Northeast Regional Ocean Planning White Paper Update: Overview of the Maritime Commerce Sector in the Northeastern United States

Summary of 2015 Engagement of the Ports and Shipping Community

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Introduction

The purpose of this report is to summarize major themes and outcomes from a series of targeted outreach efforts by Northeast US regional ocean planning staff to the port and shipping community. This outreach included in-person meetings (at least one in each New England state and New York City) and phone calls with national trade associations and other regional leaders and industry representatives. This outreach was conducted to help the Northeast Regional Planning Body ensure accurate baseline data and obtain an understanding of future trends for incorporation into the Northeast regional ocean planning process. This document also includes key findings from background research conducted by aggregating and summarizing regional port strategic planning documents. This document was prepared by the Consensus Building Institute (CBI) and overseen by Patrick Field, CBI Managing Director. The lead researcher was Kate Longley-Wood of SeaPlan, under contract to CBI.

Maritime commerce, which for purposes of this document includes commercial shipping (tankers, cargo vessels, tugs and barges) and passenger vessels such as ferries and cruise ships, is affected by both socioeconomic and geopolitical factors at local, regional, national, and international scales. These driving forces must be considered when establishing baseline data and anticipating future trends for ocean planning purposes. This document updates a recent overview of the status of the sector and analysis of emerging trends found in a 2013 white paper commissioned for the Northeast regional ocean planning effort.[1]

This report is organized into the following sections:

Introduction - This section explains the impetus for the report and gives an overview of the background and methodology.

[1] Kite-Powell, H. (2013). *NROC White Paper: Overview of the Maritime Commerce Sector in the Northeastern United States*. Retrieved from http://neoceanplanning.org/wp-content/uploads/2013/12/Maritime-Commerce-White-Paper.pdf

Summary of Findings – This section provides a brief summary of key findings which are described in greater detail in the report.

Methodology Overview – This section provides a brief explanation of how the document was prepared.

Baseline Data – This section focuses on the role of AIS data in providing baseline data on vessel traffic and provides an overview of industry discussions related to how best to parse, display, and interpret the data in the context of ocean planning. It also gives an overview of the industry review of current pilot boarding area data.

Emerging Trends - This section uses both background research and discussions with industry members to summarize both the context and drivers for emerging trends, as well as trends related to each sector.

Conclusions - This section synthesizes key points within the context of ocean planning in the Northeast US.

Appendices - Appendices provide greater detail on meetings, background research and AIS data.

Summary of Findings

Details on these findings are provided in the rest of this report. In general, these findings should be construed for their importance to the regional ocean planning effort and are intended to focus on topics such as the spatial patterns of maritime transportation, potential trends in the industry that could lead to future changes in those spatial patterns, and the "footprint" of related topics such as the location of pilot boarding areas. These topics are all important considerations for siting additional activities, managing resources and human activities, and ocean planning.

- Baseline Automatic Identification System (AIS) data appear to be generally accurate when broken out by sector (e.g., tug/tow, tanker, cargo, passenger vessel); however, using identification codes to identify traffic patterns below the sector level may result in misleading or inaccurate maps.
- In the future, industry members expect to see more ATB (articulated tug barge) traffic, which may result in shifts in traffic patterns. Most existing coastal tug-tow routes are likely to remain the same, although the number of vessels using these routes may fluctuate. New routes are emerging in response to new opportunities such as the transport of petroleum products to and from Atlantic Canada. Additionally, there is interest in pursuing additional services (such as the Maine Port Authority's plans for a barge service connecting Portland and New York City).
- There was general consensus that while tanker routes were unlikely to change, certain routes were likely to see more traffic, particularly in Maine ports, as well as in Bridgeport, Connecticut, where there has been a small but steady increase in tanker traffic in recent years.
- The expansion of the Panama Canal, to be completed in 2016, will increase the maximum allowable draft of ships passing through the canal. East coast trade via large ships using the Suez Canal is also increasing. These trends will require upgrades at ports that wish to accommodate the larger vessels, as well as likely additional dredging and dredge spoil disposal.

While New England ports may not be the primary beneficiaries of all of this new direct traffic, there will be increases in "feeder" or secondary traffic from other East coast ports.

- Cargo vessel capacity and draft are expected to continue to increase, and ports have begun to plan for these increases by expanding navigation channels and terminal capacity in order to remain competitive.
- Many ports are focusing on enhancing inter-modal connectivity in order to facilitate the movement of cargo to and from ports. This is being accomplished by increasing rail capacity in ports as well as by new and existing marine highway barge services.
- Energy development, either offshore wind and natural gas LNG export, could impact port and maritime operations in several ways (for example, increased traffic associated with construction and/or operations of such facilities). However, it is not certain if more LNG facilities will be built in New England or offshore New York/New Jersey, and the future of off-shore wind development at a large scale is both uncertain and likely many years out given regulatory and permitting timelines.
- Environmental regulations, such as those intended to prevent ship strikes on North Atlantic right whales, and to reduce emissions, can impact vessel and port operations; local and state regulation variations may complicate operations.
- Information identifying the locations of pilot boarding areas, areas where tug/barge gear configurations are adjusted, and other such details are important to collect; these areas are used by the industry for specific reasons related to safety based on circumstances at specific ports.
- On a global and regional scale, the cruise ship industry is expanding. Cruise ship companies are increasingly calling in Northeast ports but port infrastructure limitations are currently hindering further growth at certain secondary ports in the region. Generally, cruise ship itineraries are available 12-18 months ahead of time.
- Some Northeastern ports are investing in cold storage and fish processing facilities to add value to supply chains and support fishing industries that use their ports.
- In summary, it is difficult to predict with any precision future changes in shipping in New England beyond a couple of exceptions described above, although port and vessel operations are generally expected to increase. Participants noted that even small annual increases in maritime trade could cumulatively be significant over time

Methodology

This report utilizes results from in-person meetings at various ports, phone calls, review of existing port plans and documents, and review of the previous White Paper.

In the late winter and early spring of 2015, Northeast regional ocean planning staff conducted outreach through a series of in-person meetings and phone calls across the planning region. In some cases, these were dedicated meetings to engage the maritime commerce industry or industry sub-group. In other cases, the topic of ocean planning was included as an agenda item in an already-existing meeting. In-person meetings took place in Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, and New York City. To engage industry members in Maine, ocean planning staff also conducted a series of phone calls with industry representatives. An overview of these meetings can be found in Appendix A.

Agendas from each meeting can be found in Appendix B, and a participant list can be found in Appendix C.

In addition to these meetings, ocean planning staff also held phone calls with representatives of national and international shipping organizations (including the Chamber of Shipping of America, American Waterways Operators, World Shipping Council, Intertanko, Passenger Vessel Association, and the Cruise Lines International Association). A main purpose of this outreach was to ensure that representatives of these organizations had the opportunity to provide their perspectives on this effort.

Prior to conversations in each state, background research was conducted on specific issues facing individual ports in Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut. The primary source documents for this research included a variety of publically-available strategic ports planning and economic analysis documents. An overview of these documents can be found in Appendix D. These documents were used to help identify current issues and concerns, basic statistics, and future trends and expectations for specific ports.

The purpose of these port summaries was to provide appropriate details and context to inform meeting discussions, as well as to provide supporting information for this paper. Other sources used to provide information for this paper are referenced as footnotes.

Baseline Data: AIS and Pilot Boarding Areas

AIS is a navigational tool which transmits real-time data on the location and characteristics of ocean-going vessels. Vessels engaged in international trade that are over 300 or more gross tons, as well as vessels carrying over twelve passengers on an international voyage, are required to have functional AIS systems aboard their ships.[2] Vessel operators use a two digit coding system to indicate vessel type and activity while in transit. A table detailing each of these codes can be found in Appendix E.

The Northeast Ocean Data Portal Working Group acquired AIS data from 2012 from NOAA Coastal Services Center (now NOAA Office of Coastal Management) via the US Coast Guard. Using trackline data from the USCG, the Working Group produced maps depicting vessel density for all traffic as well as for specific sectors and, in some cases, vessel identification codes. The Northeast Ocean Data Portal Working Group also developed a dataset depicting the locations of pilot boarding areas using the United States Coast Pilot and the Massachusetts Office of Coastal Zone Management's pilot boarding area dataset. Examples of vessel density maps from prior years as well as pilot boarding area data can be found on the Northeast Ocean Data Portal.[3]

Industry members were asked to review the density maps, which were broken out by the following vessel categories:

[2] http://www.navcen.uscg.gov/?pageName=AISCariageReqmts

[3] http://www.northeastoceandata.org/maps/maritime-commerce/#

- Cargo
- Tanker
- Passenger Vessel
- Tug-Tow

In response to suggestions from industry members during prior meetings, the tug-tow category was further broken down by the following AIS vessel codes:

- **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.
- **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.
- **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.
- **31** – Engaged in towing by pulling (not pushing or hauling)
- **32** – Engaged in towing by pulling (not pushing or hauling) and length of the tow exceeds 200 meters (656 ft.)
- **52** – Harbor tugs

Presenting these maps to industry members was a major component of this phase of targeted outreach to ensure accurate baseline data in the planning process.

The following are summaries of major themes captured in discussions related to the categorization and depiction of baseline data, broken out by industry.

Tug-tow

A key theme that emerged during discussions with the tug-tow industry was that breaking down the data by vessel codes (the six codes listed above) could lead to inaccuracies for several reasons. Participants noted that even when AIS is installed, operators may not be entering their codes accurately. Tug operators are also unlikely to switch their codes mid-transit when they routinely switch vessel configurations to account for changing sea states and vessel traffic. For example, tug operators routinely change from pushing a barge in a notch to towing it from behind when entering rougher weather, and will shorten up their tow line or change back to pushing in the notch when entering ports and other confined waterways. . Some participants referenced the TSAC (Towing Safety Advisory Committee) report that found that operators are regularly inputting incorrect data into AIS.[4]

There was a general consensus that the aggregated tug-tow data accurately represented the major routes; however, participants cautioned that not all AIS data will be sent to the USCG, and that there are AIS receiver limitations, leading to “blind spots” which may result in underestimates of vessel activity, particularly further offshore.

[4] Nutt, G.D. (2013). *Towing Safety Advisory Committee Report of the Subcommittee On: Automatic Identification System (AIS) Encoding for Towing Vessels (TASK 13-01).*

In the future, industry members expect to see more ATB (articulated tug barge) traffic. This trend is likely be reflected in AIS data by an increase in direct, farther offshore routes between major ports, due to the fact that ATBs are less limited by weather and more likely to use offshore routes to avoid high traffic areas nearer to shore. For example, ATBs might be more likely to use an outer Long Island route instead of going through Long Island Sound. Coastal tug-tow routes are likely to remain the same geographically, although the number of vessels may fluctuate; seasonal or month-to-month fluctuations, including an overall increase of tug-tow traffic in the winter, would also be expected to continue (and there was interest in continuing to look at such data analyses). One meeting participant suggested that the Panama Canal Expansion may lead to an increasing interest in lightering containers from New York and bringing containers via barge to New England ports, which would result in greater use intensity along established routes. Some participants predicted that certain ATB routes that are visible on the AIS maps will eventually begin to cluster into more consolidated trade routes and zones; however, not all participants agreed with this prediction.

Finally, AIS data was useful to indicate areas outside of certain ports (e.g., New York City) where tugs slow down considerably or stop in order to change gear configurations prior to entering a port. Other locations, such as the entrance to Buzzards Bay and the northern entrance to the Cape Cod Canal, were identified as places where tugs frequently pause to adjust towing gear. This type of information was important to collect in addition to the general route-type discussion.

Dry cargo

There was general consensus throughout the ports that overall, the maps provided an accurate representation of major routes used by dry cargo vessels, and that it was not necessary to introduce additional granularity using vessel codes, especially since cargo vessel traffic is likely to follow the TSS (traffic separation scheme) where present. There was agreement that some of the aberrant data was likely from survey vessels engaged in seafloor mapping activity. They noted that some seasonal variations in intensity were possible, especially if vessels were trying to take advantage of good weather windows, but that the routes themselves were unlikely to change, even when considering future scenarios associated with topics such as the Panama Canal expansion.

Tanker/LNG

In general, participants indicated that major tanker/LNG routes were accurately represented in the data. Some participants suggested that the AIS category is likely to include some petroleum barges that are being tugged or towed. Participants in Massachusetts made note of one erroneous route from the Cape Cod Canal into Boston that likely resulted from ATB operators using an incorrect code. New Hampshire participants also indicated that activity immediately adjacent to pilot boarding areas could represent vessels waiting for pilots. There was general consensus that while routes were unlikely to change unless oil exploration is re-opened on the East Coast, certain routes were likely to see more traffic, particularly in Maine ports, as well as in Bridgeport, Connecticut, where there has been a small but steady increase in tanker traffic.

Other Maritime Sectors

AIS data discussions involving other maritime sectors primarily revolved around cruise and passenger ferry data. Participants at the Connecticut and New Hampshire meetings stated that the depiction of limited cruise ship activity in Bridgeport and New Hampshire was accurate, though unlikely to change. In Massachusetts, participants pointed out an AIS blind spot between Plymouth and Scituate which likely results in a map that underestimates passenger vessel traffic in nearshore waters between those two locations. It was also noted that some AIS monitoring services turn off their antennas in the winter, which means that seasonal trends would be less likely to be captured. They also pointed out that traffic in Cape Cod Bay and around Race Point was likely due to whale watch vessels and possibly charter fishing vessel traffic heading to Stellwagen Bank, but that not all whale watch vessels were equipped with AIS and charter boats were unlikely to carry AIS equipment. Maine representatives noted that Portland, Bar Harbor, Rockland, and Eastport hosted the majority of cruise ship traffic in Maine, as depicted by AIS data, and also noted general growth patterns for those ports. In general, participants suggested that more recent data (2013) would more accurately depict ferry traffic since new services have developed in the last couple of years (for example, Fall River MA to Block Island).

Anticipated future trends for AIS data

In addition to the trends listed above, many participants agreed that future AIS maps will likely show overall greater intensity of use due to the fact that more vessels are choosing to use AIS systems, even when they are not required by law to do so. Vessel traffic on the whole will likely overall increase in the long term as existing transportation infrastructure is taxed by expanding populations; more near term considerations (e.g., timing of economic downturns, port-specific issues, and effects of infrastructure improvements) are hard to predict and will increase or in some cases decrease traffic in certain elements of the shipping industry Many participants suggested that it would be useful to look at AIS data across multiple years to better ascertain trends.

Pilot Boarding Areas

Meeting participants agreed that there didn't seem to be any missing pilot boarding areas in the dataset, but discussed how best to define buffers surrounding each location. In Massachusetts, participants noted that the precise location of a pilot boarding area may vary from ½ mile to 4 miles, depending on wind and sea conditions. They believed that a ½ mile buffer was appropriate, but cautioned that a larger buffer should be considered to avoid future use conflicts. Connecticut participants suggested a 1 nm (1.15 mile) buffer, but noted that during inclement weather, pilots are likely to board closer to the shore. New Hampshire participants agreed that pilots tend to board about 1 mile away from the reference buoy, but suggested shifting the pilot boarding area at the entrance to Portsmouth Harbor to the southeast to better characterize the areas where pilots are most likely to meet ships.

Emerging Trends

This section explores context and drivers for emerging trends as well as specific drivers per kind of shipping and port activity.

Context and Drivers

The following sections provide a brief overview of the context and drivers for current marine transportation issues, as identified in the NROC Overview of the Maritime Commerce Sector[1], as well as in the strategic planning documents identified in Appendix D.

Panama Canal expansion

The expansion of the Panama Canal, set to be completed in 2016, will increase the maximum allowable draft of ships passing through the canal from 39.5 feet to 49.9 feet. In order to attract business from these larger vessels, ports will need to upgrade and expand existing facilities and navigation channels to accommodate increasingly large post-Panamax Vessels. In addition to securing resources to complete these upgrades, ports will also need to find ways to properly dispose of dredged materials. The disposal of contaminated sediment requires additional considerations and resources.

Ports along the Atlantic seaboard have been preparing for the expansion of the Panama Canal by addressing dredging and other infrastructure needs. Various assessments of the potential impacts of the Panama Canal have identified various outcomes in specific ports either as a direct result of ships with increased capacity, or resulting from secondary or "feeder" traffic. In general, there does not appear to be an across-the-board consensus on what impacts will occur at specific New England ports, except that in general the result is anticipated to be growth.

Energy industry developments

Offshore energy development has the potential to drive expansion and upgrades of port infrastructure to support the installation and maintenance of offshore energy facilities. Although the future of Cape Wind is highly uncertain, since it was not able to secure sufficient power producer agreements with New England utilities, other proposed offshore energy developments, such as those off Maine, Massachusetts, Rhode Island, and New York will potentially require support facilities in nearby ports. The only current permitted offshore wind energy project under construction includes five turbines off Block Island. Identification of federal lease areas south of Massachusetts and Rhode Island is now complete, but the expected timeline for the completion of a construction and operations plan, a key document to finalize approval of an actual project, is at least five years out. The time for approval of such plans along with environmental review is uncertain, likely extending that timeline several more years prior to construction.

The future of LNG terminals, particularly regarding exports, is not entirely clear at this point. Nationally, most attention is likely to be focused on export facilities in the Gulf. However, the proximity of Northeast ports to Marcellus Shale gas makes the region an attractive site for export. One current project is Downeast LNG in eastern Maine, a proposed 3 million ton LNG import-export project. In 2014, Downeast LNG completed the FERC review process for its originally proposed LNG import project. The project initiated a new FERC filing in July of 2014 as a bi-directional (import and export) LNG project and in August of 2014 filed its DOE export request for Free-Trade and Non-Free Trade countries. In March of 2015 it received its FTA authorization from the DOE. The Port Ambrose project is a deepwater LNG import facility proposed approximately 19 miles southeast of New York City, with a pipeline connecting to existing gas infrastructure south of Long Island, New York. The proposal is under review by the US Coast Guard and US Maritime Administration pursuant to the Deepwater Ports Act, and a draft Environmental Impact Statement was issued for public review in December, 2014.

Regulatory frameworks

Various local, state, and national regulatory and resource management programs affect ports and maritime transportation and commerce. Changes in any of these programs can result in consequent changes to the patterns/intensity of vessel traffic. While outside the realm of this summary to provide an exhaustive overview of all of these programs, below are some of the considerations raised by meeting participants:

- Environmental regulations, such as those intended to prevent ship strikes on North Atlantic right whales, and to reduce air pollution emissions, can impact vessel and port operations. In 2007, the TSS in Cape Cod Bay was shifted to avoid high concentrations of endangered right whales. Speed restrictions are also imposed when right whales are present in high numbers. These measures impact ship schedules and can increase vessel transit time, and, by extension, costs, for those ships traveling in and out of Boston. Additionally, if specific local or state regulations that affect shipping operations vary within an operator's geography , that can be an additional burden for such operations.
- Air quality regulations and related activities (such as the designation of Emissions Control Areas) related to decreasing levels of particulate emissions from ship exhaust will likely result in increased costs for the shipping industry.
- Ownership structures and local land use at each port can support, limit, or otherwise impact port activities. Several states also report institutional inconsistencies when there is no entity to govern the entire port system, leading to inefficiencies and inadequate distribution of resources to ports within a given state.

Short sea shipping

Short sea shipping (sometimes also used synonymously with the US DOT Maritime Administration "Marine Highway Program") is an attempt to reduce highway congestion by moving cargo between coastal destinations over ocean, rather than land-based, routes. The future viability of short sea shipping in the Northeast is uncertain. Currently, there is a subsidized pilot project to develop a vessel and service design for an ATB-based Marine Highway operation between Portland and New York; however, it will likely be necessary to demonstrate that such a project could run without subsidies if other shipping companies are to follow suit. There are near-term questions as to whether short sea shipping can compete with truck-based shipping, even in the face of increasing land-based traffic and congestion in the Northeast US; however, automation of container handling at many terminals and other port enhancements are being pursued to help in this issue.

Tourism and cruise ship industry trends

On a global scale, the cruise ship industry is expanding, and cruise ship companies are increasingly making stops in Northeast ports. Growth in the tourism and cruise industry sector is especially apparent in Boston and several ports in Maine (Portland, Rockland, and Bar Harbor). Maine cruise industry representatives also noted growth in various sizes of vessels calling in Maine. Growth of the cruise industry sector in Portsmouth, New Hampshire is hindered by navigation channel depths and tidal

constraints, and in Newport Rhode Island, expansion is limited by a lack of berthing space. Other ports, such as Gloucester and New Bedford are seeking to increase cruise ship traffic.

Emerging Trends by Kinds of Shipping and Traffic

The following sections provide a brief overview of emerging trends, by kinds of shipping and traffic, as identified during meetings as well as in the strategic planning documents outlined in Appendix D.

Tug/Tow

As noted in the previous section on AIS data, future trends point to more ATB traffic. However, the dry bulk commodity industry (tugs moving sand and gravel, coal, construction debris, etc.) and many smaller firms will continue to employ standard tugs due to the highcapital cost of ATB operations. In one of the meetings, participants noted that as larger ships continue to account for a greater shares of freight (for example, following completion of the expansion of the Panama Canal), ATBs will begin to play a larger role in accommodating this growth and supplying services to smaller ports. ATBs are also able to operate in a broader range of weather conditions further from shore that allow them to sail between two ports in a straight line, rather than following the curvature of the coast. As a result, offshore ATB routes are emerging and are expected to grow in the future. One example is an emerging offshore route from Delaware Bay directly to Atlantic Canada. This effect may not be felt across all ports in New England, however.

Dry Cargo

In general, regional ports will need to increase the capacity of terminals and port infrastructure, and expand bridges and navigation channels to accommodate both larger vessels and larger amounts of cargo. Some ports are addressing this need through various infrastructure and navigation channel projects, including, but not limited to:

- The Port of Boston's Deep Draft Navigation Project, which would deepen the Main Ship Channel, Conley Turning Basin and the Lower Reserved Channel
- Expansion of the Port of Boston's Conley Terminal into the adjacent Coastal Oil property
- Widening of the turning basin and reconstruction of the Sarah Mildred Long Bridge in the Port of New Hampshire (Portsmouth)

These projects are expected to help retain existing business and attract additional volume.

Some Northeast ports, including the Port of New Bedford and Rhode Island ports are exploring the feasibility of becoming short sea shipping hubs, as the demand for short sea shipping is expected to increase to allow ports to handle increased cargo. Similarly, while a major container port facility does not appear to be feasible for the state of Connecticut, the 2012 Deepwater Ports Strategy Study identified a potential opportunity for a container feeder service in New Haven to serve nearby ports.

Other ports are looking to expand existing markets. The Icelandic steamship line Eimskip has changed its routes to allow for more frequent, direct container shipments between Europe and Portland. It is

expected that this will eventually lead toward a goal of weekly service by 2020. Weekly service will make Portland more competitive with the ports of Boston, New York, and Montreal, which all offer weekly container service.

The Analysis of the Massachusetts Port System Technical Memorandum,[5] as well as meeting participants in New York City stressed that because Northeast ports are situated relatively far away from the Panama Canal, Panamax vessels will not necessarily be the direct driving force of trends. North Atlantic, Mediterranean and Suez markets will likely continue to be target markets. However, the 2013 Panama Canal Expansion Study[6] does predict changes in service patterns and the need to accommodate post-Panamax vessels, especially for those vessels serving the Northeast Asia – U.S. East Coast route.

Tanker and LNG

Participants at the Port of Boston Maritime Working Group meeting noted that, on a regional basis, tanker traffic supporting petroleum-based products would only increase if oil exploration on the east coast were to re-open , in which case the increase would be dramatic. They also noted that some additional ports in Canada (Canadaport, located in St. John, New Brunswick on the Bay of Fundy) are looking to export LNG by pulling gas off Canadian pipelines, but shipping would be complicated as the tankers would have to pass through Canadian waters. There is also the possibility for gas to start being shipped up the east coast from the Gulf of Mexico in LNG tanker ships.

The Northeast Gateway LNG terminal, located near the entrance to the Port of Boston, had a shipment this winter and expects to have more in the upcoming year. There have been efforts to explore the possibility of exporting LNG via the Northeast Gateway, but to date this has been determined to not be economical and therefore they expect to continue importing. Also near Boston, replacement of the Chelsea Street Bridge is expected to alleviate air draft and lift span constraints associated with shipping liquid bulk into the port, meaning that larger vessels can now be accommodated.

There are barriers to exporting oil and other petroleum products from existing facilities in the northeast: the expense of reverse engineering existing infrastructure; political and legal challenges; and the need to change federal law. In Bridgeport, CT, the volume of tanker traffic has since increased, and there is additional shipping traffic from coal operations. In addition, companies are phasing out smaller tankers and barges, and there will be fewer of them in the future.

Passenger Transportation (ferry and cruises)

Maine and Boston-based cruise industries appear to be growing and are expected to continue to do so. In Portland Maine, the newly-completed Ocean Gateway Megaberth is expected to expand the growth of the industry by accommodating vessels over 900 ft. Additional shore-side improvements in Bar

[5] Ports of Massachusetts Strategic Plan (2013). *Technical Memorandum #4: Analysis of the Massachusetts Ports System*. Retrieved from http://www.massdot.state.ma.us/Portals/17/docs/ports/TechMemo4Nov142013access.pdf

[6] US Department of Transportation Maritime Administration (2013). *Panama Canal Expansion Study Phase I Report: Developments in Trade the National and Global Economies.* Retrieved from http://www.marad.dot.gov/documents/Panama_Canal_Phase_I_Report_-_20Nov2013.pdf

Harbor may also lead to enhanced capacity there. Growth in Maine appears to include both larger vessels (carrying thousands of passengers) and smaller, weekend-excursion trips (hundreds of passengers). In Boston, the cruise industry is centered on the Black Falcon Terminal. If growth continues over the long term, the City will need to explore additional options for dockage space, parking, and possibly a second terminal to accommodate larger vessels.

Other Northeast ports are interested in capturing a share of the growing cruise-based market. Gloucester has invested in Cruiseport Gloucester, a passenger terminal with general marine and visitor amenities. In New Bedford, cruise ship visits to the port have been increasing and there is support for smaller-scale excursion cruise activities.

In Newport, Rhode Island, the cruise market is likely to remain limited without enhanced dockside infrastructure to reduce or eliminate tendering. In areas such as Connecticut where cruise ship traffic is unlikely to increase, there are potential opportunities by expanding shore-based excursions, particularly in New London. Similar ideas have been proposed in Maine, which would capitalize on railway connections to Freeport, Kennebunkport, and the White Mountains.

In some (particularly urban) areas, ferry operations are likely to increase. In Boston, meeting participants predicted that commuters would look to ferries as they become increasingly frustrated with declining roadways, subways, and commuter rails. In Bridgeport, ferry service providers expect continued growth, which will also come with requirements for expanded parking and queuing facilities. The proposed relocation and expansion of the Bridgeport ferry to the Barnum Landing location is expected to result in a total of 347 jobs by 2020. Existing ferry services that serve island communities in Massachusetts and Maine are anticipated to continue; many of these ferries are the sole means of reaching the smaller communities.

Pilots

Pilots in Maine generally agreed that existing information captured traffic offshore Maine well. In Massachusetts, Massport, the USCG and Boston pilots are looking to formally establish a deep draft anchorage area near the Boston Pilot Boarding Area; however, there is unexploded ordnance in that area. This area is outside port limits and therefore, ships anchoring in this location don't incur any fees or require permits or crew contracts.

Connecticut meeting participants noted that the pilot boarding area located off of Point Judith, Rhode Island may be moved to an area off Watch Hill in the future to locate it within Connecticut waters. There have also been efforts to work with the USCG to move the existing boarding area to the west/north.

New Technology Effects

Many ports in the Northeast have the potential to, or are actively positioning themselves to, support future offshore energy development. The Port of New Hampshire's flexibility in cargo handling capabilities puts it at an advantage when it comes to servicing emerging technologies. In Maine, the continued investment in the state's Three-Port Strategy provides resources in preparing ports to handle cargo related to offshore energy. Maine ports have been actively educating the offshore wind industry on the advantages of using Maine ports to support future developments.

The City of New Bedford has taken steps to draw offshore energy business to the port. The Massachusetts Clean Energy Center (MCEC) and the City have started a project to create the New Bedford Marine Commerce Terminal, which will support the construction, assembly, and the deployment of wind turbines. An increase in traffic is expected at the new terminal. There have already been deliveries to the terminal scheduled, and much effort has been dedicated to bringing new cargo, including wind farm components, to the terminal.

In Rhode Island, the Deepwater Wind project is expected to drive port business and job creation, especially in Quonset at the Port of Davisville. A marine construction firm in the Quonset Business Park at the Port of Davisville in Rhode Island is manufacturing pieces of Deepwater Wind's turbine foundations, and Deepwater Wind has expressed interest in developing a landside operations base here. However, future developments depend on successful agreements between wind farm developers and electric utilities.

Fishing and Fish Processing

Some Northeastern ports are investing in cold storage and fish processing facilities to support the fishing industries that use their ports. In Boston, Massport and the Boston Economic Development and Industrial Commission are developing a modern fish processing industry near the existing Fish Pier. In Bucksport, Maine, the 2014 opening of Central Maine Cold Storage means that Maine fishermen will have better access to freezing capacity and cold storage space.[7] In Connecticut, the catch from the New London fleet is currently transferred to New Bedford for processing and distribution; however Connecticut's 2012 Deepwater Ports Strategy Study recommends the state consider investing in ice and refrigeration equipment at the Thames River Seafood Cooperative.

In Massachusetts ports where fishing is a major industry, ports are grappling with quotas and reduced stock. In New Bedford, scallop quotas are expected to affect some fishermen in the short-term, but in the long-term, management actions to ensure stock sustainability are expected to yield increased harvests and revenues. In the meantime, the City is working to identify compatible industries which benefit from investment in those resources necessary for a thriving fishing industry. Such industries could include professional maritime trades, marine research, renewable energy, and climate change research. The Port of Gloucester is expecting to remain a hub for fishing, landing and processing groundfish when the stock rebounds.

Landside Access

Many ports are focusing on enhancing inter-modal connectivity in order to facilitate the movement of cargo to and from the ports. In Maine, the proposed Rail-to-Port Triangle initiative will leverage proposed and current infrastructure investment to enhance connections between Portland, Brunswick and Lewiston/Auburn. In Massachusetts, second generation double-stack clearance along the CSX freight rail line means that there will be increased cargo capacity for container shipments that are

[7] Coperthwaite, H. & Clime, R. (2015). *Maine Seafood Study: A set of tools for integrating Maine seafood into food distribution systems.* Retrieved from: http://www.ceimaine.org/wp-content/uploads/2015/01/Maine-Seafood-Study.pdf

shipped to Worcester by truck. Additionally, extension and reactivation of Track 61 in the Port of Boston could mean on-dock rail access at the Massport Marine Terminal and the Boston Marine Industrial Park bulk cargo handling and cold storage facilities. This could handle up to 6,000 rail carloads per year. Connecticut's 2012 Deepwater Ports Strategy Study recommends that the state invest in rail access and rail yard expansion projects in New Haven in order to take advantage of increased business opportunities in competitive markets.

Conclusions

In general, ocean planning depends on evaluating industry needs and compatibility in the face of an uncertain future. In some limited cases there is enough information to make reasonable predictions in the face of known drivers. In general, other influential events or conditions, such as economic downturns, are harder to predict.

In the Northeast, predictable, emerging trends include increased use of ATBs, increased growth in the cruise ship industry, and overall increases in the size and capacity of cargo vessels (as well as future increases in land-side highway congestion). In many cases, port infrastructure is already adjusting to accommodate these changes. Other trends are harder to predict. While there is strong support for short sea shipping from many industry groups and ports, some remain skeptical that short sea shipping is economically viable in the near future. Offshore energy development also introduces uncertainty into the planning process. While many ports are poised to support and benefit from nearby offshore energy development, the future of many of these projects is uncertain, and impacts these developments will have on vessel traffic patterns is not clear. From a data perspective, existing AIS data are successful in portraying major routes, and these routes are expected to stay relatively static in the foreseeable future; however, future developments are likely to affect the intensity of traffic traversing these routes. High-quality, stakeholder-endorsed baseline data as well as an understanding of future trends is the key successfully considering maritime commerce in the context of ocean planning.

Appendices:

A. Table of meeting dates, times, locations, and meeting focus (e.g. tug and barge or general focus)
B. Meeting agendas
C. List of meeting participants and affiliations
D. List of source documents for background research (source, year, length, purpose, link)
E. Table of AIS vessel identification codes

Appendix A – Meeting dates, times, locations, and meeting focus

Date	Meeting Length	Location	State	Meeting Focus
February 10, 2015	30 minutes	Phone call with World Shipping Council	Washington DC	Ocean planning update and issue identification with John Butler
February 13, 2015	30 minutes	Phone call with Intertanko	Alexandria, VA	Ocean planning update and issue identification with Joe Angelo
February 24, 2015	30 minutes	Phone call with Cruise Lines International Association	Washington DC	Ocean planning update and issue identification with Bud Darr
March 2, 2015	30 minutes	Phone call with Passenger Vessel Association	Washington DC	Ocean planning update and issue identification with Ed Welch
March 10, 2015	2 hours	Boston Fish Pier	MA	Meeting of the Port of Boston Maritime Working Group
March 18, 2015	2 hours	Fort Wadsworth DLA Building, Staten Island	NY	Meeting with the USCG, the American Waterways Operators, NY/NJ Port Authority, USDOT MARAD, mid-Atlantic Data Portal team, and the New York Tug and Barge Committee
March 18, 2015	30 minutes	Pease Development Authority Division of Ports and Harbors Office, Portsmouth	NH	Presentation for the New Hampshire Port Authority
May 8, 2015	60 minutes	Quonset Development Corporation	RI	Meeting with Port Director and Planning Director, Quonset Development Corp., RI Coastal Resources Center
May 14, 2015	30 minutes	Bridgeport & Port Jefferson Steamboat Company, Bridgeport	CT	Presentation at the Bridgeport & Port Jefferson Steamboat Company Board of Directors Meeting
May 19, 2015	90 minutes	USCG Sector SE New England	RI	
May 19, 2015	90 minutes	Northeast Marine Pilots	RI	
Various	30-90 minutes	Phone and in-person presentations at Maine Pilots Association, Port of Portland Propeller Club meetings	ME	Various meetings and phone calls with Maine Ports Director, Maine Director of Cruise Marketing, Maine Pilots Association, Port of Portland Propeller Club
Various	30-90 minutes	Phone calls and in-person meetings with Chamber of Shipping of America	Washington DC	Ocean planning update and issue identification with Sean Kline and Kathy Metcalf
Various	30-60 minutes	Phone calls with American Waterways Operators	Washington DC	Ocean planning update and issue identification with John Harms

Date	Meeting Length	Location	State	Meeting Focus
May 29, 2015	60 minutes	Meeting with US Navy Undersea Warfare Center staff	RI	US Navy activities in Narragansett Bay and offshore
May 29, 2015	60 minutes	Meeting with Chris Myers, Block Island Ferry	RI	Discussion about AIS ferry data

Appendix B – Meeting agendas

Northeast Ocean Planning
Port of Boston Maritime Working Group
Fish Pier Maritime Conference Room 1 East
March 10, 2015

Objectives for the meeting

- Share maps of port and shipping operations
- Obtain input on missing or needed information, including important routes, operational areas, and interactions with other existing or proposed maritime activities
- Understand potential future trends that could change port and shipping operations
- Make connections for future outreach about regional ocean planning and Port of Boston operations

Agenda

1:00 Welcome & Introductions

1:10 Tug/Tow
- Review 2012 AIS maps for codes 21, 22, 23, 31, & 32
- Routes, operational areas, buffers and best practices for each activity
- Future trends for each activity

1:30 Dry Cargo (container, break-bulk, and bulk)
- Review 2012 AIS Cargo maps. Are there additional AIS breakdowns that make sense?
- Routes, operational areas, buffers and best practices
- Future trends

1:50 Tanker & LNG
- Review 2012 AIS Tanker maps. Are there additional AIS breakdowns that make sense?
- Routes, operational areas, buffers and best practices
- Future trends

2:10 Passenger (ferry and cruise)
- Review 2012 AIS Passenger maps. Are there additional AIS breakdowns that make sense?
- Routes, operational areas, buffers and best practices
- Future trends

2:30 Pilots
- Review pilot boarding area and other operation/navigation maps
- Operational areas, buffers and best practices
- Future trends

2:50 Other potential analyses across activities
- Changes over calendar year (monthly/seasonal - review AIS time slider)?
- Changes year over year?
- Other?

3:00 Wrap up

Northeast Regional Ocean Council

Tug and Barge Sector Specific Meeting

Date: March 18, 2015
Time: Approximately 12 pm EST (immediately following Harbor Safety Operations meeting)
Location: Fort Wadsworth, Staten Island, NY

Objectives for the meeting

- Continue previous discussion between tug and barge industry and regional ocean planning
- Advance regional ocean planning understanding of the tug and barge industry by reviewing specific data products derived from AIS
- Understand trends in tug and barge industry and their impact on marine operator needs

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

Meeting will start following the end of the Harbor Safety Operators meeting, so times below are approximate

12:00 PM Welcome, introductions and purpose of meeting (including quick re-cap of November 24 meeting)

12:15 PM Review of AIS-derived map products, followed by discussion and identification of:

a. Areas where unique operations exist in the Northeast that are not captured by AIS data, including:
    i. Areas used as anchorages
    ii. Routes used during inclement weather
    iii. Areas where towing gear is regularly adjusted
b. Recent (2013-present) "routes" or other activity areas in use not captured by AIS data
c. Other issues with map products that may distort what is actually happening on the water

1:00 PM MARAD presentation of trends and emerging issues
Bill MacDonald will provide presentation, followed by group discussion

1:55 PM Conclusion and summary of next steps

2:00 PM Adjourn

Appendix C – List of meeting participants and affiliations

Name	Affiliation/Title	Meeting Attended
George Lee	Boston Towing and Transportation	MA
Brad Wellock	Massport	MA
Nick Napoli	NROC	MA, NH, CT
Rachel Shmookler	RPS ASA	MA, NY
Bill McDonald	Maritime Administration	MA, NY
Mark Cutter	USCG	MA
Angel Montanez	Master Mariner	MA
Pete Gilson	MA Boating and Yacht Club Association	MA
Andy Hammond	Boston Pilots	MA
Marty McCabe	Boston Pilots	MA
Jeff Havlicek	Excelerate Energy	MA
Steve Palmer	Moran Shipping	MA
Kate Longley-Wood	SeaPlan	MA, NY
William Grossman	USCG	NY
Jeff Yunker	USCG	NY
Michele DesAutels	USCG	NY
John Harms	American Waterways Operators	NY
Matt Campo	Rugers/Mid-Atlantic ocean planning portal	NY
Tony MacDonald	Monmouth University Urban Coast Institute/Mid-Atlantic Ocean Planning	NY
Eric Johansson	Tug and Barge Commission	NY
Dan Pastore	Port Authority of NY/NJ	NY
John Weber	NROC	NY, ME
Brad Cook	NH Division of Ports and Harbors	NH
Don Coker	Maritime/Public Affairs	NH
Roger Groux	PDA Liaison	NH
Chris Holt	Dredging	NH
Esther Kennedy	Government	NH
Chris Snow	Moorings	NH
Various attendees	Various	CT
John Henshaw	Director, ME Port Authority	ME
Amy Powers	Director, ME Cruise Ship Marketing	ME
Brian Downey	Marine Compliance Solutions LLC	ME
Capt. Prentice Strong	Penobscot Bay River Pilots	ME
Tom Robbens	Port of Portland Propeller Club	ME
Charles Weeks	Maine Maritime Academy	ME
Shawn Moody	Chase Leavitt and Co,	ME
Bob Peacock	Eastport Pilots	ME
Evan Matthews	Quonset Development Corp.	RI
Katharine Trapani	Quonset Development Corp.	RI
Jen McCann	URI CRC	RI
Ed Welch	Passenger Vessel Assoc.	Phone call
Sean Kline	Chamber of Shipping of America	Phone call
Kathy Metcalf	Chamber of Shipping of America	Phone call

Name	Affiliation/Title	Meeting Attended
John Butler	World Shipping Council	Phone call
Joe Angelo	Intertanko	Phone call
Bud Darr	Cruise Lines International	Phone call
Paul Costabile	Northeast Marine Pilots	RI
Howard McVay	Northeast Marine Pilots	RI
Sean Bogus	Northeast Marine Pilots	RI
Ed LeBlanc	USCG	RI
Chris Tompsett	Naval Undersea Warfare Center	RI
Chris Myers	Block Island Ferry	RI

Appendix D – List of source documents for background research

Appendix D – List of source documents for background research

State	Port(s)	Report Title	Prepared by	Prepared for	Year	Purpose of document	Link to source
CT	New Haven, Bridgeport and New London	Connecticut's Deep Water Port Strategy Study	Moffatt & Nichol in association with Beta Group	State of Connecticut	2012	To assist the state in development and implementing a long-term strategy for the economic development of Bridgeport, New Haven, and New London	http://www.governor.ct.gov/malloy/lib/malloy/ct_deep_water_port_strategy_study_-_final_report_full_-_sept_2012.pdf
MA	Gloucester	Gloucester Municipal Harbor Plan and DPA Master Plan	City of Gloucester	City of Gloucester	2014	Prepared under the Massachusetts Office of Coastal Zone Management regulations as an amendment to the 2009 MHP and DPA Master Plan	http://www.gloucester-ma.gov/DocumentCenter/View/3118
MA	Boston, Fall River, Gloucester, New Bedford, and Salem	The Ports of Massachusetts Strategic Plan Technical Memorandum Number 4: Analysis of the Massachusetts Port System	Massport Compact	MA Department of Transportation	2013	To evaluate the ports of the Massachusetts Ports Compact from a market-based perspective and to provide the context for future recommendations	http://www.massdot.state.ma.us/Portals/17/docs/ports/TechMemo4Nov142013access.pdf
MA	New Bedford	New Bedford/Fairhaven Municipal Harbor Plan	Fort Point Associations, Inc.; Apex Companies, LLC; Urban Harbors Institute; FXM Associates	City of New Bedford and Town of Fairhaven	2010	Prepared under the Massachusetts Office of Coastal Zone Management regulations as a renewal of the 2002 New Bedford/Fairhaven Municipal Harbor plan	http://www.epa.gov/region1/superfund/sites/newbedford/504398.pdf
NH	Portsmouth	Economic Development Draft Report	City of Portsmouth	City of Portsmouth	2014	Prepared for inclusion in the Existing Conditions Report for the 2-15 Master Plan Update	http://planportsmouth.com/masterplan/FinalPortsmouthEconomicDevelopmentBaseline.pdf
NH	Portsmouth and Newington	The Economic Impact of the Piscataqua River and the Ports of Portsmouth and Newington	Magnusson, Matthew; Colgan, Charles; Gittell, Ross	Piscataqua River Economic Development Committee	2012	Economic analysis to understand the economic impact of maritime commerce in the region	http://www.portofnh.org/documents/port_study_mm_6_7_12FINAL.pdf
ME	Portland, Searsport, and Eastport	2012 Report Card for Maine's Infrastructure: Ports & Waterways	American Society of Civil Engineers	American Society of Civil Engineers: Maine Section	2012	Evaluate the state of port infrastructure and provide recommendations for future improvements	http://www.maineasce.org/MaineRC/MainePorts12062012.pdf
ME	Portland, Searsport, and Eastport	Moving People and Goods: The Governor's Rail and Port Investment Plan to Transform Transportation in Maine	Maine Department of Transportation	Maine Department of Transportation	2009	Summarize investment opportunities within the State's Rail and Port Investment Plan	http://digitalmaine.com/cgi/viewcontent.cgi?article=1029&context=mdot_docs
ME	Portland, Searsport, and Eastport	Maine Integrated Freight Plan	Cambridge Systematics, Inc.	Maine Department of Transportation	2002	Update the state's freight profile; identify stakeholder concerns; document progress since 1998 IFP; recommend specific freight improvement projects and changes to Maine's freight planning program	http://www.maineports.com/sites/default/files/resources/Maine-IntegratedFreightPlan.pdf

State	Port(s)	Report Title	Prepared by	Prepared for	Year	Purpose of document	Link to source
RI	Providence, Newport, Davisville/Quonset Point	Special Legislative Commission to Study Potential Economic Opportunities in the Development of Port Facilities in the State of Rhode Island	Rhode Island Port Commission	Rhode Island General Assembly	2012	Provide overview of current concerns and challenges of the maritime industry and identify opportunities for growth	http://www.rilin.state.ri.us/Reports/Joint%20Port%20Commission%20Final%20Report%202-14-12.pdf
RI	Providence, Newport, Davisville/Quonset Point	Rhode Island's Ports: Opportunity for Growth	Martin Associates, LLC	Rhode Island Bays, Rivers, and Watersheds Coordination Team	2011	Assess development opportunities for Rhode Islands Ports	http://www.rilin.state.ri.us/Reports/Joint%20Port%20Commission%20Final%20Report%202-14-12.pdf
RI	Providence, Newport, Davisville/Quonset Point	Transportation 2035: Long Range Transportation Plan	Rhode Island Statewide Planning Program	State of Rhode Island	2012	Address Rhode Island's tranportation needs over the next several decades as a key component of the State Guide Plan	http://www.planning.ri.gov/documents/trans/LRTP%202035%20-%20Final.pdf

Appendix E – Table of AIS vessel identification codes

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	**2nd digit [4x|6x|7x|8x|9x]**	**Codes for specific vessels operating in USA [2x]**	**Engaged in… Codes [3x]**	**Special Craft Codes [5x]**
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 other 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 *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)