessed. Rear Adm. Shep Smith, Director of NOAA's Office of Coast Survey, was asked by Intertanko, a maritime association that represents the interests of the tanker industry, to remove the 'U' designation on ENCs as it was impeding the industry's ability to do a proper risk model assessment of ships entering U.S. ports. Nationwide, the USACE is the federal authority for maintaining federal channels; NOAA does not normally assess USACE surveys and as such designated all surveys as a CATZOC B.

USACE survey techniques factor into CATZOC quality

The maintenance of all federal channels falls under the jurisdiction of the USACE, and as such, Coast Survey recognizes the USACE as the

authority for survey data acquired in these active waterways. USACE districts around the country help the flow of commerce in and out of the nation's busiest ports and Coast Survey applies data from 22 of these districts to nautical charts for safe navigation by deep draft vessels. The USACE districts use sonar equipment to measure sediment movement within the channel to maintain channel-controlling depths and determine dredging needs. The USACE Philadelphia District is unique in that it is fully utilizing its multibeam sonar equipment, which has the capacity to survey large swaths of the seafloor and detect features and obstructions that might be harmful to deep draft vessels. As vessels in the nation's waterways continue to grow in size, USACE districts that are utilizing their multibeam systems are helping to ensure that the general bathymetry of the seafloor bottom is well

"This is a huge leap forward toward the sophistication of nautical charts, and will help the maritime sector along the Delaware River. I want to commend the men and women at NOAA's Office of Coast Survey and the Army Corps of Engineers District Philadelphia for working together to provide safer timely high-quality data for maritime commerce. I applaud Commerce Secretary Ross for recognizing the vital role that NOAA's Coast Survey provides to the maritime industry and thank him for this outcome. This synergy between NOAA and the Army Corps is exciting to see, and I support efforts to replicate this pilot project in other ports and waterways around the country."

- U.S. Senator Chris Coons (D-DE)



Office of Coast Survey
National Oceanic and Atmospheric Administration

known at the time of the survey. This is particularly important as vessel drafts are nearing the seafloor bottom in port areas across the country, running higher risk of hitting a feature or object in the waterway.

Updating NOAA nautical charts

Coast Survey is exploring various ways of changing and improving charted information for the mariner as outlined in the National Charting Plan. Coast Survey is working with USACE Philadelphia District to determine the CATZOC quality of the survey data acquired in the Delaware River. The CATZOC value of the surveys collected over the past year by USACE District Philadelphia have been designated by Coast Survey as meeting a CATZOC A2 standard. There is a significant improvement in survey quality designation from a CATZOC B to a CATZOC A2. CATZOC A2 seafloor coverage indicates that the full area was surveyed and allows for the detection of significant seafloor features. CATZOC B seafloor coverage does not have sufficient quality or resolution, indicating that while hazardous objects are not expected, they may exist and may be undetected because of the survey quality. Coast Survey has encoded ENCs with the CATZOC A2 quality in portions of

the federal channel along the Delaware River that are surveyed by the USACE District Philadelphia utilizing robust multibeam survey methods. There is not a refresh rate or time frame required with international CATZOC standards, however, USACE Philadelphia District typically resurveys the main navigation channel on an annual basis using the same multibeam survey techniques that NOAA used to assess the current CATZOC value.

Potential impact to shipping companies and terminal operators

For the portion of the federal navigation channel from Newbold Channel Range down to the mouth of the Delaware Bay, this designation will decrease the risk margin placed on ships transiting the waterway and make fuller use of the actual controlling depths in this waterway. Additionally, "this could potentially help to lessen the expense and risk of lightering operations," reports Eric Clarke, marine operations cargomaster at Philadelphia Energy Solutions. Commonly, shipping companies whose risk models are calculated using the CATZOC B quality levels mandate lightering operations before transiting to terminals where water depths are more restrictive. Through coordination efforts between USACE Districts and Coast Survey, federal agencies are working to serve up better data and information to the mariner so they can make more informed decisions to keep commerce moving effectively and safely in the nation's busiest waterways.

The author, Rachel Medley, is chief of the Customer Affairs Branch at NOAA's Office of Coast Survey. She also serves as the NOAA liaison to the Delaware River and Bay for navigation issues. For more information, please contact Rachel.Medley@noaa.gov

"The Delaware River port community is taking steps to utilize the planned deepening of the main channel. We are already seeing arrivals of post-Panamax sized vessels that require special transit considerations and planning. Our valued partnerships with USCG, USACE, and NOAA are critical to the safe movement of deep-draft commercial traffic in our waterway. As the USACE nears completion of the project to deepen the main shipping channel, improvements in sounding data quality have enabled NOAA to provide safety assurances to shippers in the form of improved CATZOC designation for the estuary. This has real-world relevance to ship owners and charterers who move vessels on the Delaware and will allow them to more effectively utilize the full channel depth upon completion of the deepening project."

- Capt. J. Stuart Griffin, Chair of the Mariners' Advisory Committee (MAC) and Delaware River & Bay Pilot

VII. USCG – DISTRICT 5

Captain Kurt Clarke reported the following:

Ice Season has concluded.

Hurricane Season has begun. We just wrapped up a national hurricane season exercise with over 150,000 port players that spanned over a couple of days.

We had a great coordination effort from the pilots, terminal operators and bridge owners to bring in two cranes.

We now have a Very Large Crude Carrier, VLCC, lightering offshore and will soon be coming up the river. These VLCCs are the size of aircraft carriers.

We will be kicking off a Ports and Waterways Safety Assessment (PAWSA) event. This event will involve 30 to 50 port players to focus on waterways usage and safety concerns in the event of a marine incident. The event will incorporate the weather and ship traffic into the exercise scheduled for the end of September.

Chris Scraba added that NOAA, ACOE and the USCG will also be involved in the PAWSA exercise. Chris reported on the following distribution.

Mariners Advisory Committee (MAC) For the Bay & River Delaware **Fifth Coast Guard District and Sector Delaware Bay** **Waterways and Aids to Navigation Report for June 14, 2018**

1. **Marcus Hook Project:** A/E Design completed 20 APR 17. **UPDATE.** CEU anticipates awarding contract in July 2018 and site work is sked to start in SEP 2018 after environmental closure period.
2. **Tinicum and Reedy RRL:** **UPDATE.** CEU awarded \$390K contract on 15 DEC17. Maintenance and repair of this structure completed May 18. (see pix) Reedy RRL A/E design Mar 17; bid bust in July 2017; **UPDATE:** Contract awarded MAR18 for 24 Oct 18 completion.
3. **Mid Atlantic Reg Planning Body(RPB)/MARCO and BOEM Updates:**
 - a. 5-6 Mar 18 BOEM's Marine Transportation-Wind Energy Knowledge Exchange
 - b. 29 Mar D5 Dpw met w/US Wind. Jul 2018 75' MET tower to be installed 17 NM off OC, MD
 - c. 26 APR MCNS WG.
 - d. 9 May NY Bight CFI Interagency TF Meeting NY/NJ D5 Dpw briefed nav safety concerns.
 - e. 7 May: D5 Dpw met w/Deepwater Wind-Skipjack 8mw X 15. R/Vsl to conduct both geo-physical and geo technical (boring) surveys during summer of 2018. Met Buoy 2019/2020.
 - f. 21 May: USCG HQ CG-5PW sent letter to BOEM on Req for Feedback (attached)
 - g. 2 Aug Mid Atl RPB/MARCO Public Mtg in Richmond, VA.
4. **SEC DEL BAY: Port and Waterways Safety Assessment (PAWSA) Sept 2018.** PAWSA will provide risk assessment process to ID major waterway safety hazards, estimate risk levels, evaluate potential mitigation measures, and set the stage for implementing selected measures to reduce risks and work toward long-term solutions for dynamically changing deeper draft port.

TINICUM RANGE REAR LIGHT STRUCTURAL REPAIRS/REPAINT: \$393k



VIII. USCG – SECTOR DELAWARE BAY

Lt. Kiley Relf announced the Anchor Management Working Group scheduled for July 12th. She asked if anyone is interested in attending to contact her- see distribution below:

Mariners Advisory Committee (MAC) For the Bay & River Delaware
Fifth Coast Guard District and Sector Delaware Bay
Waterways and Aids to Navigation Report for June 14 2018

1. Hurricane Seasonal Alert

- a. On May 29th, Hurricane Seasonal Alert was set for the Delaware Bay COTP zone
- b. We would like to remind all of our facilities, marinas and vessels to take adequate precautions and review the port contingency plan that is posted on our homeport page.

2. Hurricane Exercise Cora

- a. May 3rd, CGD5 held a Hurricane exercise with over 250 participating agency components and 150,000 players. For the daily injects, SDB's MSTRU held a daily call with participation from the Pilots, USACE, MARAD, NOAA & Philaport.

3. Greenwich Terminal Crane Delivery

- a. On March 24th the M/V ZHEN HUA 16 transited the Delaware River and made passage under the Delaware Memorial Bridge and the Commodore Barry Bridge with two multi-million dollar post-Panamax cranes
- b. Two safety zones were established for the transit of the cranes, one was for the transit from the anchorage to the terminal and the second was for the time period the vessel was moored at Packer Ave Marine Terminal

4. Delair Memorial Railroad Bridge Extension of Remote Operation

- a. On April 24th MSIB 23-18 for the Delair Drawbridge was released. The CG has issued a temporary deviation authorizing the Delair Memorial Railroad Bridge to be remotely operated for an additional 6 months- Until October 16, 2018.

5. D5 held the Mid-Atlantic Maritime Commerce & Navigation Safety Webinar

- a. April 26th a webinar was held to discuss NOAA Ocean Predictions for the 2018 Hurricane Season & best practices for navigation safety within the port.

6. PAWSA

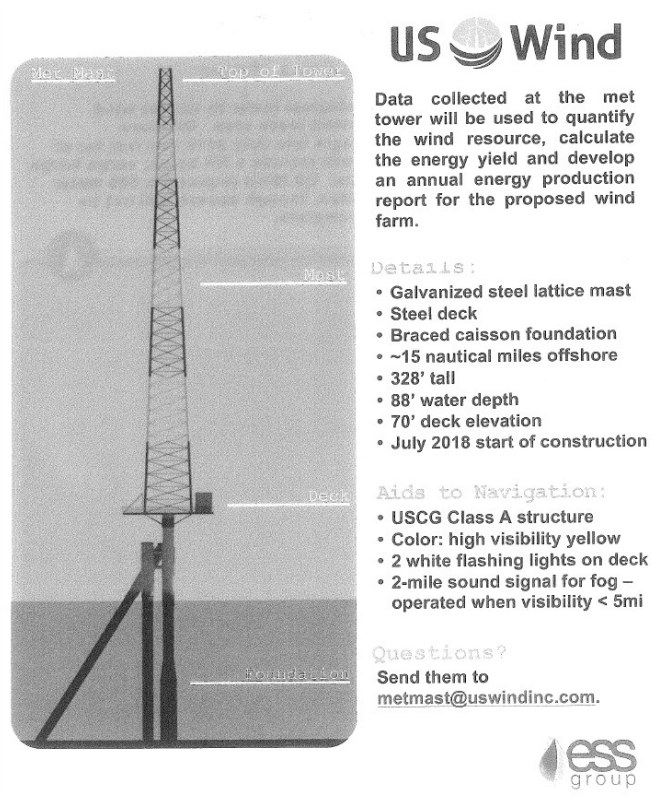
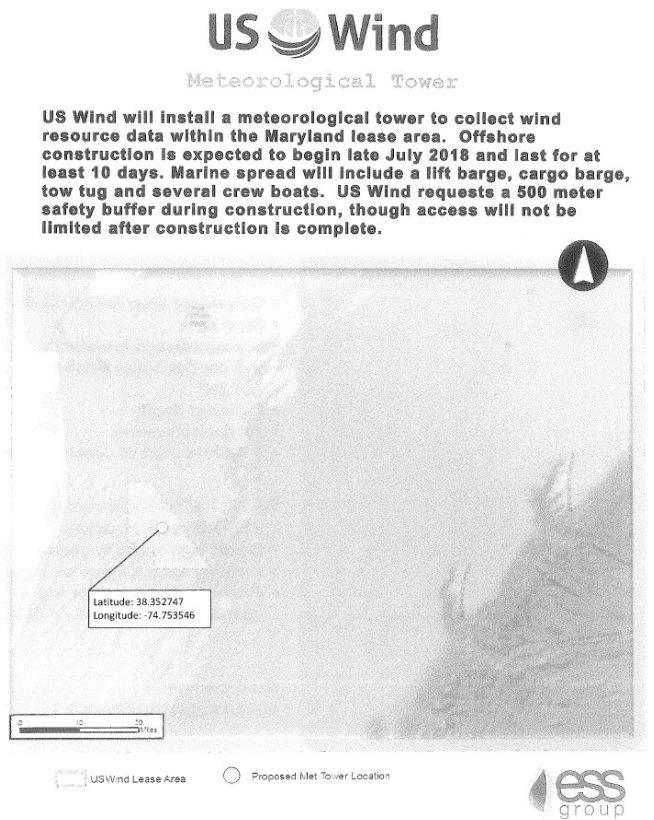
- a. Ports and Waterways Safety Assessment will be conducted for the Sector Delaware Bay Area September 26-28.
- b. One of the missions of the PAWSA is to evaluate specific variables dealing with both waterway casualties and their consequences.
- c. Facilitated discussions on 6 specific areas: Conditions of vessels, amounts/ types of vessel traffic, local weather, waterway attributes (including ATON) and immediate on long term consequences as a result of a marine casualty.

7. Anchorage Management Working Group

- a. July 12th 2:30-4:00

IX Unfinished Business

Maryland Area- US Wind: Paul Rich reported on the following distribution:



He added that by 2021, there will be 32 installations and an offshore substation.

There was discussion about the installation having lights and being equipped with AIS or Raycon transmitters. Paul replied that he will get answers to both questions.

Captain John R. O'Keeffe of Deepwater Wind made a presentation. Here are some of the key slides.



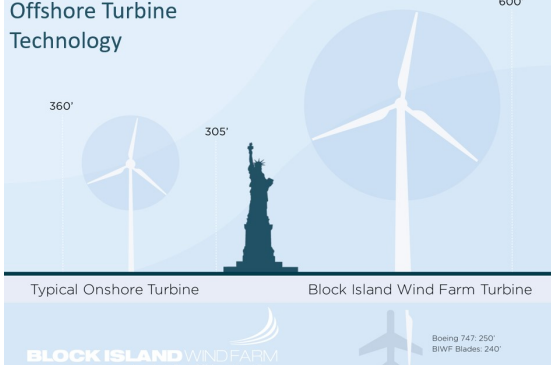
**America's Offshore
Wind Leader**

- Developer and operator of the first offshore wind project in the US
- Winner of the first auction for federal offshore wind leases in the US
- Awarded first, second, and third offshore wind power contracts in the US
- Controls three offshore lease areas with 4,000 MW capacity

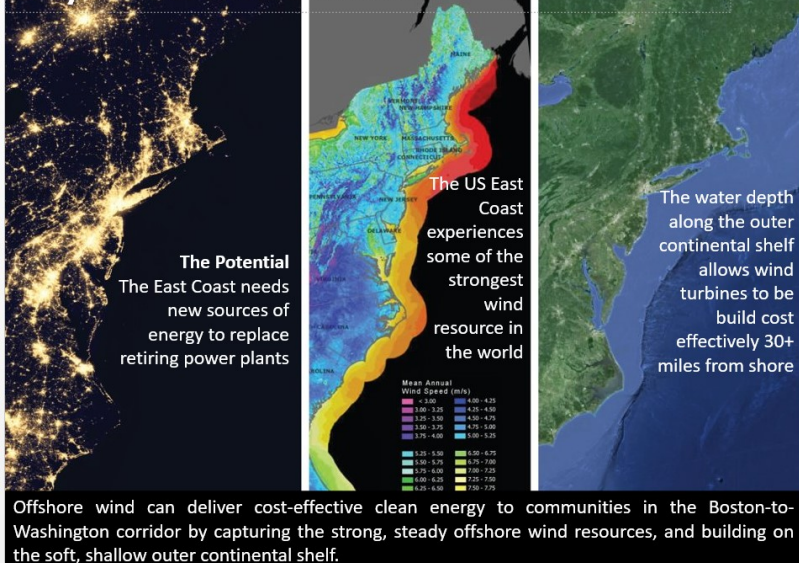
DE Shaw & Co

Principally owned by D.E. Shaw, one of the largest global alternative asset managers with more than \$43 billion assets under management as of July 1, 2017. Founded DWW in 2005 to focus on offshore wind in the US.

Rapid Advances in Offshore Turbine Technology



Why Offshore Wind Farms?



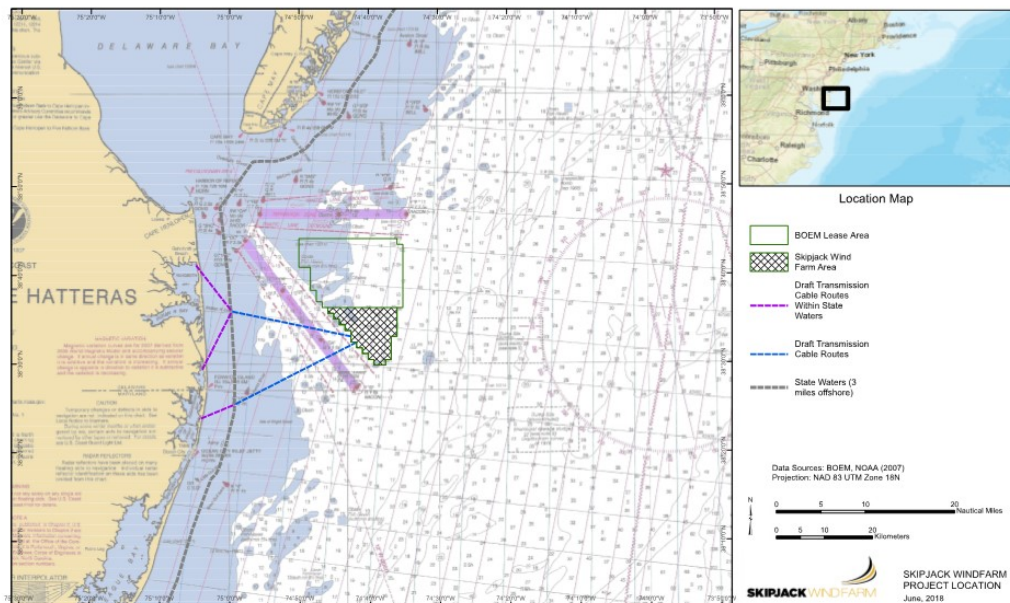
America's First Offshore Wind Farm is Now Operating



On Schedule to Begin Serving MD in 2023

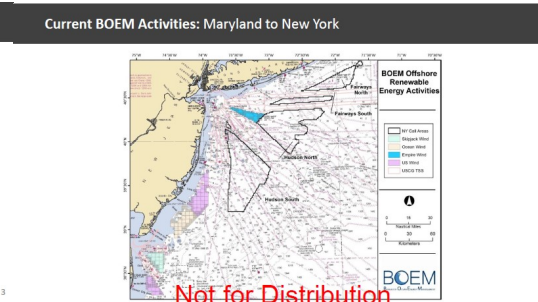
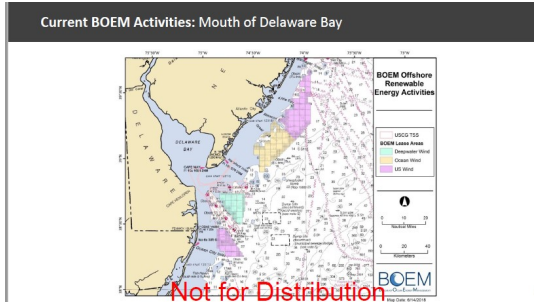
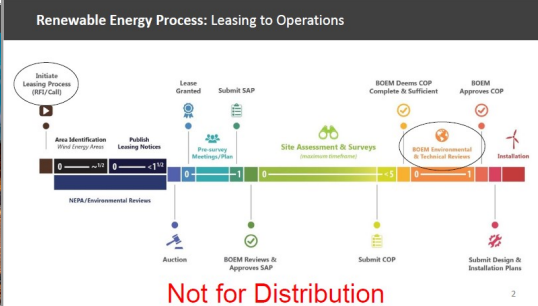
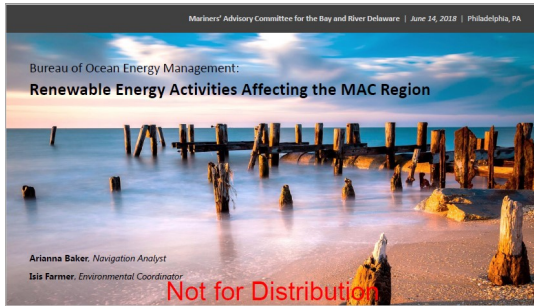
Spring 2017	Open Maryland Office
Summer 2018	Begin Onshore/Offshore Surveying
Winter 2019	Submit Permit Application
June 2020	Receive Permit Approval
Spring 2021	Installation Begins Offshore
December 2022	Commercial Operation

Project Chart

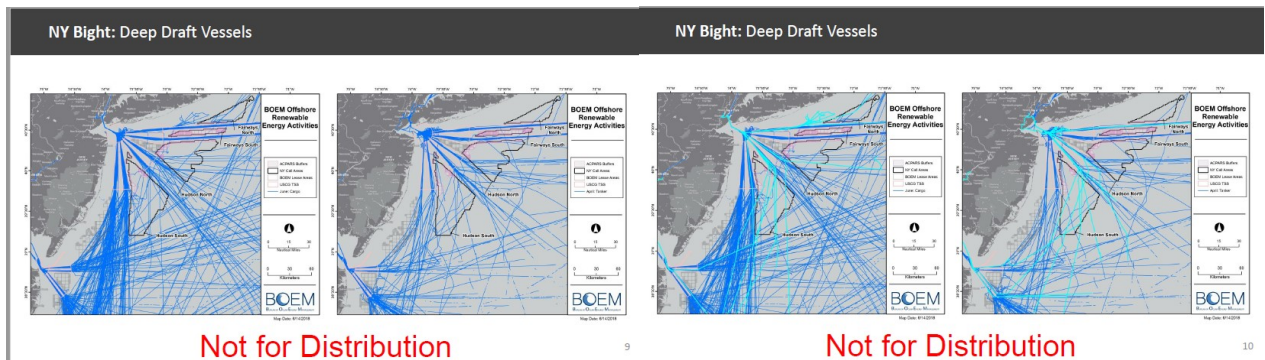
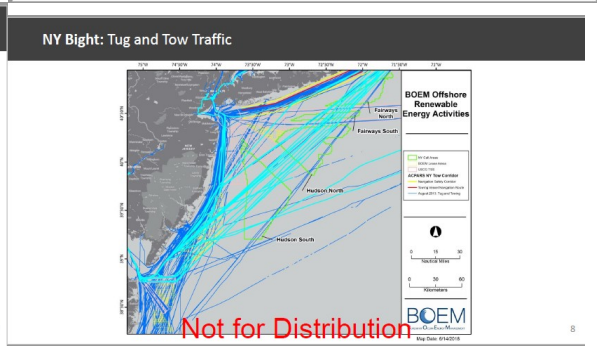
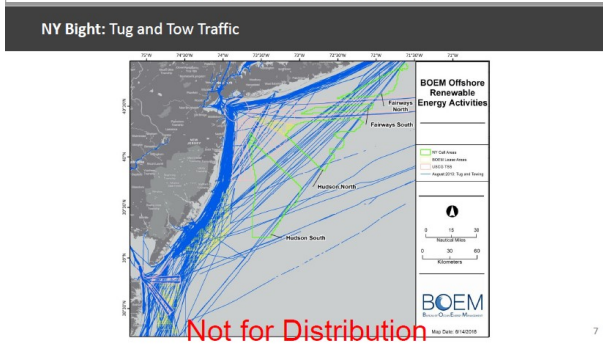


Wind Energy Update

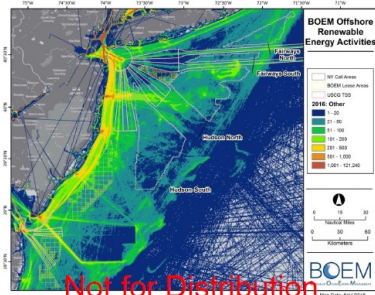
BOEM Presentation by Arianna Baker: Discussion on “Request for Feedback” on BOEM’s Proposed Path



- ### Navigational Analyses: Area ID Stage
- Three major components of analyzing vessel traffic navigation and offshore wind:
- History:** What have vessels done throughout the areas in the past?
 - Motivations:** Why do vessels behave in such a way?
 - Future:**
 - What does the future of the maritime industry look like?
 - How will wind turbine arrays divert vessel traffic?
- Not for Distribution



NY Bight: Fishing Vessels



Not for Distribution

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How to Submit Comments

Comments must be submitted/postmarked by **July 30, 2018**

- On www.regulations.gov, search using keyword **BOEM-2018-0004**
- In written form, by **hand or mail delivery** to:
Bureau of Ocean Energy Management
45600 Woodland Road, VAM-OREP
Sterling, Virginia 20166
- More information: www.boem.gov/NY-Bight



Not for Distribution

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Questions?

Arianna Baker | arianna.baker@boem.gov | 703-787-1677

Isis Farmer | isis.farmer@boem.gov | 703-787-1522



Not for Distribution

U.S. Department of
Homeland Security
United States
Coast Guard



Commandant
United States Coast Guard

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16003

MAY 21 2018

Office of Renewable Energy Programs
Bureau of Ocean Energy Management
45600 Woodland Rd, VAM-OREP
Sterling, Virginia 20166

Dear Mr. Browning:

Thank you for the opportunity to comment on BOEM's Request for Feedback (RFF) Docket No. BOEM-2018-0018, which identifies BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf (OCS).

The Coast Guard has several equities tied to offshore renewable energy leasing opportunities. Our responsibilities include Marine Transportation System (MTS) infrastructure protection, emergency management, navigation safety, and maritime security. All these factors need to be considered early in the process as BOEM leases Atlantic OCS areas. The Coast Guard will adapt to the changing environment in order to accommodate maritime commerce, but will oppose priorities that place undue strain on the MTS or impact safety of navigation and execution of our statutory missions.

The Coast Guard concurs with BOEM's three exclusionary factors of OCSLA Prohibited Areas, DOD Conflict Areas, and Maritime Navigation Conflict Areas. However, BOEM indicates it will not address marine vessel traffic information (e.g. Automatic Identification System traffic data) or further delineate areas of high traffic use outside of official traffic separation schemes until later in the Area identification process. We have concerns with this approach. Simply because there is no existing routing measure should not be a basis to assume the area is not critical for navigation, and therefore the area is available exclusively for renewable energy development. The Coast Guard requests that BOEM include the traditional high-density maritime traffic routes (navigation corridors) outlined in Appendix VII to the Atlantic Coast Port Access Route Study (ACPARS) as a part of the Maritime Navigation Conflict Area exclusionary factor. These traditional routes for the entire east coast need to be addressed prior to the OREI Area identification process to ensure the protection of our Nation's economic and national security interests. Otherwise, navigation safety of both National defense assets and commercial ships transiting along the east coast will be impacted.

The Ports and Waterway Safety Act (33 U.S.C. § 1223(c)) authorizes the Coast Guard to designate shipping safety fairways to allow vessels an area free of fixed offshore structures for safe access to U.S. ports. To help mitigate the navigation safety risks between OREI and vessels transiting along the east coast and into the port approaches of the MTS, the Coast Guard is going to move forward with a regulatory initiative to convert these traditional high-density maritime traffic routes into shipping safety fairways.

Delair Railroad Bridge

Captain Griffin reported that test deviation for the Delair Railroad Bridge has been extended until October 16, 2018

Packer Crane Delivery

Captain Griffin added that there will be additional cranes coming into the port in 2019 from China.

X New Business

Seabury Capital /Port of Wilmington's privatization/expansion presentation by Patrick Bird and Ray Camarda

GLOBAL REACH. GLOBAL SCALE.

SEABURY MARITIME PFRA

14 June 2018

Privatization of the Port of Wilmington and the Development of Edgemoor
Mariners' Advisory Committee for the Bay & River Delaware

SEABURYCAPITAL.COM

Agenda

About Seabury Maritime PFRA

Revitalization of the Port of Wilmington & Edgemoor

Situation Overview

Evolving Solution

Regional Container Market vs. Capacity

Source: DSPIC Master Plan (PRV, Johns), US Census, individual port websites, and SMPFRA Analysis

- Additional capacity, driven by market demand will soon be required to maintain efficient port operations
- 16.5 million TEU cumulative capacity shortfall 2018-2030
- Larger ports unable to overcome supply constraint
- Smaller ports will garner a natural market presence

GT USA Award

Key Aspects

- Future of the Port of Wilmington**
 - The Port of Wilmington is to be modernized, expanded, and eventual repurposed to focus on non-container cargoes for multiple carrier lines
 - Break Bulk/Project
 - Ro-Ro
 - Bulk
 - Livestock
- Build Edgemoor Container Terminal to service multiple carrier lines**
 - 1.2-1.4 Million TEU
 - Servicing up to 8,000 TEU vessels without load restrictions
 - Capable of handling 12,500 TEU vessels with load restrictions
 - Fulfilling regional growth unserviceable by regional capacity

GT USA Award

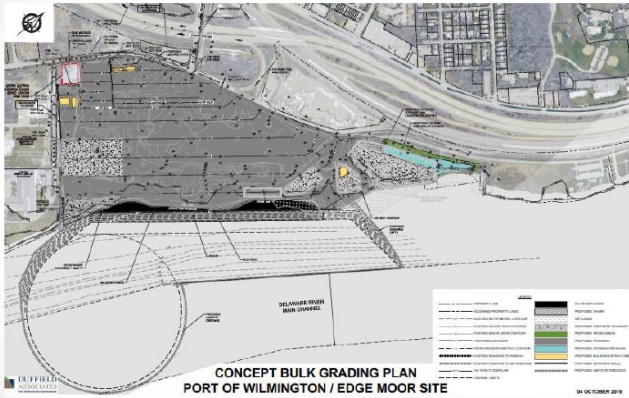
Key Aspects

- Economic Impact Includes**
 - Doubling of operations related jobs (Direct, Indirect, and Induced) to about 12,200 jobs by 2027
 - Capital expenditures creating 5100 cumulative annual jobs through 2027
 - CAPEX Investment
 - Port of Wilmington (POW) \$73 Million 2018-2020
 - Edgemoor \$511 Million 2020-2027
 - Total CAPEX over concession period \$1.3 Billion
 - Expected lower vessel OPEX with increased vessel size due to
 - Deeper draft unavailable at POW Christina berths
 - Market demands of container lines that have evolved to larger ships on all trade lanes.

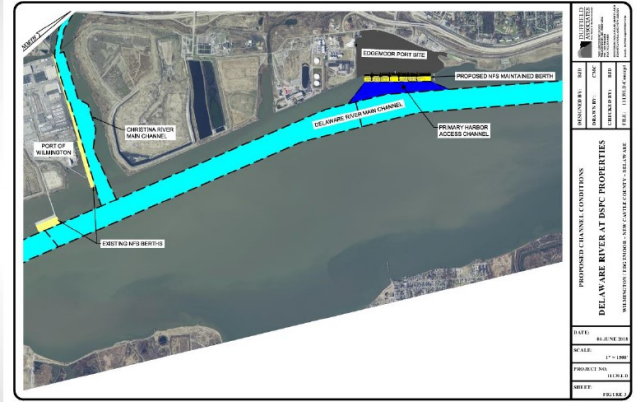
Edgemoor Dredge

- Initial Dredge**
 - GT USA Wilmington will invest through DSPIC in the initial dredging for Edgemoor
 - Estimated CAPEX: \$40 million
- Delaware Main Channel Modifications**
 - Intended to provide safe navigational access around the Edgemoor berths
 - Berths are offset 500 to 800 feet from the current limit of the main channel
- Turning Basin**
 - Used for illustrative purposes to show that the modified channel configuration will provide adequate clearance of turning vessels
 - Area to turn vessels is 1700 feet diameter
 - Diagram on next page is for illustrative purposes

Edgemoor Navigation Approach



Edgemoor Navigation Approach



Early Concept of Edgemoor for Illustrative Purposes



XI Open Discussion

We are looking at a new location for the next meeting.

XII. Adjournment

Captain Griffin announced the next meeting of the MAC is scheduled for September 13, 2018 @1100 hours. The meeting location has yet to be determined.

With no further agenda items or discussion Juan Vernetti moved that the meeting be adjourned. Captain Michael Nesbitt seconded and all approved. The meeting was adjourned at 1334 hours

Next meeting: September 13, 2018 at 1100
Location to be announced