Summary: Northeast US Ocean Planning and the Tug and Barge Industry

This document summarizes the discussion held on November 26, 2014 at the US Coast Guard Battery Park Building, 1 South Street, New York City. This meeting was convened by Northeast ocean planning staff and the US Coast Guard, in coordination with the American Waterways Operators and the New York Tug and Barge Committee. The meeting agenda and attendees are included in Appendix One of this summary.

The meeting objectives included:

1. Advance the Northeast Regional Planning Body's understanding of the tug and barge industry,
2. Advance the tug and barge industry's understanding of the status of ocean planning in the region, and the Northeast Regional Ocean Council's role and the Northeast RPB's role in the process, and
3. Identify ways to assist the tug and barge sector in the ocean planning process.

Per the agenda, suggested outcomes of the meeting were to prepare a written summary and ensure its delivery to the Northeast RPB, and to increase engagement, collaboration, and relationship building among parties.

Status of Ocean Planning in the Northeast US

The meeting began with a brief overview from John Weber about the current status of ocean planning in the Northeast Region (defined as Long Island Sound north around Massachusetts through the Gulf of Maine). This presentation included a series of slides (attached in Appendix Two) and touched on the following points:

- The Northeast Regional Planning Body (RPB) has been active since 2012, with a focus on general goal setting, initial engagement of stakeholders, and data development. Much of the work of the RPB (including overall goals and objectives, its work plan, specific project summaries, meeting minutes and summaries, and other information) is available on its web site: www.neoceanplanning.org. The Northeast Regional Ocean Council provides support for the work of the RPB, e.g. in the form of staff support. The Northeast RPB includes federal, state, tribal, and New England Fishery Management Council representatives. There is overlap in some cases with members of the Northeast and Mid-Atlantic RPBs. As a result of this overlap and a concerted effort at a staff level to collaborate on particular projects and in general, there is coordination with the ocean planning effort underway in the Mid-Atlantic.
- Much of the ocean planning effort to date in the Northeast has focused on developing data, maps, and other information. The on-line ocean atlas (sometimes referred to as the Northeast

Ocean Data Portal) at www.Northeastoceandata.org contains much of the data-focused work to date.

- A main data development focus in the past year has been using Automated Information System (AIS) data to develop maps of the spatial footprint of maritime commerce in the Northeast. A main comment received during engagement efforts to date has been the need to differentiate types of maritime commerce traffic, because of differences between (for example) the tug and tow industry and tanker traffic. See Appendix Two for slides that illustrate these differences. As a result of this feedback, AIS-derived products on the Northeast Ocean Data Portal are available in the following categories:
    a. All AIS vessels
    b. Cargo
    c. Passenger
    d. Tug-Tow
    e. Tanker

  A key interest at this point in time is to continue to review draft products, such as these, to identify additional gaps in information, aspects of the traffic patterns that are important to understand beyond the visualizations, and augment AIS-derived information with other important shipping details to inform ocean planning. An additional consideration is that this data is retrospective: it may not fully capture the present picture, and certainly is not forecasting future changes (see below for additional points raised during this discussion).

- Finally, the presentation included an overview of the timeline through mid-2016, with a focus on the first six months of 2015 as a particularly important time to engage appropriate sectors in advance of the next RPB meeting, tentatively scheduled for May 2015. Ocean planning staff will meet with members of the North Atlantic Ports Association at their meeting in early December in Alexandria, VA and with the Chamber of Shipping of America to plan for additional discussions in the coming months.

Following the presentation, the subsequent discussion included the following points:

- The need for coordination between the Mid-Atlantic and Northeast ocean planning efforts was raised, pointing to the fact that the tug/tow industry considers its "region" as encompassing the entire Atlantic Seaboard. Thus, from the industry's view, ocean planning in two parts of the Atlantic Coast needs to be coordinated as much as possible. In addition, there was concern that marine spatial planning issues concerning approaches to the Port of NY-NJ, the busiest port on the east coast, may be underrepresented because the port lies on the border of the Northeast and Mid-Atlantic Regional Planning Bodies. The towing industry representatives requested greater coordination between NROC and MARCO in order to ensure port traffic in the region is adequately represented.

- There was general agreement that the AIS-derived maps do a fairly decent job of capturing the general traffic pattern. However, important details tended to get lost when looking at a regional picture, including:
    - Areas in or approaching certain ports or waterways where weather or the characteristics of the waterway require tugboat operators to slow down or stop in order to modify their towing gear. Often, tugs towing barges on a wire must "shorten up" the wire, or even shift the barge into a "pushing ahead" configuration when approaching a restricted waterway. This information is not captured in most AIS data. Several areas in the Northeast where this occurs regularly include the approaches to
        - NY Harbor,
        - Buzzards Bay and the Cape Cod Canal, and
        - Portland Maine.
    - Emerging routes, or routes where maritime traffic is increasing. For example, routes from New York and the Delaware Bay region north to Canadian ports of Halifax, New Brunswick, St. Johns, and others.
    - Misleading nature of AIS maps showing "low" versus "high" density areas. What may seem to be a low density route may be critical to particular operations.
    - No differentiation in AIS data between tugboats using barge-on-wire, pushing-ahead, or articulated tug and barge (ATB) configurations. ATBs are rigidly connected to a barge via metal pins, have a deeper draft and can travel faster and farther offshore in poor weather than traditional tug/barge units. As a result, AIS data for the towing industry will show a wide variety of routes, both offshore and near-shore, without differentiating between the type of tug configuration.
    - AIS coding relies on operators to correctly code their AIS devices according to vessel type and other specifications. There has been confusion over how to code ATB units in past years, which will lead to misleading AIS data from earlier years. Marino Hwang, Kirby Offshore Marine, agreed to provide NROC with AIS coding information, which is included in Appendix Three.
    - A suggestion was made to look at seasonal trends in vessel traffic data by separating out relatively poor and fair weather months to look at traffic alterations.
- A concern was raised with the need to take into account future trends, in addition to the use of retrospective data such as the data used in the AIS-derived maps. This theme came up several times throughout the meeting. For example, there was concern expressed that the Atlantic Coast-Port Access Route Study (AC-PARS), which was designed to address this critical future trends issue, may never be finished by the Coast Guard.
- Lastly, participants noted that it was critical for Northeast RPB to understand the economic, safety, and traditional roles of the tug/tow industry in the context of potential wind energy development. There were comments that pointed out that there are specific reasons for the use of tug/tow routes, as shown in some of the AIS-derived maps, and potential

implications/impacts from wind energy development. This led to an overview of the tug/tow industry, as described below.

Tug/tow industry overview

John Harms from the American Waterways Operators led a discussion describing the general characteristics of the tug and barge community. This included input from the operators in the room, and resulted in the following:

- There are three main types of tug and barge operations:
    - Tugs connected to a barge by a wire that can be up to 2600 feet long with a catenary (slack wire underwater) up to 80 foot depth, depending on weather and the distance between the tug and barge (nicer weather = further offshore). Wind may blow a barge being towed up to several hundred feet to either side of a tug's trajectory. In such operations, barges are rarely following directly behind a tugboat and may be up to 60 degrees off the stern of a vessel.
    - Barges in the notch, where tugs slip into a notch in the back of a barge and push from behind. Such operations can operate in relatively calm seas but must detach and place a barge on a wire during adverse weather.
    - Articulated tug barge units (ATB) which have a much larger notch; the tug is rigidly connected to a barge via metal pins. ATBs have a deeper draft, can travel at faster speeds, and can go farther offshore in worse weather than traditional operations.
- Tug routes are well established and have been used for decades (or longer). Route planning is critical to safe, economic tug operations and movement of commerce. Factors affecting route planning include what a tug is towing, weather, fuel costs, and other vessel traffic.
- Tug and barge vessel speeds varies between one and 12 knots and are generally at much slower speeds than most other cargo vessels. As a result, tug operators avoid waterways (or TSS routes) used by faster, deeper-draft vessels for safety reasons. Adverse weather may decrease speeds to one knot or less (essentially, tugs may be in a holding position to wait for storms to subside). ATBs may operate at the higher end of that range in more severe weather than other types of operations.
- Adverse weather may significantly affect tug routes. For safety reasons, following routes closer to shore that provide easier access to ports of refuge are critical.
- Fuel costs account for approximately 50% of transit costs, so alterations of existing or historic routes may have a significant effect on the cost of moving cargo if travel distances increase. A tug typically uses hundreds of gallons of fuel per hour, with a typical trip from New York to Boston taking up to 36 hours. So delays and alterations of routes are a significant concern.
- Route alterations may also result in the delay of the delivery of goods within anticipated timeframes, which may result in penalties for operators and ultimately additional costs for

consumers. An example was given related to the food supply in the New York region, which is dependent on barge traffic.

- The deepening of the Panama Canal will increase deep-draft, international ship traffic, mostly in the handful of Atlantic Seaboard ports with sufficiently deep harbors. With larger ships calling on a smaller number of ports, barge traffic will likely increase as a cost-effective way to transport goods to smaller ports incapable of handling Post-Panamax vessels.

A significant amount of time was spent discussing issues related to potential offshore wind energy development. These concerns included the following:

- The location of wind energy farms may require tugs to choose between travelling closer to shore in congested waters, or travelling farther offshore where more adverse weather occurs and the presence of larger and faster vessels may result in safety concerns.
- Interference with radar and other electronic systems on tugboats needs to be studied and steps taken to eliminate impacts.
- There was a discussion of the sea space necessary for tugs and barges to operate safely around wind installations and competing vessel traffic. The distance required for safe operations will vary depending on the characteristics of the waterway, weather, and other vessel traffic in the region. Tug operators consider any distance of less than a mile to be an "encounter" with another vessel or structure. Therefore, more distance is required for safe operations.
- A couple of meeting attendees discussed prohibiting wind energy development within approximately 16 miles of the coast line to address potential concerns with existing maritime traffic, recreation, and visual impacts.
- It is critical that the industry avoid a situation where tugs and barges are required to "zig-zag" through hazards. This zig-zagging is common in the Gulf of Mexico, but the presence of the Gulf Intracoastal Canal means that few barges on wire are towed in the region. No such alternative waterway exists in the Northeast.

Next Steps

The group agreed that several follow-up steps were desirable to address the following topics:

1. Further mapping to identify important gear switching/operational areas, as referenced above.
2. Further discussions of potential future trends and changes in vessel traffic due to the Panama Canal, short-sea shipping, gas/oil traffic, and other economic changes.
3. Further investigation of the potential to break-out ATB traffic in AIS maps.
4. Continued coordination with the Mid-Atlantic regional ocean planning effort
5. Additional engagement of AWO members and other representatives of the ports and shipping communities.

To address these topics, the group agreed on the following next steps:

1. Meet with the NY Harbor Safety Operations Committee and representatives of the Mid-Atlantic planning effort at one of its upcoming meetings to focus on topic 1 above. Ocean planning staff would come prepared with maps/charts to mark up. Additionally, ocean planning staff will provide an update on the work MARAD and others can undertake to compile existing information on future trends. Note that the tentative plan as of early 2015 is to target March 18 for this meeting.
2. Mr. Weber to investigate Topic 3 and report back to the group.
3. Mr. Weber to work with John Harms and other members on Topic 5 to ensure participation of members of the tug industry across New England.

APPENDIX 1

Meeting Agenda and Participants

Northeast Regional Ocean Council

Tug and Barge Sector Specific Meeting

Date: Monday, November 24, 2014
Time: 1:00 pm EST
Location: U.S. Custom House, 1 Bowling Green, New York, NY 10004

Objectives for the meeting

- Advance NROC's and the Northeast Regional Planning Body's understanding of the tug and barge industry
- Advance the tug and barge industry's understanding of the status of ocean planning in the region, and NROC's role and the Northeast RPB's role in the process
- Identify ways NROC can assist the tug and barge sector in the ocean planning process

Suggested outcomes of the meeting

- Written summary of the meeting to be delivered to the Northeast RPB
- Increased engagement, collaboration, and relationship building among parties

1:00 PM Welcome, introductions and purpose of meeting

1:15 PM Background on overall ocean planning efforts in New England

1:45 PM Overview of Tugboat and Barge Industry in the Northeast

a. Types of vessels
b. Established operations and practices
    i. Speed
    ii. Routes
    iii. Variations due to weather

c. Potential impacts of ocean planning process:
    i. Safety concerns
    ii. Economic concerns

2:30 PM Future work, with focus on:

a. Engagement
b. Further information development

3:00 PM Conclusion and summary of next steps

3:15 PM Adjourn

Meeting attendees:

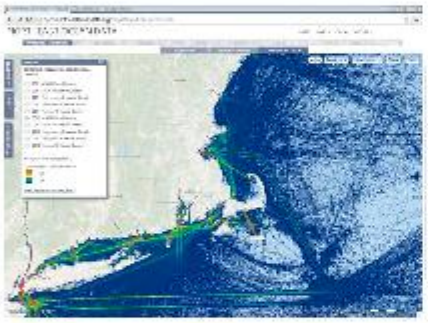
John Harms, American Waterways Operators
Eric Johansson, Tug and Barge Committee
John Bowie, Vine Brothers
Marino Hwang, Kirby Offshore Marine LLC
Andrew McGovern, Sandy Hook Pilots Association
William McDowell, US Maritime Administration
Steven Furlough, Dann Marine Towing
Dan Hubbard, US Coast Guard
Michele Desautels, US Coast Guard
John Weber, NE Ocean Planning staff

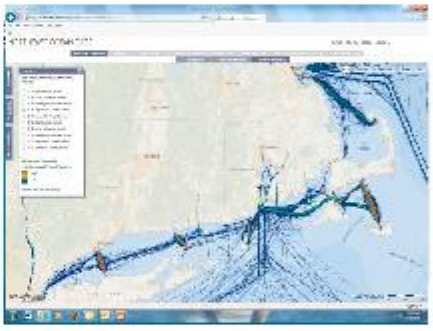
APPENDIX TWO

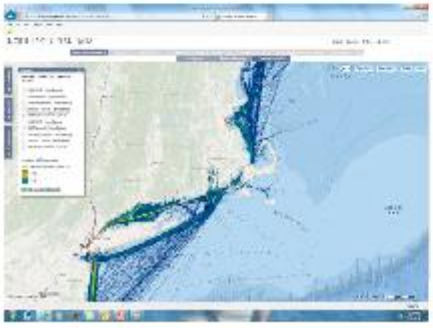
Slide Presentation


Northeast Regional Planning
November 2014
OCEAN PLANNING
NORTHEAST


NORTHEAST OCEAN DATA
MARITIME COMMERCE
AQUACULTURE
OTHER MARINE LIFE
www.NortheastOceanData.org








Timeline: Dec 2014 to June 2016
2014
2015
2016
OCEAN PLANNING
NORTHEAST

APPENDIX THREE

AIS coding summary

2-digit numeric codes for *Type of Ship and Cargo Type* are composed from 1st and 2nd digit columns; or as defined in columns 2x, 3x, or 5x. The terms used are as defined in IMO SOLAS, 46 U.S.C. 2101 or 33 CFR 140.10. Blue and/or italic text denotes amplifying text not found in the original source (ITU-R M.1371-4)				
1st digit	**[1x|4x|6x|7x|8x|9x] 2nd digit**	**[2x] U.S. specific vessels**	**[3x] others "engaged in"**	**[5x] special craft**
0 – Not available *DO NOT USE*	0 – All ships of this type	*20 – WIG (Wing In Ground) vessels*	30 – Fishing*	50 – Pilot vessel
1 – Reserved for future use *DO NOT USE*	1 – Carrying DG (Dangerous Goods), HS (Hazardous Substances), or MP (Marine Pollutant), IMO hazard or pollutant category A/X; *or use 41/61 if carrying < 12 passengers for hire*	*21 – Engaged in towing other than barges by pushing ahead or hauling alongside (i.e. articulated tug-barges, push-boats, workboats); whose dimensions (ABCD values) solely represent the overall dimensions of the vessel**	31 – *Engaged in* towing *by pulling (not pushing or hauling)*	51 – Search and rescue vessels, *i.e. USCG boats, USCG Auxiliary, assistance towers*
2 – WIG *or the vessels denoted in column [2x] operating in U.S waters, including the U.S. EEZ*	2 – Carrying DG, HS, or MP, IMO hazard or pollutant category B/Y; *or use42/62 if carrying ≥ 12 passengers for hire*	*22 – Engaged in towing barges by pushing ahead or hauling alongside (i.e. articulated tug-barges, push-boats, workboats); whose dimensions (ABCD values) represent the overall rectangular dimensions of the vessel and its tow**	32 – *Engaged in* towing *by pulling (not pushing or hauling)* and length of the tow exceeds 200 meters (656 ft.)	52 – *Harbor* tugs
3 – Other vessels *engaged in actions denoted in column [3x]*	3 – Carrying DG, HS, or MP, IMO hazard or pollutant category C/Z; *or use 43/63 for ferry service carrying < 150 passengers*	*23 – Light boats (i.e. push-boats or work boats not engaged in towing; whose dimensions (ABCD values) solely represent the vessel dimensions of the vessel**	33 – Engaged in dredging, or underwater operations, *(e.g., salvaging, surveying, but, not diving) **	53 – *Fish, offshore or* port tenders
4 – HSC *(Hi-speed Craft) or passenger vessels < 100 GT, including tenders*	4 – Carrying DG, HS, or MP, IMO hazard or pollutant category D/O; *or use 44/64 for ferry service carrying ≥ 150 passengers*	*24 – Mobile Offshore Drilling Units (MODUs), Liftboats, Floating Production Systems (FPS), Floating Production Storage and Offloading Vessels (FPSO)*	34 – Engaged in diving operations*	54 – *Commercial response* vessels with anti-pollution facilities or equipment
5 – Special craft, *per column [5x]*	5 – Reserved for future use *DO NOT USE*	*25 – Offshore Supply Vessels (OSV)*	35 – Engaged in military operations	55 – Law enforcement vessels, *i.e. USCG cutters, marine police*
6 – Passenger ships *≥ 100 GT*	6 – Reserved for future use *DO NOT USE*	*26 – Processing vessels (i.e. fish)*	36 – Sailing *vessels**	56 – Spare–for assignments to local vessels *as designated by the USCG Captain of Port*
7 –Cargo *(freight)* ships, *including Integrated Tug-Barge (ITB) vessels*	7 – Reserved for future use *DO NOT USE*	*27 – School, scientific, research or training ships*	37 – Pleasure craft *(recreational vessel)*	57 – Spare–for assignments to local vessels *involved in a marine event*
8 – Tankers	8 – Reserved for future use *DO NOT USE*	*28 – U.S. public or governmental vessels*	38 – Reserved for future use *DO NOT USE*	58 – Medical transports (as defined in the 1949 Geneva Convention and Additional Protocols) *or similar public safety vessels*
9 – Other types of ship	9 – No additional information *contact cgnav@uscg.mil prior to use*	*29 – Autonomous or remotely-operated craft*	39 – Reserved for future use *DO NOT USE*	59 – Ships according to RR Resolution No. 18 (Mob-83)