

**DRAFT FOR DISCUSSION**

**MAKING WATERFRONTS WORK:  
Data needs and policy recommendations for preserving  
water-dependent maritime land uses in New York, New Jersey and Connecticut**

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**Credits:** This study was funded by the University of Rhode Island’s Coastal Institute IGERT Project, a program of the National Science Foundation.

Special thanks to Karl Chan, Urban & Regional Studies’ student, Cornell University, for research assistance.

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## 1. EXECUTIVE SUMMARY

Evidence throughout the region indicates that water-dependent maritime uses, ranging from large-scale shipyards to small-scale marinas, are being converted to other uses. Regional Plan Association (RPA) conducted a reconnaissance study of the tri-state area to understand the long-term viability of water-dependent maritime land uses. The goal of this study was to address three questions: (1) *What is the range of water-dependent maritime land uses on the region's waterfronts, why are they of value, and how are these uses managed?*; (2) *What are the issues affecting the long-term viability of these land uses?*; and (3) *What can be done from a planning and policy perspective to improve the viability of these uses?*

To address these questions, RPA conducted interviews with 46 key informants throughout the tri-state region from government agencies, non-governmental organizations, maritime industries, trade associations, and advocacy groups. We also reviewed recent studies of water-dependent maritime activities, available quantitative data, and reports analyzing maritime uses in other regions and the nation. One concurrent study of note - the New York City Economic Development Corporation's (EDC) Maritime Support Services Location Study - includes an inventory, economic impact analysis, and study of the demand for maritime support services within New York City's six Significant Maritime and Industrial Areas. Unlike the EDC study, RPA's study focuses broadly on *water-dependent maritime use*, which we define as land uses whose function or purpose requires direct siting on, over, or adjacent to the water and which support any boat-related use, whether commercial/industrial or recreational. We focus in particular on three key regions of the tri-state area: New York-New Jersey Harbor; Long Island Sound; and the New Jersey Atlantic Coast.

Water-dependent uses are identified as a priority in the federal Coastal Zone Management Act of 1972, and the New York, New Jersey and Connecticut coastal management programs each have policies and regulations on water-dependent uses. All water-dependent maritime uses have unique siting requirements, requiring in-water, upland, and adjacent facilities to survive. These uses confer significant public benefit: commercial/industrial maritime uses provide jobs,

economic activity, and goods and services to the region. By providing access to public trust waters, recreational maritime uses provide important jobs, quality of life benefits, as well as economic activity and enhancements to tourism.

There are no comprehensive inventories of maritime uses throughout the region. The best available data on the number and location of commercial/industrial uses is found through the U.S. Army Corps of Engineers Ports and Waterways Facilities Data, and the best available data on recreational uses is provided by two sources: a Metropolitan Waterfront Alliance/NY-NJ Harbor Estuary Program dataset on New York-New Jersey Harbor, and a Regional Plan Association dataset on Long Island Sound.

Several economic impact studies have been conducted for individual maritime industry sectors around the tri-state region, though no one study addresses all maritime uses throughout the entire study area. The Maritime Support Services Location Study recently released by the New York City Economic Development Corporation indicates that maritime support services in New York City provide 11,870 total jobs, \$1.1 billion in personal income and over \$2 billion in overall economic activity (2007 dollars).

The long-term viability of maritime uses in the region is shaped by several factors:

- Maritime uses are engaged in intense competition for waterfront space. This competition takes place not only between water-dependent and non-water-dependent uses, but between different and conflicting maritime uses.
- No one entity or organization is managing the big picture. Waterfront use decision-making is fragmented among multiple different federal, state, regional, and local decision-making entities. Waterfront land-use decisions are primarily the purview of municipal governments, although multiple federal, state and regional entities have an interest in these decisions. For these reasons, decisions about maritime uses are

often made at the local level, even though those uses benefit the entire region.

- Land use regulations could, but often do not, protect maritime uses. In some cases, zoning ordinances and special area designations to protect maritime uses are not in place; in other cases, these land use controls are in place but are not implemented to their full extent.
- Complying with environmental regulations presents some challenges for maritime uses. These challenges derive largely from the costs and complexity associated with the permitting process for dredging and in-water structures.
- Emerging trends in maritime industries and environmental management may have a profound impact on the long-term viability of maritime uses. These emerging trends include the increased popularity of maritime recreation and passenger ferries; anticipated growth in maritime trade and the prospect of accommodating this growth through short sea shipping; and climate change and sea level rise.

Solutions to these problems will vary significantly by geographic location, regulatory jurisdiction, and type of maritime use. However, the long-term viability of all maritime uses throughout the tri-state region can be improved if certain steps are taken:

- A comprehensive inventory of the number and location of all maritime uses throughout the region should be conducted.
- A comprehensive dataset or study of the economic impact of maritime uses should be developed. Such a dataset or study could draw upon, aggregate, and update the many existing economic impact studies.
- A forum of key decision-makers and maritime industry end-users should be convened. Such a forum would be

an important first step toward improving communication and coordination among decision-makers, regulators, and end-users. It would also be a step toward regional, long-term planning for maritime uses.

- A better toolbox for the protection of maritime uses should be developed in cooperation with decision-makers and the maritime industry. Such a toolbox should identify incentives to maintain the maritime uses as well as the tools to prevent the displacement of them.

## 2. INTRODUCTION/OVERVIEW

The history of the greater New York City region is tied to its waterfronts. From its earliest inception in the 17<sup>th</sup> century, New York City was a maritime city, its piers and wharves providing essential access for ships carrying goods and people. The Port later grew to encompass the bulk of the New York-New Jersey Harbor Estuary, with piers, wharves and related support facilities lining the New York and New Jersey waterfronts. Many of the surrounding communities on Long Island Sound, the Hudson River, and the New Jersey coast were similarly tied to the waterfront. More recently, recreational maritime uses have taken their place on the waterfronts of both New York City and the surrounding suburbs, providing new ways for communities to maintain their connection to the water. To exist, all of these commercial and recreational maritime activities had required water-dependent uses of waterfront land. Piers, wharves, and other in-water facilities provided dockage for cargo ships, passenger ferries, fishing vessels, cruise ships and pleasure boats. Shipyards and repair facilities, storage/work areas, and other uses provided critical upland support to these vessels and this wide range of commercial and recreational maritime industries.

Despite this long history and the continued viability of both commercial and recreational maritime industries, there is anecdotal evidence that water-dependent uses of the region's waterfronts are under pressure, and, in some cases, are being converted to non-water-dependent uses – condominiums, retail stores, or mixed-use developments<sup>1</sup>. In Brooklyn, NY, a graving dock was recently converted into a parking lot for an IKEA store. On City Island, NY, a full-service commercial marina was recently converted to a residential development with docks available only to residents. In Perth Amboy, NJ, a dry dock and ship repair facility has been converted to a mixed-use development. In

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<sup>1</sup> To understand the historical context of the loss of piers and other maritime facilities, particularly within the Port of New York and New Jersey, see: "Postwar Changes in Global Trade and Shipping Patterns and Their Impact Upon American Ports of Entry" in Labaree, B. et al. 1998. *America and the Sea: A Maritime History*. Mystic, CT: Mystic Seaport Museum; and also Levinson, M. 2006. *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*. Princeton, NJ: Princeton University Press.

Bridgeport, CT the proposed sale of a small shipping terminal has some stakeholders concerned about residential redevelopment. In Stamford, CT, mixed-use redevelopment plans for a swath of waterfront will reduce land available to a popular full-service marina and boatyard. And on Staten Island, NY, recent city agency attention to the North Shore has many stakeholders wondering whether "Tugboat Alley" is in danger of conversion to residential and mixed-use development.

Cumulative loss of water-dependent maritime uses will reshape the region's relationship to the water. At risk are:

- Access – whether of maritime businesses, or of individuals – to the region's waterways
- Essential services for transportation ports and boaters
- Rising costs of goods and services
- High-paying maritime jobs
- Waterborne transportation that could relieve congestions on bridges and tunnels

It could also result in losses that, while less tangible, are just as important - such as the loss of community character, and the aesthetic, social, and cultural value many people attribute to maritime uses.

For these reasons, Regional Plan Association (RPA) has conducted a reconnaissance study of the tri-state area to understand some of the issues facing the long-term viability of water-dependent maritime land uses. The goal of this study was to address three questions: (1) *What is the range of water-dependent maritime land uses on the region's waterfronts, why are they of value, and how are these uses managed?*; (2) *What are the issues affecting the long-term viability of these land uses?*; and (3) *What can be done from a planning and policy perspective to improve the viability of these uses?*

To address these questions, RPA conducted interviews with 46 key informants throughout the tri-state region from government agencies, non-governmental organizations, maritime industries, trade associations, and advocacy groups. We also

reviewed recent studies of water-dependent maritime activities in the region, available quantitative data, and reports analyzing maritime uses in other regions and the nation. One concurrent study of note - the New York City Economic Development Corporation's Maritime Support Services Location Study - includes an inventory, economic impact analysis, and study of the demand for maritime support services within New York City's six Significant Maritime and Industrial Areas. RPA study findings reflect analysis of all stakeholder interviews, reports, and other data. Findings are not meant to represent the viewpoints of individual stakeholders but rather the summary of all input and data received and reviewed for this report.

This reconnaissance study seeks to assess the viability of both commercial and recreational maritime uses from a land-use planning and policy perspective, with the goal of understanding how land-use policies and decision-making processes could better protect and ensure viable water-dependent uses for future generations. It is *not* an attempt to study the regional maritime industry itself, nor the movement of freight throughout the region. Nor does it include primary research on the number, location, and economic impact of maritime uses in the region. Researchers also acknowledge the vast diversity, both in geography and type of uses, included in this study, and in particular the importance differences between commercial/industrial and recreational maritime activities.

This study found that there is a significant range of commercial and recreational water-dependent maritime land uses throughout the region, and that nearly all such uses may be threatened, in some way, by a confluence of issues. While pressures on water-dependent maritime uses vary by location, type of use, or regulatory jurisdiction, there are common themes:

- Intense competition for waterfront space
- Lack of coordination among decision-making entities
- Inadequate land use regulations
- Complex and costly environmental regulations

- Emerging trends in maritime industries and environmental management that underscore the importance of long-term planning

While next steps will vary by location, the viability of water-dependent maritime land uses may in general be improved through: More information on the number, location, and economic value of maritime uses; improved coordination and communication between government decision-makers and the purveyors of water-dependent maritime uses; and a better set of tools through which planners, policymakers, and stakeholders can protect maritime uses.

### **3. WHAT IS A WATER-DEPENDENT MARITIME USE?**

A water-dependent use is, simply put, a land use whose function or purpose requires direct siting on, over, or adjacent to the water (in particular navigable water). Water-dependent uses are unique: by definition they must be located on the waterfront in order to exist. Remove an existing water-dependent use from the waterfront, and it must find another waterfront location or it will cease to exist.

Under the federal Coastal Zone Management Act of 1972 (CZMA), states participating in the coastal zone management program must give priority consideration to water-dependent uses. Coastal management leaders throughout the nation have further emphasized the importance of water-dependent uses. In 1988, the New England/New York Coastal Zone Task Force undertook an extensive study of water-dependent uses and produced a two-volume series analyzing the legal and economic aspects of planning for water-dependent uses.<sup>2</sup> A 1998 report by the NOAA Office of Ocean and Coastal Resource Management noted that water-dependent uses, which have notable economic value, have traditionally provided coastal communities with their livelihood.<sup>3</sup> The “Keep our Waterfronts Working Act,” a proposed amendment to the federal CZMA currently being debated in the House of Representatives, would establish a grant program “to ensure coastal access for commercial and recreational fishermen and other water-dependent coastal-related businesses”.<sup>4</sup> And water-dependent uses are identified as a top priority in the draft “Waterfront and Smart Growth Elements” under development by NOAA and the U.S. EPA.<sup>5</sup>

New York, New Jersey, and Connecticut each have state coastal management programs which have defined water-dependent uses (see Appendix III) and developed a range of strategies to prioritize water-dependent uses of the shoreline.<sup>6</sup> While the three states’ definitions vary somewhat, each acknowledges the water-dependent nature of commercial and recreational maritime facilities, as well as facilities which require use of water for cooling or processing (i.e. power plants or fish processing facilities). This study is limited to water-dependent *maritime* uses – that is, those supporting commercial shipping and recreational boating. However, we acknowledge that there are many non-maritime water-dependent uses which support other water-based activities such as fishing, swimming, wildlife viewing, and general public access to coastal waters. Such uses are functionally dependent on the water and may also require in-water infrastructure such as piers or bulkheads.

Whether serving commercial/industrial or recreational purposes, all water-dependent maritime uses require some type of in-water use, some type of upland use, and access to some adjacent uses. For example, a cargo terminal will require in-water piers, bulkheaded wharves, and deep water access; upland space for discharging and short-term storage of cargo; and, via adjacent land, access to intermodal connections to transport the cargo. Similarly, a full-service recreational marina will require in-water piers or floating docks and appropriate water depth for its client vessels; upland space for some mix of services; and, on adjacent land, parking and access to support services. See Table 1 for a breakdown of the full range of water-dependent maritime uses.

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<sup>2</sup> Marine Law Institute. (1988). *Managing the Shoreline for Water Dependent Uses: A Handbook of Legal Tools*. Portland, Maine: Marine Law Institute, University of Maine School of Law.

<sup>3</sup> Walker, K., & Arnn, M. (1998). “Preserving Waterfronts for Water Dependent Uses.” Retrieved from [http://www.oceanservice.noaa.gov/websites/retiredsites/sotc\\_pdf/WDU.PDF](http://www.oceanservice.noaa.gov/websites/retiredsites/sotc_pdf/WDU.PDF)

<sup>4</sup> “Keep Our Waterfronts Working Act of 2007.” H.R. 3223, 110<sup>th</sup> Cong. 1<sup>st</sup> Sess., 2008.

<sup>5</sup> Environmental Protection Agency and National Oceanic and Atmospheric Administration. March 2008.

“Waterfront and Coastal Smart Growth Elements.” Retrieved from [http://seagrant.gso.uri.edu/ccd/documents/coastal\\_elements.pdf](http://seagrant.gso.uri.edu/ccd/documents/coastal_elements.pdf).

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<sup>6</sup> Other federal, state and local regulations also define water-dependency. For further discussion see: Ankerson, T. & Ruppert, T. (2006). “Water-Dependent Use Definitions: A Tool to Protect and Preserve Recreational and Commercial Working Waterfronts.” Retrieved from [http://www.law.ufl.edu/conservation/waterways/waterfronts/pdf/water\\_dependency\\_test.pdf](http://www.law.ufl.edu/conservation/waterways/waterfronts/pdf/water_dependency_test.pdf).

**Table 1. TYPOLOGY OF WATER-DEPENDENT MARITIME USES**

Category	Use	Description/Purpose	Examples	In-Water Uses	Upland Uses	Adjacent Land Uses
<b>Marine Commercial/ Industrial</b>	<b>Cargo Terminal</b>  (Container, Ro-Ro, Bulk, Breakbulk, Bulk Liquid)  <i>(For the purposes of this table, includes waste transfer stations)</i>	For loading and unloading cargo from commercial ships	Elizabeth-Port Authority Marine Terminal, NJ; Cilco Terminal, Bridgeport, CT	Fixed piers; bulkheads; deep water access	Infrastructure and space for discharging/ short-term storage of cargo (e.g. cranes; fuel tanks); parking	Intermodal connections (e.g. road for ro-ro; rail); access to commercial support services (e.g. fuel, hardware/supply stores); buffer/security
	<b>Commercial Pier</b>  (Fishing, Tug/Barges, Work Barges, Support Vessels, Government Vessels, General Berthing)	Short- and long-term dockage for primarily commercial vessels	Eric Basin Bargeport, Brooklyn, NY; “Tugboat Alley,” Staten Island, NY	Fixed piers; deep water access	Infrastructure and space for maintenance and operations (e.g. storage/ repair area; office); parking	Access to commercial support services (e.g. fuel, hardware/supply stores); buffer/security
	<b>Shipyard/Ship Repair</b>  <i>(For the purposes of this table, includes dry dock facilities)</i>	Ship construction and/ or maintenance	Caddell Dry Dock, Staten Island, NY; Brooklyn Navy Yard, NY	Fixed piers; water access for dry dock/Travelift; water depth for floating dry dock	Infrastructure and space for maintenance, storage, operations (e.g. machine shop; cranes; storage/ repair area; office); parking	Access to commercial support services (e.g. fuel, hardware/supply stores); buffer/security
	<b>Passenger/Car Ferry Terminal</b>  (Ferry, Excursion Vessel, Cruise Ship)  <i>(Denotes facilities exclusively dedicated to this purpose)</i>	Boarding and debarking passengers	Brooklyn Cruise Terminal, NY; Port Jefferson Ferry Terminal, Long Island, NY	Fixed piers; bulkheads; deep water access	Debarcation area (open pier or enclosed terminal); parking; passenger services (ticketing, restrooms, etc)	Intermodal connections (e.g. road for ro-ro); buffer/security



Category	Use	Description/Purpose	Examples	In-Water Uses	Upland Uses	Adjacent Land Uses
<b>Commercial (Used for Marine Recreation)</b>	<b>Mixed-use Pier</b>  (Ferry, Excursion Vessel, Educational/Historic Vessel)	Boarding and debarking passengers; waterfront festivals	Pier 16/South Street Seaport and Pier 66 Maritime, New York, NY; Long Wharf Pier, New Haven, CT	Fixed piers; deep water access	Debarcation area (open pier); parking; passenger services (ticketing, restrooms, etc)	Intermodal connections; other attractions/services (dining; historic sites; promenade)
	<b>Marina</b>  <i>(For the purposes of this table, includes yacht clubs and sailing centers; often accompanies a boatyard)</i>	Short- and long-term dockage for recreational vessels	Brewer Yacht Haven Marina, Stamford, CT; World's Fair Marina, Queens, NY	Fixed piers; floating docks; appropriate water depth	Infrastructure and space for services (e.g. restrooms, pump out); parking	Access to support services (e.g. fuel, hardware/supply stores); other attractions/ services (e.g. dining)
	<b>Boatyard</b>  <i>(Often accompanies a marina)</i>	Boat construction and/ or maintenance	Consolidated Marine, City Island, NY; Dodson's Boatyard, Stonington, CT	Fixed piers; bulkheads; floating docks; appropriate water depth; water access for Travelift/crane	Infrastructure and space for maintenance, storage, services (e.g. machine shop; cranes; storage/ repair area); parking	Access to support services (e.g. fuel, hardware/supply stores); buffer
<b>Recreational (No Commercial Use)</b>	<b>Pier or landing</b> (equipped for boating access)	Short-term dockage for various vessels	City Pier and Waterfront Park, New London, CT	Fixed piers or floating docks designed for vessel use; appropriate water depth	Upland access; space for services (e.g. restrooms); parking	Access to/ integration with adjacent community
	<b>Pier or landing</b> <i>(NON-MARITIME – not equipped for boating access)</i>	<i>Recreational fishing, swimming, wildlife viewing, or general public access</i>	<i>West Harlem Pier, New York, NY</i>	<i>Fixed piers or walkways not designed for vessel use</i>	<i>Upland access</i>	<i>Access to/ integration with adjacent community</i>
	<b>Boat ramp/launch</b>	Site for launching small recreational vessels	Liberty State Park Boat Launch, Jersey City, NJ; Hudson River Park/Pier 66, New York, NY	Water access (via driveway or ramp to water's edge)	Upland access; parking	Intermodal connection (road)
	<b>Residential docks/ dockominiums*</b>	Private docks generally converted from a marina and exclusive to adjacent residents	River Vue at Hoffman's Marina, Brielle, NJ	Fixed piers or floating docks designed for vessel use; appropriate water depth	Varies	Varies

*\*Residential docks or dockominiums, insofar as they are owned and used only by adjacent property owners, were not considered in this study because they do not confer a public benefit. They are included here because they are both water-dependent and maritime.*

This table was developed with input from Austin Becker at the University of Rhode Island Coastal Resources Center/Rhode Island Sea Grant.

The fact that water-dependent maritime uses require both in-water and upland facilities, as well as appropriate adjacent land uses, emphasizes both their uniqueness in siting requirements and their vulnerability to in-water limitations and upland development. Eliminate any one of those three elements – in the case of the cargo terminal, deep-water access, upland space, or intermodal connections – and it is unlikely to survive. Further, some of the upland and adjacent land uses – such as storage space, or access to commercial support services such as ship supply stores – may not be considered water-dependent under some regulatory definitions, but may in fact be essential to the viability of a water-dependent maritime use.

### **The Public Benefits of Water-Dependent Maritime Uses**

Whether they be a cargo terminal, shipyard, commercial pier, or recreational marina, water-dependent maritime uses confer a variety of public benefits. Commercial/industrial uses - such as cargo terminals and port support services - provide water access to water-dependent businesses like shipping companies. These businesses in turn provide not only jobs to skilled workers, but also access to goods ranging from fuel oil to cars to consumer goods.<sup>7</sup> In some cases, these maritime facilities also provide important public services like waste transfer and recycling. Recreational uses - such as marinas and boatyards - also provide water access to water-dependent businesses, and jobs to skilled workers. Educational and historic vessels and ports also provide access and educational opportunities for the public as well as a cultural link to the more water-dependent past. Given the widespread privatization of waterfront property, all of these facilities that are public supplement essential access provided by formally-designated public access facilities. (The economic values associated with these uses are further discussed below in section 3.)

Although water-dependent maritime uses confer a wide range of public benefits, they are inherently a finite resource. There are a limited

number of water-dependent maritime uses, and most are privately owned. Due to the unique siting requirements of water-dependent maritime uses, facilities must be located on an already limited amount of appropriate waterfront space. As a result, water-dependent maritime uses are forced to compete for waterfront space with other non-water-dependent uses such as residential, commercial, and some forms of mixed-use development. It is for these reasons - along with the economic value and historic nature of them - that state and municipal governments often seek to protect these uses, or to reserve some waterfront land expressly for water-dependent uses.

### **The Public Management of Water-Dependent Maritime Uses**

New York, New Jersey and Connecticut each have state coastal management programs approved and funded by the federal government under the Coastal Zone Management Act of 1972. Among other things, the CZMA requires participating states to give water-dependent uses priority on coastal lands. New York, New Jersey and Connecticut each have unique methods of addressing this requirement that are designed to complement local land use controls administered by individual municipalities.

The New York State Coastal Management Program, housed in the Department of State, is embodied in the “New York State Coastal Policies,” broad policy objectives intended to guide development in coastal areas throughout the state. These policies include a definition of water-dependent use, a detailed list of examples (see Appendix III), and several policy objectives about prioritizing water-dependent uses. In addition, New York developed a Long Island Sound Coastal Management Plan to address the unique resources of this region. New York encourages municipalities to further refine and implement its policies through Local Waterfront Revitalization Programs (LWRP). New York City has an LWRP which is implemented through the Department of City Planning office; 10 municipalities on Long Island Sound have also developed LWRPs. For these reasons, policies on water-dependency vary widely by municipality. Such policies on water-dependent uses are for the most part enforced

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<sup>7</sup> See [www.deliveringprosperity.com](http://www.deliveringprosperity.com), maintained by the New York Shipping Association.

through a consistency review process, in which a proposed action must be deemed consistent with relevant coastal policies before being approved.<sup>8</sup>

The New Jersey Coastal Management Program (NJCMP), housed in the state Department of Environmental Protection, is codified in a detailed series of Coastal Zone Management rules. These rules include a definition of water-dependent uses, examples of water-dependent and non-water-dependent uses (see Appendix III), and several detailed land use regulations that are designed to encourage and preserve water-dependent development of waterfront lands. These regulations vary widely throughout the state both in jurisdiction and in the nature of the regulation; for example, the state of New Jersey has greater authority to control development on filled tidelands than on other lands. These coastal land use regulations are administered and enforced by the New Jersey Division of Land Use Regulation, a direct permitting agency.<sup>9</sup>

Connecticut's coastal program is codified in the Connecticut Coastal Management Act and administered through the Office of Long Island Sound Programs (OLISP), housed within the state Department of Environmental Protection. The Act includes a definition and examples of water-dependent uses (see Appendix III) and several policies regarding water-dependent uses, including a provision for the evaluation of "adverse impacts on future water-dependent development opportunities." Policies are enforced through the coastal site plan review process, which is customarily conducted at the municipal level but may also include input from state coastal managers.<sup>10</sup>

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<sup>8</sup> New York Department of State Division of Coastal Resources. 2008. Retrieved from <http://www.nyswaterfronts.com/index.asp>

<sup>9</sup> New Jersey Department of Environmental Protection Coastal Management Program. 2008. Retrieved from <http://www.state.nj.us/dep/cmp/>.

<sup>10</sup> Connecticut Department of Environmental Protection. 2000. *Connecticut Coastal Management Manual*. Retrieved from [http://www.ct.gov/dep/lib/dep/long\\_island\\_sound/coastal\\_management\\_manual/manual\\_08.pdf](http://www.ct.gov/dep/lib/dep/long_island_sound/coastal_management_manual/manual_08.pdf)

#### **4. WATER DEPENDENT MARITIME USES IN THE TRI-STATE AREA**

##### **Geographic Area**

The greater New York City metropolitan region is developed around a network of waterways. These waterways have historically connected New York City and the surrounding communities with the global community. Altogether, New York City's network of rivers, bays, and harbors comprises 578 miles of waterfront. New York's Long Island Sound coastline has an additional 304 miles of waterfront, while Connecticut has over 200 miles of coastline on the Sound. New Jersey has 127 miles of coastline on the Atlantic Ocean and an additional 83 miles on Raritan and Delaware Bays.<sup>11</sup> For the purposes of this initial review of water-dependent maritime uses in the tri-state area, the south shore of Long Island as well as the Delaware Bay section of New Jersey is excluded (see Figure 1).



**Figure 1. The Study Area**

<sup>11</sup> New York Department of State Division of Coastal Resources, 2008, retrieved from <http://www.nyswaterfronts.com/index.asp>; Connecticut Department of Environmental Protection, 2008, retrieved from <http://www.ct.gov/dep/cwp/view.asp?A=2690&Q=322430>; New Jersey Department of Environmental Protection, 2008, retrieved from <http://www.state.nj.us/dep/cmp/access/>.

These hundreds of miles of coastline are home to a host of resources and facilities serving the commercial and recreational maritime communities. The Port of New York and New Jersey, several satellite ports, and hundreds of smaller harbors together provide essential water access for freight transportation, passenger transportation, commercial fishing, and recreational boating. The Port of New York and New Jersey is the third largest container port in the U.S.<sup>12</sup> and comprises several freight and passenger terminals as well as a host of essential maritime support service facilities located on both the New York City and New Jersey waterfronts. Long Island Sound is home to several secondary, or satellite ports – Bridgeport, New Haven, New London and Port Jefferson – which include freight and passenger terminals as well as smaller concentrations of maritime support service facilities. Finally, Long Island Sound and the New Jersey coast include a range of smaller harbors and waterfronts which provide water access for recreational and smaller-scale commercial boaters (such as ferries and excursion boats), as well as for the region's remaining commercial fisheries (see Figures 2 and 3).

The greater New York City region is also home to a number of unique maritime resources and sites of national significance. New York's rich maritime heritage is celebrated on its waterfront by institutions including the Ellis Island Immigration Museum, the South Street Seaport Museum in Manhattan, and Sailor's Snug Harbor on Staten Island, and new waterfront destinations such as Governors Island. One of the nation's five maritime colleges, SUNY Maritime, is located in the Bronx on the East River waterfront. Two of the nation's five federal service academies, both of which train future mariners, are located on Long Island Sound: the U.S. Merchant Marine Academy in Kings Point, NY and the U.S. Coast Guard Academy in New London, CT.

Figures 2 and 3 show the best available data on the location of water-dependent maritime uses in the study area. The U.S. Army Corps of Engineers' Ports and Waterways Facilities dataset (updated on a rotating basis between 1995 and

<sup>12</sup> U.S. Army Corps of Engineers. 2007. *New York and New Jersey Harbor*. Retrieved from <http://www.nan.usace.army.mil/harbor/index.htm>.

2004) is used to indicate piers, port facilities, and other commercial/industrial maritime uses. Recreational maritime uses on Long Island Sound are symbolized using a dataset developed by Regional Plan Association (2002). Recreational maritime uses in New York-New Jersey Harbor and environs are symbolized using a dataset under development by the Metropolitan Waterfront Alliance and the New York-New Jersey Harbor Estuary Program/U.S. EPA (2008). In all cases, data have not been field-checked or updated. They are assumed to represent facility location, not necessarily current use. Figure 2 does not show the entire New Jersey Atlantic coast, even though it was included in the study area, because the above datasets did not include any data points for this region.

Figure 2. New York-New Jersey Harbor and Environs

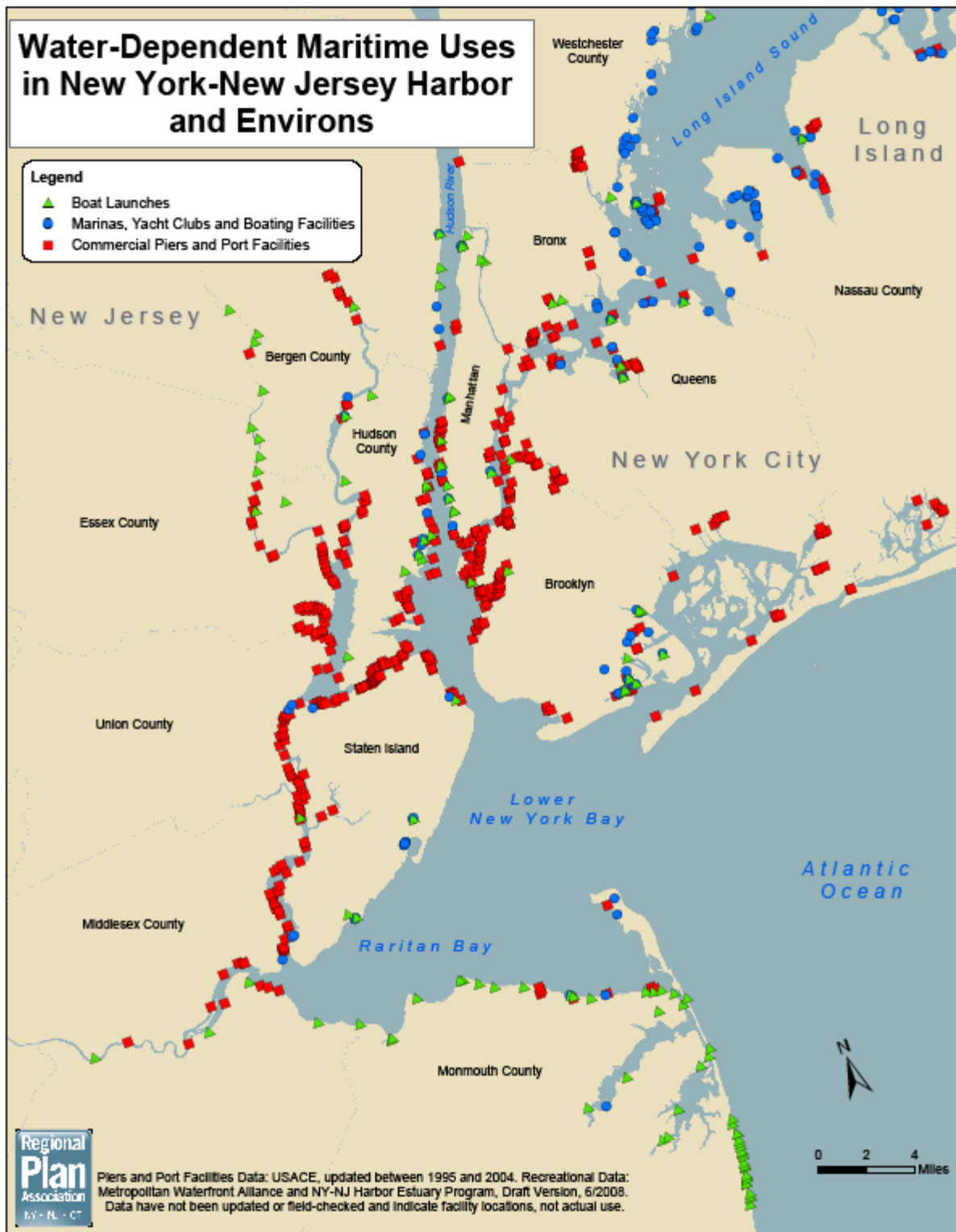
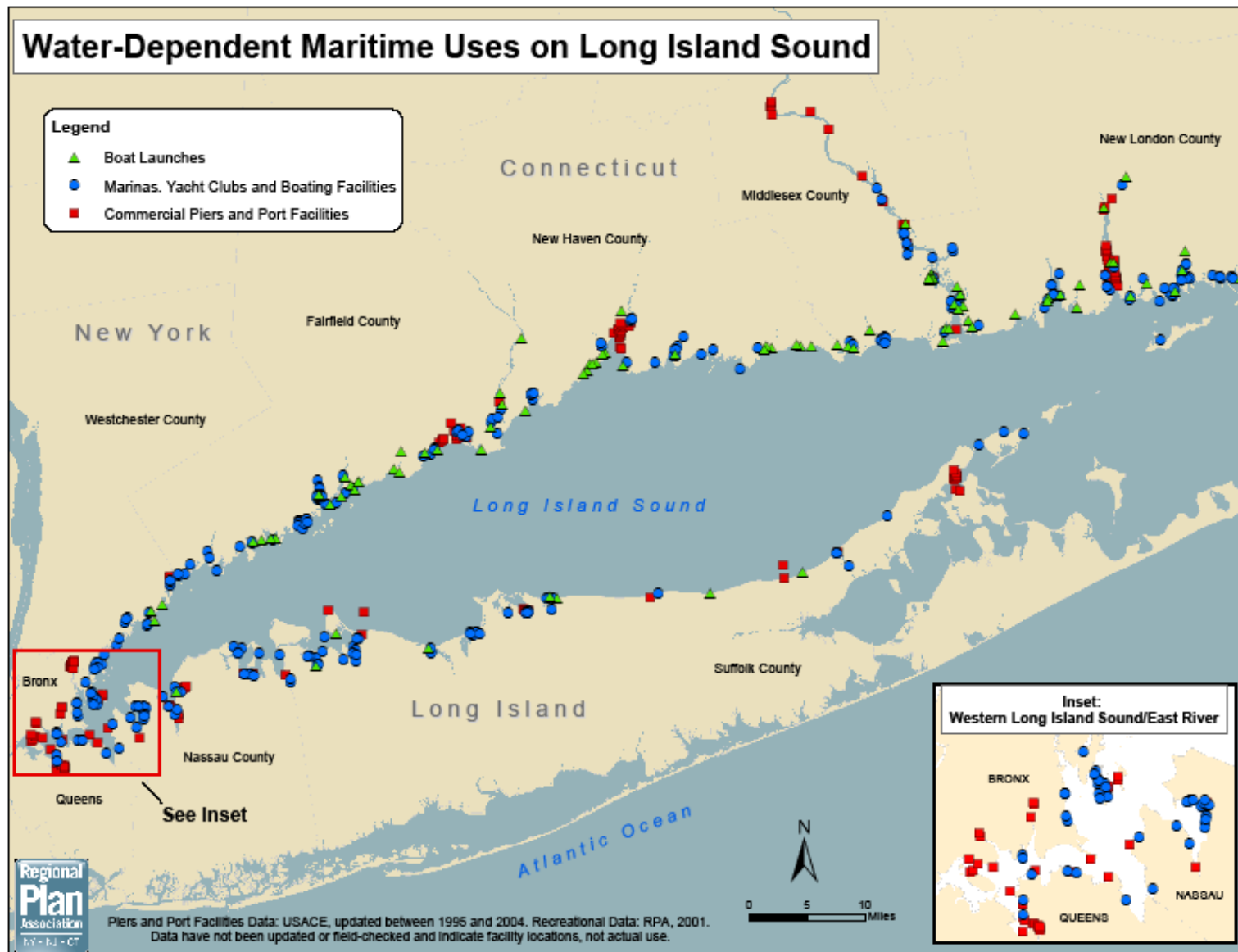


Figure 3: Long Island Sound



## Quantifying Water-Dependent Maritime Uses

### *How many water-dependent maritime uses are there in the tri-state area?*

It is surprisingly difficult to quantify the number of water-dependent maritime uses in the tri-state area. There is no one comprehensive, up-to-date inventory of all such commercial and recreational maritime facilities in the region. Nor do any of the three states maintain inventories, maps, or databases of such uses. This is due in part to differing definitions of such uses, the fact that many such uses are privately-owned and maintained, and the difficulties inherent in keeping such an inventory up-to-date. The U.S. Army Corps of Engineers maintains a database of port and waterways facilities which is updated on a rotating basis, but this dataset excluded recreational facilities.<sup>13</sup> In some cases, data are available but only on a statewide basis such that they cannot be disaggregated by municipality or even county. For these reasons, it is not possible to provide a credible number of water-dependent maritime uses in the study area, or to credibly quantify the loss of such uses in recent years. Despite these limitations, some of the data on specific types of uses are useful as a means of illustrating the quantity and variety of water-dependent maritime uses in the tri-state area:

- According to the U.S. Army Corps of Engineers, there are currently **656 commercial piers and wharves** located in coastal counties within the study area (see Table 2 below).

**Table 2**  
**Commercial Piers and Port Facilities, by County** <sup>14</sup>  
(Source: USACE Ports and Waterways Facilities Data)

State	County	2000s
New York	Bronx	30
	Kings	100
	Nassau	42
	New York	42
	Queens	40
	Richmond	60
	Rockland	9
	Suffolk	27
	Westchester	30
New Jersey	Bergen	10
	Essex	44
	Hudson	63
	Middlesex	41
	Monmouth	8
	Union	25
Connecticut	Fairfield	17
	Middlesex	13
	New Haven	23
	New London	32
Total		656

<sup>13</sup> U.S. Army Corps of Engineers. 2008. Port and Waterways Facilities Data. Updated on a rotating basis between 1995 and 2004. Retrieved from <http://www.iwr.usace.army.mil/ndc/data/datapwd.htm>.

<sup>14</sup> See Point 13



- According to the New York City Economic Development Corporation's 2007 Maritime Support Services Location Study, there are **188 pier sides** in use by maritime support businesses within New York City's six Significant Maritime and Industrial Areas (SMIAs) (see Table 3 below).<sup>15</sup>

**Table 3**  
**Pier Sides in Use in New York City's Significant Maritime and Industrial Areas**  
*(Source: Yahalom et al., 2007)*

SMIA	Pier sides (in use)
South Bronx	9
Newtown Creek	16
Brooklyn NY	23
Red Hook	21
Sunset Park	59
Staten Island	60

- According to the Metropolitan Waterfront Alliance, NY-NJ Harbor Estuary Program and Regional Plan Association, there are **560 recreational facilities** located in coastal counties within the study area<sup>16</sup> (see Table 4 below).

**Table 4**  
**Recreational Facilities, by County**  
*(Sources: MWA & NY-NJ Harbor Estuary Program, 2008; RPA, 2001)*

State	County	Quantity
New York	Bronx	26
	Kings	29
	Nassau	37
	New York	22
	Queens	10
	Richmond	18
	Rockland	3
	Suffolk	60
	Westchester	21
New Jersey	Bergen	17
	Essex	1
	Hudson	21
	Middlesex	8
	Monmouth	53
	Union	2
Connecticut	Fairfield	73
	Middlesex	43
	New Haven	44
	New London	72

<sup>15</sup> Yahalom, S. et al. 2007. *Maritime Support Services Location Study*. Prepared for the New York City Economic Development Corporation. Retrieved from <http://www.nycedc.com/Web/AboutUs/OurProjects/CurrentProjects/MaritimeStudy.htm>.

<sup>16</sup> MWA & NY-NJ Harbor Estuary Program. 2008; RPA. 2001.

- According to the National Marine Manufacturers' Association, there are **1,802 recreational marinas** providing **142,454 boat slips** in the three states (including the Great Lakes).<sup>17</sup> The New York Marine Trades Association estimates that approximately 700 of New York's 1,092 marinas are in the New York City/Long Island Sound region (C. Squeri, 2008) (See Table 5 below).<sup>18</sup>

**Table 5**  
**Recreational Marinas in the Tri-State Area<sup>19</sup>**  
*(Source: National Marine Manufacturers' Association, 2005)*

State	Marinas	Boat Slips	Nat'l Ranking (based on # marinas)
New York	1,092	82,986	2 <sup>nd</sup>
New Jersey	489	34,868	8 <sup>th</sup>
Connecticut	221	24,600	14 <sup>th</sup>

- According to the National Ocean Economics Program, there are **87 ship and boat building and repair facilities** in the tri-state area (includes the Great Lakes and Delaware Bay).<sup>20</sup>

<sup>17</sup> National Marine Manufacturers' Association. 2005. Recreational Boating Statistical Abstract. Available from the National Manufacturers' Association, <http://www.nmma.org/facts/publications.asp>.

<sup>18</sup> Chris Squeri, personal communication, May 6, 2008.

<sup>19</sup> The data from the National Marine Manufacturers' Association does not disaggregate by county and represents data from the entire state.

<sup>20</sup> National Ocean Economics Program. 2008. "Ocean Economy" data. Retrieved from <http://noep.mbari.org/Market/ocean/oceanEcon.asp>. NOEP "Ocean Economy" data are compiled from Bureau of Labor Statistics data and organized by NAICS classification. Per BLS confidentiality rules, data are not disclosed when they could potentially reveal the financial information of a single establishment. For further information see Colgan, C., 2007, A Guide to the Measurement of the Market Data for the Ocean and Coastal Economy in the National Ocean Economics Program, available at <http://noep.mbari.org/Download/>.

***How many water-dependent maritime uses have been lost?***

As noted above, it is difficult to quantify the number of water-dependent maritime uses in the region. For this reason, it is also difficult to quantify the number of water-dependent maritime uses that have been lost over time. While stakeholders, news articles, and other sources provide anecdotal evidence of the loss of marinas,

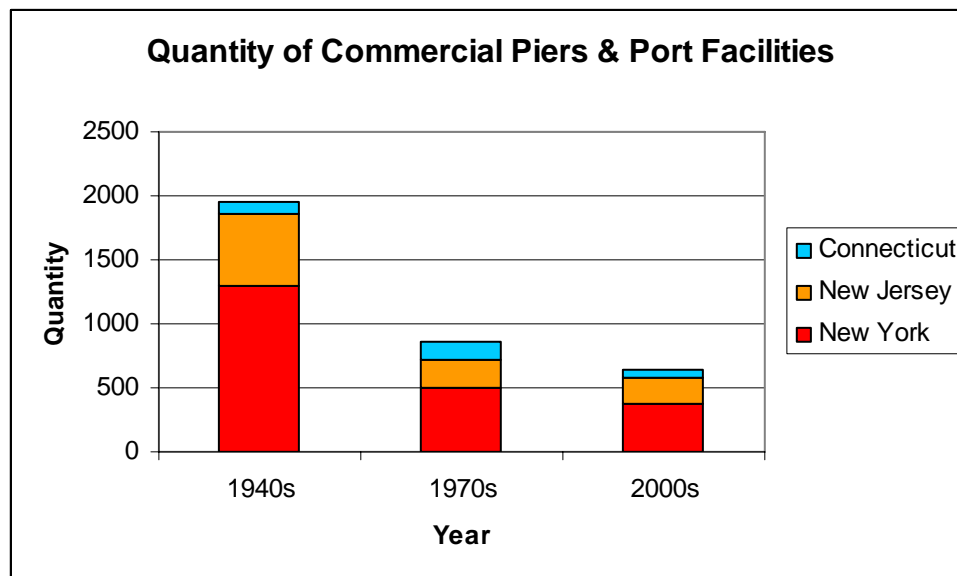
shipyards, and other such facilities to other uses, no comprehensive data is available on the loss of these facilities, nor is it a simple task to assemble such data. However, the USACE Ports and Waterways Facilities data - used above to help quantify current piers and port facilities - has been collected for decades and analyzing it helps to illustrate an overall trend of loss over time throughout the region.

**Table 6**  
**Change in Commercial Piers and Port Facilities 1940's - 2000's, by County<sup>21</sup>**  
*(Source: USACE Ports and Waterways Facilities Data)*

State	County	1940s	1970s	2000s
New York	Bronx	131	29	30
	Kings	427	151	100
	Nassau	22	7	42
	New York	302	130	42
	Queens	174	106	40
	Richmond	35	35	60
	Rockland	N/A	N/A	9
	Suffolk	N/A	24	27
	Westchester	81	11	30
New Jersey	Bergen	39	N/A	10
	Essex	147	68	44
	Hudson	219	95	63
	Middlesex	41	13	41
	Monmouth	6	5	8
	Union	N/A	44	25
Connecticut	Fairfield	25	53	17
	Middlesex	N/A	N/A	13
	New Haven	29	53	23
	New London	42	35	32
<b>Total</b>		<b>1720</b>	<b>859</b>	<b>656</b>

<sup>21</sup> U.S. Army Corps of Engineers. The Port of New York, N.Y. and N.J., & The Port of Southern New England retrieved from and U.S. Army Corps of Engineers. 2008. Port and Waterways Facilities Data. Updated on a rotating basis between 1995 and 2004. Retrieved from <http://www.iwr.usace.army.mil/ndc/data/datapwd.htm>.

**Figure 4.**  
**Changes in the Quantity of Commercial Piers & Port Facilities by State (From 1940s to 2000s)**



While these figures provide a general snapshot of loss of water-dependent maritime uses over time, it is difficult to quantify the total loss because in many cases the loss is not complete – only part of the property, such as a portion of the upland area, may be converted to a non-maritime use. And in other cases the loss of a maritime use is actually the conversion from one type of maritime use to another – such as a conversion from a shipyard to a ferry landing.

Additional anecdotal evidence indicates a range of maritime uses in the region which have recently been or are being converted to other uses. In New York, these include the former Todd Shipyard, a graving dock in Red Hook, Brooklyn, which has been converted to an IKEA parking lot; Royal Marina on City Island, which has been converted to a private residential development with docks for residents; and Shelter Cove Marina in the Bronx, also converted to residential development. In New Jersey, these include Tri-State Shipyard in Perth Amboy, Hoffman's Marina in Brielle, and the Mariner's Emporium Marina in Long Branch; all have been converted to residential development. In Connecticut, these include the Hess Oil Terminal site in New Haven, now a park and mixed-use development, and

Admiral Cove Marina in Stonington, now a residential development.<sup>22</sup>

### ***What is the economic value of water-dependent maritime uses in the tri-state area?***

As with the quantity of water-dependent maritime uses, it is not a simple matter to quantify the economic impact of water-dependent maritime uses in the tri-state region. There has been no one study which has comprehensively evaluated the values associated with this diverse range of land uses. Despite this, there are a number of data sources and studies which provide an idea of the impact of water-dependent maritime land uses in the region.

Maritime uses have a significant economic impact on the tri-state area's economy. The Ocean Economy database of the National Ocean

<sup>22</sup> Cohen, G. (2005, July 3.) Sailing Into History. *The New York Times*; Chris Squeri, personal communication, 2008; Dorina Frizzera, personal communication, 2008; Melissa Danko, personal communication, 2008; David Kozak, personal communication, 2008; Carol Szymanski, personal communication, 2008.

Economics Program reveals that numerous maritime commercial and recreational industries are important contributors to the tri-state area economy. These industries range from marine passenger and freight transportation to fisheries to recreational marinas and tour boats. According to these data, in the tri-state area there are 1,315 establishments providing 20,826 direct jobs, generating over \$1.25 billion in employment income, and contributing over \$2.3 billion to the GDP.<sup>23</sup> Much of this impact is due to the economic activity of the Port of New York and New Jersey: the Port Authority reports that in 2007 it handled more than \$166 billion in cargo, up 11% from the previous year.<sup>24</sup> Other jobs, income, and economic activity are associated with the region's secondary ports, and with the region's recreational maritime uses. See Table 6<sup>25</sup> for further information.

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<sup>23</sup> National Ocean Economics Program, "Ocean Economy" data, retrieved from <http://noep.mbari.org/>, accessed on June 17, 2008. The National Ocean Economics Program defines the "ocean economy" to include industries "whose definition explicitly ties the activity to the ocean," or industries which are "partially related to the ocean and...located in a shore-adjacent zip code". For the purposes of this study, we selected only industries whose nature is most clearly water-dependent, though we acknowledge that this is imperfect assessment of the value of water-dependent uses.

<sup>24</sup> Port Authority of New York and New Jersey. (2008, March 20). Press Release: "Port of New York and New Jersey Sets Cargo Record in 2007; Plans for Expansion Announced." Retrieved from <http://www.panynj.gov/AboutthePortAuthority/PressCenter/PressReleases/PressRelease/index.php?id=1046>.

<sup>25</sup> The data from National Ocean Economics Program does not allow for disaggregation both by county and by the specified uses included in the table.

**Table 7**  
**Economic Impact of Select Ocean-Dependent Industries in the Tri-State Area**  
*(Source: National Ocean Economics Program, accessed June 17, 2008)*

State	Industry	Establishments	Employment	Wages (2004 dollars)	GDP (2004 dollars)
New York	Combined Fishing/Hatcheries & Aquaculture	67	188	\$6,949,998	\$43,266,800
	Boat Building & Repair	32	186	\$5,450,596	\$9,535,300
	Ship Building & Repair	15	466	\$26,960,442	\$47,164,500
	Marinas	260	1,812	\$63,820,882	\$132,021,300
	Scenic Water Tours	83	779	\$17,885,495	\$29,297,100
	Marine Transportation Services	102	2,490	\$146,073,210	\$239,273,600
	Combined Deep Sea Freight & Marine Passenger Transportation	57	1,414	\$108,631,078	\$281,028,500
	<b>TOTAL FOR NY</b>	<b>616</b>	<b>7,335</b>	<b>\$375,771,701</b>	<b>\$781,587,100</b>
<i>*New York data include the Great Lakes region and the south shore of LI.</i>					
New Jersey	Combined Fishing/Hatcheries & Aquaculture	76	246	\$9,013,583	\$53,447,500
	Boat Building & Repair	18	1,815	\$65,920,377	\$61,501,900
	Ship Building & Repair	11	302	\$12,950,927	\$12,082,900
	Marinas	170	1,101	\$38,787,628	\$123,639,000
	Scenic Water Tours	68	260	\$4,486,198	\$6,934,600
	Marine Transportation Services	104	5,765	\$495,804,404	\$766,399,700
	Combined Deep Sea Freight & Marine Passenger Transportation	46	1,366	\$102,909,404	\$251,127,600
	<b>TOTAL FOR NJ</b>	<b>493</b>	<b>10,855</b>	<b>\$729,872,521</b>	<b>\$1,275,133,200</b>
<i>*New Jersey data include Delaware Bay.</i>					
Connecticut	Combined Fishing/Hatcheries & Aquaculture	21	82	\$3,194,887	\$20,263,800
	Boat Building & Repair	11	231	\$11,830,704	\$18,344,400
	Ship Building & Repair <i>(see footnote 3)</i>	D	D	D	D
	Marinas	98	920	\$35,554,947	\$34,967,000
	Scenic Water Tours	14	43	\$700,984	\$1,240,100
	Marine Transportation Services	39	456	\$23,516,196	\$41,602,000
	Combined Deep Sea Freight & Marine Passenger Transportation	23	904	\$74,320,293	\$174,937,300
	<b>TOTAL FOR CT</b>	<b>206</b>	<b>2,636</b>	<b>\$149,118,011</b>	<b>\$291,354,600</b>

Several economic impact studies have been conducted of maritime industries within certain geographic areas of the tri-state region. These studies provide useful insight into the economic activity associated with some maritime uses within the region. However, they do not directly address the issue of water-dependency because they do not focus on the connection between these industries and the specific waterfront sites and facilities that support these activities. Despite these limitations, data from these studies provide an idea of the impact water-dependent maritime uses and illustrate the range of values associated with these uses:

- **A 2004 study of the Port of New York and New Jersey** found that port industries provided 122,547 direct jobs and 232,910 total jobs (direct & indirect); contributed over \$15.5 billion to GDP; generated combined federal, state, and local tax revenues of \$5.8 billion; and provided nearly \$12.6 billion in personal income (2004 dollars).<sup>26</sup>
- **A 2001 study of Connecticut's deep-water ports** (New London, New Haven, Bridgeport, and Norwalk) found that Connecticut's seaports supported 10,452 direct jobs and 5,130 indirect jobs; provided more than \$5.3 billion in personal income; and generated a total value added of over \$1.4 billion dollars (1995 dollars).<sup>27</sup>
- **A 2007 study of New York City's maritime support services** within the City's six Significant Maritime and Industrial Areas found that these support services provide 7,100 direct jobs and 11,870 total jobs (direct and indirect), and generate over \$1.1 billion in personal

income and over \$2 billion in economic activity (2007 dollars).<sup>28</sup>

- **A 2004 study of water-quality dependent uses of Long Island Sound** found that such uses, including commercial and recreational fishing and recreational boating, accounted for 6,077 total jobs and \$203,759,000 in total wages (2000 dollars).<sup>29</sup>
- **A 2008 study of New Jersey's recreational boating industry** found that recreational boating in NJ supported 17,942 total jobs, generated \$142,000,000 in state/local tax revenue generated \$1.8 billion in economic activity (2006 dollars).<sup>30</sup>
- **A 2004 study of New York's recreational boating industry** found that recreational boating in New York supported approximately 18,700 total jobs, contributed \$728 million in labor income, and generated a total economic impact of \$1.8 billion. In the New York City-Long Island Metropolitan Area, the economic impact of recreational boating was \$843 million (2003 dollars).<sup>31 32</sup>

<sup>26</sup> Lahr, M. & Strauss-Wieder, A. 2004. *Economic Impacts of the New York/New Jersey Port Industry*. Prepared for the New York Shipping Association.

<sup>27</sup> Carstensen, F. et al. 2001. *The Economic Impact of Connecticut's Deepwater Ports: An IMPLAN and REMI Analysis*. Connecticut Center for Economic Analysis, University of Connecticut. The Connecticut Maritime Coalition has commissioned a new economic impact study of Connecticut's deepwater ports, which will be funded by the Connecticut Department of Economic and Community Development and is expected to be completed by early 2009 (John Crowther, personal communication, 2008).

<sup>28</sup> Yahalom, S. et al. 2007. *Maritime Support Services Location Study*. Prepared by SUNY Maritime College for the NYC Economic Development Corporation and the Brooklyn Navy Yard Development Corporation.

<sup>29</sup> Kildow, J. et al. 2004. *Estimates of Water-Quality Related Values and Other Relevant Data for Long Island Sound*. Prepared for the Long Island Sound Study, US EPA by The National Ocean Economics Project.

<sup>30</sup> Marine Trades Association of New Jersey. 2008. *Recreational Boating in New Jersey: An Economic Impact Analysis*.

<sup>31</sup> Connelly, N. et al. 2004. *Recreational Boating Expenditures in 2003 in New York State and Their Economic Impacts*. Prepared for New York Sea Grant.

<sup>32</sup> The six studies do not disaggregate by county or any other comparable unit of analysis.

#### 4. **FINDINGS**

Analysis of stakeholder interviews and available data revealed a range of issues affecting the long-term viability of water-dependent maritime uses in the region. There is intense competition for access to waterfront land, which is shaped largely by economic forces and often results in conflict. This competition and conflict is not effectively managed because no one entity or agency is in charge of the big picture. Land use regulations could be a means of protecting maritime uses, though they are not often used to their full extent. Complying with some environmental regulations presents significant challenges – largely financial – to many maritime uses. The following text further explores these issues.

##### **Finding #1: Maritime uses are engaged in intense competition for waterfront space.**

Water-dependent maritime uses are engaged in intense competition for waterfront space.

Maritime uses are subject to development pressure, and forced to compete with residential, commercial, recreational, and mixed uses for waterfront space. While some of this pressure is for residential development, there is also significant pressure for other “newer” maritime uses such as ferry landings and recreational boating facilities. In some cases new development has displaced maritime uses, while in other cases development is taking place around maritime uses, putting pressure on them and reducing the amount of space available for their operation. This development pressure appears to be driven by the recent rise in waterfront property values and demand for housing, and is exacerbated by the widespread belief that maritime uses are not as economically beneficial as other uses of waterfront property.

##### **The Economics of Water-Dependent Uses**

In many cases, the costs of water-dependent uses may outweigh the benefits: municipalities and property owners may earn a greater return from waterfront residences or mixed-use development than from a marina or shipyard. Residential use is often thought to be the “highest and best” use of waterfront property

because it generates higher tax revenue than an industrial or commercial use.<sup>33</sup> The recent rise in waterfront property values, coupled with the increasing demand for housing, only intensifies the pressure to redevelop the waterfront with residential units: one recent news article noted that waterfront homes in Old Saybrook, CT have increased in value from \$35,000 to \$800,000 over the past 50 years.<sup>34</sup> While nearly all maritime uses are subject to some degree of development pressure, uses that are particularly vulnerable to such pressure are privately-owned maritime support services; small, family-owned recreational marinas and boatyards; and commercial/industrial maritime uses in the region’s secondary ports, such as Bridgeport and New Haven, where some view maritime uses as part of the “old economy.”<sup>35</sup> Although maritime uses generate significant economic benefits, as discussed above, such benefits are dispersed throughout the region and are therefore not often valued by the municipality or the property owner.

For some maritime business owners, the costs of maintaining a water-dependent use may also outweigh the benefits. Property taxes, plus the costs of dredging and complying with other environmental regulations, place an economic burden on water-dependent businesses, especially smaller family-owned businesses such as marinas and shipyards. In particular, recreational marinas and boatyards struggle to keep up with their property tax bills, which stakeholders indicate have increased substantially in recent years. One recent news article reports that in 2005, a 285-slip Long Island marina paid upwards of \$212,000 in taxes, up from \$68,000 a decade earlier.<sup>36</sup> The costs associated with dredging and complying with other environmental regulations are further discussed below in section 4.

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<sup>33</sup>That residential use is the highest and best use of waterfront property is the subject of some debate. Commercial and industrial properties can be taxed at higher rates than residential properties but are the recipient of fewer services such as schools, hospitals, and to some degree police and fire safety. In other states concerns about property taxes have led to legislative/executive actions to protect water-dependent uses (see note 77).

<sup>34</sup>Funkhouser, D. (2007, December 16). “High seas, high risk: Shoreline towns beginning to prepare for the inevitable.” Hartford, CT: *Hartford Courant*.

<sup>35</sup>David Kozak, personal communication, 2008.

<sup>36</sup>Cotsalas, V. (2005, December 11). “Less Room at the Dock for Houseboats.” *New York Times*.



In many cases, maritime uses compete for waterfront space with other maritime uses. This is because some water-dependent recreational and tourism-related uses, such as cruise ship terminals serving tourists or marinas serving high-end yachts, are viewed as more lucrative and appealing to adjacent residents than water-dependent commercial/industrial uses. An example of this is the former Military Ocean Terminal site in Bayonne, New Jersey (see Case Study 1).

### **Waterfront Use Conflicts**

Competition for waterfront land is resulting in conflict between adjacent and potentially incompatible uses. The most common type of conflict is between commercial/industrial maritime uses and adjacent residential development. In many cases throughout the region, residential development is being proposed, or in some cases is already in place, in close proximity to maritime uses which operate around the clock and which involve potentially undesirable sounds, sights and smells. Complaints from adjacent neighbors could ultimately force water-dependent businesses to relocate or even cease operations. For example, representatives from Hughes Marine, which bases its barge fleet in Erie Basin in Red Hook, Brooklyn, noted their concern about nearby residential development, and cited as an example the residential development that had been proposed on the adjacent Revere Sugar property.<sup>37</sup> In another example, Hugo Neu, a scrap metal/recycling company which operated on the Jersey City waterfront until complaints from residents of the adjacent Port Liberte condominium complex caused them to relocate further down the waterfront.<sup>38</sup> There can also be conflicts between a state's efforts to ensure the right of public access to coastal waters - upheld by the Public Trust Doctrine – and water dependent industries' efforts to operate safely and securely. These conflicts can play out in a variety of ways, such as recreational boaters using waters adjacent to commercial or industrial areas in places like NY/NJ Harbor or on land at the water's edge where access can be limited. While the perception of such a conflict

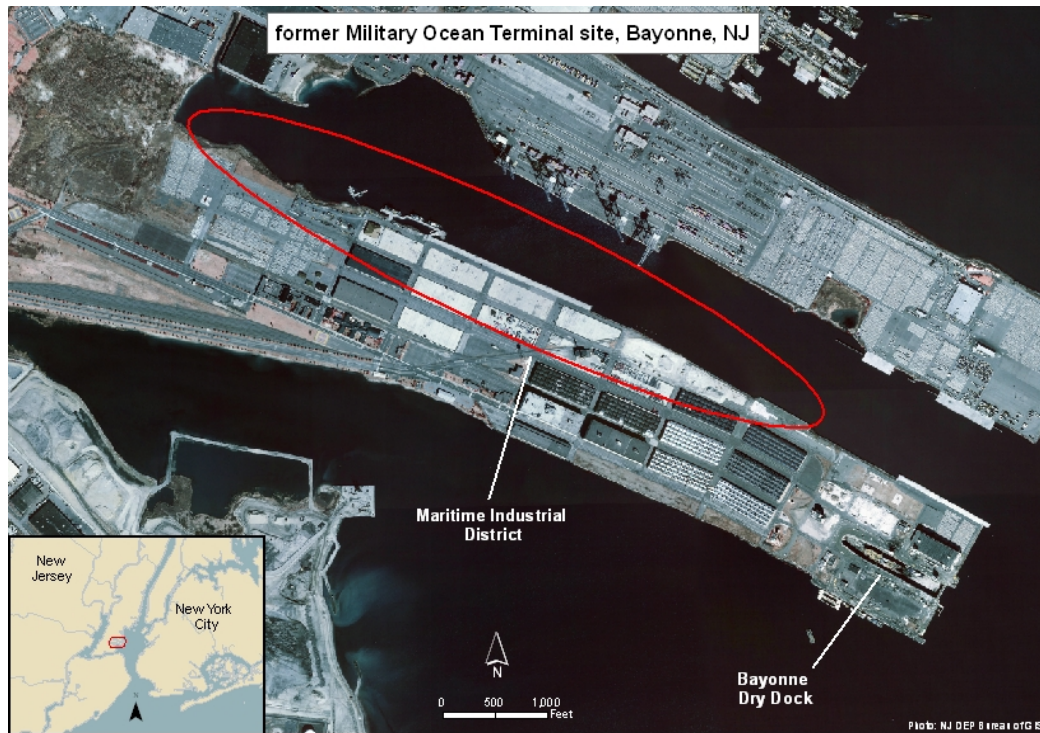
may be more common than actual incidents, this conflict may further exacerbate pressure on water dependent uses and present challenges to those states seeking to strike the right balance between access and secure, efficient operations.

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<sup>37</sup> Brian Hughes, personal communication, 2008.

<sup>38</sup> Vitullo-Martin, J. (April 2005). "The False War Between Housing and Jobs." The Manhattan Institute's Center for Rethinking Development. Retrieved from [http://www.manhattan-institute.org/email/crd\\_newsletter04-05.html](http://www.manhattan-institute.org/email/crd_newsletter04-05.html).

### Case Study 1: Military Ocean Terminal, Bayonne, New Jersey



The former Military Ocean Terminal site is a 430-acre property on a peninsula in Bayonne, New Jersey in New York Harbor. The site was transferred by the U.S. Army to the city of Bayonne in 2001 and is now managed by the Bayonne Local Redevelopment Authority (BLRA) as The Peninsula at Bayonne Harbor.

The BLRA plans to redevelop much of this site, which is surrounded on three sides by deep water, with residential, mixed use, and some water-dependent uses. One of the redevelopment objectives, as stated in the Master Plan, is to increase the city's real estate tax base. Water-dependent uses identified in the Master Plan include ferry landings, marinas, and cruise ship operations. Redevelopment plans do not include the continued operation of Bayonne Dry Dock: according to the site's Redevelopment Plan, the dry dock will ultimately be redeveloped "with multiple uses – water-related, art & cultural institutions and family entertainment."<sup>39</sup>

BLRA plans include limited commercial/industrial maritime use: a 125-acre parcel is designated the "Maritime Industrial District," though the property comes with conditions that prohibit a container terminal. Some stakeholders advocate that a container terminal is clearly the most economically beneficial use of the site because of the jobs that would be created. An auto terminal has been proposed for the site, though plans are on hold until a legal dispute over the sale of the property is resolved.<sup>40</sup>

<sup>39</sup> Bayonne Local Redevelopment Authority. 2006. *The Peninsula at Bayonne Harbor BLRA Redevelopment Plan*. Retrieved from <http://www.bayonnelra.com/plan.htm>.

<sup>40</sup> Bayonne Local Redevelopment Authority. 2008. "Redevelopment Districts." Retrieved from <http://www.bayonnelra.com/>; Bonney, J. (2008, March 31). "X Marks the Spot." *Journal of Commerce*; Bonney, J. (2007, October 1). "Battle of Bayonne." *Journal of Commerce*.

**Finding #2: No one is in charge of the big picture.**

While water-dependent maritime uses confer a wide range of public benefits to the entire region, no one authority manages the region's maritime uses. Although multiple federal, state and regional entities have an interest in and limited authority over maritime uses, decisions about these and other waterfront uses are primarily within the purview of each individual municipality due to the tradition of local land-use control. This means that local decision-makers regularly make waterfront land-use decisions that can have a profound impact on the network of maritime uses throughout the region.

Whereas many maritime uses confer regional benefits, they are largely subject to local decision-making due to the tradition of local land-use control. Local decision-makers are typically guided by municipal concerns, such as economic revitalization and increasing property tax revenue, which may in some cases seem to be at odds with regional, state, or national concerns. While state coastal management programs seek to prioritize water-dependent uses of coastal lands, they are limited in their ability to do so by municipalities' zoning and permitting authorities. Additionally, as states face increasing budget shortfalls, those with departments dedicated to maritime oversight have experienced some of the sharpest cuts to staff and program funding, leaving well-intentioned programs with less ability to oversee the big picture.<sup>41</sup> As a result, local land-use decisions can result in the displacement of maritime uses of regional benefit. An example of this is the case of Brewer's Yacht Haven Marina in Stamford, CT (see Case Study 2).

In some cases, private ownership of critical maritime uses compounds the problem of no one entity managing the big picture. This is most clearly the case in the Port of New York and New Jersey. The Port Authority of New York and New Jersey owns most of the port's major cargo terminals, but the majority of the Port's maritime support services – tugboat companies, pilot boats,

and ship repair facilities – are on privately-owned land. According to the NYCEDC's Maritime Support Services Location Study, 93 of the 129 maritime support service facilities within the city's six Significant Maritime and Industrial Areas are privately owned.<sup>42</sup> Some stakeholders feel that some of these properties are at considerable risk of conversion to non-maritime uses. An important example of this is the case of the North Shore of Staten Island, New York (see Case Study 3).

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<sup>41</sup> New Jersey's Office of Maritime Resources – which provides interagency support, program planning and policy recommendations on maritime issues – had its staff reduced to 3 from 11.

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<sup>42</sup> Yahalom et al 2007; see Appendix.

### Case Study 2: Brewer's Yacht Haven Marina, Stamford, CT



*Image: Google Earth 2008*

Brewer's Yacht Haven Marina in Stamford, CT is a 630-slip recreational marina and boatyard serving recreational boaters throughout the tri-state region. This facility includes a full-service boatyard with appropriate water depth and equipment to service large, deep-draft recreational vessels.<sup>43</sup> It is one of few remaining boatyards on Long Island Sound equipped for such vessels.

The Brewer's property and surrounding lands are part of an 80-acre waterfront development plan proposed by Antares Investment Partners. As of this writing, Antares is considering siting a high-speed ferry terminal on the Brewer's site, thus displacing up to half of the boatyard's upland storage and maintenance area.<sup>44</sup> To enact this plan, the Stamford Zoning Board has recently approved a zoning change for the Brewer's property and an adjacent parcel from a waterfront district to a mixed-use district, thus allowing over 150 non-water-dependent uses at the site.<sup>45</sup>

Connecticut coastal managers and other stakeholders are concerned that this change would ultimately lead to the loss of the boatyard, which would impact not just Stamford but the entire region. Officials from the Connecticut Office of Long Island Sound Programs have offered comments on the ferry feasibility study, questioning why Antares is prioritizing the Brewers site over other available waterfront sites. They have also offered comments on the zoning change, indicating their concern for the long-term viability of the boatyard, recommending an alternative zoning change to protect water-dependent uses at the site, and emphasizing the provisions of the Connecticut Coastal Management Act that mandate protection of water-dependent uses. As of this writing, no such changes have been made.<sup>46</sup>

### Case Study 3: The North Shore of Staten Island, New York

<sup>43</sup> Brewer's Yacht Haven Marina, 2008, <http://www.byy.com/stamford/index.cfm>.

<sup>44</sup> Kristal Kallenberg, personal communication, 2008.

<sup>45</sup> Letter from Betsey Wingfield, CTDEP, to Stamford Zoning Board, August 10, 2007.

<sup>46</sup> Kristal Kallenberg, personal communication, 2008; letter from Brian Thompson, CTDEP, to Stamford Zoning Board, May 21, 2007; letter from Betsey Wingfield, CTDEP, to Stamford Zoning Board, August 10, 2007; letter from Kristal Kallenberg, CTDEP, to Urbitran, October 15, 2007.





*Image: Google Earth 2008*

The North Shore of Staten Island is home to a collection of maritime support services which are critical to the operation of the Port of New York and New Jersey. These include one of the Port's major ship repair facilities, Cadell Dry Dock, and an area dubbed "Tugboat Alley," which is home to the tugboat operators whose tugs support the movement of ships throughout the Port. Many of these facilities are located within the Staten Island Significant Maritime and Industrial Area (SMIA), and according to the NYCEDC Maritime Support Services Location Study, all but one of the maritime businesses located within the Staten Island SMIA are privately owned.<sup>47</sup> This suggests that these uses may be more vulnerable to conversion than the other port uses that are owned by the Port of New York and New Jersey.

New York Harbor stakeholders emphasized the critical importance of these businesses to the operation of the entire Port, and how the north shore of Staten Island is the ideal location for these uses because it is central to all of the Port's terminals and facilities. However, recent initiatives, including the MTA's North Shore Rail Study and the EDC's North Shore Rail Use and Transportation Study, suggest that some City officials are exploring development alternatives for the North Shore. New York Harbor stakeholders expressed considerable concern that this area be protected for the benefit of the Port and the entire region.<sup>48</sup>

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<sup>47</sup> Yahalom et al., 2007: see Appendix.

<sup>48</sup> "MTA to move ahead with North Shore Rail Study." (2008, February 26). *Staten Island Advance*.

**Finding #3: Land use regulations could protect maritime uses.**

Land use regulations, including local zoning ordinances and special area designations, could be effectively used to protect water-dependent maritime uses from conversion to non-water-dependent uses. However, to be effective, such regulations must (a) be appropriately designed to protect such uses; and (b) be implemented to their full extent by decision-makers through permitting and consistency review processes.

**Local zoning ordinances**

Local zoning ordinances can be effectively used to protect and retain water-dependent uses, both by reserving waterfront property for water-dependent uses, and also by creating buffers around such uses to minimize conflicts with adjacent, non-water-dependent uses. However, anecdotal evidence suggests that such strategies are not widely used to protect water-dependent uses throughout the region. For example, although several areas within New York City's five boroughs are designated Significant Maritime and Industrial Areas under the city's New Waterfront Revitalization Program, and therefore home to numerous maritime uses of significance, the city's Zoning Resolution does not limit development in any of these areas expressly for water-dependent uses.<sup>49</sup> In another example, a 2005 study of 18 coastal communities in northeastern New Jersey found that most of those communities did not have waterfront elements to their master plans, nor did they have specific zoning ordinances to protect traditional waterfront or water-dependent uses.<sup>50</sup>

Some communities in the region employ zoning for water-dependent uses, or have recently rezoned sections of their waterfronts for water-dependent or marine-related uses in response to waterfront development pressures. One such

example is Oyster Bay, New York (see Case Study 4).

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<sup>49</sup> New York City Zoning Resolution, online at <http://www.nyc.gov/html/dcp/html/zone/zonetext.shtml>.

<sup>50</sup> McCay, B. et al. 2005. "Public Access and Waterfront Development in New Jersey: From the Arthur Kill to the Shrewsbury River." NY NJ Baykeeper. Retrieved from <http://www.nynjbaykeeper.org>.

#### Case Study #4: Glenwood Landing, Oyster Bay, New York



*Image: Google Earth, 2008*

The Glenwood Landing area of Oyster Bay is a 160-acre waterfront on the north shore of Long Island. The area had historically been occupied by industrial uses, but in recent years, these uses had declined and community members were concerned about the future development of this section of waterfront. In particular, community members were concerned about proposals for a car dealership preparation facility and a ferry terminal and related parking, and wanted to see uses of public benefit along the waterfront. In response to these concerns, the town of Oyster Bay instituted a short-term development moratorium and initiated the Glenwood Landing Waterfront Study to re-envision the future of this area.<sup>51</sup>

In 2004, as a result of this study, the town of Oyster Bay rezoned the Glenwood Landing into two Waterfront Districts, one of which is designed to “promote a mix of recreational and *water-dependent* marine commercial land uses that are consistent with the physical, cultural, socioeconomic, and environmental features of the Town of Oyster Bay’s coastal waterfront and which serve to enhance the accessibility, enjoyment, and utility of these vital areas.”<sup>52</sup>

<sup>51</sup> Aldona Lawson, personal communication, 2008.

<sup>52</sup> Oyster Bay Town Code §246-5.1.2.9

### Special Area Designations<sup>53</sup>

Special area designations, or overlay zones that reflect state or regional policy goals, are another land-use control that could protect maritime uses. New York City's Significant Maritime and Industrial Areas (SMIAs) are one such example. Six areas of New York City waterfront are designated as SMIAs as part of the City's New Waterfront Revitalization Program, which is approved by New York State as part of the state's coastal management program. Land-use decisions within the SMIAs must be reviewed for consistency with the coastal policies of the New Waterfront Revitalization Program. These policies include one to "support water-dependent and industrial uses" in the SMIAs and other appropriate areas.<sup>54</sup> Through this process, the SMIAs are intended to provide some protection for water-dependent and industrial uses in those areas.

However, as with zoning, such mechanisms are only effective when implemented to their full extent, as decisions made through the permitting process may undermine such protections. An important such example is the former Todd Shipyard/graving dock site in Red Hook, Brooklyn (see Case Study 5).

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<sup>53</sup> A special area designation is a type of overlay that could be enacted by a municipality as a land use control targeting an area of particular concern.

<sup>54</sup> New York City Department of City Planning. 2002. *The New Waterfront Revitalization Program*. Retrieved from <http://www.nyc.gov/html/dcp/html/wrp/wrp.shtml>.



### Case Study 5: former Todd Shipyard/gravating dock site, Brooklyn, New York



*Images: John Bartelstone [left, before conversion right, after conversion]*

The former Todd Shipyard was a full-service ship repair facility on Erie Basin in Red Hook, Brooklyn. Though widely known as the former Todd Shipyard, it operated more recently as the New York Shipyard, and was last owned by United States Dredging. It is best known for its historic graving dock, which was active for over 140 years and, at 730 feet in length, was once one of the largest of its kind.<sup>55</sup> It was located within the Red Hook Significant Maritime and Industrial Area, a special area designation of the New York City New Waterfront Revitalization Program (WRP).

The Todd Shipyard graving dock remained active until 2005, when the City of New York permitted an IKEA store for the shipyard site. The IKEA proposal included a parking lot to be built on the site of the graving dock.<sup>56</sup> This proposal was reviewed for consistency with the coastal policies of the WRP, which include prioritization of water-dependent maritime and industrial uses. It was found to be consistent with these policies because it allowed for preservation of some water-dependent uses – specifically, dockage for the adjacent barge company as well as a new ferry landing to serve IKEA customers – and would also provide public access to the waterfront.<sup>57</sup> This decision was challenged in New York State Supreme Court in 2005, but upheld on the basis that it was, indeed, consistent with the WRP policy that an action is consistent when it will “not substantially hinder the achievement of any of the policies and, where practicable, will advance one or more of the policies.”<sup>58</sup>

<sup>55</sup> Municipal Art Society. 2007. “The Red Hook Graving Dock.” Online at [http://www.saveindustrialbrooklyn.org/red\\_hook.html](http://www.saveindustrialbrooklyn.org/red_hook.html).

<sup>56</sup> Pogrebin, Robin. (2007, June 14). “Brooklyn Waterfront Called Endangered Site.” *New York Times*.

<sup>57</sup> New York City Planning Commission. September 8, 2004. Commission Reports: “Red Hook Ikea” Nos. 27-31. Online at <http://a030-cpc.nyc.gov/html/cpc/index.aspx?function=3>.

<sup>58</sup> *Coalition to Revise Our Waterfront Now v. City of New York*. 2005. NY State Supreme Court-NY County.

**Finding #4: Complying with some environmental regulations is a challenge for some maritime uses.**

Complying with some environmental regulations is a significant challenge for certain maritime uses. In some cases the challenge is not the regulations themselves, but instead the costs and time associated with the permitting process. Such investments of time and money are particularly problematic for smaller-scale, privately-owned maritime uses such as shipyards and ship repair businesses, recreational marinas and boatyards, and mixed-use piers. It is not that regulatory agencies specifically target maritime uses with greater environmental oversight; rather maritime uses are subject to a complex regulatory process for reasons connected to their nature and location:

- They are located on the coastal margin, which is in general highly vulnerable due to the concentration of valuable natural resources/ecosystem services as well as the exposure of these areas to high-energy storm events, etc.
- They are located at the intersection of multiple jurisdictions (federal and state jurisdiction in-water; municipal jurisdiction upland).
- They require complex development in manipulation of these areas, both upland and in-water.

Dredging and permitting for in-water structures were the two environmental regulatory areas of greatest concern to maritime users in the region. While the costs and requirements of dredging may represent a more extreme example, it is useful to analyze the challenges inherent within the process to understand the complexities of the overall regulatory system.

**Cost and Complexity**

Much of the cost and complexity associated with environmental permitting is due to the fragmented nature of environmental governance. An environmental engineer interviewed for this study indicated that in the Long Island Sound region, the permitting process

for marina-related renovation and repair projects could take an average of 1 ½ years and could cost anywhere from \$30,000 to \$120,000.<sup>59</sup> A typical water-dependent maritime use, involving both upland and in-water structures, may require permits from multiple federal, state, and local authorities. As an example, such a project in New York State may require permits or approvals from: the U.S. Army Corps of Engineers; National Marine Fisheries Service (NOAA Fisheries); U.S. Fish and Wildlife Service; U.S. Coast Guard; New York State Department of Environmental Conservation; New York State Department of State Division of Coastal Resources; and the municipality's coastal management commission, municipal planning and zoning commission, and building department.<sup>60</sup> The costs associated with obtaining the appropriate permits from these agencies include the permit fees themselves, testing fees (i.e. to assess water quality or the toxicity of dredged material), and the costs of retaining environmental engineers and consultants to manage the permitting process.

**Dredging**

Water-dependent maritime use requires regular dredging of its in-water facilities to maintain appropriate water depth for its client vessels. Without regular access to waters of the appropriate depth, maritime businesses may be forced to limit or in some cases cease operations. The costs associated with dredging, coupled with the amount of time and effort it takes to obtain the necessary permits, have an enormous effect on the long-term viability of water-dependent maritime uses. Costs are associated with the testing of dredged material (to assess its toxicity) and the subsequent removal, transport, and disposal of the sediment, as well as the permitting process itself. According to Port Authority officials, port dredging projects involve costs from \$100,000 to \$250,000 to test dredged sediments, and between \$18 and \$80 per cubic yard for sediment disposal (depending on upland or in-water disposal).<sup>61</sup>

These costs are particularly burdensome to small marina and boatyard owners who have little to no access to public funds and do not

<sup>59</sup> Daniel Natchez, personal communication, 2008.

<sup>60</sup> Daniel Natchez, personal communication, 2008.

<sup>61</sup> Thomas Costanzo, personal communication, 2008.

generate sufficient revenue to justify these costs. This fact is illustrated in a case study economic analysis of marina dredging projects in New Jersey, which found that dredged material placement can cost between \$21 and \$59 per cubic yard (2005 dollars), which is a particular hardship for small marina owners.<sup>62</sup> One environmental engineer consulted for this study indicated that for a marina in the Long Island Sound region – an “average” dredging project, constituting 20,000 cubic yards of material, could cost as much as \$755,000.<sup>63</sup> The case of Union Dry Dock in Hoboken, New Jersey illustrates this problem (see Case Study 6).

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<sup>62</sup> New Jersey Department of Transportation Office of Maritime Resources. n.d. *Public and Private Dredged Material Management Strategies in New Jersey: A Case Study Economic Analysis*. Online at <http://www.state.nj.us/transportation/airwater/maritime/dreeconomic.shtm>.

<sup>63</sup> Sediment testing: \$25,000; disposal for 20,000 cy at \$35/cy: \$700,000; permitting: \$30,000. Daniel Natchez, personal communication, 2008.

### Case Study 6: Union Dry Dock, Hoboken, New Jersey



*Image: Google Earth, 2008*

Union Dry Dock is a small ship repair company with three floating dry docks on New York Harbor in Hoboken, New Jersey. Recently, naturally-occurring shoaling under Union's dry docks has required the shipyard to limit use of their dry docks.

Because the costs of dredging are prohibitive, Union Dry Dock has instead applied for an emergency authorization to re-profile (move sediment to a deeper on-site location) an area under one of their floating dry docks. The New Jersey Department of Environmental Protection has approved this emergency authorization, but at the time of writing, Union is still awaiting the appropriate permits from the U.S. Army Corps of Engineers. While reprofiling will enable Union to expand use of its dry docks for a relatively short period of time, it does not offer a long-term solution to Union's dredging problem.<sup>64</sup>

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<sup>64</sup> Bob Ferrie, personal communication, 2008.

## In-Water Structures

Maritime uses require either the construction of new or the maintenance of existing in-water structures including fixed piers, floating docks, pilings, and bulkheads. Maritime uses cannot survive without such structures, along with the appropriate water depth maintained through dredging. State environmental regulations in New York, New Jersey, and Connecticut limit the number, location, and design of in-water structures in order to minimize the impact of such structures on water quality, fish and wildlife habitat, and other aspects of the marine environment. Impacts can be direct, by displacing open state waters, and in-direct, through shadows and sedimentation caused by bulkheads, piers, and docks.

Under the New York State Protection of Waters Program, the DEC regulates many in-water structures including docks, moorings, bulkheads and revetments. This program is designed to protect water resources and the public health and welfare while allowing for economic development.<sup>65</sup> The Protection of Waters regulations are broadly written; and maritime users and environmental consultants in New York Harbor and Long Island Sound working under New York State's environmental regulations suggest that DEC officials are strictly interpreting these regulations and are limiting the maintenance and development of some maritime uses.<sup>66</sup> Environmental engineers and consultants indicate that there are ways to design piers and other structures to minimize impacts on habitat, and even enhance habitat, while allowing for maritime uses. For example, reef balls were installed as part of the West Harlem Waterfront Park project to enhance fish habitat near those piers.<sup>67</sup> However, anecdotal evidence suggests that such technological solutions are not yet widely accepted as a means of complying with New York State regulations.

<sup>65</sup> New York State Department of Environmental Conservation. 2004. "Protection of Waters Program: A Guide for Applicants." Online at <http://www.dec.ny.gov/permits/6340.html>.

<sup>66</sup> New York State Codes, Rules, and Regulations: 6NYCRR Part 608.8; Brown, Eliot. (2008, April 6.) "Off the Waterfront!" *The New York Observer*.

<sup>67</sup> For example, see Alevras, Ron, and Sarah Zappala. 2008. "Incorporating Aquatic Habitat Values in Working Waterfronts." Presented at The Coastal Society Conference, Los Angeles, CA, July 2, 2008.

## **Finding #5: Emerging trends underscore the importance of long-term planning for water-dependent maritime uses.**

Emerging trends in the maritime industries and in environmental management will have a significant impact on the long-term viability of water-dependent maritime uses. Both the commercial/industrial and the recreational maritime industries are in transition, with significant growth projected for both sectors. Much of this growth must be accommodated by water-dependent maritime land uses. In addition, climate change-induced sea level rise and increased flooding rise will have a profound long-term impact on maritime uses and on all other waterfront development and infrastructure. Together, these emerging trends underscore the importance of long-term planning for maritime uses.

## **Maritime Industries in Transition**

Both the commercial/industrial and the recreational maritime industries are in transition. Recreation and tourism-related maritime uses, including cruise ships and excursion boats, have become increasingly popular in recent years and may in some cases be more financially viable or desirable than other use. The U.S. Commission on Ocean Policy reported that on a national level, marine-related tourism and recreation are the only sectors of the "ocean economy" to grow over the past decade.<sup>68</sup> Passenger ferries, which provide both recreational opportunities and a means of mass transit, are also increasingly desirable, both on a national scale and within the greater New York region.<sup>69</sup> Some New York City officials and stakeholders are particularly interested in expanding passenger ferries as a means of reducing congestion and improving transportation redundancy.<sup>70</sup> Future development in these

<sup>68</sup> Colgan, Charles S. 2003. *Living Near and Making a Living From the Nation's Coasts and Oceans*. Appendix C to the Final Report of the U.S. Commission on Ocean Policy. Online at [http://oceancommission.gov/documents/full\\_color\\_rpt/welcome.html](http://oceancommission.gov/documents/full_color_rpt/welcome.html).

<sup>69</sup> Weisbrod, Roberta and Catherine Lawson. 2003. "Ferry Systems: Planning for the Revitalization of U.S. Cities." *Journal of Urban Technology* 10(2) p. 47-68.

<sup>70</sup> Council of the City of New York. May 5, 2008 Press Release: "Speaker Quinn, Mayor Bloomberg Unveil Plans for Five-Borough Ferry Service"; New York Metropolitan



industries will require either existing or new maritime uses, including ferry landings and passenger terminals as well as maritime support facilities to provide services to these vessels.

Maritime commerce and containerized trade in particular, is also on the rise. The U.S. Maritime Administration estimates that in order to keep pace with projected growth in coming years, the nation must expand its overall port capacity by 10% each year.<sup>71</sup> In the Port of New York and New Jersey, cargo growth increased 4% in 2007, outpacing all other major U.S. ports; port officials project that cargo volume will double in the next ten years.<sup>72</sup> This growth must be accommodated by expanding the Port's capacity and also by improving the transport of cargo from the Port to its final destination. Maritime industry leaders maintain that short sea shipping is an efficient and environmentally desirable means of doing so.<sup>73</sup>

Short sea shipping is the movement of cargo from major ports to secondary ports, via coastal and inland waterways, on barges or freight ferries. For example, a tug and barge could transport shipping containers from the Port of New York and New Jersey to Albany via the Hudson River, or to New Haven via the East River and Long Island Sound. Currently, 86% of all freight enters and leaves the Port by truck, one container at a time.<sup>74</sup> Short sea shipping would move much of this truck traffic to the waterways, thus relieving regional traffic congestion. The Port Authority recently conducted a pilot short sea shipping service through its Port Inland Distribution Network, but suspended it because it was financially infeasible.<sup>75</sup> Industry representatives indicate that public policy intervention and/or financial incentives are

needed to induce shippers to shift to this mode of freight transportation.<sup>76</sup>

As with recreational uses and passenger ferry transportation, the future development of short sea shipping will require either existing or new maritime facilities throughout the region, and particularly in satellite ports such as Bridgeport or New Haven. While many domestic short sea shipping services would require relatively little infrastructure, appropriate waterfront space must still be reserved for such future uses. One industry expert indicated that many of the maritime support businesses in the region, such as tug and barge companies, could also be involved in short sea shipping because their equipment and facilities could be used for both purposes.<sup>77</sup> In addition, according to a study conducted by the Institute for Global Maritime Studies and the Fletcher School of Law and Diplomacy at Tufts University<sup>78</sup>, foresight is required to prevent working waterfronts' gentrification, so that they will be ready to serve America's revitalized deep blue highway.

### **Climate Change and Sea Level Rise**

The projected effects of climate change - including sea level rise and increased energy and frequency of storms - will have profound long-term implications for maritime uses.

According to a 2006 report by the Union of Concerned Scientists, sea level is projected to rise from 4 to 21 inches by the end of the century under the most conservative greenhouse gas emissions scenario. The report emphasizes how even the most conservative of these projections has severe consequences for low-lying coastal areas such as those in the northeastern US.<sup>79</sup> A

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Transportation Council. 2005. Long Island Sound Waterborne Transportation Plan.

<sup>71</sup> U.S. Maritime Administration. 2007. *Vision for the 21<sup>st</sup> Century*. Online at <http://marad.dot.gov/Publications/2007/Maritime%20Report~1107%20changed%2010-29.pdf>.

<sup>72</sup> Port Authority of New York and New Jersey. March 20, 2008 Press Release: "Port of New York and New Jersey Sets Cargo Record in 2007; Plans for Expansion Announced." September 20, 2007 Press Release: "Port Authority to Acquire Key Parcel of Bayonne Property to Handle Continued Cargo Growth in Port of NY/NJ."

<sup>73</sup> U.S. Maritime Administration. 2007. *Vision for the 21<sup>st</sup> Century*.

<sup>74</sup> Zantal, Peter, personal communication, 2008.

<sup>75</sup> Zantal, Peter, personal communication, 2008.

<sup>76</sup> Kelly, Edward, personal communication, 2008; deCerreño, Allison et al. 2006. *Bi-State Domestic Freight Ferries Study*. New York University Rudin Center for Transportation Policy and Management.

<sup>77</sup> McGovern, Andrew, personal communication, 2008.

<sup>78</sup> Institute for Global Maritime Studies and the Fletcher School of Law and Diplomacy at Tufts University. 2008. *America's Deep Blue Highway: How Coastal Shipping Could Reduce Traffic Congestion, Lower Pollution, and Bolster National Security*. Online at [http://www.igms.org/docs/americas\\_deep\\_blue\\_highway\\_IGMS\\_report\\_sept\\_2008.pdf](http://www.igms.org/docs/americas_deep_blue_highway_IGMS_report_sept_2008.pdf)

<sup>79</sup> Union of Concerned Scientists. 2006. *Climate Change in the U.S. Northeast: A Report of the Northeast Climate Impacts Assessment*. Online at [http://www.climatechoices.org/ne/resources\\_ne/nereport.html](http://www.climatechoices.org/ne/resources_ne/nereport.html).

2007 study found that the greater New York area is among the top ten most vulnerable port cities in the world, both in population and in assets, to coastal flooding and storm damage.<sup>80</sup> These findings suggest that the long-term viability of *all* waterfront uses – whether water-dependent or not – is in question. They also suggest that waterfronts are best developed with uses that *must* be located on the water, and that are specifically designed to withstand the dangers of coastal hazards.

### **Ocean Energy**

Increasingly, areas immediately offshore are being considered for and in some cases - such as New Jersey<sup>81</sup> - used as areas for an emerging alternative energy industry. In addition to wind farms, offshore areas are also attractive places for Liquid Natural Gas (LNG) facilities. As this industry develops, locations along the waterfront will be in demand for use as staging areas to support the construction and maintenance of offshore wind farms and to service LNG facilities. Both would require new water-dependent maritime uses with deepwater access and sufficient upland area to allow for the full development of these facilities.

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<sup>80</sup> Nicholls, R.J. et al. 2007. *Ranking of the World's Cities Most Exposed to Coastal Flooding Today and in the Future*. Organization for Economic Cooperation and Development. Online at [http://www.oecd.org/document/34/0,3343,en\\_2649\\_201185\\_39727650\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/34/0,3343,en_2649_201185_39727650_1_1_1_1,00.html).

<sup>81</sup> The State of New Jersey recently awarded a grant to Garden State Offshore Energy, a joint venture between a unit of Public Service Enterprise Group Inc. and wind-power developer Deepwater Wind to develop the state's first offshore wind farm.

## **6. NEXT STEPS**

The following actions should be taken as next steps toward improving the knowledge base of water-dependent maritime uses in the region and protecting water-dependent maritime uses where appropriate.

### **Step #1: Inventory all maritime uses throughout the region.**

There is no comprehensive, up-to-date inventory of the number and location of all maritime uses, both commercial/industrial and recreational, throughout the region. Such an inventory will provide an important baseline by which to gauge future losses of maritime uses as well as future changes in waterfront land use. It will also enable decision-makers to make informed decisions, engage in long-range transportation and land-use planning, and where appropriate advocate for the preservation of such uses. None of the states in the tri-state area maintain such an inventory. The Maritime Support Services Location Study recently released by the NYCEDC includes an inventory of maritime support businesses located within New York City's six Significant Maritime and Industrial Areas.<sup>82</sup> This inventory represents one model, and a critical first step, toward a comprehensive inventory for the entire tri-state region.

Other states are currently in the process of developing comprehensive inventories of maritime uses. The state of Maine recently concluded an inventory of the state's "water access infrastructure" and created maps and databases for participating communities.<sup>83</sup> The state of Rhode Island is conducting a Geographic Information Systems (GIS)-based inventory of all marine commercial/industrial uses in the state, with the goal of making recommendations for the future development of such uses.<sup>84</sup> And Alabama Sea Grant is conducting the "South Alabama

Working Waterfront" Inventory, which also involves the creation of a GIS database.<sup>85</sup>

Both of these inventories present useful models of the type of inventory that could be accomplished for maritime uses throughout the region.

### **Step #2: Assess the economic impact of all maritime uses in the region.**

While many different studies have been conducted on the economic impact of various maritime industry sectors throughout the region, there is no one comprehensive, up-to-date study or data source of all commercial/industrial and recreational maritime uses in the region. In addition, while many of these studies illustrate the economic impact associated with maritime industry, few of these studies emphasize the relationship between this impact and the maritime land-uses that enable the economic activity. A comprehensive dataset or meta-analysis highlighting the economic impact of all maritime uses in the region would be of great use to both decision-makers and advocates. Such a dataset could draw upon the many existing data sources and studies, and could update, modify, or expand as appropriate to reflect the jobs, wages, and economic activity associated with the full range of maritime uses in the region.

### **Step #3: Convene a forum of decision-makers and maritime industry end-users.**

As noted above, no one entity or organization manages maritime uses throughout the region. Decision-making is fragmented among the many municipalities and state, regional, and federal entities with an interest in maritime uses. Moreover, no one entity manages the various environmental regulations that, cumulatively, present significant challenges to some maritime users. A forum of key waterfront decision-makers and maritime end-users would be an important first step toward improving communication and coordination both between the multiple decision-making entities, and between decision-makers and maritime industry end-users. Such communication and coordination would present an important step toward long-range, holistic planning for the

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<sup>82</sup> Yahalom, S. et al. 2007. Maritime Support Services Location Study. Prepared by SUNY Maritime for the New York City Economic Development Corporation.

<sup>83</sup> Conover, Shey. "Mapping Maine's Working Waterfront: for Our Heritage and Economy." Presented at the Working Waterways and Waterfronts Conference, Norfolk, VA, May 9, 2007.

<sup>84</sup> Becker, Austin, personal communication, 2008.

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<sup>85</sup> Thompson, Jody. "Working Waterfronts in Alabama and Mississippi Post-Katrina." Presented at The Coastal Society conference, Los Angeles, CA, July 2, 2008.



region's waterfronts, and toward better communication between environmental regulators and the end-users seeking permits from regulatory agencies. Furthermore, while it is not the purpose of this study to assign responsibility to any one agency or stakeholder, one of the goals of convening a forum would be to work with leaders or key agencies to determine who can be in charge in each jurisdiction. Finally, such a forum could help improve the visibility of maritime uses and help generate political will in support of their preservation.

There is evidence that such forums, when carefully planned, can help improve the management of maritime uses. In 2007, such a forum took place in Providence, Rhode Island in response to a growing debate about the future of the city's commercial/industrial waterfront. This two-day event brought together decision-makers, maritime industry representatives, developers, and outside experts to identify issues and work toward solutions for the city's waterfront. This led to the development of a working waterfront alliance; an increase in public awareness of the city's waterfront; and an improved dialogue between and among waterfront stakeholders and decision-makers.<sup>86</sup>

#### **Step #4: Develop a better toolbox for the protection of maritime uses.**

Land use regulations could, but do not always, protect maritime uses from conversion to other uses. In addition, complying with environmental regulations presents significant challenges to some maritime users. Some of these problems could be addressed through a better toolbox of policies, regulations, and programs to protect maritime uses. Such a toolbox, specifically designed for the unique maritime uses and regulatory structures of the tri-state area, should be developed and implemented. Such a toolbox should be developed in collaboration with decision-makers and maritime end-users, and designed for use by local and state decision-makers, individual land-owners, and advocacy groups.

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<sup>86</sup> Becker, Austin, personal communication, 2008.

A toolbox to protect maritime uses should include a suite of incentives to maintain appropriate maritime uses, and disincentives to convert to non-maritime uses. Such tools have recently been developed and employed in many other states, and many resemble the strategies typically used in farmland preservation. Incentives to maintain maritime uses may include tax breaks, grant programs, or opportunities to transfer or sell development rights. For example, the state of Maine recently passed a constitutional amendment to allow "working waterfront" uses to be taxed at the property's current use, not the "highest and best" use.<sup>87</sup> In another example, Palm Beach County, Florida recently purchased the development rights to two marina and boatyard facilities in order to ensure their longevity.<sup>88</sup> Disincentives to convert could include land use controls such as zoning regulations or special area designations, or the outright purchase of waterfront land. For example, the city of Baltimore, Maryland developed Maritime Industrial Zoning Overlay Districts with the goal of "reducing increasing conflicts between mixed-use development and maritime shipping by demarcating deep water areas in industrial precincts and reserving them for industrial use."<sup>89</sup> In another example, the state of Massachusetts uses its legal rights over filled tidelands to limit development in the state's "Designated Port Areas."<sup>90</sup> "Special Area Management Plans" are another planning tool that has been enacted in other states to address water-dependent uses/working waterfronts. They are identified in the federal Coastal Zone Management Act and can be enacted by a state coastal management program to develop a plan to manage coastal areas of particular concern. One example is the Rhode Island Coastal Management Program, which developed a "Metro Bay Special Area Management Plan" for the state's major urban area, encompassing Providence's working

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<sup>87</sup> Cowperthwaite, Hugh. 2007. "Maine Working Waterfront Access Pilot Program." Presented at the *Working Waterways and Waterfronts* Conference, Norfolk, VA, May 10, 2007.

<sup>88</sup> "County to spend \$29 million to keep parts of two marinas open to public." (2006, March 1.) *Palm Beach Post*.

<sup>89</sup> Baltimore Development Corporation. 2007. *Maritime Industrial Zoning Overlay District: 2007 Annual Report*.

<sup>90</sup> Ducsik, Dennis. 2007. Keeping Vessels at the Water's Edge: Progressive Stewardship of Public Tidelands in Massachusetts. Presented at the *Working Waterways and Waterfronts* Conference, Norfolk, VA, May 10, 2007.

waterfront, with the goal of better managing these uses<sup>91</sup>.

Some policies, regulations, and initiatives in the tri-state area present important starting points in developing this toolbox. These include the state coastal management programs' policies to protect water-dependent uses and municipal waterfront zoning ordinances such as the new Water-Dependent Use district established by Oyster Bay. These also include proposed programs like the New Jersey "Maritime Heritage Preservation Program," which would seek to preserve New Jersey maritime uses through the same type of preservation strategies established for New Jersey's farmlands.<sup>92</sup> This toolbox would build upon these strategies, refine them, and seek to implement them through direct land-use decision-making.

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<sup>91</sup> NOAA Office of Ocean and Coastal Resource Management. 2007. "Special Area Management Plans" and "Special Area Management Plans: Case Studies." Online at <http://coastalmanagement.noaa.gov/special.html>.

<sup>92</sup> Andrew Willner, personal communication, 2008.

## **Appendix I.**

### **Stakeholders interviewed**

**Fatai Adekoya**, New York Metropolitan Transportation Council

**Marta Bede**, New York City Economic Development Corporation

**David Blatt**, Connecticut DEP Coastal Management Program

**Genevieve Boehm**, New Jersey DOT Office of Maritime Resources

**Gerry Bogacz**, New York Metropolitan Transportation Council

**Scott Borgerson**, Columbia University Center for Energy,

Marine Transportation and Public Policy

**Kevin Corbett**, DMJM Harris

**Carter Craft**, Metropolitan Waterfront Alliance

**Paul Cummings**, New York State Department of Coastal Resources

**Melissa Danko**, New Jersey Marine Trades Association

**Robert Dickey**, International Longshoremen's Association Local 1588

**Suzanne Dietrick**, New Jersey DEP Office of Dredging and Sediment Technology

**Chris Dolphin**, New Jersey Division of Land Use Regulation

**John Doswell**, Working Harbor Committee

**Rachel Dubin**, Southwest Brooklyn Industrial Development Corporation

**Ruth Ehinger**, New Jersey DEP Coastal Management Program

**Tom Fox**, New York Water Taxi

**Dorina Frizzera**, New Jersey DEP Coastal Management Program

**Don Frost**, Connecticut Maritime Association/Connecticut Maritime Coalition

**Betsy Frawley Haggerty**, North River Historic Ship Society

**Pamela Hepburn**, North River Historic Ship Society

**Brian Hughes**, Hughes Marine

**Kristal Kallenberg**, Connecticut DEP Coastal Management Program

**Ed Kelly**, Maritime Association of NY & NJ

**Andrew Kimball**, Brooklyn Navy Yard Development Corporation

**David Kozak**, Connecticut DEP Coastal Management Program

**Richard Larrabee**, Port Authority of New York and New Jersey

**Roland Lewis**, Metropolitan Waterfront Alliance

**Andrew McGovern**, Sandy Hook Pilots Association

**Frank McDonough**, New York Shipping Association

**Dennis Mildner**, New York State Department of Coastal Resources

**Julie Nadel**, North River Historic Ship Society

**Daniel Natchez**, Natchez & Associates

**Joel Reinbold**, independent consultant

**David Sharps**, Waterfront Museum

**Chris Squeri**, New York Marine Trades Association

**Eric Swensen**, Hempstead Harbor Protection Committee

**Carol Szymanski**, Connecticut DEP Coastal Management Program

**Mark Tedesco**, Long Island Sound Study

**Phaedra Thomas**, Southwest Brooklyn Industrial Dev't Corp

**Kenneth Walker**, NOAA Office of Ocean and Coastal Resource Management

**Nancy Welsh**, New York State Department of Coastal Resources

**Edward Weinstein**, Edward M. Weinstein Consulting

**Roberta Weisbrod**, Partnership for Sustainable Ports

**Grant Westerson**, Connecticut Marine Trades Association

**Wilbur Woods**, New York City Dept. of City Planning

**Appendix II.**  
**Select Bibliography Reports and Studies**  
**Relevant to the Study Area**

Carstensen, F. et al. 2001. *The Economic Impact of Connecticut's Deepwater Ports: An IMPLAN and REMI Analysis*. Prepared for the Connecticut Coastline Port Authority. Available online at <http://ceea.uconn.edu/studies/Port%20Study.pdf>.

Connelly, N. et al. 2004. *Recreational Boating Expenditures in 2003 in New York State and Their Economic Impacts*. Prepared for New York Sea Grant. Available online at <http://www.seagrant.sunysb.edu/CoastalGeo/BoatingReport-FINAL.pdf>.

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Lahr, M. and Strauss-Wieder, A. 2004. *Economic Impacts of the New York/New Jersey Port Industry*. Prepared for the New York Shipping Association. Available online at <http://www.asw.com/pdf/NYNJPortEconomicImpacts2004.pdf>.

Marine Trades Association of New Jersey. 2008. *Recreational Boating in New Jersey: An Economic Impact Analysis*. Available online at <http://www.mtanj.org/>.

Yahalom, S. et al. 2007. *Maritime Support Services Location Study*. Prepared for the New York City Economic Development Corporation. Available online at <http://www.nycedc.com/Web/AboutUs/OurProjects/CurrentProjects/MaritimeStudy.htm>.

### Appendix III. State and Local Definitions of Water- Dependent Uses

State and local government agencies such as coastal management programs and planning boards may use regulatory definitions of water-dependency to limit waterfront development. Such regulatory definitions could be used to protect water-dependent uses. However, we found that in some cases, narrow interpretations of water-dependency are limiting the development of some waterfront uses.

Although this study focuses primarily on water-dependent maritime uses (i.e. those serving ships and boats), we found that narrow definitions of water-dependency are often problematic for *non-maritime* uses that allow for other activities like recreational fishing, wildlife viewing, or general public access to coastal waters. Such a use may be a pier or waterfront walkway that is not designed for vessel use. Such uses may be considered “passive” rather than “active” water-dependent uses, but nonetheless are functionally dependent on the water. For example, the Connecticut Coastal Management Program considers general public access a water-dependent use, though coastal managers explained that they first explore options for a more “active” use, such as a marina or boat launch, before permitting a waterfront walkway or other “passive” use.<sup>93</sup>

In Connecticut and New Jersey, coastal management definitions and regulations allow for such water-dependent recreational uses in some waterfront areas. In New York, the Hudson River Park Act explicitly defines water-dependent use to include some such recreational uses. However, New York stakeholders reported that applicants for recreational piers, walkways and similar such projects have encountered significant difficulties in proving the water-dependent nature of their project to the New York State Department of Environmental Conservation.<sup>94</sup> See below for a summary of the relevant state and local definitions of water-dependent uses.

<sup>93</sup> Carol Szymanski, personal communication, 2008.

<sup>94</sup> See for example Brown, Eliot. (2008, April 11). Off the waterfront! *The New York Observer*.

### NEW YORK:

**NY Department of State (coastal management program):** “*Water-dependent use* means an activity that can only be conducted on, in, over or adjacent to a water body because such activity requires access to water, and involves the use of water as an integral part of the activity.” In the state’s coastal policies, this definition is accompanied by several statements of uses to be considered water-dependent, one of which emphasizes that passive recreational activities may also be water-dependent: “Recreational activities which depend on access to coastal waters (for example: swimming, fishing, boating, wildlife viewing)”  
(From NYS Coastal Policies,  
[http://nyswaterfronts.com/downloads/pdfs/State\\_Coastal\\_Policies.pdf](http://nyswaterfronts.com/downloads/pdfs/State_Coastal_Policies.pdf))

**NY Department of Environmental Conservation:** Under the “Protection of Waters” program, NYS DEC employs the same definition as NYS DOS: “*Water-dependent use* means an activity that can only be conducted on, in, over or adjacent to a water body because such activity requires access to water, and involves the use of water as an integral part of the activity.”  
(From: NYS Environmental Conservation Law,  
<http://www.dec.ny.gov/regs/4438.html#15889>)

**New York City Department of City Planning:** Defines water-dependent (WD) use as follows: “WD #uses# require direct access to a body of water in order to function or use waterways for transport of materials or products.” Also defines a separate category of “*waterfront enhancing*” (WE) uses as follows: “WE #uses# comprise a group of primarily recreational, cultural, entertainment or retail shopping #uses# that, when located at the water’s edge, add to the public use and enjoyment of the waterfront.”  
(From: NYC zoning resolution,  
<http://www.nyc.gov/html/dcp/pdf/zoning/art06c02.pdf>)

**NY Hudson River Park Act (1998):** Defines water-dependent use as follows: “‘Water dependent use’ excludes any prohibited use and means: (i) any use that depends on utilization of resources found in the water section; (ii) recreational activities that depend on access to the water section, such as fishing, boating, swimming

in such waters, passive enjoyment of the Hudson river and wildlife protection and viewing; (iii) facilities and incidental structures needed to dock and service boats; and (iv) scientific and educational activities that by their nature require access to marine reserve waters.”

(From: Hudson River Park Act of 1998,  
<http://www.hudsonriverpark.org/pdfs/act/act.pdf>)

## CONNECTICUT:

### **CT Department of Environmental Protection Office of Long Island Sound Programs**

**(coastal management program):** Defines water-dependent as follows: “Water-dependent uses’ means those uses and facilities which require direct access to, or location in, marine or tidal waters and which therefore cannot be located inland, including but not limited to: Marinas, recreational and commercial fishing and boating facilities, finfish and shellfish processing plants, waterfront dock and port facilities, shipyards and boat building facilities, water-based recreational uses, navigation aides, basins and channels, industrial uses dependent upon water-borne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an inland site and uses which provide general public access to marine or tidal waters.”

(From CT Coastal Management Act,  
[http://www.ct.gov/dep/lib/dep/long\\_island\\_sound/coastal\\_management\\_manual/manual\\_section\\_5\\_08.pdf](http://www.ct.gov/dep/lib/dep/long_island_sound/coastal_management_manual/manual_section_5_08.pdf))

## NEW JERSEY:

### **NJ Department of Environmental Protection Coastal Management Program:**

Defines water-dependent use as follows: "Water dependent" means development that cannot physically function without direct access to the body of water along which it is proposed.... Maritime activity, commercial fishing, public waterfront recreation and marinas are examples of water dependent uses, but only the portion of the development requiring direct access to the water is water dependent. The test for water dependency shall assess both the need of the proposed use for access to the water and the capacity of the proposed water body to satisfy the requirements and absorb the impacts of the proposed use.....”

“Examples of water dependent uses include: docks, piers, marina activities requiring access to the water, such as commissioning and decommissioning new and used boats, boat repairs and short term parking for boaters, storage for boats which are too large to be feasibly transported by car trailer (generally greater than 24 feet), rack systems for boat storage, industries such as fish processing plants and other commercial fishing operations, port activities requiring the loading and unloading of vessels, and water-oriented recreation.”

(From NJ Coastal Zone Management Rules,  
<http://www.nj.gov/dep/landuse/7-7e.pdf>)