

Rhode Island Ports & Commercial Harbors

A GIS-based Inventory of Current Uses and Infrastructure
August 2010

Written by:
Austin Becker
Angela Wilson
Rebecca Bannon
Jennifer McCann
Don Robadue
Susan Kennedy (Editor)



This project was supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration.



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Credit Notation

The Rhode Island Statewide Planning Program (RISPP), Rhode Island Department of Administration, is established by Chapter 42-11 of the General Laws as the central planning agency for state government. The work of the Program is guided by the State Planning Council, comprised of state, local, and public representatives and federal and other advisors.

In 2007, RISPP, in an effort to more closely link land and coastal planning strategies, provided Challenge Grant Competition funds to the University of Rhode Island Coastal Resources Center/Rhode Island Sea Grant (CRC/SG) to implement a groundbreaking study for the state: "Rhode Island's Ports and Commercial Harbors: A Rhode Island Geographic Information System (GIS)-based Inventory of Current Uses and Infrastructure." The project objectives are to: 1) Prepare a comprehensive GIS-based Inventory of existing marine commercial/industrial uses and infrastructure and assess the use of Rhode Island ports and commercial harbors; and 2) Develop information to contribute to resolving some pressing state issues such as traffic congestion and economic development.

This report and the Geographic Information System (GIS)-based Inventory database were supported by funds from the RISPP and the Rhode Island Sea Grant College Program. It was prepared by Austin Becker, Angela Wilson, Jennifer McCann and Don Robadue of the University of Rhode Island Coastal Resources Center/Rhode Island Sea Grant College Program (CRC/SG), and Rebecca Bannon, Amiee Mandeville, and Chris Damon of the University of Rhode Island Environmental Data Center (EDC), with guidance from a Steering Committee and an Advisory Committee (See Acknowledgements). It may be reprinted, in part or full, with the customary crediting of the source.

The Ports and Harbors GIS-based Inventory is located on the Rhode Island Geographic Information Systems server (<http://www.edc.uri.edu/RIGIS/>) and is publicly available. This document is available electronically at <http://www.planning.ri.gov> and <http://www.seagrants.gso.uri.edu/coast/portsharbors.html>.

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ABSTRACT: The purpose of the GIS-based Inventory is to provide decision makers with a tool for better understanding Rhode Island's marine commercial/industrial uses and infrastructure. The GIS-based Inventory provides municipalities, state agencies, and the private sector with a snap-shot in time (July 2008) of how 17 of Rhode Island's waterfronts used the parcels that are adjacent to Rhode Island Coastal Resources Management Council (CRMC) designated Type 5 (Commercial and Recreational Harbors) and Type 6 (Maritime Industries and Commercial Navigation) water classifications.

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1. Executive Summary

In 2007, the Rhode Island Statewide Planning Program (RISPP), in an effort to more closely link land and coastal planning strategies, provided Challenge Grant Competition funds to the University of Rhode Island Coastal Resources Center/Rhode Island Sea Grant (CRC/SG) to implement a groundbreaking study for the state: "Rhode Island's Ports and Commercial Harbors: A Rhode Island Geographic Information System (GIS)-based Inventory of Current Uses and Infrastructure." Over the course of three years, and with guidance from Steering and Advisory committees, the study has produced the state's first comprehensive GIS-based Inventory of existing resources, marine infrastructure and uses, and conditions of Rhode Island ports and commercial harbors.

The GIS-based Inventory has served a critical role, as no single or comprehensive source of data previously existed that identified and quantified the assets, facilities and infrastructure of Rhode Island's multiple ports and harbors. Such guidance will enable urban waterfront planning to emerge as a focused lens through which to start solving pressing statewide problems in a collaborative and integrative context that reflects the needs and goals of varied stakeholders. The tool, however, is limited by the specific industrial/commercial scope, the size of its project area, and the use of only Type 5 and 6 CRMC water type classifications. This means that the data is not comprehensive for the spectrum of all marine-based industries.

The final study area includes 1,568 parcels (5,562 acres) and is approximately 10 percent, or about 42 miles of Rhode Island's total coastline. Data reflects conditions for these waterfronts as they existed in July 2008.

This report describes how the GIS-based tool and its components were developed, and then presents three examples showing how the tool can be applied to better understand Rhode Island's marine commercial/industrial uses and infrastructure. These examples are:

- 1) Community profile development. Using the GIS-based Inventory, 17 waterfront profiles were developed. Summaries include both text and maps that demonstrate the number of acres and parcels used for industrial and commercial purposes and specific infrastructure.
- 2) Responses to specific queries. Specific questions related to ports and harbors were answered using the GIS-based Inventory. Although more detailed responses to these questions may be found in the report, some highlights appear below, with all responses pertaining to the study area only:

- Of the 1,028 parcels (3,009 acres) that are zoned for commercial or industrial uses, 176 (879 acres) are being used for marine commercial or industrial purposes.
 - There are 384 parcels (1,204 acres) being used for water dependent, water related, or water enhanced uses.
 - Four parcels (64 acres) are vacant, zoned commercial or industrial, are within 200 feet of Type 6 waters, and are 200 feet from 25 feet or more of water depth.
 - Statewide there are 1,946 berthing spots that vary in length (10 - 2,600 feet long) and depth (3 - 40 feet deep). There are 431 acres of lay-down space and 58 parcels with active rail.
- 3) Tool for monitoring change. The GIS-based Inventory was able to demonstrate the change in land use during a one-year time period at the Quonset Business Park.

Overall, the GIS-based Inventory is bringing a new level of effectiveness and efficiency to planning discussion across the state. Critically, it also sheds light on an ongoing challenge for the state: industrial and commercial marine uses and infrastructure are a limited resource in Rhode Island with very few parcels remaining to expand marine-based industry. Thus, the GIS-Inventory is a primary resource which can now help decision makers start addressing marine commercial and industrial development challenges.

The Ports and Harbors GIS-based Inventory is located on the Rhode Island Geographic Information Systems server (<http://www.edc.uri.edu/RIGIS/>) and is publicly available. This document is available electronically at <http://www.planning.ri.gov> and <http://www.seagrant.gso.uri.edu/coast/portsharbors.html>.

2. Introduction

In 2007, the Rhode Island Statewide Planning Program (RISPP), in an effort to more closely link land and coastal planning strategies, provided Challenge Grant Competition funds to CRC/SG to implement the creation of the GIS-based Inventory. Over the course of three years, and with guidance from Steering and Advisory committees, the study has produced the state's first comprehensive GIS-based Inventory of existing resources, marine infrastructure and uses, and conditions of Rhode Island ports and commercial harbors.

The final study area includes 1,568 parcels (5,562 acres) and is approximately 10 percent, or about 42 miles of Rhode Island's total coastline. Data reflects conditions for these waterfronts as they existed in July 2008.

The GIS-based Inventory takes stock of a comprehensive range of commercial and industrial marine infrastructure (i.e., piers and rail access) and of marine operations (i.e., cargo transport). Related or complementary uses are also included, as is information regarding municipal zoning and state water types as designated by the Rhode Island Coastal Resources Management Council (CRMC). The study also partially accounts for recreational marine uses, both commercial and non-commercial, within the study area boundary.

This report describes how the GIS-based Inventory and its components were developed, and then presents three examples showing how the tool can be applied to better understand Rhode Island's marine commercial/industrial uses and infrastructure. The study has served a critical role, as no single or comprehensive source of data previously existed that identified and quantified the assets, facilities, and infrastructure of Rhode Island's multiple ports and harbors. This is important information for the public and private sectors alike for two reasons: 1) Harbor planning has traditionally occurred in isolated fashion, with little attention paid to the impact of decisions on host communities; other ports and harbors; or the economic, environmental, and social resources of Narragansett Bay; and 2) Harbors may provide solutions to resolve many of Rhode Island's future problems including freight transportation, traffic congestion, and economic development.

Going forward, public and private constituencies will need to engage in innovative and timely planning processes to ensure the most is made of Rhode Island's coastal, marine-based commercial and industrial assets: not only is a mere seven percent of the state's coastline zoned for commercial or industrial uses (Type 5 waters, three percent; Type 6 waters, four percent), but realistically developable, large parcels are extremely rare, with the remainder of available property constituting little more than fragments. Ensuring practical and wise use of these few critical parcels is important.

Such guidance will enable urban waterfront planning to emerge as a focused lens through which to start solving pressing statewide problems in a collaborative and integrative context that reflects the needs and goals of varied stakeholders. The GIS-based Inventory has emerged as a critical tool for helping decision-makers from both the public and private sectors. With this new tool, they are now better prepared to make sound waterborne-freight and marine transportation planning and permitting decisions, to integrate smart growth tools and techniques into these processes to foster vibrant waterfronts, and to ultimately enhance the economic viability and value of the state.

The Ports and Harbors GIS-based Inventory is located on the Rhode Island Geographic Information Systems server (<http://www.edc.uri.edu/RIGIS/>) and is publicly available. This document is available electronically at <http://www.planning.ri.gov> and <http://www.seagrant.gso.uri.edu/coast/portsharbors.html>.

3. Study Methodology

The purpose of the study is two-fold, aiming to provide the state with: 1) Its first comprehensive GIS-based Inventory of commercial, industrial, and in many instances, recreational resources of its ports and harbors; and 2) Technical assistance so decision makers can apply the Inventory as a tool for understanding complex waterfront redevelopment and planning issues and for engaging in collaborative efforts to arrive at sound decisions about them.

Creating the Supportive Network

Providing both the GIS-based Inventory and its supportive framework has hinged on the creation of a valuable network for input and dialogue. The network is comprised of a Rhode Island Statewide Planning Program (RISPP) steering committee, with representation from government and private sector interests engaged with ports and harbors redevelopment issues; and of an advisory committee, with leaders from local, national, and international public and business spheres sharing their lessons learned from diverse waterfront initiatives. Both groups have contributed critical skill sets, experiences, and knowledge to the process and have enabled the development of a GIS-based Inventory tool targeted to government needs and supported by responsive technical assistance.

The establishment of this network also fostered seeding of an equally important component of the decision making framework: community participation. Through their leadership capacity, members of the project team and the steering and advisory committees encouraged community groups and a rich array of private sector interests to contribute to the conversations. Opportunities for inclusion included committee meetings, a list serve, a web page, and presentations, including one to a committee serving the Rhode Island General Assembly.

Establishing the Study Area

Because the focus of this effort was maritime commercial and industrial uses, the identification of the study area began by creating a polygon of land area one half-mile around the Rhode Island Coastal Resources Management Council's (CRMC) Water Classifications for Types 5 and 6 waters using mapping software. This was done in order to identify the port and harbor areas near and within the designated water types. Type 5 waters (Commercial and Recreational Harbors, such as Newport Harbor) support a vibrant mix of commercial and recreational waterfront activities. These activities (i.e., commercial fishing, recreational boating, ferry service) are traditional for Rhode Island and constitute important components of the state's tourism industry. Type 6 waters (Industrial Waterfronts and Commercial Navigation Channels, such as the Port of Providence) reflect the extensive physical alterations needed to accommodate

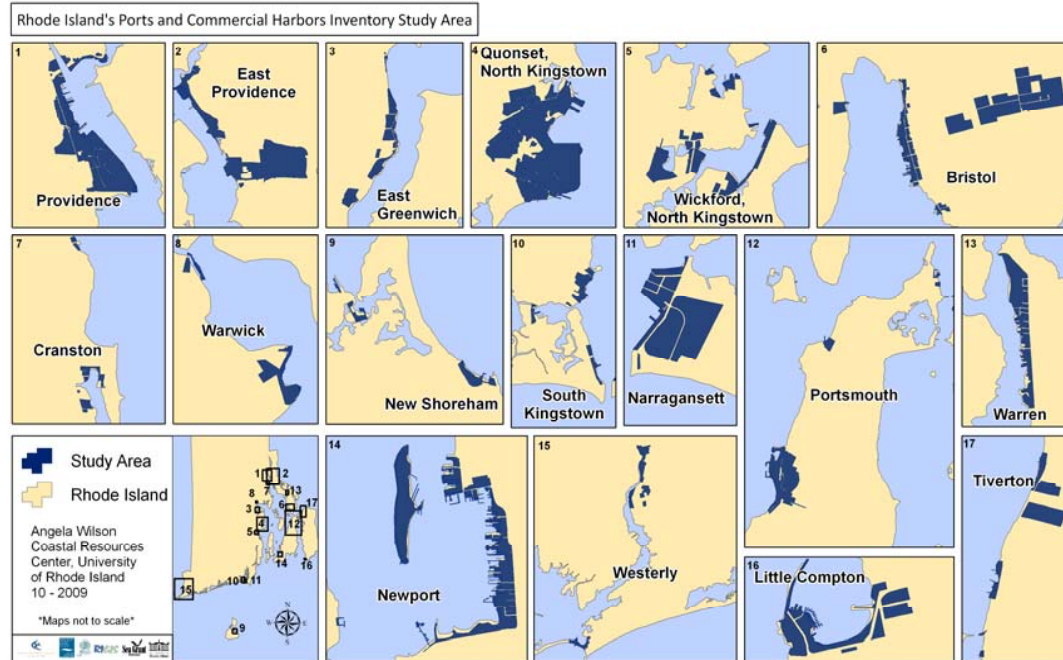
commercial and industrial water dependent and water enhanced activities. In these waters, water dependent industrial and commercial activities take precedence over all other activities. For both Type 5 and 6 classifications, maintenance of adequate water depths is essential, high water quality is seldom achievable, and some filling may be desirable. Seven percent of Rhode Island's coastline is zoned Type 5 (three percent) and Type 6 (four percent) waters.

For each of the polygons within this half-mile buffer of Types 5 and 6 waters, parcel data was joined. Parcel data reflects the latest information available (as of July 2008). In instances where digital information did not exist, paper maps provided by municipalities underwent a "heads-up" digitizing process to yield data. General zoning categories were created based on the individual zoning codes from each municipality. All zone codes were generalized into six broad categories: Open Space, Residential, Commercial, Industrial, Mixed-Use, and Other. If in doubt about which category was most appropriate, zone codes were included in the study, rather than excluded. For example, a municipal zone code of "Residential Mixed Use" was categorized as "Mixed Use", rather than as "Residential" so that parcels with that municipal code would be included and studied in more detail. Zone code generalizations were verified by the town planner for each municipality.

Using the expertise and judgment from both the project team and members of the steering committee, the study area boundary was refined. Adjacent parcels outside of the initial study area boundary known to be critical for marine commercial and industrial uses, such as the Exxon Mobil site in East Providence and some of the upland portions of Quonset/Davisville, were included. Due to the likelihood that parcels did not and would not be used for marine commercial and/or industrial uses, the project and steering committees determined to exclude the following areas: the area north of the Point Street Bridge (crossing the Providence River), areas west of Interstate 95 in Providence, areas north of the Route 195 Bridge over the Seekonk River, areas that are almost entirely residential, and property owned by the U.S. Navy (with the exception of tank farms on Aquidneck Island).

The study area is 1,568 parcels (5,562 acres), approximately 10%, or about 42 miles of Rhode Island's total coastline and includes 17 waterfronts from 16 Rhode Island municipalities: Bristol; Cranston; East Greenwich; East Providence; Little Compton; Narragansett; Newport; New Shoreham; Quonset/Davisville, North Kingstown; Wickford, North Kingstown; Portsmouth; Providence; South Kingstown; Tiverton; Warren; Warwick; and Westerly.

FIGURE 1. INVENTORY STUDY AREA



Although not reflected in the final study area of 1,568 parcels, there are 17 parcels (Table 1) assigned “Special Feature” status due to the significant role they play in Rhode Island’s overall ports and harbors “picture.” Thus, they are in the database but they have not been assigned any attribute information, outside of the “Special Feature” designation.

TABLE 1. SPECIAL FEATURES AND LOCATIONS

Special Feature	Municipality
Hog Island Ferry Terminal	Bristol
Industrial Parks with Water Related Businesses - some are moving to Franklin Industrial Park	Bristol
Franklin Industrial Park - new park with water related businesses and improved access to water	Bristol
Tugboat Berthing	Jamestown
Jamestown Facilities	Jamestown
University of Rhode Island Pier	Narragansett
Narragansett Pier	Narragansett
Fort Adams - Ferry Terminal and General Berthing	Newport
Charter Boat Berthing, general winter berthing	New Shoreham
High Speed Ferry	New Shoreham
Weyerhaeuser Pier	Portsmouth
Silver Spring Marine	South Kingstown
Ram Pt. Marina, URI Sailing Club, Marina Bay Docking, Pt. Judith Yacht Club	South Kingstown
Stone Cove Marina	South Kingstown
Billington Cove Marina	South Kingstown
Commercial Fishing Berthing, Marine Repair	Tiverton
Marinas, General Berthing with some Commercial Fishing	Warwick

Developing the Tool and Defining the Attributes

Existing data sets were acquired from a U.S. Army Corps of Engineers Ports Dataset (2005) and a RISPP Land Use/Land Cover (2004). These, in turn, were joined with the datasets that were created during the establishment of the study area. New fields were created to capture maritime infrastructure, vacant land, and uses of interest to the study. This resulted in a total of 67 data fields or attributes for each of the 1,568 parcels. This allowed for a more robust and informative picture of the unique nature of Rhode Island's 17 ports and harbors. See Table 2 for a complete list of Inventory data attributes.

TABLE 2. INVENTORY DATA ATTRIBUTES

Acres	Pier Capacity
Available	Pier Depth
Berth Draft	Pier in Use
Berth Draft Range	Pier Number
Berth Length	Pier Purpose
Berth Number	Pipeline
Berth Purpose	Purpose Notes
City	Rail
Crane Capacity	Rail Active
Crane in Use	Railyard
Crane Number	Sewer Service
Crane Type	Shore Power
Deep Water Required	Source
Dry Dock Capacity	Source Photo Available
Dry Dock in Use	Special Features
Dry Dock Number	Special Use Restrictions
Fire Station	Tank Capacity
Fish Processing	Tank in Use
Float Purpose	Tank Number
Floats	Use Level
General Comments	Warehouse Capacity
Laydown Acres	Warehouse in Use
Laydown Purpose	Warehouse Number
Laydown in Use	Waste Pumpout
Lift Capacity	Water Dependence
Lift in Use	Water Service
Lift Number	Wharf Capacity
Liquid Transfer	Wharf Depth
Liquid Type	Wharf Number
Marine Recreation Use	Wharf in Use
Parcel Number	Wharf Purpose
Parcel Purpose	Water Type
Parcel Utilization	Zoning
Pending Development Proposals	

Parcel Purpose

The uses taking place on each parcel were characterized by assigning multiple descriptors to each parcel as separate fields in the attribute table. For example, rather

than simply characterizing a parcel as “Commercial,” the tool enabled the GIS-based Inventory to further describe it as “Ship Building or Repair” and “Restaurant.” This provides a more detailed and accurate description for each individual parcel. These purpose categories are listed in Table 3.

TABLE 3. LIST OF CATEGORIES FOR “PURPOSE” AND “MARINE RECREATION USE” ATTRIBUTES

<i>Categories for Attribute “Purpose” for Commercial and Industrial</i>	<i>Categories for Attribute “Marine Recreation Uses”</i>
Combination of Purposes	Berthing
Commercial Dock Building and Pile Driving	Boat Building
Commercial Ferry	Boat Ramp
Commercial Fishing	Boat Repair
Dry Bulk Cargo	Charter Ticket Sales
Electrical Power Generation	Commercial Passenger Vessel
Fish Processing	Dockominium
General Berthing	Marina
Government/ Institution	Memorial
Liquid Cargo	Museum
Pipe line	Park
Roll on/ Roll off	Parking
Sewer	Public Access
Ship Building or Repair	Public Dockage
	Restaurant
	Rowing Club
	Seasonal Laydown
	Transient Slips
	Yacht Club

Parcel Utilization

Another technique to describe the primary parcel use is to identify a parcel as Maine Commercial/Industrial, Commercial Marine Recreation, Maine Recreation (Not Commercial), or Not Water Related. In cases where a parcel had multiple activities occurring (and where uses vary by floor and section of an individual parcel) an effort was made to document these activities in the data base.

Special Use Restrictions

Several parcels were identified as having use restrictions, such as “commercial and industrial zoning restrictions” or “town owned - must be used for recreation”. When identified by the municipality or in reviewed documents, this information was input into

the “Special Use Restrictions” attribute. Not all use restrictions were identified for every parcel.

Use Level

The GIS “Use Level” attribute identifies if a parcel is “in use” or “vacant”. A parcel would be coded “in use” if any activity was taking place, or there was development in the process of being permitted. A parcel would be identified as being “vacant” if the parcel had no current use or activity, including no pending development in process of being permitted.

Water Type

The inventory identifies the location of the parcel relative to the CRMC water type classifications. The water type classifications include: Type 1 (Conservation Areas); Type 2 (Low Intensity Use); Type 3(High Intensity Boating); Type 4 (Multi-purpose Waters); Type 5 (Commercial and Recreational Harbors; and Type 6 (Industrial Waterfronts and Commercial Navigation Channels). Because of CRMC’s jurisdiction of 200 feet inland from the coastal feature, a when a parcel is further than 200 feet from the shoreline, the parcel is coded as “not within 200 ft of the shoreline”.

Water Dependence

An additional form of labeling is to determine if a parcel is Water Dependent, Water Related or Water Enhanced (See Table 4 for examples of uses). If there is a water dependent use taking place on the parcel, even if it is not the primary activity on the parcel, the entire parcel is classified as water dependent. These definitions apply:

Water Dependent Use: Requires direct access to marine or tidal waters, or a location which is proximate to marine or tidal waters, for its continued viable operation and which therefore cannot be reasonably located inland.

Water Enhanced Use: Water enhanced uses do not require access to the water for viable operation, but are enhanced by a waterfront location.

Water Related: Water related uses do not require direct access to the water, but provide goods or services associated with water dependent uses. They are uses that do not strictly require a waterfront location, but are generally understood to be closely associated with the harbor. These facilities are better sited close to the water.

FIGURE 2. DECISION MAKING PROCESSES FOR WATER DEPENDENT ACTIVITIES

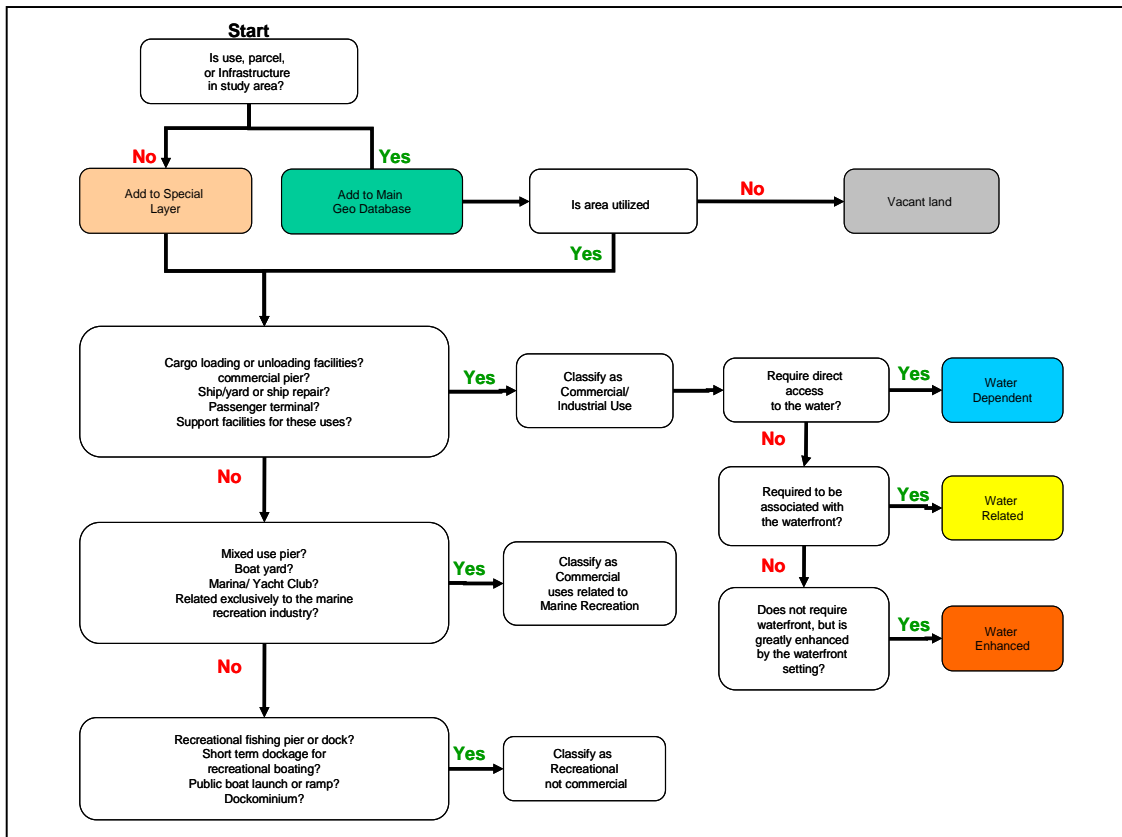


TABLE 4. EXAMPLES OF USES

Water Dependent	Water Related	Water Enhanced
Marinas	Chandleries	Restaurants
Ship repair	Bait shops	Bars/taverns/night clubs
Commercial fishing facilities	Ice houses	Hotels
Cargo handling facilities	Bait shops	Residential with water view
Ferry terminals, water taxis	Marine supply stores	Museums
Charter facilities	Fish processing facilities	Educational institutions
Petroleum facilities served via marine pipeline	Marine repair facilities (welding, engine repair)	Offices
Cruise ship terminals	Tugboat dispatch	
Boat rentals/charter facilities (fishing, sailing, etc),		
Bulk cargo handling facilities		
U.S. Coast Guard facilities		
Tugboat dock		
Container ports		

Available

The GIS attribute “Available” identifies the parcels that are: vacant; zoned commercial or industrial by the municipality; within 200 feet of Type 6 waters; and within 200 feet of 25 feet or more of water depth. Because these qualities are required for most maritime industrial activities to take place, a special attribute was developed.

Collecting the Data

The GIS-based Inventory reflects an extensive amount of input and review by local officials and staff from all of the 17 waterfronts. A questionnaire was developed that allowed for the population of 67 data fields within the GIS-based Inventory for each of the 1,568 parcels identified within the study area (Listed in Table 2). The questionnaire (Appendix D) was first piloted at two separate waterfronts -- the Quonset Business Park and the Little Compton waterfront – and then applied to each of the other 15 waterfronts. Questionnaire completion required extensive tours of the study area led by local staff such as the municipal planner and/or harbormaster.

To ensure interviewees had ample opportunity and information to comment, the project team provided maps, attributes tables, and orthophotographs; participated in phone, email, and in-person follow-up interviews; and ensured all data was reviewed prior to being submitted to RISPP and the steering committee.

Assets and Limitations of the GIS-based Inventory

The creation of the GIS-based Inventory represents an important step forward for ports and harbors planning in Rhode Island. As the first of its kind for the state, the tool provides decision makers with a critical foundation of data regarding the use and availability of commercial and industrial waterfront land and facilities. Prior to the GIS-based Inventory, data pertaining to Rhode Island’s marine commercial and industrial assets was sparse. Now, a substantial first collection of data from a variety of information types – aerial photography, parcel data, municipal zoning, and state water classifications – is serving a valuable purpose. The GIS-based Inventory is bringing a new level of effectiveness and efficiency to planning discussion across the state. Critically, it also sheds light on an ongoing challenge for the state: industrial and commercial marine uses and infrastructure are a limited resource in Rhode Island with very few parcels remaining to expand this industry. Thus, the GIS-based Inventory is a primary resource which can now help decision makers start addressing marine commercial and industrial development challenges.

There are, however, limitations to the tool's capabilities: 1) The data is accurate only for July 2008, and will require consistent maintenance for accuracy; 2) Data is not comprehensive for marine recreational facilities and uses, a critical part of the state's overall ports and harbors assets; 3) The tool is a screening aid; the data does not reflect the finer-grain specificity needed to address critical site suitability issues which necessarily accompany the decision making process; for example, whether a vacant parcel contains wetlands or contaminants; and 4) The tool is technical assistance aimed at broadly focusing planning dialogue; it is not a substitute for decision making processes and analysis regarding the future of Rhode Island's maritime industry.

Also, the GIS-based Inventory does not contain details about the employment, tax revenue, or economic impacts of waterfront businesses. Some of the information was deemed proprietary, so it was not collected. Other information, such as tax record data and assessed value data, are either incomplete or inconsistent (i.e., data sets for different years), so these items were not used for the study.

Finally, while the GIS-based Inventory features comment fields on the legal status and site use restrictions of some parcels, the data is not definitive. At present, it is not possible to link the parcel data to all relevant permits, deed restrictions, rights-of-way, or other legal characteristics.

4. How the GIS-based Inventory can be applied

In order to illustrate how this tool can be used, the following activities were implemented:

1. Community profile development. Using the GIS-based Inventory, 17 waterfront profiles were developed (Appendix B). Summaries include both text and maps that demonstrate the number of acres and parcels used for industrial and commercial purposes and specific infrastructure.

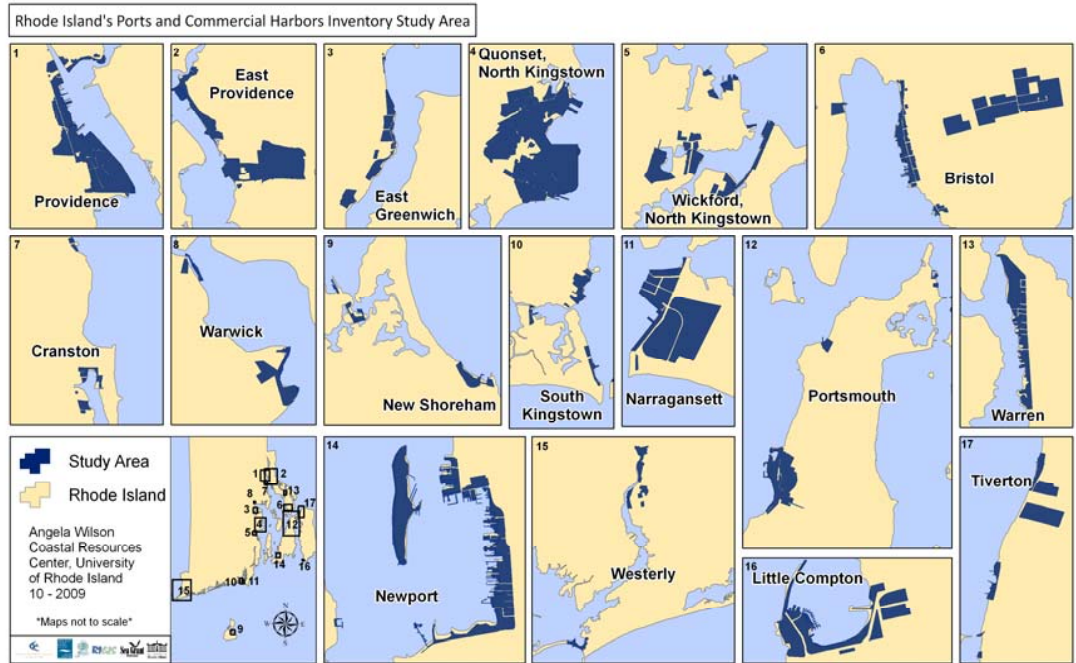
2. Respond to specific queries. Specific questions related to ports and harbors were asked of the GIS-based Inventory. These serve as examples for demonstrating Inventory capabilities.

3. Inventory as a tool for monitoring change. The GIS-based Inventory was able to demonstrate the change in land use during a one-year time period at the Quonset Business Park.

Community Profile Development

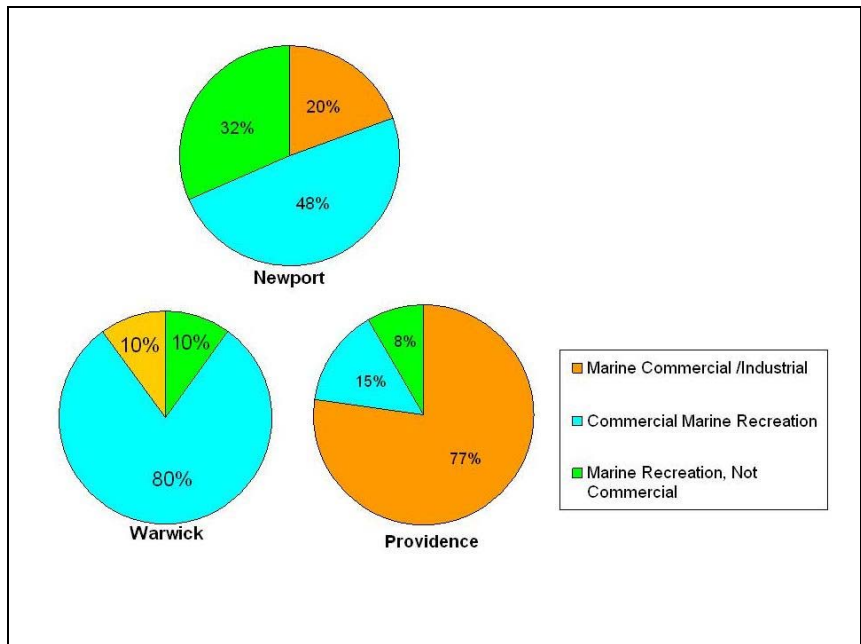
To demonstrate an application of the GIS-based Inventory, 17 waterfront community profiles were developed (Appendix B). These profiles describe through text and maps the industrial and commercial purposes and the infrastructure found at each of the waterfronts in July 2008. Each profile or summary provides three maps (parcel boundaries, parcel utilization, parcel use water dependence) and includes an overview of the waterfront's role within the state, its water dependent uses and infrastructure, its special features, and its harbor governance structure. In addition, each profile features a summary table that provides details about zoning, parcel use, water dependence, vacant parcels, and marine commercial infrastructure.

FIGURE 3. INVENTORY STUDY AREA



Waterfronts vary in terms of the mix and ratios of their uses, with most waterfronts exhibiting a predominant use. The GIS Inventory allows for this sort of analysis.

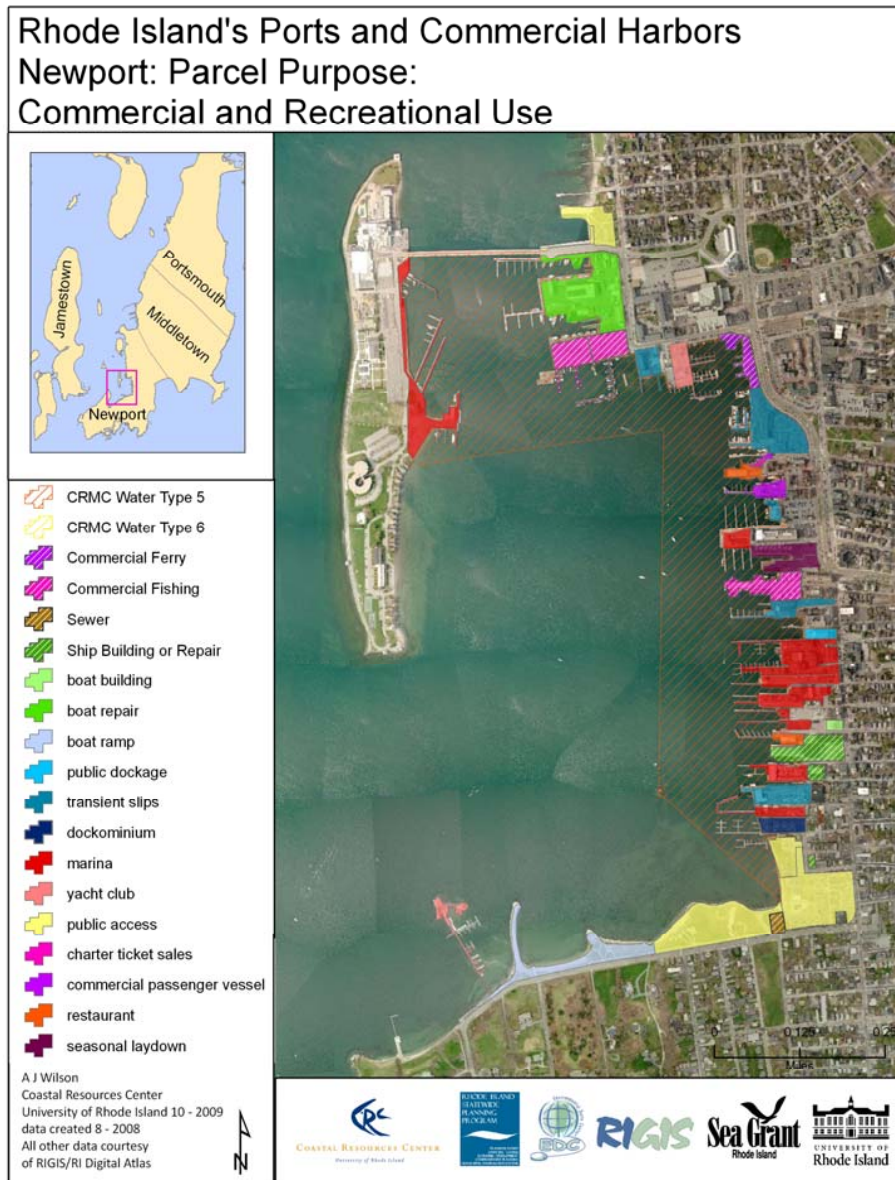
FIGURE 4. ILLUSTRATIVE UTILIZATION PIE CHART OF NEWPORT, PROVIDENCE, AND WARWICK



The activity pattern of each waterfront is unique and multi-dimensional. The study identified 14 distinct commercial and industrial purposes and 19 recreational purposes (See Table 3).

The greatest variety of waterfront uses is found in Newport, with 17 different uses, and Quonset Business Park, with 11. The most common shared use is marinas, found in all 17, commercial fishing in 12, and boat repair, commercial passenger vessels and yacht clubs, each found in nine waterfronts (See Municipal Community Profiles in Appendix B for more detail).

FIGURE 5. NEWPORT



Responses to Specific Queries

In order to demonstrate the level of information that can be generated from the GIS-based Inventory, the project team and Steering committee identified six questions:

Query 1. What is the existing infrastructure for freight and passenger transportation in the state within the study area?

Providence and the Quonset Business Park are Rhode Island's two existing inter-modal ports. Both locations have the infrastructure and geographic requirements to successfully promote freight and/or passenger transportation. These requirements include a fully intact marine component, deep-water access, close proximity to the open ocean, and connections to land transportation infrastructure (pers. communication, Evan Matthews, R.I. Economic Development Corporation, 2009).

Four waterfronts (Providence, Quonset Business Park, East Providence, and Tiverton) are able to handle industrial scale cargo such as dry bulk and/or liquid (Table 5).

Seven of the 17 waterfronts have at least one commercial or industrial facility currently in use for transporting smaller scale commercial/retail cargo such as store goods and equipment, and/or passengers (Table 5).

TABLE 5. COMMERCIAL OR INDUSTRIAL FACILITIES PER MUNICIPALITY

Municipality	Commercial or Industrial facilities
Bristol	Prudence Island Ferry (commercial ferry)
East Providence	Exxon Mobil and Capital Terminals (liquid cargo)
Narragansett	Block Island Ferry (commercial ferry)
New Shoreham	Block Island Ferry, High Speed Ferry (commercial ferry)
Newport	Block Island Ferry, Jamestown-Newport Ferry, Providence-Newport Ferry (commercial ferry service)
North Kingstown	Martha's Vineyard Ferry (commercial ferry), Port of Davisville Piers 1 and 2, NORAD (Ro-Ro), SeaFreeze (dry bulk cargo)
Portsmouth	Prudence Island Ferry (commercial ferry)
Providence	Sprague Energy Corp., Hudson Terminal Corp., Motiva Enterprises, New England Petroleum, Lehigh Terminal, TEPPCO Terminal (liquid cargo), Univar Terminal, North Pacific Plywood, Abhu Merhi Lines, St. Lawrence Cement Co., Schnitzer Northeast (dry bulk cargo), Providence Piers (commercial ferry)
Tiverton	Inland Fuel Terminals (liquid cargo)

Query 2. How many acres of coastal land are zoned for commercial or industrial uses within the study area?

There are 1,028 parcels (3,009 acres) zoned for commercial or industrial uses.

Of these 1,028 parcels, 176 parcels (879 acres) are being used for marine commercial or industrial purposes. This classification is made for parcels that have an identified use that is predominately marine commercial or industrial and is not related to the marine recreation sector (see below for this figure). Examples of marine commercial/industrial uses include: commercial fishing piers, charter vessels, and commercial ship building or repair (Table 6 presents water type location for each parcel).

FIGURE 6. PARCEL UTILIZATION

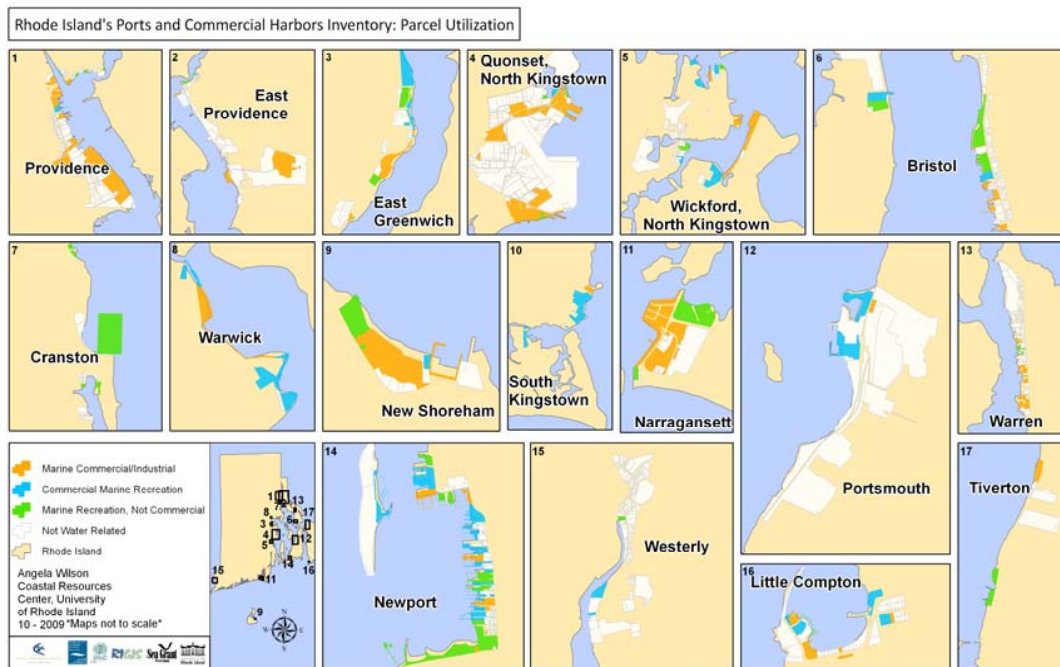


TABLE 6. PARCELS ZONED FOR COMMERCIAL OR INDUSTRIAL PURPOSES AND BEING USED FOR MARINE COMMERCIAL OR INDUSTRIAL PURPOSES

Water Type	# of parcels
6	79
5	30
Other Water Types	8
Not within 200 ft of shoreline	59
TOTAL	176

Of these 1,028 parcels, 85 parcels (124 acres) are zoned for commercial or industrial purposes and are being used for commercial marine recreational purposes. Marine commercial recreation includes marinas, recreational boat repair, and seasonal commercial passenger vessels (Table 7 presents information on water type location for each parcel).

TABLE 7. COMMERCIAL OR INDUSTRIALLY ZONED PARCELS BEING USED FOR MARINE COMMERCIAL/RECREATIONAL PURPOSES.

Water Type	# of parcels
6	10
5	51
Other W. Types	16
Not within 200 ft of shoreline	8
TOTAL	85

Query 3. How many acres of land within the study area are currently being used for Water Dependent, Water Related, or Water Enhanced, and Non-Water related purposes? See Table 8 for examples of uses.

319 parcels (1,078 acres) are used for Water Dependent uses.

41 parcels (101 acres) are used for Water Related Uses.

24 parcels (25 acres) are used for Water Enhanced Uses.

59% of Type 5 waters are Not Water Related (224 parcels, 87 acres).

46% of Type 6 waters are Not Water Related (83 parcels, 960 acres).

FIGURE 7. WATER DEPENDENCE

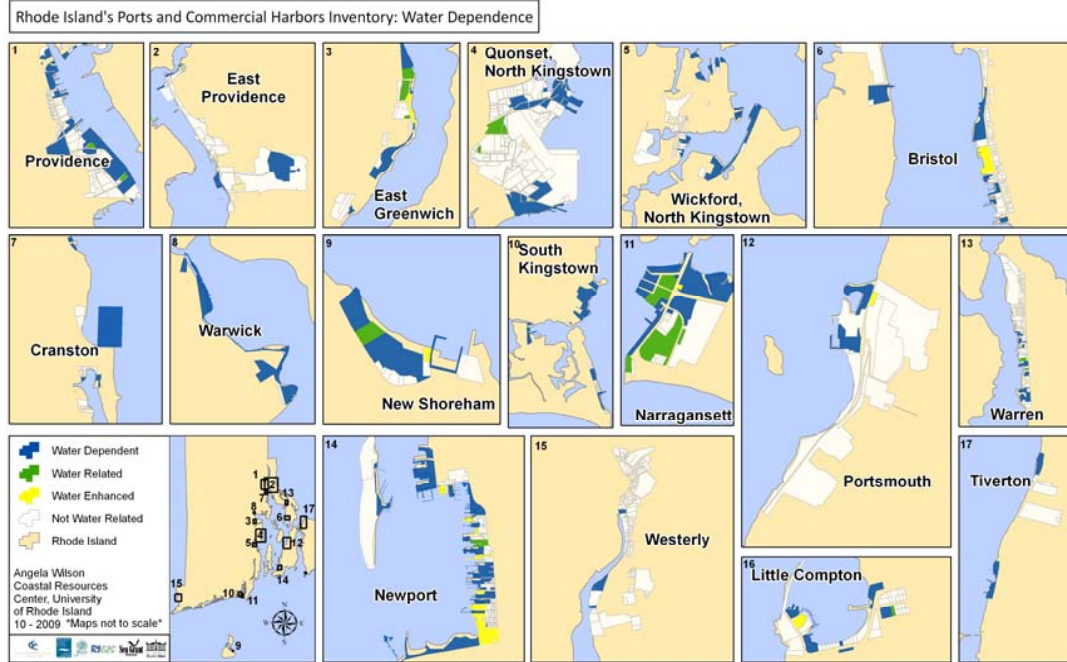


TABLE 8. EXAMPLES OF WATER DEPENDENT USES

Water Dependent	Water Related	Water Enhanced
Marinas	Chandleries	Restaurants
Ship repair	Bait shops	Bars/taverns/night clubs
Commercial fishing facilities	Ice houses	Hotels
Cargo handling facilities	Bait shops	Residential with a water view
Ferry terminals and water taxis	Marine supply stores	Museums
Charter facilities	Fish processing facilities	Educational institutions
Petroleum facilities served via marine pipeline	Marine repair facilities (welding, engine repairs, etc)	Offices
Cruise ship terminals	Tugboat dispatch	
Boat rentals/charter facilities (fishing, sailing, etc),		
Bulk cargo handling facilities		
Coast guard facilities		
Tugboat dock		
Container ports		

Query 4. How many acres within the study area are vacant?

1,493 acres (128 parcels) are vacant within the study area. A vacant parcel by definition has no current use or activity (July 2008) and there are no developments underway or permits pending.

Of these 1,493 vacant acres, 1,014 acres (75 parcels) are zoned commercial and industrial (Table 9). Further research must take place to determine if these parcels would be suitable (e.g. no wetlands) for commercial/industrial development.

FIGURE 8. PARCEL VACANCY

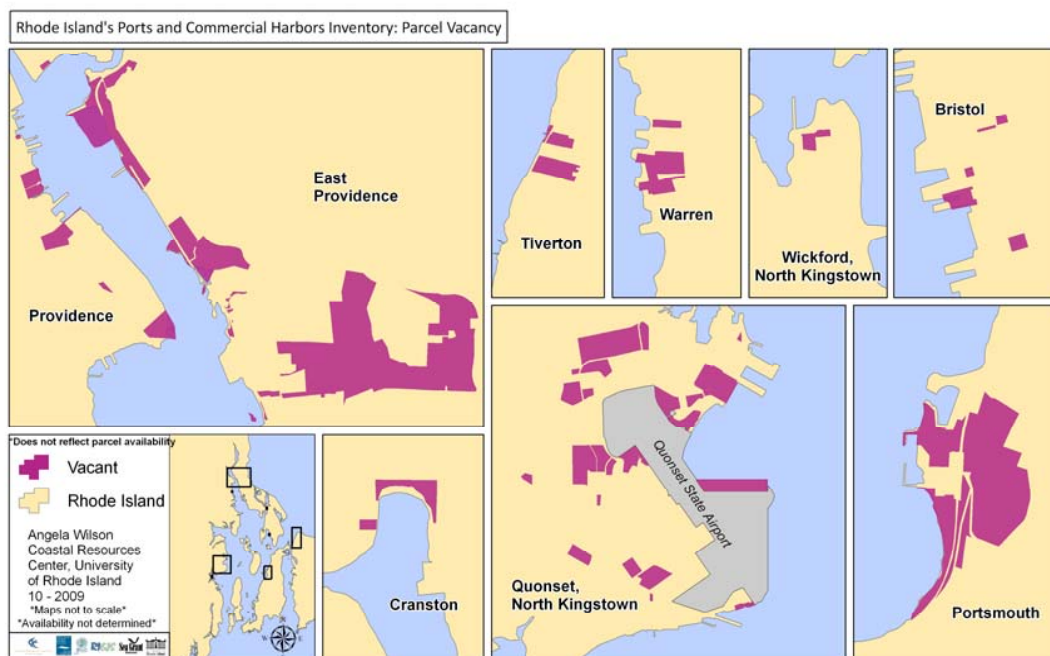


TABLE 9. VACANT PARCELS BY ZONING CLASS

Zoning Code	Parcels	Acres
Commercial	17	224
Industrial	58	790
Mixed Use	40	259
Open Space	10	187
Other	3	33
TOTAL	128	1,493

TABLE 10. VACANT PARCELS BY MUNICIPALITY

Municipality	Parcels	Acres
Bristol	10	2
Cranston	2	1
E. Providence	32	644
Narragansett	1	1
Newport	1	1
N. Kingstown (Quonset and Wickford)	49	302
Portsmouth	9	367
Providence	13	63
Tiverton	6	109
Warren	4	2
Westerly	1	1
TOTAL	128	1,493

FIGURE 8. VACANT PARCELS WITH ZONING CLASS FOR EAST PROVIDENCE.

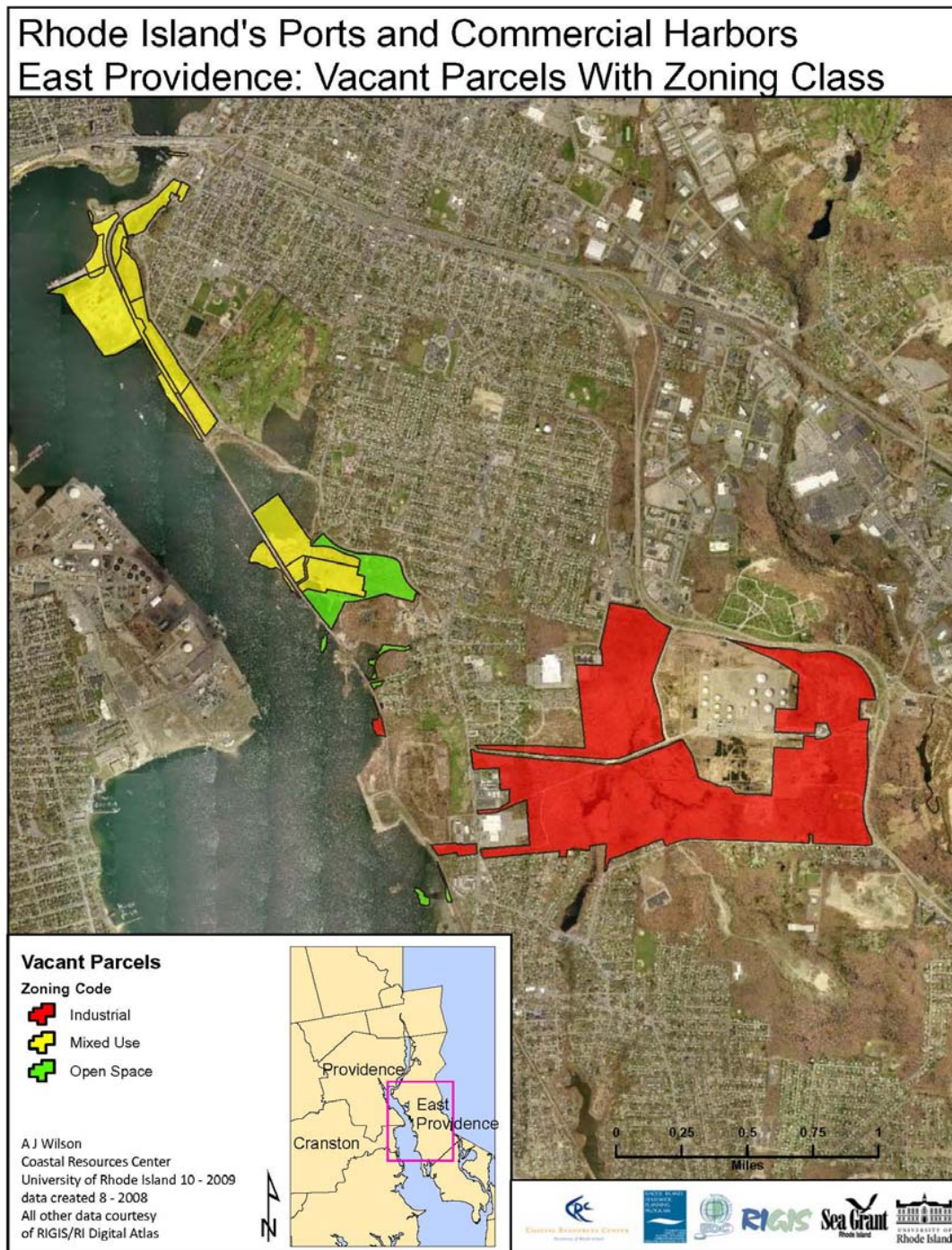


FIGURE 9. VACANT PARCELS WITH ZONING CLASS FOR PROVIDENCE



FIGURE 10. VACANT PARCELS WITH ZONING CLASS FOR NARRAGANSETT



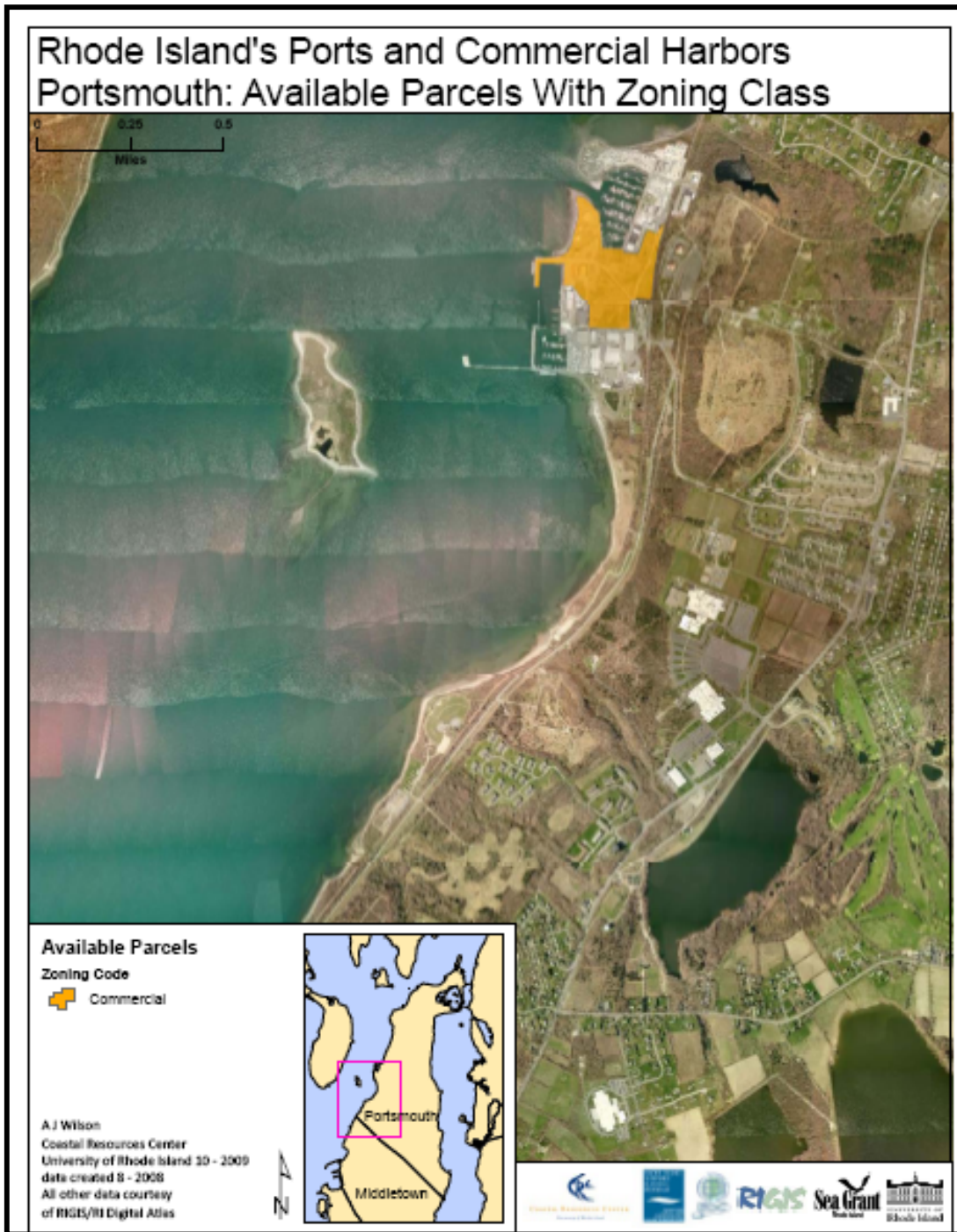
Query 5: How many Acres/Parcels are: 1) Vacant; 2) Zoned Commercial or Industrial; 3) Within 200 feet of Type 6 waters; AND 4) Within 200 feet of 25 foot water depth?

Four parcels (64 acres) are vacant; zoned commercial or industrial; within 200 feet of Type 6 waters; and within 200 feet of 25 foot water depth. Three of these parcels are located in Providence and 1 is located in Portsmouth.

FIGURE 11. AVAILABLE PARCELS WITH ZONING CLASS FOR PROVIDENCE



FIGURE 12. AVAILABLE PARCELS WITH ZONING CLASS FOR PORTSMOUTH



QUERY 6. WHAT MARINE COMMERCIAL/INDUSTRIAL INFRASTRUCTURE AND USES IS THE STATE CURRENTLY ENDOWED WITH?

Statewide there are 1,946 berthing spots that vary in length (10 - 2,600 feet long) and depth (3 - 40 feet deep). There are 431 acres of lay-down space and 58 parcels with active rail.

The largest amount of shore land is used for the storage of 304 acres of liquid product, mainly petroleum. Ship building and repair (185 acres) is the second largest infrastructure use, followed by Roll-on/Roll-off cargo (138 acres), dry bulk cargo (101 acres), commercial fishing (50 acres) and general berthing (38 acres).

TABLE 11. INFRASTRUCTURE BY MUNICIPALITY

Infrastructure	Municipalities
26 wharfs	10 (Bristol, Cranston, East Providence, New Shoreham, Newport, North Kingstown, Portsmouth, Providence, Warren, Warwick)
177 piers	9 (Bristol, Cranston, East Greenwich, East Providence, Little Compton, Narragansett, New Shoreham, Newport, North Kingstown, Portsmouth, Providence, South Kingstown, Tiverton, Warren, Warwick, Westerly)
2 dry docks	2 (Providence, North Kingstown)
41 warehouses	5 (Warren, Providence, Portsmouth, North Kingstown, and Newport)
91 tanks	6 (East Providence, Narragansett, North Kingstown, Portsmouth, Providence, Tiverton)
5 lifts/200-plus ton capacity	5 (Newport, North Kingstown, Portsmouth, Providence, Warren)

The GIS-based Inventory as a Tool for Monitoring Change in Water Associated Uses

The Quonset Business Park was initially a case study for testing GIS-based Inventory capabilities and site visit protocols before statewide application. Between pilot initiation and GIS-based Inventory completion in June 2009, changes in parcel use have taken place. While land is vacant, it appears to be largely fragmented. In July 2008, 42 parcels (334 acres) were vacant. Of those 42 parcels, only 35 were available for potential water

associated uses. In July of 2009, 43 parcels (345 acres) were vacant. Of these 43 parcels, only six are available for water associated uses.

FIGURE 13. QUONSET VACANCY 2008



FIGURE 14. QUONSET VACANCY 2009



5. Specific Tasks to Enhance the Inventory

The goal of the GIS-based Inventory is to provide decision makers with sound and comprehensive information to help them make effective and efficient choices concerning Rhode Island's commercial and industrial waterfronts and their economic, social and environmental resources. The project team suggests the following to enhance the ability of the Inventory and better achieve the GIS-based Inventory goal:

1. Communicate and customize the results of the GIS-based Inventory. Stakeholders and municipalities should be able to access the data in a variety of ways without the need for specialized geographic information systems expertise. Improvements include creating customized CD-ROMs with subsets of the data most relevant to a stakeholder or municipality, creating interactive PDFs that can be used to produce maps without dependence on mapping software, and improved kinds of internet access such as a map creation server. Communities and data users should be provided with some basic training and help in adapting the information to their particular needs. There is a strong interest in this among communities and other stakeholders, but technical capability of local boards, commissions and municipalities is uneven across the state.
2. Demonstrate site suitability analysis. A key issue for understanding the GIS-based Inventory is site suitability. The GIS-based Inventory incorporates a few new data layers pertaining to the aspects of suitability, such as compatible zoning, CRMC water classification, and for some parcels, the available water depth. Additional data layers, such as presence of wetlands and other protected critical features and areas, water quality conditions and classifications, available water or sewer infrastructure, water depths, flood hazards, and topographic elevation – many already available from the Rhode Island GIS data base – could be incorporated into the analysis to enhance understanding of site suitability.
3. Obtain complete commercial marine recreation information. Rhode Island's recreational waterfronts are captured in the study only when it is located within the study area. A more comprehensive inventory of Rhode Island's commercial marine recreation activities will provide a more thorough understanding of the state's maritime industry.
4. Monitor changes every two years. The state should ensure that the GIS-based Inventory is updated at least every two years to better understand trends for maritime commercial and industrial activities. The GIS-based Inventory data is a baseline against which all future activities can be measured and updated.
5. Enhance with climate change data. The GIS-based Inventory information should also be layered with sea level rise data in order to facilitate adaptive planning to accommodate storms and climate change at Rhode Island's waterfronts.

6. Conclusion

The GIS-based Inventory has met its initial objectives of providing a baseline showing where Rhode Island's ports and harbors are located, how these areas are used, what infrastructure they host, and which parcels remain available for marine commercial and industrial use. The processes of creating the GIS-based Inventory and forming a supportive network of public and private partners have contributed to initiating a rich dialogue amongst government, private sector, and community interests. This is now helping Rhode Island examine how urban waterfronts can be better embraced as tools for important state goals such as the creation of quality jobs, reliance on a mix of traditional and renewable energy resources, and development of a more efficient, effective and secure marine transportation system. All of these goals are illustrative of pressing economic, social, and environmental issues now facing Rhode Island and the New England region.

Within this context – fostering marine-based industry as one means of solving key problems – the GIS-based Inventory points to a critical challenge: land appropriate for coastal commercial use, or acreage with adjacent Type 6 waters, is extremely scarce. Timely implementation of balanced planning approaches is sorely needed to integrate and make best use of the remaining parcels' full array of economic, social, and environmental assets.

Appendix A. References for report, municipal profiles and GIS Inventory

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Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Bristol, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Bristol

Principal Contact: Diane Williamson, AICP, Director of Community Development; Edward Tanner, Principal Planner; Mathew Colouro, Assistant Harbormaster

Site Visit Date: 6/22/2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Bristol has a long history as a center for yacht building and recreational sailing. It has a protected harbor, designated as Type 5 by CRMC, which is used primarily for recreational sailing, though the docks on the State Street Wharf support some other commercial marine uses.

Summary of water dependent uses and infrastructure

Maritime activity is centered around the State Street Wharf, Church Street Dock, and the Rockwell Dock. State Street Wharf has a large open space surrounded by bulkhead berthing primarily used by commercial fishing boats. The State Street Wharf is used for parking in the summer. Rockwell Dock is in the town center and offers slips for both quahog and recreational boats. Forty-one of these slips (50% of the total) are reserved for commercial fishing boats. The Church Street Docks also has a small amount of working waterfront, as well as the harbor master's office. The pier just to the north of Church Street Docks is where the Prudence Island ferry operates, fishing boats dock, and the occasional tugboat ties up. The Coast Guard has a working 450' pier where various buoy tenders and other USCG vessels tie up.

Though primarily used by recreational boaters, the boat ramp at Independence Park is also used by the freight ferry that serves Hog Island, as well as some of the maritime industries in the industrial parks noted below. Independence Park does have a medium use by quahoggers that launch their boats by trailer and includes parking areas.

At Quito's Restaurant at the northern end of the waterfront, there is a lobster wholesaler and seafood restaurant that has a dock on the waterside utilized by lobster boats. The US Coast Guard also maintains a pier in Bristol just south of the Church Street docks. On the western side of Bristol Harbor, Bristol Marine is a recreational marina with a 50-ton travel lift and a small boat repair service.

Bristol Harbor also has a shellfish transplant bed that is on the western side of the harbor. Although shellfish are abundant in the harbor and in the adjacent Mt. Hope Bay, the resource is

currently closed for harvesting due to sewage overflow coming from the city of Fall River, Massachusetts.¹

Herreschoff Pier has smaller regional cruise ships and large motor yachts. 200 foot dockage used year round. Deeper water. In area, Herrishoff marine museum, Marine electronics, sail making, boat repair, start up facilities for smaller marine businesses that have moved to larger industrial park. Americas Cup Hall of Fame located here. Important Maritime History site on historic register.

Special Features Overlay: Bristol Industrial Park, East Bay Industrial Park, and Franklin Street Corridor Industrial Park - Bristol hosts three maritime industrial parks, located inland from the waterfront. All three contain a large number of recreational boat builders, riggers, and boat-related manufacturers. Some of these utilize the boat ramp at Independence Park. The East Bay Industrial Park tenants include: Blue Blend Boat Cushions, Blackstone Marine Boatbuilders, ZRL (designer for naval security operations), and others. Approved and under construction, the Franklin Street Industrial Park hosts, East Passage Boat Works, Shannon Yachts, and an International Yacht Restoration School satellite campus among others. The recent Franklin Industrial Park Redevelopment Plan recommendations include: "Create a special 'Boat Transport Route' to the waterfront through the Franklin Street, Bayview Avenue neighborhoods, including access to the Wood Street entrance to Bristol Industrial Park. Although outside the Project Area, the proposed Boat Access Route should include access through Broadcommon Road and Ballou Boulevard, the East Bay Industrial Park, to the waterfront. This will include relocation or raising the height of utility lines, and adjustments to turning radii within designated streets."²

Harbor Governance Structure

CRMC granted full approval to Bristol's Harbor Management Plan on February 10, 2006. Bristol has a full time harbor master and shares an assistant harbormaster with Warren. The town has a Harbor Commission of five members appointed to three-year terms. Bristol also utilizes a "Waterfront Zone" which is, "intended for mixed-use residential, commercial, and limited industrial use along the downtown waterfront with an emphasis on preservation, economic development, recreation, and open space."³ The eastern side of the harbor along the waterfront is zoned as a "Waterfront Zone." All development in this area must comply with zoning ordinance specifications.

¹ Town of Bristol Harbor Plan Update, 2005. P. B-7.

² Bristol Redevelopment Agency. (2008). Official Redevelopment Plan Franklin Street Corridor. P. 20.

³ Town of Bristol Code of Ordinances. (2008). Chapter 28 – Zoning. Section 28-1.

BRISTOL STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	3.45	13
Commercial	0.72	3
Mixed Use	33.68	119
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	4.52	15
Commercial Marine Recreation	7.16	10
Marine Recreation, Not Commercial	11.88	4
Not Water Related	59.63	110
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	16.43	19
Water Related	1.26	5
Water Enhanced	5.88	5
Not Water Related	59.63	110
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	1.75	10
5. Marine Commercial Infrastructure	Number	Comments
Lifts	1	50 Ton
Piers	13	Various lengths from 60 ft to 480 ft
Wharves	1	Used for Commercial Fishing
Floating Docks	Unknown	5 locations with floating docks
Berthing	96	Combination of Uses
Laydown Acreage	0.6	Used for Commercial Fishing

Rhode Island's Ports and Commercial Harbors

Bristol: Parcel Purpose: Commercial and Recreational



Rhode Island's Ports and Commercial Harbors

Bristol: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

Bristol: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Cranston, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Cranston

Principal Contact: Peter LaPolla, Planner and Harbor Management Commission Member

Visit Date: 6/12/2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Cranston has Type 6 waters where it borders Providence and a federally authorized channel connecting Port Edgewood Marina to the main Providence River navigation channel on the western shores of the Upper Narragansett Bay.

Summary of water dependence of uses and infrastructure

The vast majority of marine uses in Cranston are recreational marinas or yacht clubs. Cranston has two marinas: Port Edgewood Marina and Pawtuxet Cove Marina. The three yacht clubs include Edgewood Yacht Club, Rhode Island Yacht Club, and Pawtuxet Athletic Club. The Edgewood Marina has a travel lift for boat hauling and room for upland winter storage of yachts. There are no other marine commercial/industrial operations in Cranston. Cranston supports a few quahog fishermen who dock their boats at various marinas. The US Marine Corps has a reserves training center on the waterfront, though it does not utilize the waterfront for marine purposes. The majority of the coastal land is zoned residential.

A federal navigation project in Pawtuxet Cove recently performed maintenance dredging of the six-foot deep, 100-foot wide channel, and the six-foot deep 14-acre anchorage. There is a 2,200-foot long sheltering dike and six-foot deep turning basin at the mouth of the Pawtuxet River.¹

Harbor Governance Structure

Cranston is in the process of finalizing its harbor management plan as of August, 2008. Cranston has a Harbor Management Commission and a Harbormaster. There is no special waterfront zoning in Cranston.

¹ CRMC, officials celebrate start of Pawtuxet Cove dredging project, Online at http://www.crmc.state.ri.us/news/100505_pawtuxet_dredge.html. Accessed 7/14/2008.

CRANSTON STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	15.86	4
Commercial	2.98	17
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	0	0
Commercial Marine Recreation	0	0
Marine Recreation, Not Commercial	26.36	17
Not Water Related	38.44	29
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	26.36	17
Water Related	0	0
Water Enhanced	0	0
Not Water Related	38.44	29
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0.69	2
5. Marine Commercial Infrastructure	Number	Comments
Lifts	1	25 Ton
Piers	1	Used for Marine Recreation
Wharves	1	Used for Marine Recreation
Floating Docks	Unknown	5 locations with floating docks
Berthing	26	Used for Marine Recreation
Laydown Acreage	0.4	Seasonal for recreational purposes

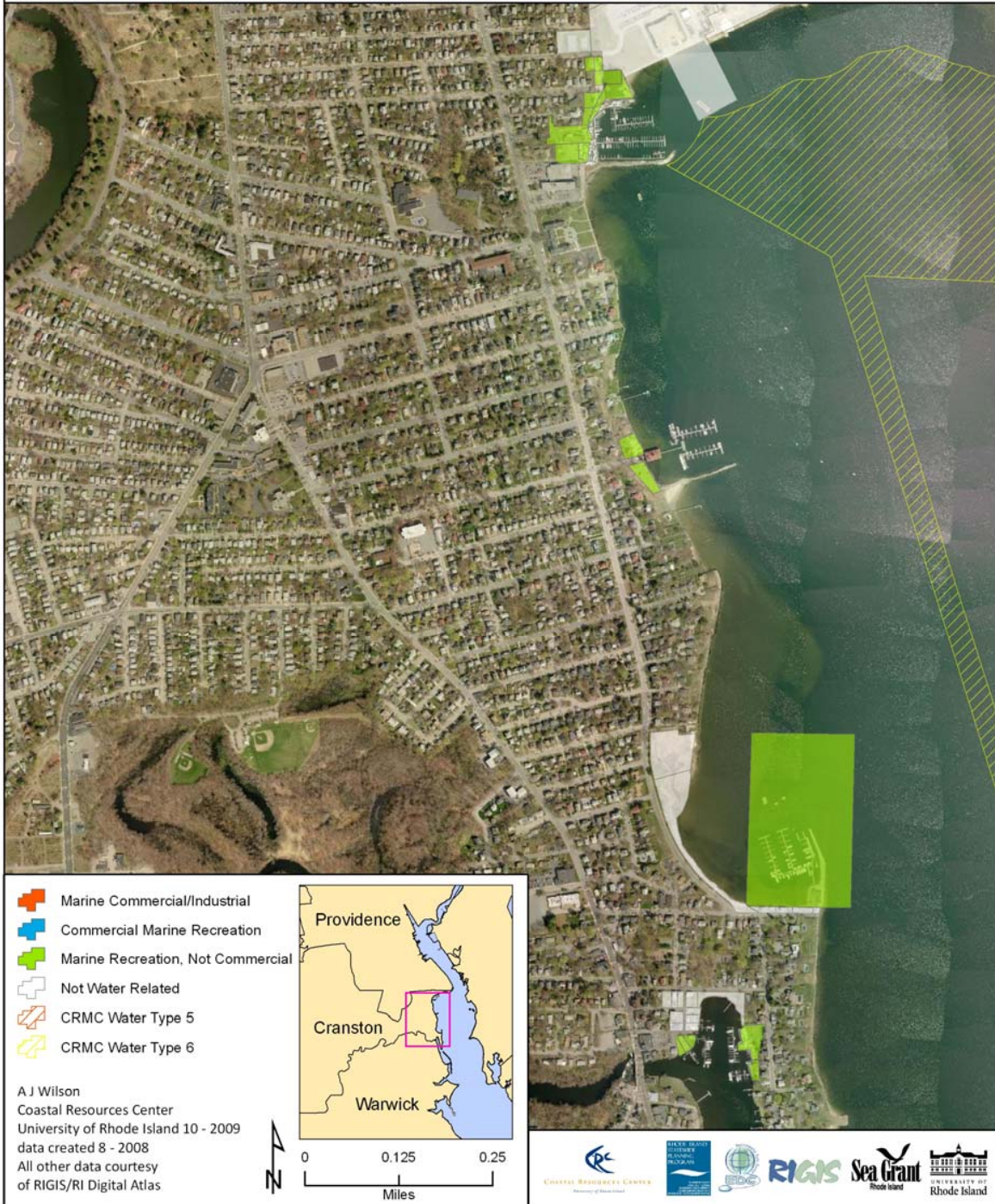
Rhode Island's Ports and Commercial Harbors

Cranston: Parcel Purpose: Commercial and Recreational



Rhode Island's Ports and Commercial Harbors

Cranston: Parcel Utilization



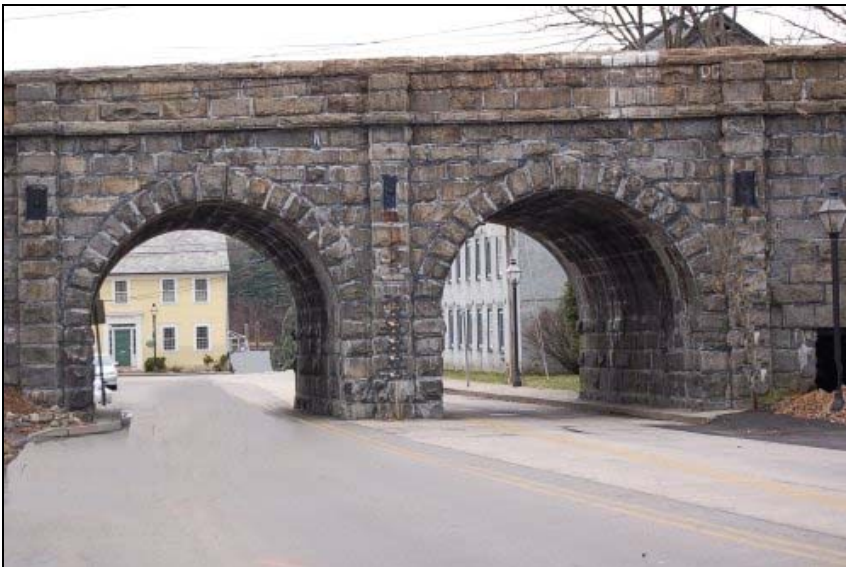
Rhode Island's Ports and Commercial Harbors

Cranston: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **East Greenwich, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



East Greenwich

Principal Contact: Lee Whitaker, Principle Planner; Jim Cullen, East Greenwich Harbormaster

Visit Date: 6/10/2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

East Greenwich is located at the southern end of Greenwich Cove. The water is zoned Type 5 in the inner harbor area. The Cove is primarily a recreational boating area, although Rhode Island's active shellfishing fleet also utilizes the Cove for vessel berthing and limited offloading of shellfish. Restaurants and marinas are located along the waterfront often with transient and seasonal dockage,. There is a rail that passes along the western side of the waterfront road. This rail is used primarily by Amtrak for its passenger service and does not have a access facility built in East Greenwich. Only two roads provide access directly to the waterfront from Main Street .

Summary of water dependence of uses and infrastructure

There are nine marinas in the study area:

- Norton's Shipyard
- East Greenwich Yacht Club
- Milt's Marina
- Twenty Water Street
- Table Twenty Eight
- Harborside Lobster Mania
- Greenwich Cove Marina
- Harris Marina
- Anderson's Boat Yard

There are about twenty full time quahog boats that dock in the Cove and several other boats owned by part-time shellfishermen. There are approximately forty slips that are considered commercial, in that they are "seasonal" instead of transient. These slips have traditionally been set aside for fishing boats. The majority of these "seasonal" slips are located on the "Finn Property," the owner of which recently passed away. It is unclear if the area will continue to be available for commercial fishing berthing. There are 115 moorings in East Greenwich, the vast majority of which are used by recreational boaters.¹

¹ Personal communication with Jim Cullen, East Greenwich Harbormaster ,7/14/2008.

The following businesses provide marine commercial services:

Anderson's Boat Yard – This boat yard serves primarily small commercial fishing vessels. It has marine rail that no longer is functioning.

Rhode Island Clam – This facility is a wholesaler/distributor with capabilities to transfer catch directly from the boats. Some seafood is also trucked in for resale. There are two slips and an onsite lay down area for gear storage for fishing. Rhode Island Clam also supplies ice for the fishermen. This property is part of the Finn Property mentioned above and is currently for sale.²

Norton's Shipyard – This marina provides small boat repair and has a 35 ton travel lift.

New England Rigging – This company provides rigging services to recreational vessels.

There is also a new town dock built with the intention of a future ferry service from other waterfronts in Narragansett Bay. There is no vacant land available for marine commercial/industrial uses.

Harbor Governance Structure

A Harbor Management Plan is being completed. The town has a full-time Harbormaster position. East Greenwich has a zoning designation called Waterfront District. The purpose of this district is “to provide for water-dependent and water-related uses along Greenwich Cove, and to limit other uses. The Town of East Greenwich has little waterfront land and only by recognizing this can the Town best utilize this limited resource.” This zone was created in the last Comprehensive Plan to cover the entire waterfront; however, only two parcels are currently zoned Waterfront District. These parcels, on a steep bluff off of Water Street between King and Queen Streets, are not actually on the water, but across the street from it. The lower parcel is used for parking and for lay down area for fishing gear in the off season and it also contains the Shore Mill Condominiums. The upper lot, located on top of the bluff, is owned by the East Greenwich Veterans Fireman's Association.

² Rhode Island Clam. About Us. Online at <http://www.rhodeislandclam.com/index.html>. Accessed 7/21/08

EAST GREENWICH STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	11.94	12
Commercial	6.65	19
Mixed Use	4.02	6
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	6.35	12
Commercial Marine Recreation	1.98	6
Marine Recreation, Not Commercial	4.97	3
Not Water Related	16.17	19
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	8.5	16
Water Related	1.65	2
Water Enhanced	1.5	3
Not Water Related	16.17	19
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0	0
4. Marine Commercial Infrastructure	Number	Comments
Cranes	1	2000 lb
Piers	1	31 ft used for Commercial Marine Recreation
Floating Docks	Unknown	8 locations with floating docks
Berthing	26	Used for Marine Recreation
Laydown Acreage	0.4	Seasonal for recreational purposes

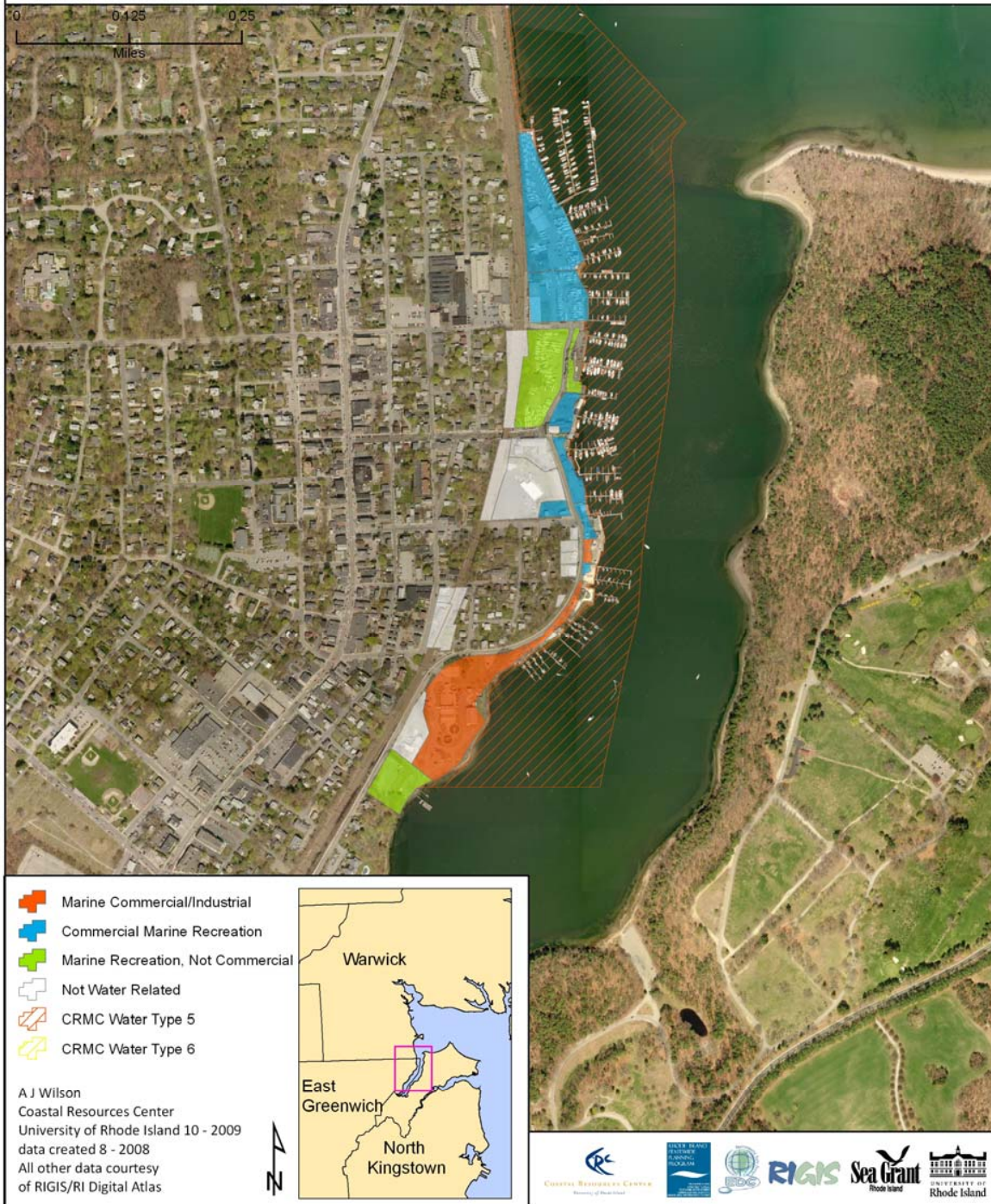
Rhode Island's Ports and Commercial Harbors

East Greenwich: Parcel Purpose: Commercial and Recreational



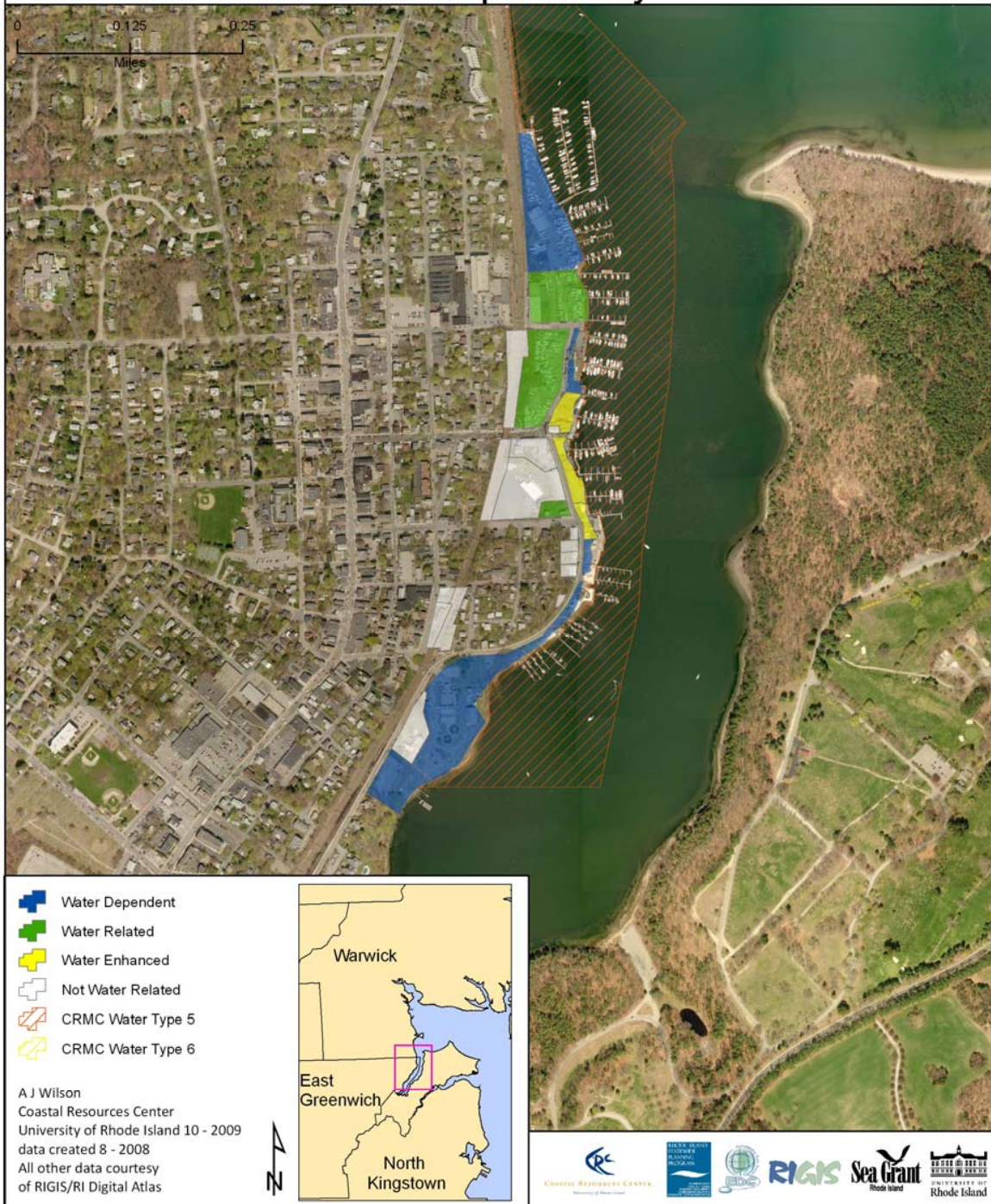
Rhode Island's Ports and Commercial Harbors

East Greenwich: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

East Greenwich: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **East Providence, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



East Providence

Principal Contact: Jeanne Boyle, Principal Planner

Visit Date: June 16, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

East Providence is at the head of Narragansett Bay and is one of the principal ports for petroleum product imports in the region. The deep water channel (Type 6 waters) runs from Pomham Rock Light up to Wilkesbarre Pier and then follows the Seekonk River along the Providence/East Providence line to Pawtucket. Once dotted with small petroleum import operations and manufacturing plants, the waterway now remains relatively vacant. East Providence has an approved redevelopment plan for its waterfront that features new residential, mixed-use, and open space zoning.

Summary of water dependence of uses and infrastructure

Exxon/Mobil – Exxon/Mobile maintains one of the major petroleum import facilities across the Providence River from ProvPort. The terminal is connected by pipeline to a tank farm located about one mile inland from the River.

Capital Terminals – This petroleum facility has nine tanks that each hold one-million barrels of product (#2 fuel oil and low-sulfur diesel). Capital Terminals also has rights to access the nearby rail service and could utilize it to carry products to markets as far away as Albany, NY; Vermont; Canada; and beyond. Wilkesbarre Pier can handle ships upwards of 830 feet long with 40' draft. The pier is equipped with two pipelines. A 12" gasoline pipeline is closed, but functional. A 16" pipeline runs two miles underground to Capital Terminals and is used for fuel oil and low-sulfur distillate. There are two manifolds, one with four 8" connections used with barges and the other with two 12" hoses used for ships.¹ Truck traffic from Capital Terminals travels along local streets to access the highway. This local traffic will be reduced upon the completion of the new Waterfront Drive.²

¹ Personal communication Todd Turcott, President Capital Terminals, 7/11/2008.

² Personal communication Jeanne Boyle, June 16, 2008

MotoRing Technical Training Institute – This school offers courses including boat Marine Service Technician at their facility located just north of the I-195 bridge on the waterfront.³

Two marinas are found on the Seekonk River, Oyster House Marina and the East Providence Yacht Club Marina.

There are four non-functioning piers (American Drilling Pier, Chevron Pier, BP/Amoco Pier, and Getty Fuel Dock) that are in various states of decay along the Seekonk and Providence Rivers. These piers would need major rebuilding to be utilized again.

Harbor Governance Structure

East Providence has a Waterfront Special Development District Commission comprised of up to 19 members with backgrounds in architecture, land use planning, urban design, law, and business. The Commission is a City-State partnership created by State Enabling Legislation in 2003 and City Ordinance in 2004. “The non-partisan Commission is committed to facilitating redevelopment along the East Providence waterfront with minimal red tape.”⁴

East Providence’s waterfront in the study area is zoned as the Waterfront Development District. According to the City ordinances, this zoning category is designed to “provide for a diverse mix of compatible land uses and densities that promote high-quality development in a manner consistent with the 2003 Waterfront Development District Plan.”⁵ This district was created to help carry out the City’s intention to, “foster a rebirth of its waterfront that will result in a new city with a mix of quality development and land uses that generate year-round activity with linkages to the surrounding neighborhoods, downtown amenities, labor, access to infrastructure, and the recreational and scenic attributes of a waterfront location.”⁶ Within this area there are six sub-districts which allow a variety of uses, including primarily residential and mixed-use. Light industrial and manufacturing uses are allowed on the waterfront in the Dexter Road and Pawtucket Ave. and Phillipsdale Sub-Districts. Marine transport is conditionally allowed in all sub-districts.⁷ Heavy Industry is prohibited in all sub-districts.

The land adjacent to the four non-functioning piers has been re-zoned by the City of East Providence and in general would no longer allow for marine industrial uses.

³ MotoRing Technical Training Institute, online at <http://www.mtti.tec.ri.us/marine.html>. Accessed 7/18/2008.

⁴ From <http://www.eastprovidencewaterfront.com/?id=6> ;. Accessed 6/01/2008

⁵ City of East Providence, Zoning Ordinances, Article 9, Waterfront Special Development Districts, Section 19-470. Online at [eastprovidencewaterfront.com](http://www.eastprovidencewaterfront.com). Accessed 7/21/2008.

⁶ City of East Providence. (2003). 2003 East Providence Waterfront Special Development District Plan. P. 1

⁷ City of East Providence, Zoning Ordinances, Article 9, Waterfront Special Development Districts, Section 19-481. Online at [eastprovidencewaterfront.com](http://www.eastprovidencewaterfront.com). Accessed 7/21/2008.

The East Providence Harbor Management Plan draft has been completed by the City and is on the list for the CRMC preliminary determination of consistency review. The new waterfront redevelopment plan does not provide for heavy maritime uses on the waterfront.

Exxon/Mobile has a large parcel that might allow for an expansion of its petroleum storage facilities. Although the Providence and Worcester Quay, located just south of the Wilkesbarre Pier, was originally permitted to be a small container port, it is now zoned part of the Bold Point Subdistrict, and zoned for, "mixed use high density area of commercial, office, retail and high density multi-family residential uses. Hospitality uses, including hotels and lodging, cafes, restaurants, bars and entertainment venues are also encouraged. Marinas, with limited support services, and water-transit related services are also permitted. Heavy commercial or industrial land uses are not permitted."⁸

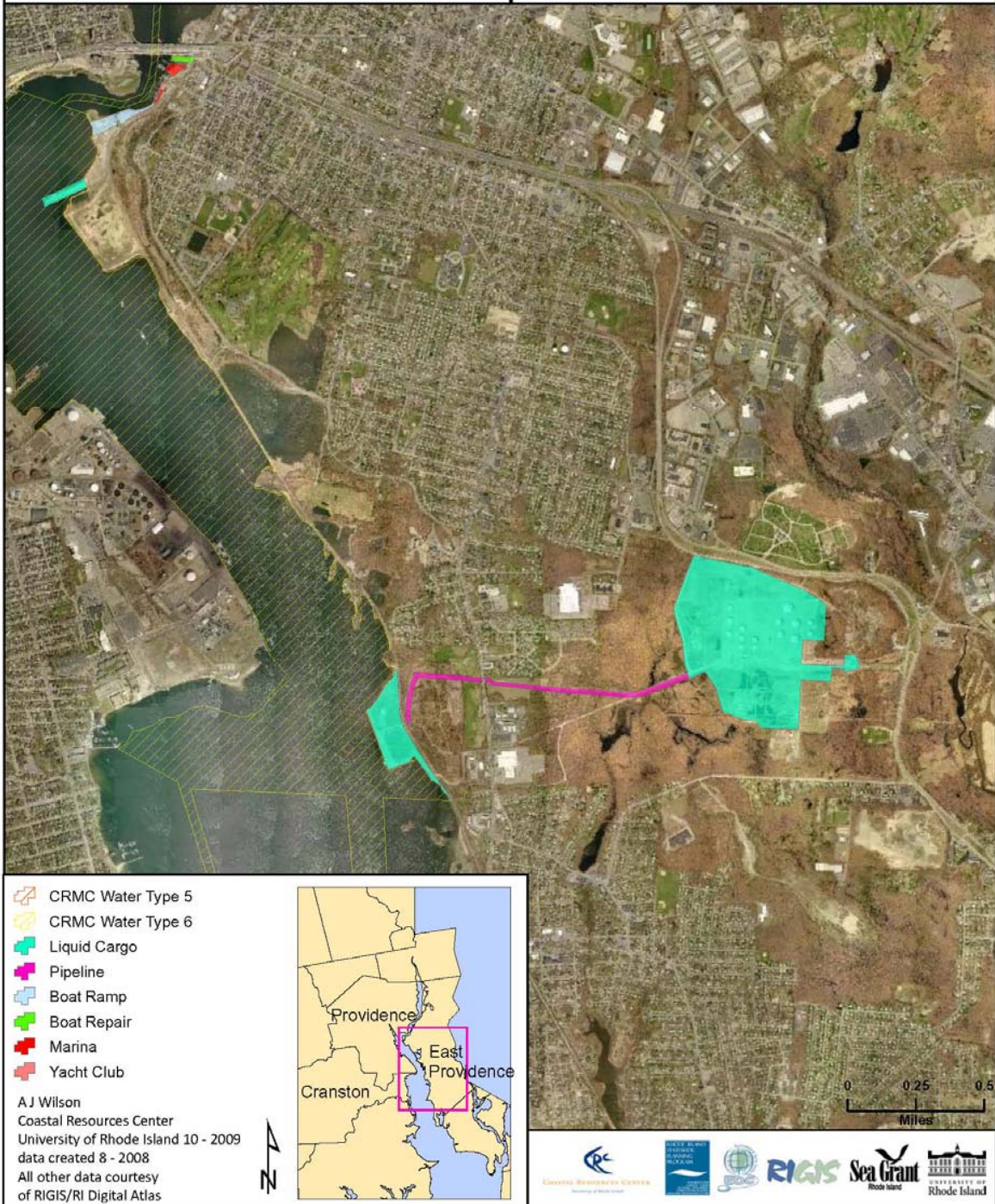
Available Land for new Maritime Commercial/Industrial Uses

East Providence has good deep-water access to the recently dredged Providence River channel and access to rail lines and highways. The rail line has been abandoned from Dunellen Road to the south, replaced by the East Bay Bike Path, and this portion is unlikely to be used for rail service again.

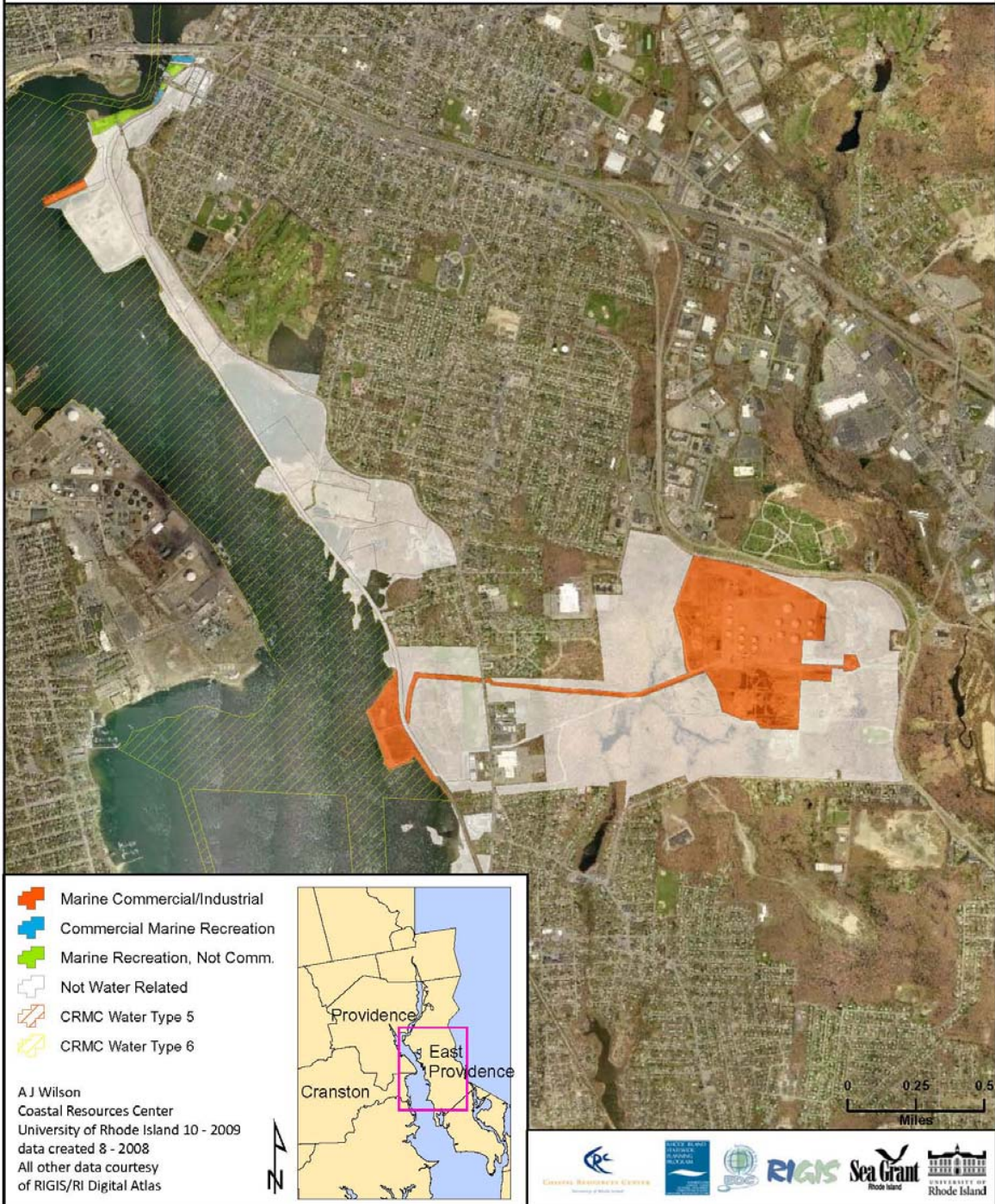
⁸ City of East Providence. East Providence Waterfront Commission Subdistricts. Online at <http://www.eastprovidencewaterfront.com/?id=16>. Accessed 7/22/2008.

EAST PROVIDENCE STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	796.41	19
Commercial	1.23	3
Mixed Use	168.64	52
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	200.74	5
Commercial Marine Recreation	1.53	2
Marine Recreation, Not Commercial	6.72	4
Not Water Related	874.50	87
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	207.89	10
Water Related	1.1	1
Water Enhanced	0	0
Not Water Related	874.50	87
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	644.43	32
5. Marine Commercial Infrastructure	Number	Comments
Tanks	16	1 million gallon total (Exxon)
Piers	2	200ft for Commercial Marine Recreation
Wharves	1	1200 ft used for liquid cargo
Berthing	2	Used for liquid cargo

Rhode Island's Ports and Commercial Harbors East Providence: Parcel Purpose

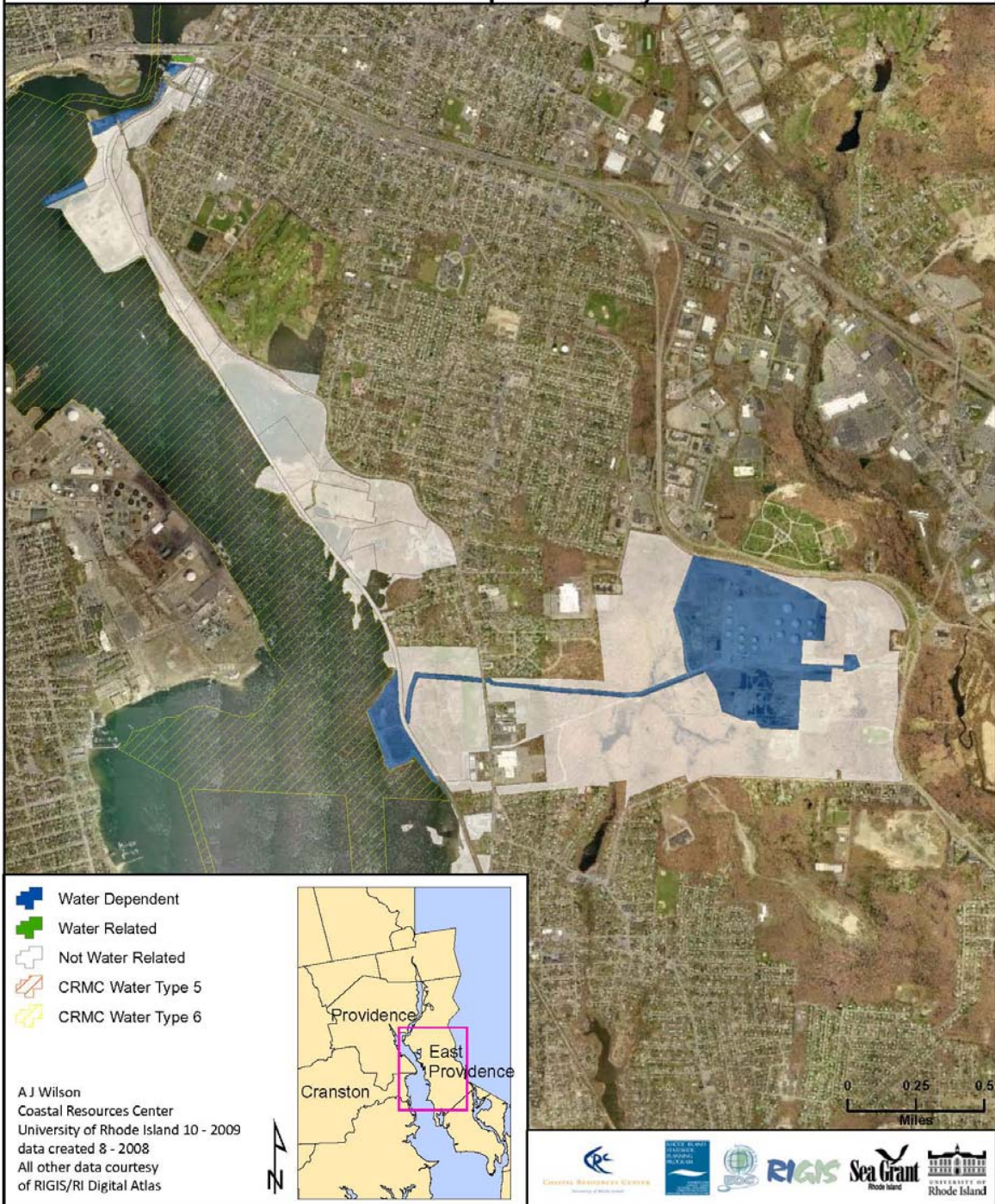


Rhode Island's Ports and Commercial Harbors East Providence: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

East Providence: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Little Compton, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Little Compton

Principal Contact: Mike Massa, Harbormaster; Mike Steers, Town Planner

Visit Date: April 23, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and position in state

Located at the southeastern-most part of Rhode Island at the mouth of the Sakonnet River, Little Compton's harbor homeports 26 commercial fishing vessels that utilize two piers for offloading, weighing, and exporting fish by truck. The harbor is zoned as Type 5 by the CRMC. The center of Little Compton's fishing industry is at Sakonnet Point at the southern end of the town. This is an ideal location for commercial fish landings and one of only a very few options for local fishermen. The next closest fish landing facility is in Westport, Massachusetts to the east and Newport the west. Although Newport is a large harbor, it has little space left for landings.¹ Little Compton's primary economic industries are fishing, farming, and a summer tourist/vacation economy.²

Harbor Governance Structure

Little Compton has a harbor master and a Harbor Commission. The Harbor Commission implements the Harbor Management Plan (not yet approved) and consists of seven members who are residents of Little Compton as follows³:

- One owner of a recreational boat kept on a mooring, or one who is on a waiting list for a mooring.
- One representative of the Sakonnet Point Marina Association, Inc.
- One representative of the Sakonnet Yacht Club.
- One commercial trip fisherman.
- One commercial day fisherman.
- One officer of the local fishermen's association.
- One member of a town conservation organization.

There is no specific waterfront zoning in place. The waterfront is zoned as a "Business District."

¹ Pers. Communication Dan Goulet, 2008

² <http://www.riedc.com/data-and-publications/state-and-community-profiles/little-compton>

³ <http://www.little-compton.com/boards/boards.htm>

Summary of uses and infrastructure

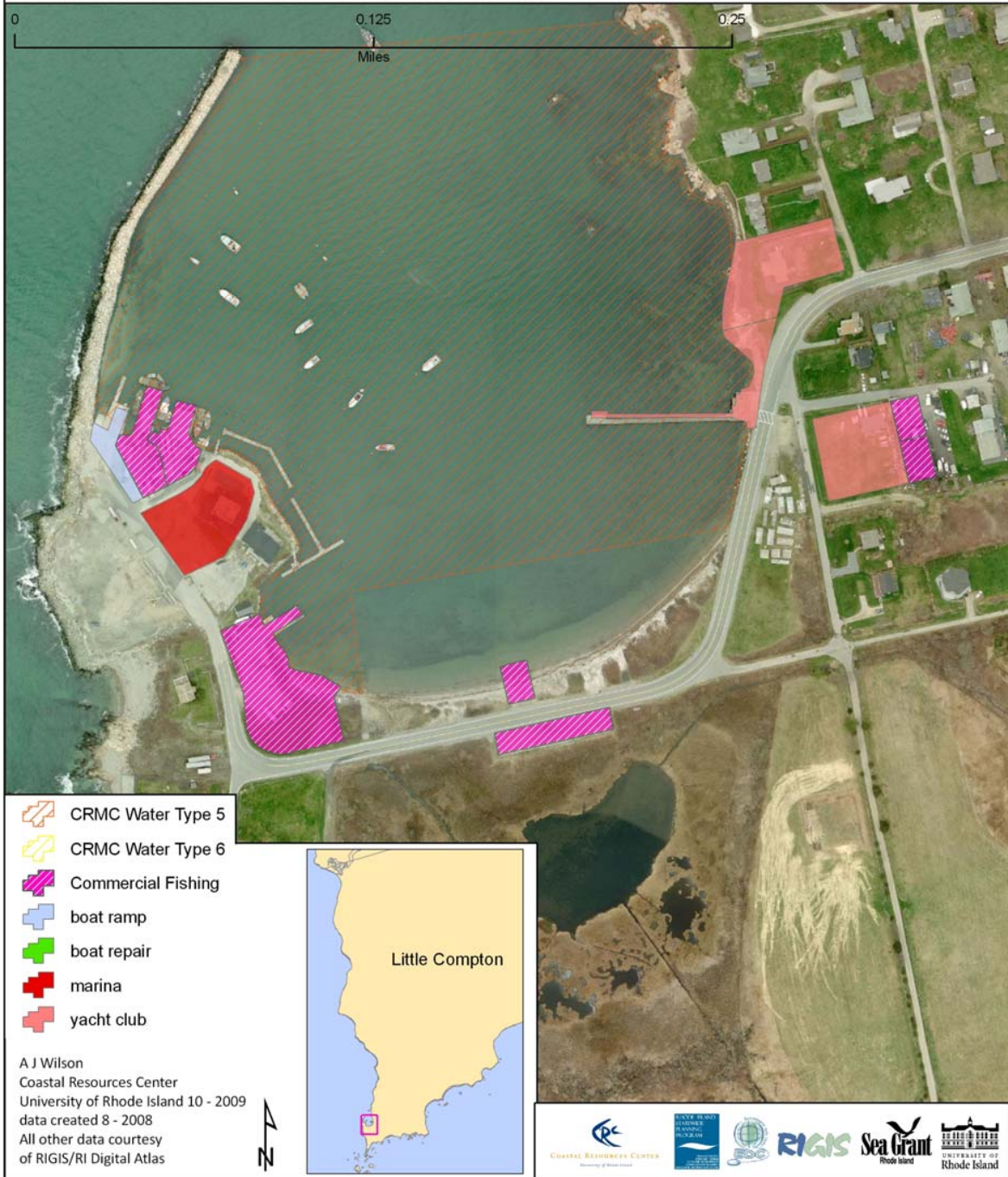
The two main piers are utilized exclusively for fishing operations. There is a 2-ton hoist, an ice house, and an indoor fish-weighing station. Both piers accommodate fishing boats up to around 65' and have approximately 8 feet of water alongside. The piers do have shore power and water available. Fish are transferred into large and small trucks and brought to markets as far south as New York City. Lobsters, gillnetters, and trapboats are the primary fisheries. There are two main fish dealers that utilize the piers: Wilcox Fishing and Point Trap Company. In addition to these piers, lobstermen and other commercial fishers utilize the public boat ramp and adjacent parking areas for launching of boats and transfer of gear.

Aside from the commercial fishing activity on the piers and a retail/wholesale lobster dealer (Sakonnet Lobster Company), Little Compton has no commercial marine uses or infrastructure. A marina was converted to dockominiums in the early 1990's. 50 Amp shorepower and water is available at this facility. A yacht club offers five slips to members and transient boaters.

LITTLE COMPTON STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	0	0
Commercial	12.34	50
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	1.67	7
Commercial Marine Recreation	2.11	5
Marine Recreation, Not Commercial	0.15	2
Not Water Related	8.14	36
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	3.17	11
Water Related	0.19	2
Water Enhanced	0.54	1
Not Water Related	8.14	36
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0	0
5. Marine Commercial Infrastructure	Number	Comments
Lifts	3	2 are 2 tons, 1 is 12 tons
Piers	6	Used for a Combination of Commercial Fishing and Marine Recreation
Berthing	10	7 used for commercial fishing 3 multiple lengths for marine recreation

Rhode Island's Ports and Commercial Harbors

Little Compton: Parcel Purpose: Commercial and Recreational



Rhode Island's Ports and Commercial Harbors

Little Compton: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

Little Compton: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Narragansett, Rhode Island**



photo credit: <http://www.flickr.com/photos/jiggapotpie/3551428368/>

Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Narragansett

Principal Contact: Mike Deluca, Principal Planner; Larry Moudrian, RI DEM

Visit Date: June 16, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Narragansett hosts Rhode Island's premier fishing port at Galilee. The waters in the harbor are zoned Type 6. The port is owned and managed by the State and used almost exclusively for commercial fishing and ferry transportation to Block Island. The ferry brings both passengers and freight to Block Island. The ferry serves as the lifeline to the island, as all food, fuel, and supplies move in and out by boat. The ferry service runs year round and requires extensive parking facilities in Pt. Judith for its customers. The tugboat *Otter* operates out of Pt. Judith.

Narragansett's Pt. Judith Harbor of Refuge, formed by a man-made breakwater, is a critical resource for vessels needing to escape inclement weather.

In 2006, Pt. Judith ranked as the 12th largest major U.S. port for dollar value of fish and 20th by poundage of fish landed.¹ A recent report conducted by MIT Sea Grant found that Pt. Judith has all of the essential components necessary for an active fishing port including: gear and supply shops, open space to work on gear, fueling facilities, ice plants, cold storage facilities, fish buyers/dealers, fish processors, mooring space, facilities to maintain and repair vessels, transportation for fish and fish products, and Coast Guard/port security.²

¹ Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, Silver Spring, MD, http://www.st.nmfs.noaa.gov/pls/webpls/MF_LPOR_T_HIST.RESULTS Accessed 6/18/2008

² Hall-Arber et al. 2001. New England Fishing Communities. Available at: <http://web.mit.edu/seagrant/aqua/cmss/marfin/index.html> (Accessed May 15, 2008)

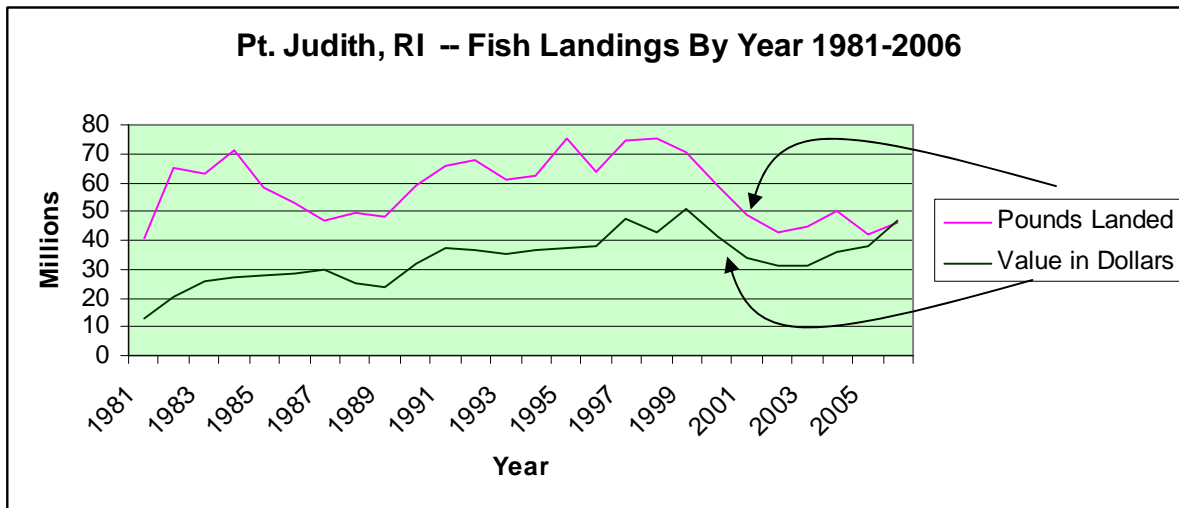


Figure 1. Pt. Judith Fish Landings By Year 1981-2006

Rhode Island Engine Co.

Rhode Island Engine is a marine mechanical equipment and service company located along the waterfront in Galilee. They provide marine engine, generators, transmissions, hydraulics, hardware and fabrication services to the commercial fleet in Point Judith.

Interstate Navigation

Interstate Navigation operates a fleet of ferry boats that provide transportation between the mainland and Block Island. These vessels are the main source of transportation to the island for visitors, residents, and all goods and supplies to sustain the island. These vessels operate year round from Point Judith.

Charter Fleet

There is an active charter fleet located in Galilee. These vessels operate seasonally taking day trips to fish for bottom fish, tuna, cod, bluefish, striped bass, sea bass, fluke, blackfish, shark, porgies, and bonito. A few charter businesses have expanded their business to include whale watches and sunset cruising. The fleet of charter boats operates from the north end of the harbor.

Harbor Governance Structure

Narragansett has worked with the State to create an appropriate zoning overlay that protects the port for commercial fishing and other maritime uses. Three districts were created: Galilee Fishing District, Galilee Business District, and Galilee Ferry District. As RI DEM holds title over a majority of the land, there is little possibility for non-marine uses to be developed in the port area. RI DEM sees the commercial fishing industry as the priority use for the port.

Narragansett has a “B-C Waterfront Business Zone”, which is composed of certain land and structures used primarily for the retailing of goods and services for water-oriented activities. The Town has also implemented the Port of Galilee Special District that recognizes the statewide importance of the commercial fishing port and the unique characteristics of the area. There are three zoning designations within the Port of Galilee Special District:

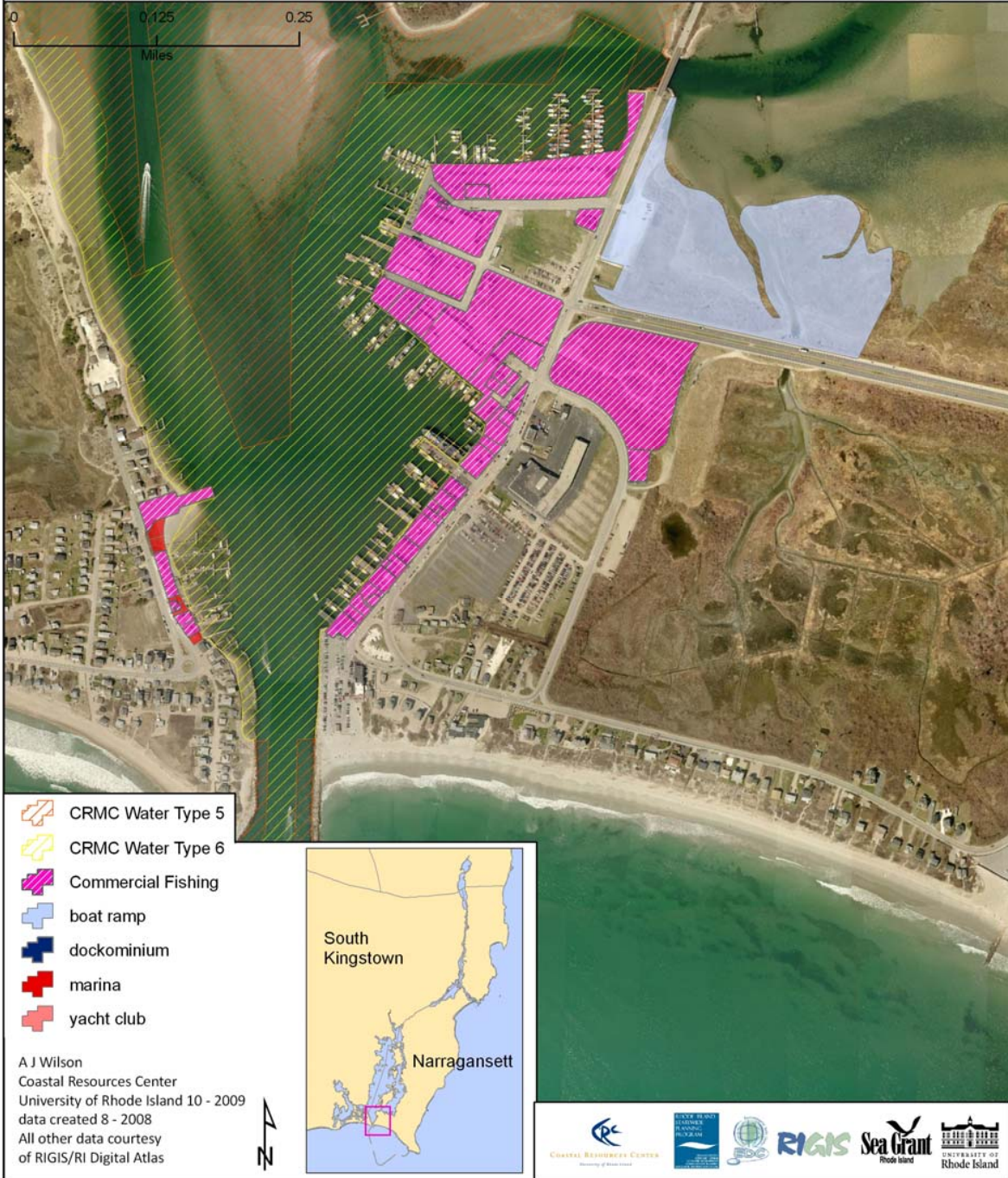
- (1) *Galilee -- fishing zone (G-Fi)*. This zone is that area within the Port of Galilee Special District that encompasses the developed waterfront and certain other areas which are to be used primarily for commercial fishing and related activities, and other water-dependent uses including charter fishing.
- (2) *Galilee -- ferry zone (G-Fe)*. This zone is that area within the developed waterfront of the Port of Galilee Special District that is to be used for land-based activities supporting ferry service to Block Island.
- (3) *Galilee -- business zone (G-B)*. This zone is that area that comprises the general commercial and mixed-used area within the Port of Galilee Special District that is to be used primarily for retail goods and services, commercial off-street parking and mixed uses.³

³ Town of Narragansett Code of Ordinances. (2007). Appendix A, Section 4.8.2.

NARRAGANSETT STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	0	0
Commercial	75.48	92
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	42.86	58
Commercial Marine Recreation	0.37	5
Marine Recreation, Not Commercial	19.76	3
Not Water Related	32.99	30
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	40.91	53
Water Related	21.75	12
Water Enhanced	0.33	1
Not Water Related	32.99	30
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0	0
5. Marine Commercial Infrastructure	Number	Comments
Tanks	1	Unknown capacity
Piers	40	Mostly used for Commercial Fishing
Floats	Unknown	2 locations with floating docks
Laydown Acreage	28.31	Used for Commercial Fishing

Rhode Island's Ports and Commercial Harbors

Narragansett: Parcel Purpose: Commercial and Recreational Use





Rhode Island's Ports and Commercial Harbors

Narragansett: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Newport, Rhode Island**



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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Newport

Principal Contact: Paige Bronk, Principal Planner; Tim Mills, Harbormaster

Visit Date: 6/24/2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Located on Aquidneck Island, at the mouth of Narragansett Bay, Newport has a bustling harbor with a long history as a center for maritime commerce. Newport's economy has relied heavily on its deep, protected, natural harbor for much of the past three hundred years. Fishing, whaling, the slave trade, the China Trade and even piracy all contributed to Newport's growth throughout the past three centuries. In the mid-20th century, Newport served as a major base of the U.S. Navy. In the 1970's, the America's Cup yacht racing series brought fame and notoriety to Newport when the U.S team won the cup. Today the harbor is a popular destination for recreational boats and yachts from all over the world, and it hosts a commercial fishing fleet and other commercial and industrial activities.

Newport has an abundance of deep water, but lacks overland connections to transportation infrastructure. Rail service runs along the western side of the island, but does not have a bridge crossing. When the plans for a new Sakonnet River Bridge were developed, the rail crossing was abandoned.¹ Vehicles must use local roads to get from the waterfront to the main interstate highway system.

Harbor Governance Structure

Newport has an active Harbor Management Commission. There is a full time harbormaster and a Harbor Management Plan draft currently in process.

Through its zoning code, Newport has established a "Traditional Maritime District (TMD)" which is designed to protect and maintain the working waterfront. The TMD is intended to provide a location for maritime activities, public access and recreational uses of the waterfront in an attractive environment which supports the historic character of the city and the traditional values associated with a working waterfront. All residential uses are prohibited in this district

¹ Personal communication with Steve Cut, RI DOT, 6/01/2008.

for public health and safety reasons.² At this point, only the Newport Shipyard area has been designated as a TMD. Except for those parcels designated as TMD, the entire waterfront is zoned as Waterfront Business District, the intent of which is “to provide for retail and commercial service facilities to meet the needs of both tourists and residents. A mix of land uses is encouraged in this area, with access to the water utilized by those activities which are dependent on such a location for their existence.”³

Summary of uses and infrastructure

Newport has a wide variety of marine commercial/industrial uses and infrastructure. The Naval War College occupies the area around Coddington Cove in the northern part of the city.

Newport Shipyard

Goat Island – Goat Island has slips for recreational vessels, as well as berthing for commercial boats. The Northeast Marine Pilots moor four or five pilot boats here. These vessels are essential for bringing pilots out to the large ships that require a pilot to navigate them safely up and down the bay. There are also U.S. Coast Guard vessels docked here, as well as commercial passenger excursion vessels.

Deepwater Anchorages – Newport’s protected deepwater harbor is used by visiting cruise ships and other large ships that require temporary anchorage before heading up the bay or moving on to the next port of call. The anchorages are federally designated and informally managed by the Newport Harbormaster.

Newport Shipyard – Newport Shipyard is a full service shipyard at the northern end of the harbor and the oldest working shipyard in Newport. It is located in Newport’s “Traditional Maritime Zone,” described above. It services primarily recreational yachts, but also some commercial vessels. The fixed pier can accommodate very large yachts, up to about 300’. The facility offers all aspects of ship repair, including metal work, joinery, electric repair, painting, hauling, and storage. Equipment at the yard includes⁴:

- » 330 Ton Travel Lift (36' Clear Inside Width/20' Maximum Draft)
- » 70 Ton Travel Lift (22.5' Clear Inside Width/18' Maximum Draft)
- » 60 Ton Brownell Self-Propelled Trailer
- » 50 Ton Hydraulic crane
- » 15 Ton Hydraulic crane
- » 2 x 10,000lbs fork lift

² City of Newport Code of Ordinances. Chapter 17.56. WATERFRONT BUSINESS DISTRICT. Available online at <http://municipalcodes.lexisnexis.com/codes/newport/>. Accessed 7/21/08.

³ City of Newport Code of Ordinances. Chapter 17.68. TRADITIONAL MARITIME DISTRICT. Available online at <http://municipalcodes.lexisnexis.com/codes/newport/>. Accessed 7/21/08.

⁴ Newport Shipyard’s Equipment. Online at <http://www.newportshipyard.com/equipmentnew.asp>. Accessed 7/21/08.

- » 1 x 8,000lbs fork lift
- » 1 x Condor Lift with 80' Boom
- » 1 x All terrain scissor lift
- » 4 x Scissors lifts
- » 1 x Kubota Tractor
- » 3 x Courtesy golf carts
- » 3 x Rigid Inflatable Tenders
- » 2 x 8'x 10' Work floats
- » 1 x Flatbed golf cart with 1500lb capacity

Newport Shipyard also leases office space to a number of marine-related businesses.

State Pier Number 9 – State Pier Number 9 is owned and maintained by the State. The pier is zoned commercial/industrial. It is managed by the RI DEM to be principally used as a fishing pier. Only commercial fishing vessels are permitted to tie up at the pier and along the two finger piers on the southern side of the pier. There is about 700' of dockspace available to the fishing fleet. Most of the fishing vessels are lobster boats and draggers. The pier itself offers almost three acres of lay-down space which is used by the fishermen for gear storage, net mending, and offloading of fish. There is parking on the pier for the fishermen, but no public parking. The public is discouraged from coming onto the pier.

Long Wharf – Long Wharf is a City-owned wharf designated for commercial fishing boat dockage. However, the water alongside is very shallow and no longer practical for most vessels. Shoaling to three feet was reported.

Perotti Park – This is a new ferry and passenger terminal located at the base of Long Wharf. It serves as a center for intermodal transportation, with docking for the ferry and cruise ship tenders and easy access to bus lines and public parking. The harbormaster's office is located in the visitors center building within the park.

Newport Harbor Hotel Marina – The marina side offers transient dockage on three floating docks and is the more permanent berthing location for a number of 12 meter yachts that serve as charter excursion vessels.

Bowen's Wharf – Bowen's Wharf has a number of tourist shops and restaurants on the wharf itself and berthing for charter boats and dinner-cruise boats, as well as the Jamestown Ferry.

Aquidneck Lobster – This pier was once used exclusively by commercial lobster boats and other commercial fishing vessels. Lobsters were offloaded here, trap boats tied up and offloaded their catch, and seafood was sold wholesale. Fishing boats still tie up on the south side and lobsters are still sold both wholesale and retail. The building has been renovated to include shops, an art gallery, and a deck for the public to enjoy the view over Newport Harbor.

Seamen's Church Institute – Located at the head of Bowen's Wharf the Seamen's Institute has been providing services to mariners since 1919. The Institute provides public restroom, shower, laundry facilities, a library, chapel, internet access, and a memorial garden. Services provided by the Institute include a ten room residency program that offers transient and affordable housing. A soup-to-docks program brings soup to commercial fishermen in both Newport and Galilee. Donated clothing and food are distributed to those in need that are working on the waterfront.

Bannister's Wharf – Like Bowen's Wharf, Bannister's is a 280 foot pier with a marina at the end. Bannister's Wharf provides berthing space for a number of commercial charter boats, including *Rum Runner* and *Madeleine*. There are twenty shops and restaurants along the waterfront that are open seasonally. Although these businesses do generate substantial revenue, they are not water dependent.

Paras Condola – Paras Condola's pier is a commercial fishing pier with berthing space for druggers, fish offloading, space for net repair and gear storage. There is a large laydown area. Often trailers are parked on land here waiting to be filled by fishing vessels as they offload their catch.

Ann Street Pier -- This fixed pier with floating docks has space for transient recreational boats and also is the home for the tender that brings guests out to the Rose Island Lighthouse. Current plans for the Armory, located adjacent to this pier, include space for guest services for recreational boaters (showers, bathrooms, etc.).

Newport Onshore Marina, Brown and Howard, Newport Marina, Waites Wharf – These are recreational marinas and/or dockminiums.

International Yacht Restoration School (IYRS) -- IYRS offers courses in boat restoration and repair and marine systems on a two and a half acre historic waterfront site. The program "teaches the skills, history, art and science of building, restoring and maintaining boats and their systems."⁵ The facility includes a large warehouse once used for electricity generation, now used for boat work, a wharf, and a long section of floating dock. There is currently a temporary building providing protection for the large yacht restoration project of *Coronet*.

Casey's Marina – Casey's has a boat ramp, crane, boat storage area and building. It offers berthing, boat repair, engine repair, and other services primarily to recreational vessels.

Recently lost businesses – The Eastern Ice House, an ice supply company serving commercial fishing vessels, recently relocated to New Bedford. The Crawford Blacksmith and Welding Company, located next to the International Yacht Restoration School property since 19th century, recently went out of business.

⁵ IYRS, About Us. Online at <http://www.iyrs.org/DefaultPermissions/AboutUs/tabid/64/Default.aspx>. Accessed 7/21/08.

Fish Landings From NMFS⁶

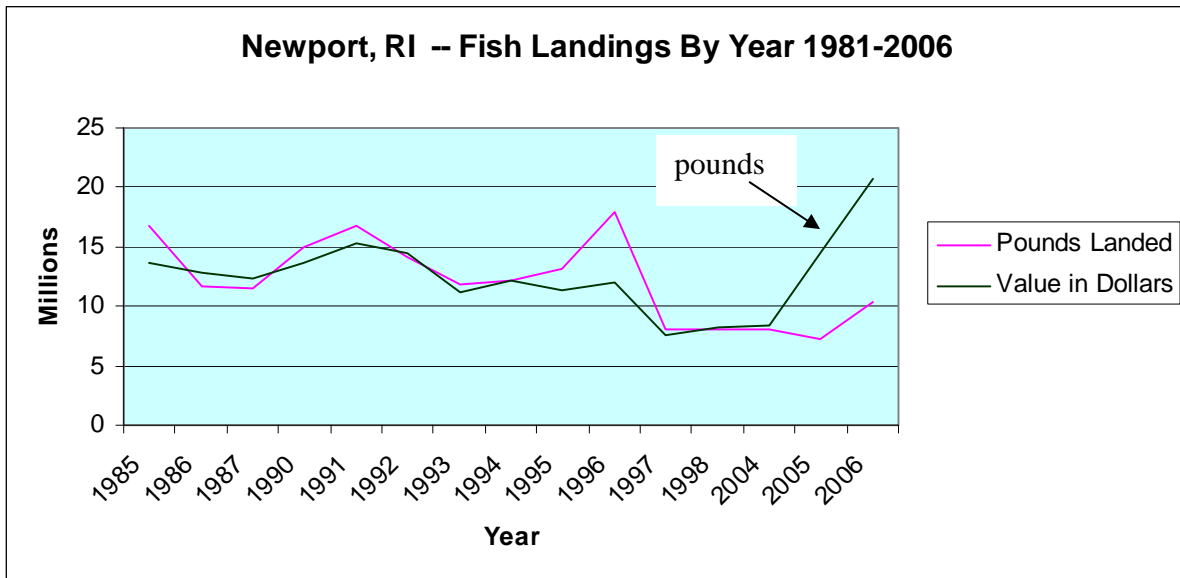


Figure 1 Newport Fish Landings 1981-2006

⁶ Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, Silver Spring, MD, http://www.st.nmfs.noaa.gov/pls/webpls/MF_LPORT_HIST.RESULTS Accessed 6/18/2008

NEWPORT STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	0	0
Commercial	101.36	137
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	9.36	8
Commercial Marine Recreation	25.64	20
Marine Recreation, Not Commercial	25.82	13
Not Water Related	52.14	102
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	45.93	27
Water Related	2.22	4
Water Enhanced	12.67	10
Not Water Related	52.14	102
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0.67	1
5. Marine Commercial Infrastructure	Number	Comments
Lifts	2	220 tons each
Cranes	2	
Warehouses	4	
Piers	32	Used for a combination of purposes
Wharves	3	Used for Commercial Marine Recreation
Floats	Unknown	7 parcels with floating docks used a combination of purposes
Berthing	469	Varied lengths from 1- 300 ft
Laydown Acreage	12.95	Seasonal for marine recreational purposes

Rhode Island's Ports and Commercial Harbors

Newport: Parcel Purpose: Commercial and Recreational Use



-  CRMC Water Type 5
-  CRMC Water Type 6
-  Commercial Ferry
-  Commercial Fishing
-  Sewer
-  Ship Building or Repair
-  boat building
-  boat repair
-  boat ramp
-  public dockage
-  transient slips
-  dockominium
-  marina
-  yacht club
-  public access
-  charter ticket sales
-  commercial passenger vessel
-  restaurant
-  seasonal laydown

A J Wilson
 Coastal Resources Center
 University of Rhode Island 10 - 2009
 data created 8 - 2008
 All other data courtesy
 of RIGIS/RI Digital Atlas







Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **New Shoreham, Rhode Island**



Photo credit: RI.net

Project contact:

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Phone: (401) 874-6127

This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



New Shoreham

Principal Contact: Jenn Brady Brown, Land Use Administrator; Chris Willy, Harbormaster

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and position in state

Block Island and the Town of New Shoreham are located 14 miles from mainland Rhode Island. There is a year-round community of less than one thousand people and a thriving seasonal tourist economy. The study area for this inventory is located in the Old Harbor district, where the water is zoned Type 5 and breakwaters create a sheltered harbor. Old Harbor serves as the principle port for the transfer of passengers. New Harbor is zoned Type 1, 2, and 3, and thus is addressed in the Special Features Layer section below.

Harbor Governance Structure

New Shoreham has a zoning category called "The Old Harbor Commercial Zone." This zone is historically and commercially defined. According to the ordinances, "it provides seaward contact with the mainland with attendant dock activities and is the site of the major hotels, stores, restaurants and related activities. It is intended that all development within the OHC Zone be compatible with existing adjacent structures and uses."¹

In Old Harbor, anchoring was recently restricted to a seven day limit and rafting was limited to two boats only. Anchoring along the entire length of the east wall is no longer permitted.² New Shoreham has an interim Harbor Management Plan approved.

Summary of uses and infrastructure

All goods and supplies for the island, including home heating oil and gasoline, are transferred by ferry through the ferry terminal in Old Harbor. Interstate Navigation runs traditional ferry service to Pt. Judith year round, and high speed ferry service to Point Judith during the summer

¹ Town of New Shoreham Zoning Ordinance. (1994) Article 3 - Section 311 - Old Harbor Commercial Zone (OHC Zone). P. 3-61. Online at <http://www.town.new-shoreham.ri.us/displaydept.cfm?id=6>. Accessed 7/21/2008.

² Personal Communication Capt. Brent E. Spies, former marine patrol officer for Town of New Shoreham, 7/23/2008.

tourist season. There is also a high speed ferry line to New London, which is owned by Cross Sound Ferry. In addition to the ferry terminal, Old Harbor contains facilities for commercial fishing. Activities include commercial fish and bait offloading, charter excursion fishing berthing, and transient berthing for large offshore commercial fishing vessels (i.e., draggers and scallop boats). Fisheries include lobster, monkfish, and finfish. An area for offloading fish and loading bait is known locally as “the loading dock”. Fishermen utilize a small amount of gear laydown area on the dock at the southern portion of the district near the breakwater. Six slips in the southwest corner of the inner harbor are used by the charter fleet, which includes *G. Willie Makit*, *Line Sider Charters*, *Sakarak*, and *Hula Charters*. Slips on along the northwest corner of the inner harbor are used by lobster boats and other small fishing vessels. Draggers will tie up along the northeast corner; in the winter they will use any available slips in the inner harbor. Old Harbor is also used as a harbor of refuge for vessels not able to return to Pt. Judith. In addition to commercial fishing activities, Old Harbor hosts a seasonal parasailing operation, slips and moorings for recreational vessels, and a commercial diving operation that runs dive charters.

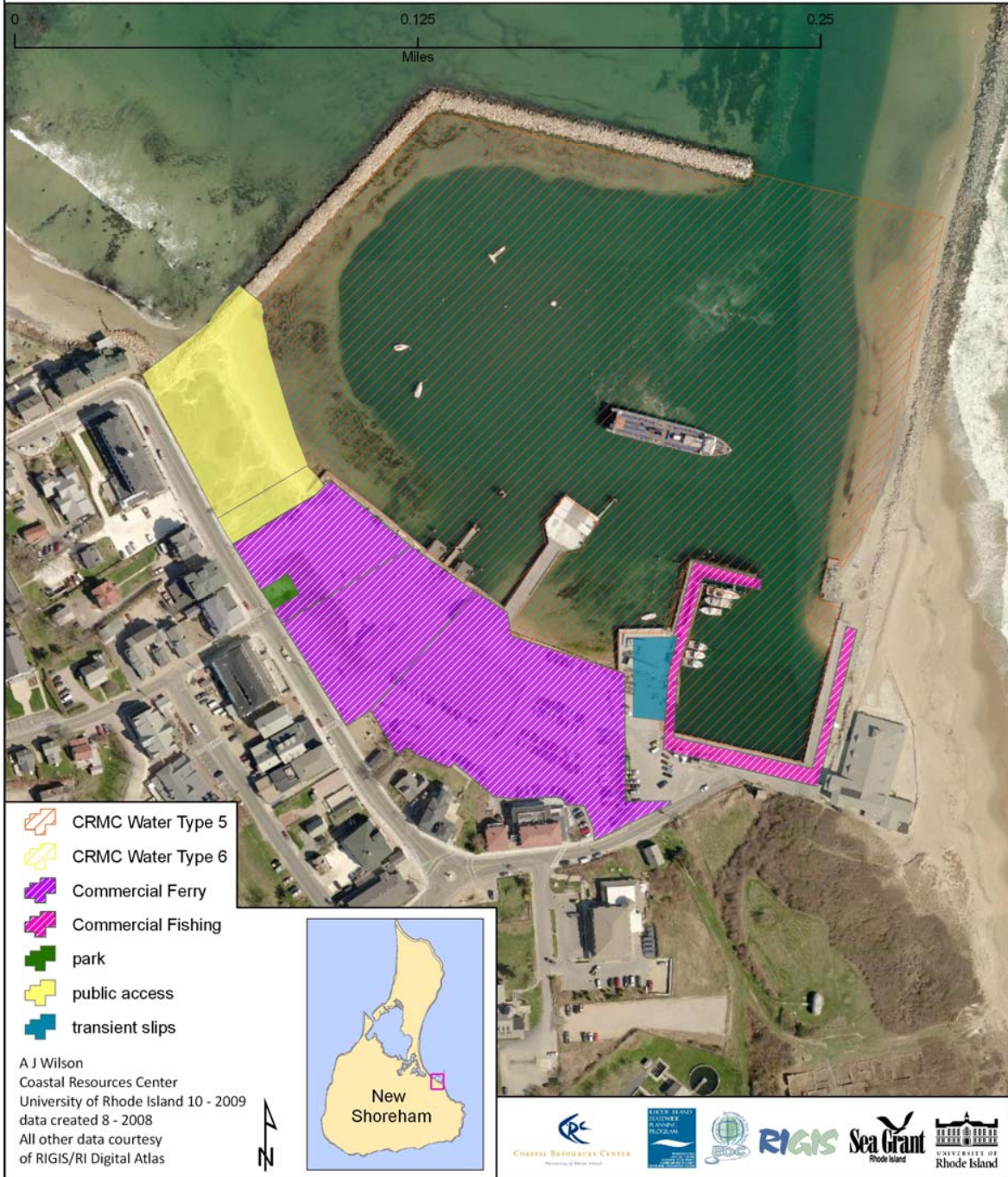
Special Features Layer

Block Island New Harbor Facilities – There are several marinas in New Harbor. Champlains Marina hosts charter fishing boats and sail boats, including three boats owned by Block Island Fish Works. The *Viking Starliner*, a ferry to Montauk, uses Champlains Marina to pick up and discharge passengers. Block Island Maritime offers sailing lessons and other maritime education programs. Safe Sea towing operates out of Block Island Boat Basin and Bay Watch towing operates out of Champlains. The sailing charterboat *Ruling Passion* operates out Block Island Boat Basin, as does the Harbormaster and Edwards Marine, a mobile marine mechanic service. The “Hog Pen,” a small cove at the southern end of New Harbor, is used by lobster boats, charter fishing vessels, a mooring barge, and various recreational vessels. There was once a liquid fuel transfer station near the Hog Pen that connected by pipeline to the power company. Now, however, this fuel is brought in on trucks by ferry.

NEW SHOREHAM STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	2.89	5
Commercial	5.47	10
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	5.12	4
Commercial Marine Recreation	0.18	1
Marine Recreation, Not Commercial	1.53	3
Not Water Related	2.27	8
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	5.18	5
Water Related	0.78	2
Water Enhanced	0.18	1
Not Water Related	2.27	8
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0	0
5. Marine Commercial Infrastructure	Number	Comments
Piers	3	Used for marine transportation and general berthing
Wharves	1	One used for commercial fishing
Floats	Unknown	2 parcels with floating docks for commercial fishing and marine recreation

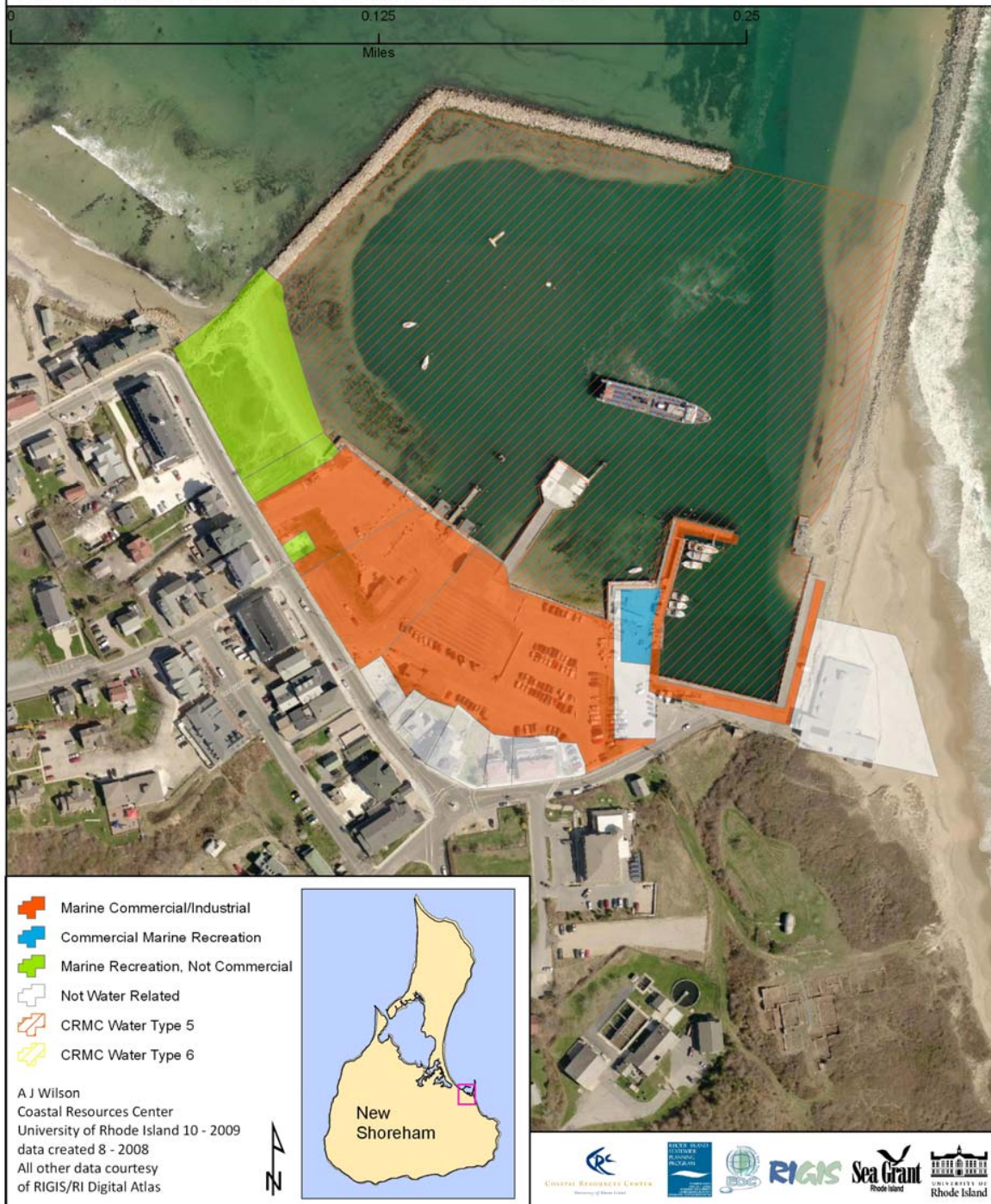
Rhode Island's Ports and Commercial Harbors

New Shoreham: Parcel Purpose: Commercial and Recreational Use



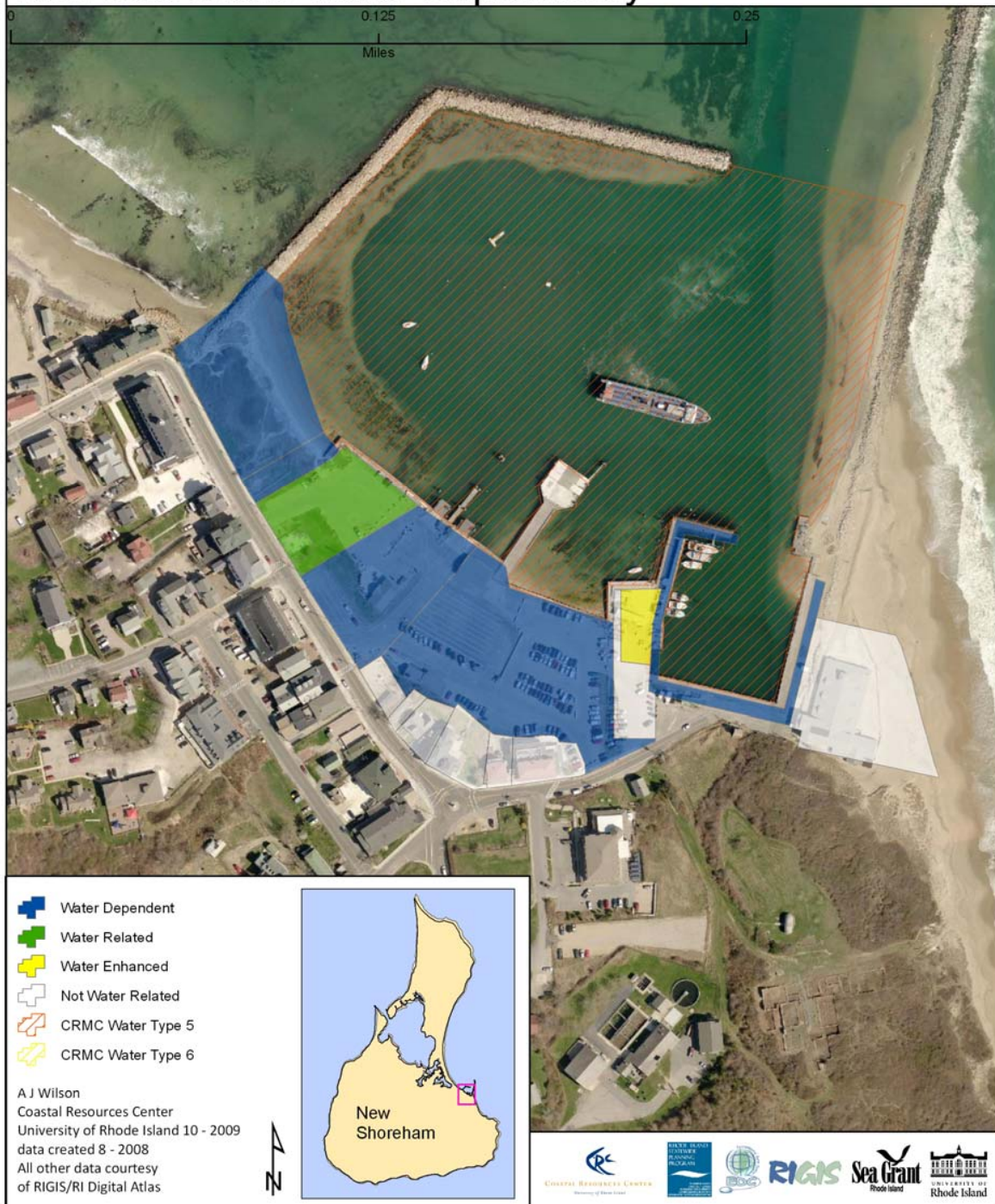
Rhode Island's Ports and Commercial Harbors

New Shoreham: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

New Shoreham: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: North Kingstown (Port of Davisville / Quonset), Rhode Island



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



North Kingstown (Port of Davisville or Quonset Business Park)

Principal Contact: Evan Mathews, Port Manager; Mike Foster, Senesco Marine; Linsey Cameron, Principal Planner; Mark Knapp, Harbormaster

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Quonset Davisville Business Park Airstation Development (the Park), is one of Rhode Island's two premier port facilities and the waters in the port area are zoned as Type 6 by CRMC. In 1974, the Naval Base was decommissioned and turned over to the state. The Park is developed and managed by the Quonset Development Corporation (QDC). The QDC is a special purpose subsidiary of the Rhode Island Economic Development Corporation, a quasi public company. Located in North Kingstown, this 3047-acre site offers multi-modal infrastructure, including rail, highway, air, and sea access. In addition to multi-modal access, utilities (electricity, natural gas, water, and on-site wastewater treatment) and an extensive communications network are also features of the Park.

Davisville Marketing (from its website)

Advantages to the Port of Davisville include:

- *no harbor maintenance fee
- *secure access
- *sheltered deep water harbor
- *no docking delay
- *one day closer to Europe than any other port south of Rhode Island.

The Port of Davisville is a border entry point and is designated Foreign Trade Zone #105.

Source:
<http://quonsetpointri.com/transportation/>

Harbor Governance Structure

Although the waters around Quonset/Davisville are zoned Type 6 by CRMC, the DEM has zoned certain sections between the piers and the airport as Type SA – the highest standard for water quality. A Harbor Management Plan is in draft form, but has not yet been approved by the CRMC. Much of the land at the Park was conveyed to the state by the federal government and is restricted to certain uses as part of the deed. This land can be seen on the map as Maritime Administration areas (MARAD) and must be used “for development or operation of a port

facility in perpetuity.”¹ The deed goes on to define port facility uses that are acceptable, including:

- Terminal and warehouse buildings
- Piers, wharves, yards, docks, berths
- Dry and cold storage spaces
- Bulk and liquid storage terminals
- Tank farms
- Aprons, cranes and equipment used to load and discharge cargo and passengers from vessels
- Multimodal transfer terminals
- Transshipment receiving stations
- Marinas
- Foreign trade zones
- Shipyards
- Industrial property
- Fishing and aquaculture structures
- Mixed-use waterfront complexes
- Connecting channels
- Port landside transportation access routes

Summary of Uses and Infrastructure

The Park has two main piers that combined offer 6,800 linear feet of berthing space. There is also a carrier pier at the southern part of the Park. The multi-modal opportunities represented by its proximity to a major interstate highway (4 miles to I-95), as well as the on-dock rail service make The Park an ideal location for import/export. The rail service, provided by Seaview Transportation Co., connects to National Class I carriers, including the Amtrak rail line.²

In addition to the two main piers, The Park has the following infrastructure in place that is utilized or could be utilized for marine commercial/industrial uses:

- 7 Warehouses
- 342.85 Acres of Laydown area,
- 1 drydock that can haul at 4500 Ton vessel, multiple cranes,
- 14 miles of rail track in two branches, with associated sidings and yards,
- an airport with 8000 foot runway with staffed control tower and instrument landing system,

The main marine-dependent tenants of the park are NORAD, SENESCO and Electric Boat.

¹ Port Facility Property Deed. BK 52PG 84. P. 2.

² <http://quonsetpointri.com/transportation/>

North Atlantic Distribution (NORAD) is the principle tenant at Quonset/Davisville. NORAD is a port of entry, processing center, and distribution center for primarily Audi, Volkswagen, and Subaru vehicles. NORAD utilizes 148 acres of space at Davisville and takes advantage of the rail spur for loading and unloading of vehicles. According to its website, NORAD takes advantage of the “No Harbor Maintenance Fee” at Quonset/Davisville, saving \$12.50 per \$10,000 in cargo value.³ Roll On/Roll Off (RO/RO) vessels berth alongside the pier and cars are driven off the ships and into waiting train cars and truck transporters. NORAD is one of the top importers of autos in the country and is now beginning an export service as well. Used trucks are processed at NORAD, clearing them through customs and exporting them to Germany for European Distribution.⁴

SENESCO builds primarily ocean-going double-hulled barges up to 417' X 74' and tugboats up to 117' X 36'. The barges are primarily used in U.S. waters to transport petroleum products. The barges and tugs are built in two former U.S. Navy hangars and on the adjacent land. The market for these barges continues to be strong, as federal law requires the use of these U.S. built, double-hulled vessels on all domestic routes.⁵ The company also does repair work on large vessels. SENESCO's pier can accommodate ships as large as air craft carriers. The rail access provided by the spur on Roger Williams Way adjacent to SENESCO is an important part of its operation. All the plate steel used in the new ship construction comes in by rail. These materials are easily moved from the rail cars to the buildings via forklift.

In addition to the main pier, SENESCO makes use of a Relieving Platform. The platform, once used to launch and recover seaplanes, is now used in conjunction with SENESCO's floating drydock for the launching and hauling of large vessels. Vessels are moved on land with “transporters”. These are wheeled devices capable of carrying up to 1000 tons that can transport vessels between the buildings and the floating drydock.

SENESCO has 3 yard cranes, 13 fork lifts, two cherry-picker cranes, a truck crane on the dock, two buildings for ship building and repair, and a large amount of laydown area for equipment storage and ship work. The company also maintains two 6-ton large-vessel moorings off of its property. Its floating drydock is 336' X 100' and can handle vessels with beams up to 82'.

SENESCO's pier (AKA the Carrier Pier) is 1200' long and 60' wide. There is up to 35' of water alongside. The pier can accommodate up to about 6 vessels at one time. Electrical service to the pier is 1600 Amp service.

Electric Boat (EB) is an automated hull-fabrication and outfitting facility that constructs submarines for the U.S. Navy.⁶ The company delivered the USS Virginia and the USS Jimmy Carter, and is now constructing the follow-on Virginia-class submarines. It also provides support

³ <http://www.noradinc.com/NoradInc/DesktopDefault.aspx?tabid=120>

⁴ "QUONSET POINTS NEWSLETTER", April 2008 - 04/07/08

⁵ Providence Journal, 7/6/2004. R.I. Firm Laying the Keel for Different Kind of Shipbuilding

⁶ Electric Boat Corporation Internet Home Page. <http://www.gdeb.com/about/>

services for other U.S. Navy ships.⁷ Electric Boat uses a jackup barge system in conjunction with its two Relieving Platforms for the launching of submarine modules that are transported to Groton, CT, for final assembly. It has a variety of cranes, including a gantry crane, and other equipment necessary for the construction of large vessels. Like SENESCO, EB utilizes its rail service to import materials used in the construction of subs. Though there is no pier on the property, EB offers bulkhead berthing for shallower draft vessels like barges. There is a private channel running north/south to the EB facility that allows barge access to the Relieving Platforms.

Other Marine Uses:

Specialty Diving Services (SDS) is a commercial dock building, pile driving, and repair business that keeps its boats and equipment at the Carrier Pier. Rhode Island Fast Ferry Inc. provides seasonal ferry service to Martha's Vineyard, Massachusetts. The service can accommodate 400 people and light freight. American Mussel Harvesters lease a waterfront area for unloading product. Other imports that travel through the park include pipes, lumber, and stone. These imports have a dependency on the rail system in place to move goods. Seafreeze is the largest producer of sea frozen fish on the U.S. east coast. They supply sea frozen and land frozen fish to a world-wide range of markets, including bait products to domestic and international longline fleets. The company has a refrigerated warehouse for storage and moves frozen seafood to the west coast by refrigerated rail car.

⁷ Electric Boat Corporation Internet Home Page. <http://www.gdeb.com/programs/>

QUONSET STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	969.12	134
Commercial	18.85	4
Mixed Use	5.66	1
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	383.92	40
Commercial Marine Recreation	11.13	1
Marine Recreation, Not Commercial	11.04	4
Not Water Related	1789.96	143
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	347.27	39
Water Related	58.82	6
Water Enhanced	0	0
Not Water Related	1789.96	143
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	301.26	42
5. Marine Commercial Infrastructure	Number	Comments
Lifts	3	2 at 400 tons, 1 at 50 tons
Cranes	8	Multiple types
Tanks	1	
Drydock	1	Located at SENESCO
Warehouses	8	
Piers	3	
Wharves	4	general berthing
Floats	Unknown	2 parcels with general purpose floating docks
Berthing	20	Used for general berthing, commercial fishing, and ship building and repair
Laydown Acreage	319.76	

Rhode Island's Ports and Commercial Harbors

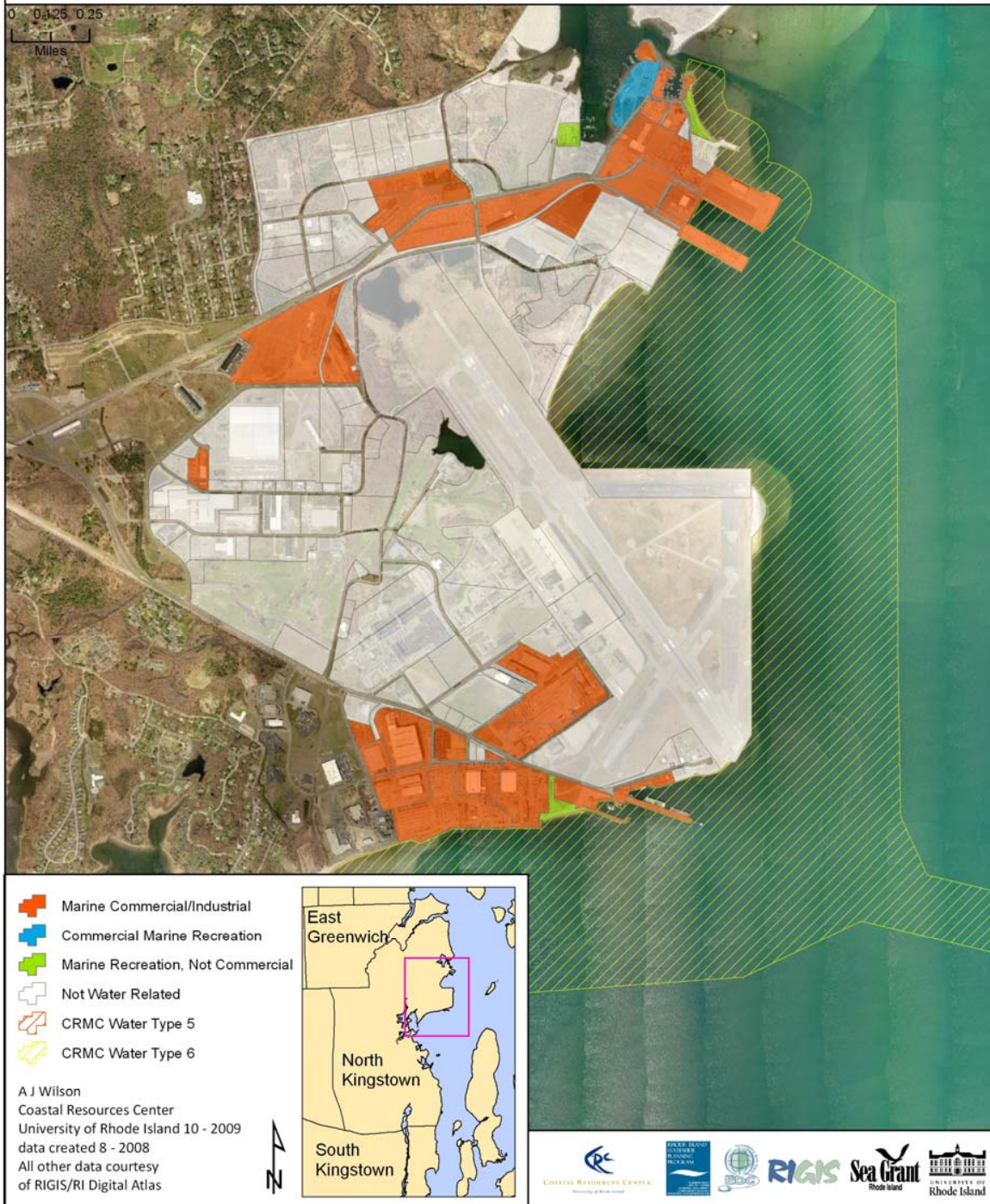
Quonset Business Park, North Kingstown

Parcel Purpose: Commercial and Recreational Use



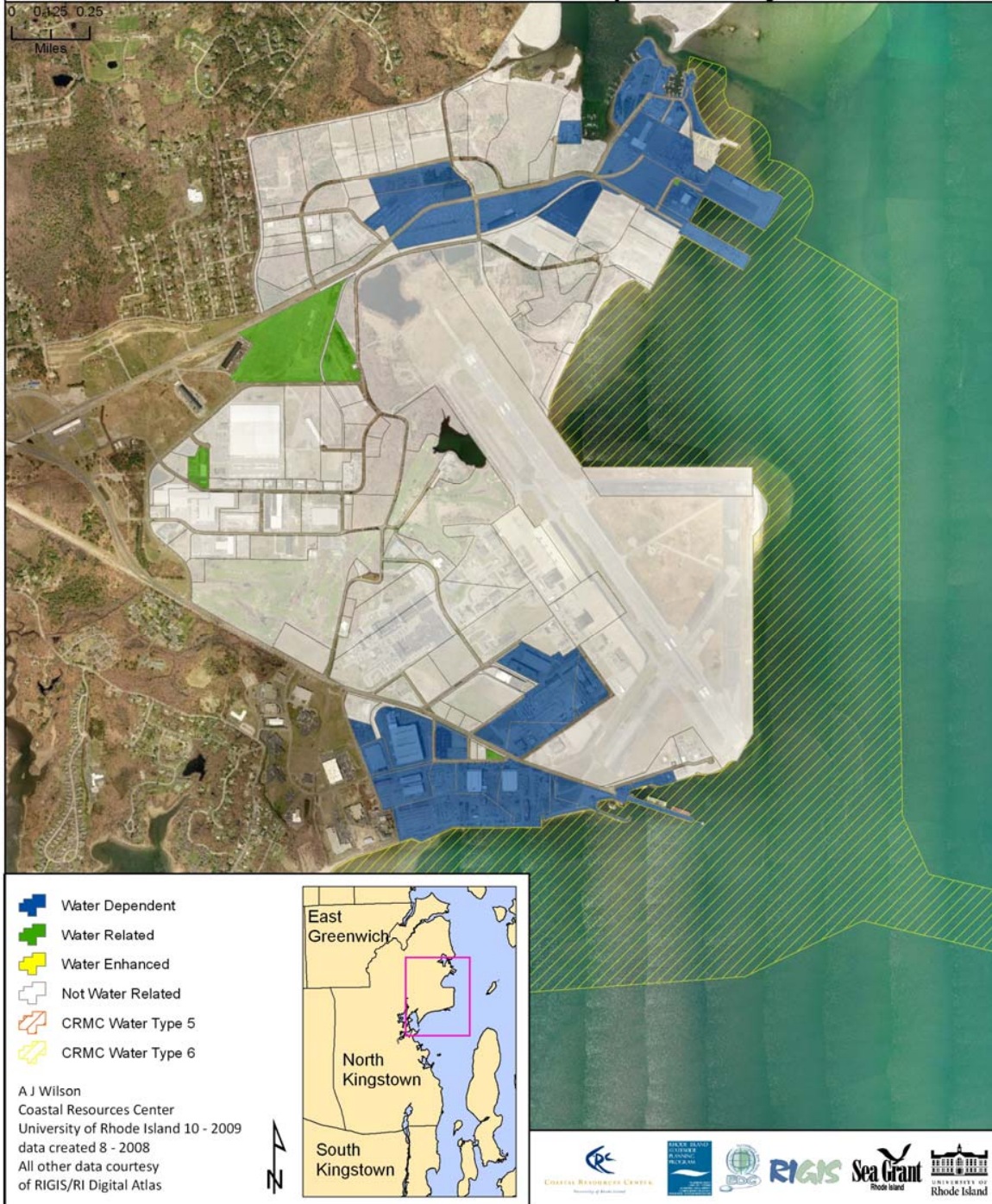
Rhode Island's Ports and Commercial Harbors

Quonset Business Park: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

Quonset Business Park: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: North Kingstown (Wickford / Allen Harbor), Rhode Island



Project contact:

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Phone: (401) 874-6127

This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



North Kingstown (Wickford/Allen Harbor)

Principal Contact: Linsey Cameron, Planner; and Mark Knapp, Harbormaster

Visit Date: 6/24/08

(Section sent for review to Linsey, Mark. Comments Rec'd from Linsey)

Maps for Review

1. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation)
2. Marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

North Kingstown's Wickford Harbor, zoned Type 5, and is used primarily for recreational boating and commercial fishing. There are five marinas in Wickford: Brewer's Yacht Yard and Marina, Wickford Marina, Johnson's Boatyard, Pleasant Street Wharf, and Wickford Shipyard. According to the recent Harbor Management Plan, as of October 2007 there were 372 registered moorings, 510 slips and 64 pilings in the Wickford Harbor.¹

Harbor Governance Structure

North Kingstown has an approved Harbor Management Plan in place. There is a Harbormaster and a Harbor Commission. The Harbor Management Commission is authorized to recommend policy for the coastal waters and harbor areas of the Town consistent with the Harbor Management Plan and any subsequent ordinances.² The Town manages both the Town Dock and the Town Wharf. By Town ordinance, the Town Wharf is utilized exclusively for commercial purposes. Wickford Harbor is classified by CRMC as Type 5 waters. Allen Harbor is classified as Type 3, but is within ½ mile of the Type 6 waters at Quonset/Davisville.

The recent Harbor Management Plan identified more than 50 commercial fishing vessels that operate out of North Kingstown that fish for shellfish, fin fish, lobster, and mussels. Most of these vessels were found to operate the inshore fisheries in the West Passage, though many do fish outside of this area in other nearby fishing grounds. There are also aquaculture projects and upweller operations located in the Town. Benefits to the Town from these fisheries include fees paid to the town, repairs and services performed in the town, and other goods and fuel purchased in North Kingstown.³

¹ Town of North Kingstown Harbor Management Plan, 2007. P. 31.

² Town of North Kingstown website at <http://www.northkingstown.org/planningdept/harbor.asp>. Accessed 7/8/08.

³ Town of North Kingstown Harbor Management Plan, 2007, p. 61

Summary of uses and infrastructure

The Town Wharf is used exclusively for commercial fishing purposes by town ordinance, although the parking area is not authorized for gear storage or laydown. There are about 20 quahog boats and 8 draggers and/or lobster boats that berth at the Town Wharf, which is the maximum capacity of the facility.⁴ Fishermen do sometimes sell their catch to buyers on the pier, although this activity is discouraged by the Town. Some fishermen also offload at the adjacent Gardner's Wharf Seafood facility. There is also charter boat that brings passengers out for harbor tours and educational programs. Wickford Shipyard has a number of commercial uses in operation including a marine welder, a wooden boat builder, and a metal fabrication shop, as well as warehouse space, office space, and classroom facilities for captain's license courses. The owners have recently received CRMC approval for 64 new slips and have pledged to maintain a portion of the dock space for commercial fishing boat use.⁵

In the center of Wickford, the Town Dock allows transient short-term recreational vessel tie-up space. The passenger vessel *Brandaris* operates off the town pier, but that is the only commercial use allowed by the town. The DEM maintains the Wickford Marine Base Facility with a new pier and non-functioning marine railway in Wickford.

Allen Harbor, just to the north of the Quonset Business Park, is used primarily for recreational boating and a few commercial uses. Little Allen Harbor, an adjacent inlet, is owned by the RI Port Authority and is leased to private concerns and operated as a private marina with 52 slips and no moorings.⁶ Clean the Bay, a marine debris cleanup operation funded primarily through federal grant monies, docks its boat in Little Allen Harbor. Rhode Island Mooring Service is also located in Little Allen Harbor and provides some general marine construction services. Sea Tow, Inc; Rhode Island Shipyard; and Allen Harbor Marina provide service primarily to recreational boaters.

Allen Harbor Marina, owned and operated by the Town of North Kingstown, is located on the southeast side of Allen Harbor and provides 100 boat slips and 80 moorings for mostly recreational vessels. The land area for Allen Harbor Marina was granted to the Town of North Kingstown by the Navy with a deed restriction limiting the facility to recreational use only and is operated under the Quonset/Davisville Recreation Fund. The Allen Harbor Boating Association on the southwest shore of this harbor provides 100 slips for its members. The Coast Guard maintained a berth in this harbor until 1992. The property adjacent to the Town Marina is owned by the U.S. Food and Drug Administration and maintains the berthing facilities.

⁴ Personal Communication with Mark Knapp, Harbormaster, 6/24/2008 and Town of North Kingstown Harbor Management Plan, p. 63.

⁵ Personal communication with Mark Knapp, Harbormaster, 6/24/2008.

⁶ Town of North Kingstown Harbor Management Plan, 2007, p. 31.

There are less than 8 acres of land in 5 parcels utilized for marine commercial/industrial purposes.

North Kingstown's Wickford and Allen Harbor areas have five vacant parcels suitable for marine commercial/industrial use located adjacent to the Pleasant Street Wharf.

Threats to North Kingstown's fishing fleet

The rapid growth of the recreational boating fleet has put available berthing space at a premium. The consistent increase in pleasure boats has and will result in the displacement of commercial fishing boats. Such pressure is a serious threat to the survival of North Kingstown's commercial fishing fleet, the wholesalers, and the support industries that service them. The commercial vessels in North Kingstown, though economically pressured by limited and competitive dock space, are currently holding constant levels of dock space due, in part, to the demand for seafood products, and the available resources that they yield.

Town of North Kingstown Harbor Management Plan, 2007, P. 63.

WICKFORD STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	1.15	7
Commercial	22.22	70
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	7.94	5
Commercial Marine Recreation	11.13	12
Marine Recreation, Not Commercial	1.76	2
Not Water Related	30.58	71
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	17.94	19
Water Related	0	0
Water Enhanced	0	0
Not Water Related	30.58	71
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0.67	7
5. Marine Commercial Infrastructure	Number	Comments
Lifts	2	15 and 35 tons
Warehouses	1	30000 square feet Wickford Shipyard
Piers	3	Used for commercial fishing, marine recreation, and government/institutional use
Wharves	2	One used for commercial fishing the other for marine recreation
Floats	Unknown	10 parcels with floating docks
Berthing	33	Used for general berthing and commercial fishing

Rhode Island's Ports and Commercial Harbors

Wickford Harbor, North Kingstown

Parcel Purpose: Commercial and Recreational Use



Rhode Island's Ports and Commercial Harbors

Wickford: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

Wickford: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Portsmouth, Rhode Island**



Project contact:

Jennifer McCann
University of Rhode Island
Coastal Resources Center/ RI Sea Grant
Email: mccann@crc.uri.edu
Phone: (401) 874-6127

This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Portsmouth

Principal Contact: Gary Crosby, Assistant Town Planner, Zoning Enforcement Officer

Visit Date: June 25, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port and its role within the state

Portsmouth, located north of Newport on Aquidneck Island, has a fully developed maritime district at Melville. Here, a large number of marine-related industries occupy an area once owned by the Navy with a protected harbor, significant lands for boat storage, and a large number of buildings devoted to marine repair and boat building operations. The majority of these businesses are oriented toward recreational vessels. The complex, as a whole, has significant infrastructure to support the industries including travel lifts, cranes, workshops, forklifts, etc.

Summary of water dependence of uses and infrastructure

There is active rail service through the Melville area and along the west side of Aquidneck Island. It is currently used only by a seasonal dinner train and does not connect to the mainland.

There are four vacant tank farms in Portsmouth which remain vacant and are contaminated. Cleanup costs will not likely allow for new residential uses.

In terms of Navy property, "The Backyard" is in the middle of the Melville district. It is currently owned by the Navy and lies vacant and unutilized. A number of marine trade businesses have formed an LLC and have expressed an interest in purchasing this parcel (pers. communication Gary Crosby, Town of Portsmouth, 2008). There are three abandoned tanks, once used for fuel, on a fixed pier. A network of pipes connects these tanks to others on Tank Farms 1 and 2. Those tanks on Tank Farms 1 and 2 also have ring drains that allows for discharge of storm water to the Backyard area. The Navy retains a permit for this discharge.

According to the Aquidneck Island West Side Master Plan (2005), possible future uses for Tank Farms 1 include marine industrial uses, transit support, light industrial, marine accessory uses, and open space. Tank Farm 1 consists of 45 total acres of which 8.5 non-developable acres and 36.5 developable acres. Possible future uses for Tank Farm 2 include, marine industrial uses, marina accessory uses, residential (affordable housing), light industrial/commercial, research and development, and open space. Tank Farm 2 consists of 93 total acres of which 15 non-

developable acres and 78 developable acres. Possible future plans for Tank Farm 3 include a waste water treatment facility (+/- 10 acres), wind turbines, recreation/ outdoor theatre, open space, marina accessory uses, marine industrial uses. There is 29 acres available of which 12.5 acres are non-developable and 16.5 acres are developable. Possible future uses for Tank Farm 4 include; commercial/industrial use, open space, hospitality/resort, wind turbines, seasonal outdoor theatre, residential (affordable housing). Tank Farm 4 consists of 94 total acres of which 14 are non-developable and 80 and developable

On the northwestern side of Tank Farm 3, there is a municipal boat ramp that is used by shellfishermen to launch their boats and transfer gear.

Albin Yachts and Hinkley Marine used the property just north of Carnegie Abby for boat manufacture and storage, but the property was recently sold.

Businesses in the Melville Complex include:

- Tartan and C&C
- Cay Electronics
- Newport R&D Inc.
- Rig Pro
- Garry Hoyt
- Hinckley Yachts
- Kiwi Marine Services
- North Sails RI
- Life Raft & Survival Equipment, Inc
- Fontaine Design Group
- Friendship Yacht Company
- Little Harbor Yacht Brokers
- Wellington Yacht Partners
- Ocean Link, Inc.
- S&S Fabrics Products
- SonicWorks, Inc.
- The Ships Store and Rigging
- DePaul Diesel Service, Inc.
- East Coast Yacht SAales
- Eastern Yacht Sales
- East Passage Yachting Center
- New England Boatworks
- Waterline Systems Incorporated
- Custom Navigation Systems
- Ted Hood Yachts
- Portsmouth US
- Oyster Harbor Marine

Harbor Governance Structure

Portsmouth has a “Waterfront District” in which residential development is prohibited, except by special use permit.

PORTSMOUTH STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	47.8	2
Commercial	269.32	15
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	5.26	3
Commercial Marine Recreation	56.71	10
Marine Recreation, Not Commercial	0	0
Not Water Related	599.78	16
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	58.3	12
Water Related	0	0
Water Enhanced	3.67	1
Not Water Related	599.78	16
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	367.5	9
5. Marine Commercial Infrastructure	Number	Comments
Lifts	4	
Cranes	3	
Tanks	9	All on Navy owned property
Warehouses	11	
Piers	8	Combination, Commercial Fishing, and transportation
Wharves	1	Used for commercial marine recreation
Floats	Unknown	7 parcels used for commercial marine recreation
Berthing	320	Commercial marine recreation
Laydown Acreage	4.86	Seasonal use

Rhode Island's Ports and Commercial Harbors

Portsmouth: Parcel Purpose: Commercial and Recreational Use



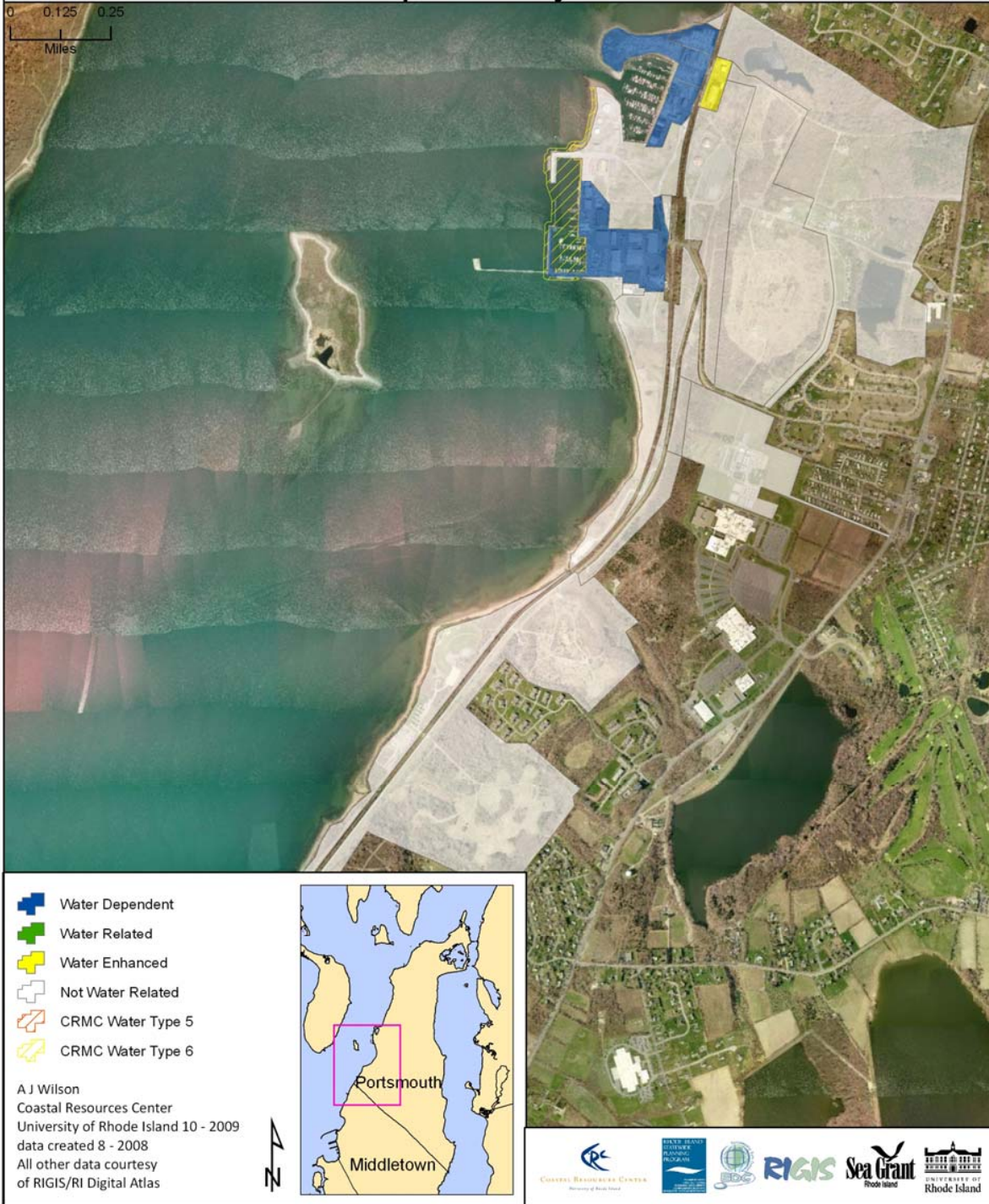
Rhode Island's Ports and Commercial Harbors

Portsmouth: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

Portsmouth: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Providence, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Providence

Principal Contact: Bonnie Nickerson, Providence Department of Planning and Development 6/17/08; Steve Curtis and Bruce Waterson, Waterson Terminal Services, 7/7/08.

Sent for review to Bonnie, David Everett, Steve Curtis, Chris Hunter,

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port and its role in the state

Providence hosts the state's principal commercial waterway and Rhode Island's largest urban waterfront. The Port of Providence is an intermodal port that offers rail service that reaches inland to major connections throughout the U.S., the interstate highway system, and a federally maintained deep-water channel. Reaching from Pomham Rock northward to the two I-195 Bridges in Providence and East Providence, it is located in the heart of the Providence metropolitan area, at the confluence of major rivers and streams.

Approximately 49 water-dependent facilities utilize the Port District and provide services to a population of over a million people located in Rhode Island, Northeastern Connecticut, and Southeastern Massachusetts.¹ While petroleum imports comprise the majority of product that moves through the port, asphalt, cement, and road salt are also imported here and used for construction, road repair and maintenance for the entire state and region. Perhaps the most significant recent undertaking within the port area is the Providence River dredging project, which dredged the channel to a controlling depth of forty feet. This state and federally funded project, totaling \$63 million and completed in 2007, was implemented because of the regional benefit and economic value of this maritime resource to the state and the region. The Department of Homeland Security (DHS) ranks the Port of Providence as a "critical port" and allocates port security grant funding to the port each year. Because of its strategic importance as

¹ United States Army Corps of Engineers, (2004). Fact Sheet, "Project Information on Providence River and Harbor Dredging Project.

one of America's critical infrastructure resources, the Port of Providence was included in the DHS Port Security Grant Program in 2008.²

The Providence Fire Department maintains its foam unit at the Allens Avenue station, just outside ProvPort.

Harbor Governance Structure

Providence has a draft Harbor Management Plan that has not been updated in several years. There is a part-time harbormaster who is a member of the Providence Police Department, but the official full-time harbormaster position has not been filled for many years. Management of the port area is shared by the City of Providence (primarily through the Department of Planning and Development) and the RI CRMC. The City recently approved a new comprehensive plan and is currently considering changes to its zoning along the portion of Allens Ave. north of Thurbers Ave. and south of the Hurricane Barrier. CRMC, by classifying the waters in the port area as Type 6, prioritizes maritime industrial uses for the port district. The RI Coastal Resources Management Program is mandated under the federal Coastal Zone Management Act to "contain a method of assuring that local land use and water use regulations within the coastal zone do not unreasonably restrict or exclude land uses and water uses of regional benefit.... Priority consideration being given to coastal-dependent uses and orderly processes for siting major facilities related to national defense, energy, fisheries development, recreation, ports and transportation, and the location, to the maximum extent practicable, of new commercial and industrial developments in or adjacent to areas where such development already exists" (16 U.S.C. 1451, Section 302).

Summary of major uses and infrastructure

Providence has a number of uses and a large amount of marine infrastructure, most of which is located along Allen Avenue.

The following information on major uses along Allen Avenue are taken directly from the recent *Economic Effects of Allen Avenue Business*, a report conducted in 2008 by FXM Associates:

Narragansett Improvement Company (225 Allen Avenue) has been a family-owned and operated business at this 2.5-acre site for 114 years. The company manufactures asphalt and provides construction services to more than 400 active customers in Rhode Island, Massachusetts, and Connecticut. In addition to the numerous cities and towns, private developers, and contractors purchasing asphalt or paving services, the company has had

² United States Department of Homeland Security, (2008). FY 2008 Infrastructure Protection Program (IPP) Port Security Grant Program (PSGP) Fact Sheet online at <http://www.nae.usace.army.mil/projects/ri/prp/providencefact.pdf>.

contracts with the US Navy since the 1960s for paving and repairs at the Newport and Groton bases. Currently, liquid asphalt and aggregate material (stone, sand) arrive by barge to Ship Street and are delivered by truck to the Allen Avenue plant. The majority of employees have skilled or semi-skilled jobs (cement finishers, mechanics, equipment operators, engineers), and have been employed at the firm for an average of 17 years. Company operations require heavy industrial zoning without time restrictions on trucking activity, and with direct highway access and proximity to liquid asphalt suppliers.

Although not currently water dependent, Narragansett Improvement is classified in the Rhode Island Ports and Harbors Inventory as Water Enhanced because it is considering importing aggregates through the facilities at Promet, located just across Allens Ave. In addition, its liquid asphalt product is imported through the nearby facilities at ProvPort.

Promet Marine Services Corp. (249 Allen Avenue) has been a family-owned and operated business at this shipyard site for 34 years, and is reportedly the last independently owned shipyard in Rhode Island. The company depends on deep water to provide vessel repair, alteration, maintenance, and other services for ocean-going commercial vessels, and has a 400-metric-ton Marine Travelift crane to handle tug boats, fishing boats, barges, and other large vessels. The full-service repairs include spray metallizing or painting; high-capacity sandblasting systems; and a machine shop for welding, mechanical, and electrical repairs. Their trade area extends from Maine to Virginia and customers include the US Navy, US Coast Guard, oil tanker companies, and approximately 98% of Rhode Island's fishing fleet. They provide services to small- to medium- sized boatyards needing heavy-capacity, deep-water piers for dry dock vessel repair. Following the 2005 Providence River Harbor Dredge Project, the company invested \$2.5 million in facility improvements. Employees hold a variety of shipyard jobs, and there is an ongoing shortage of skilled workers such as welders (ship fitters) and machinists.

Promet Marine Services Corp. is categorized as a Water Dependent Use in the Rhode Island Ports and Harbors Inventory.

Sprague Energy (144 Allen Avenue) is one of the largest suppliers and distributors of energy and materials handling in New England, and has been located on the Providence waterfront for more than 100 years. The company is water-dependent; all products come to the terminal by vessel and include home heating oil, diesel fuel, residual fuels, gasoline and natural gas. Customers are both end-users and resellers, and include a variety of federal fuel supply contracts. The workforce includes mechanics, welders and oil spill safety trained technicians, and workers must have Transportation Workers Identification Card (TWIC) security status by 2009.

Sprague Energy is categorized as a Water Dependent Use in the Rhode Island Ports and Harbors Inventory.

Providence Steamboat Company (One India Street) was established at this location in 1881 and has been in continuous operation since then. Its distinctive green tugboats are a regular feature of Providence River Harbor. The company is fully water-dependent, and operates six tugboats (including one state-of-the-art 'Z-drive' tractor tug) to provide ship and barge assistance as well as local towing for all types of vessels in Narragansett Bay south of the I-195 Bridge. US Navy and Coast Guard contracts represent a significant percentage of their customer base, and all company positions are Coast Guard licensed merchant mariners with TWIC security clearance.

Providence Steamboat Company is categorized as a Water Dependent Use in the Rhode Island Ports and Harbors Inventory.

J. Goodison Company, Inc. (7 India Street) is a full-service marine and industrial maintenance contractor serving the East Coast from Maine to Florida. The company is family-owned and operated, a committed partner of Hire Vets First program, and is fully water-dependent. Services include marine repair (dry dock, dockside, riding crew); ship and equipment painting; marine and industrial cleaning, coating, eco-friendly UHP water jetting, and abrasive blasting; maintenance of historic sites (such as Sakonnet Lighthouse); flooring and welding. Customers primarily include shipyards, government and military (Air National Guard, US Navy, US Coast Guard, and Naval Under Sea Warfare Center). Employees include marine estimators, pipe fitters, painters, welders, mechanics, and general laborers. The company is the only SBA Hub Zone contractor north of Virginia qualified to bid on set-aside federal contracts for marine services and hires at least 35% of its workers from designated census tract areas in the South Side neighborhood of Providence

Motiva Enterprises occupies approximately 75 Acres on both sides of Allen Avenue. The company has storage capacity for 1.6 million barrels of product in twenty-six tanks. Except for ethanol, its products are all received by marine transfer. Motiva Enterprises, Inc. handles gasoline, #2 fuel oil, ultra low sulfur diesel #1 and #2, jet fuel, and ethanol. The market for Motiva Enterprises, Inc. includes approximately 2.5 million people living in R.I., MA, and Eastern CT. 50% of the gasoline needs and a large portion of the home heating oil needs of Rhode Island and the surrounding area are met by the company. The company has two berths: one for ships and one for barges. Over 230 vessels per year (equivalent to 60,000 truckloads) are handled yearly. The company also has a rail siding station that is designed to accept 8,000 rail cars each year.³ According to a recent profile in the Providence Journal, Motiva recently expanded its ethanol handling capabilities and is building its tank storage capacity for ethanol. Currently, diesel consists about 50% of the product stored at the facility. "Eight of the tanks can hold up to 782,000 barrels of high- and low-sulfur diesel fuel. Seven other tanks can contain up to 415,000 barrels of regular and premium gasoline. Three tanks can store 65,000 barrels of aviation jet fuel, and one tank can store 23,000

³ Motiva Enterprises, Inc. (2008) Presentation given at Providence Waterfront Charrettes, June 10, 2008. Available online at http://www.providenceplanning.org/matriarch/MultiPiecePage.asp_Q_PageID_E_305_A_PageName_E_P2MCharrette6Info#334.

barrels of kerosene.”⁴ Motiva Enterprises is categorized as a Water Dependent Use in the Rhode Island Ports and Harbors Inventory.

Waterson Terminal Services provides stevedoring services and oversees the management of the Port of Providence (ProvPort). ProvPort is the state’s principal port area and has full rail service, highway access, and very active use. The Providence and Worcester Rail service has a yard and loop system that allows railcars to pass through the lay down area at the waters edge. Currently, ProvPort averages about two switches a day, or 6,000 rail cars/year. Commodities imported include: salt from the Bahamas; coal from Venezuela, Columbia and Indonesia; cement from Turkey, aggregate from China and India; chemicals, asphalt, and petroleum from U.S. ports. Commodities exported include: scrap metal to South Korea and Turkey; and used cars to West Africa. Waterson Terminal Services is categorized as a Water Dependent Use in the Rhode Island Ports and Harbors Inventory.

Tenants at the port that are categorized as a Water Dependent Use in the Rhode Island Ports and Harbors Inventory include the following:

TEPPCO Terminal (LPG) – Throughputs 180,000 tons of propane.

Univar Terminal – Deals in caustics, with an annual throughput of 50,000 tons. Univar manufactures chlorine and provides waste water-treatment services.

Abhu Merhi Lines – Exports 1,500 used automobiles to West Africa each month.

Three Flags Holdings – Throughputs 100,000 tons of scrap metal annually.

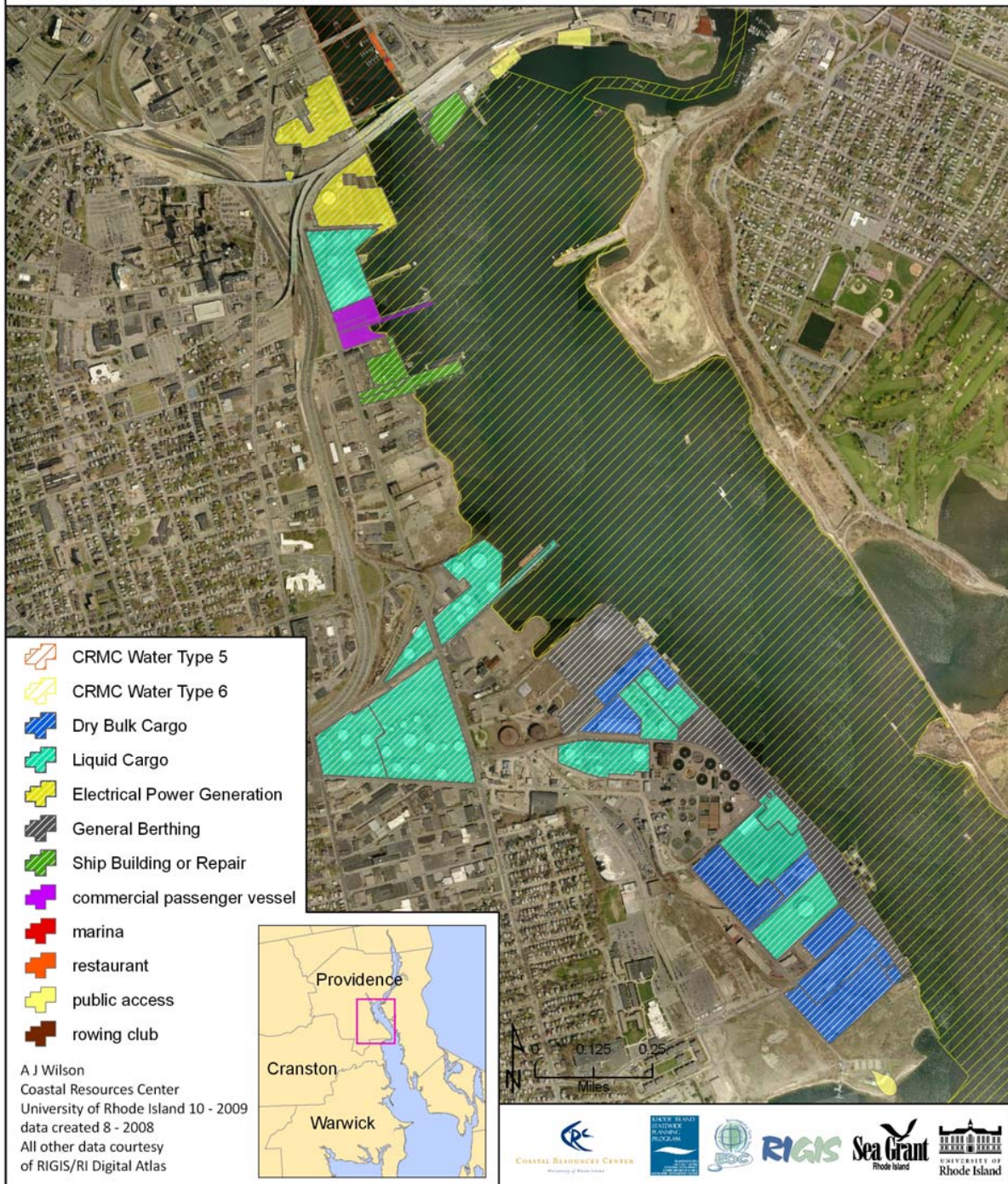
Morton Salt – Throughputs 300,000 tons of salt annually and is the exclusive provider of salt to Rhode Island

4 Barmann, Timothy C. Making tracks for clean air. Providence Journal, August 22, 2007.

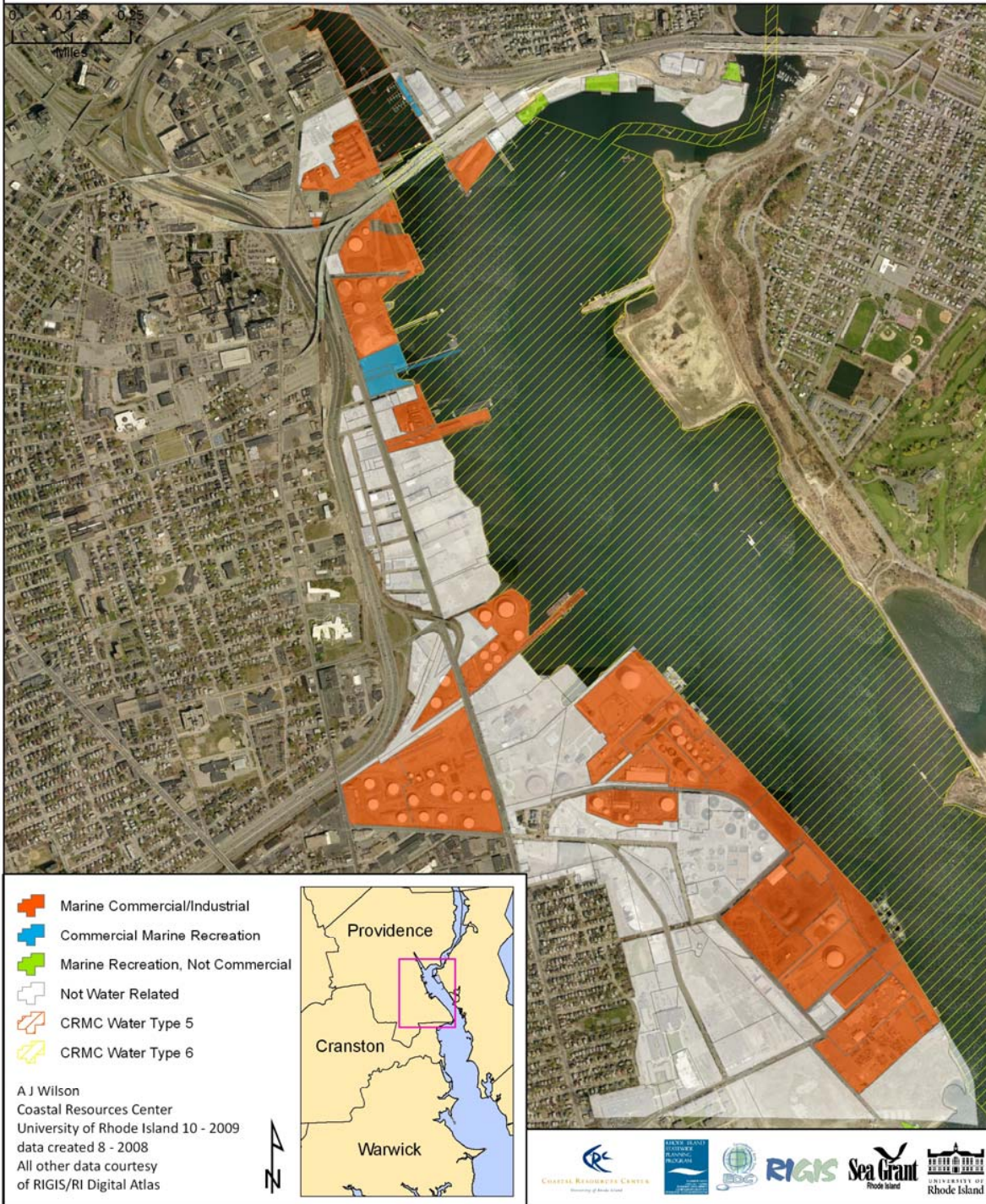
PROVIDENCE STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	418.95	135
Commercial	0	0
Mixed Use	104.64	47
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	219.10	37
Commercial Marine Recreation	6.04	7
Marine Recreation, Not Commercial	4.66	4
Not Water Related	308.52	143
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	221.09	44
Water Related	8.14	2
Water Enhanced	0.57	2
Not Water Related	308.52	143
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	63.32	13
5. Marine Commercial Infrastructure	Number	Comments
Lifts	1	400 ton
Cranes	3	Multiple types
Tanks	55	Located at Motiva, New England Petroleum, Hudson Terminals, Sprague, Dominion Electric, Narragansett Electric, and TEPPCO
Warehouses	12	Multiple sizes
Drydocks	1	Located at J. Goodson Company
Piers	7	Used for commercial marine recreation, liquid cargo, general berthing, public access, and combination
Wharves	9	Used for liquid cargo, dry bulk cargo, and general berthing
Floats	Unknown	1 parcel with floating docks used for marine recreation
Berthing	21	Various lengths from 1 – 3500 ft
Laydown Acreage	64.79	Used for commercial and industrial purposes

Rhode Island's Ports and Commercial Harbors

Providence: Parcel Purpose: Commercial and Recreational Use



Rhode Island's Ports and Commercial Harbors Providence: Parcel Utilization



Rhode Island's Ports and Commercial Harbors Providence: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **South Kingstown, Rhode Island**



Photo credit: <http://www.urisailing.org/urifleet.html>

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Coastal Resources Center/ RI Sea Grant
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Phone: (401) 874-6127

This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



South Kingstown

Principal Contact: Ray Nickerson, Principal Planner

Visit Date: June 18, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port and its role within the state

South Kingstown's Type 5 waters are in the southern portion of Pt. Judith Pond and extend into Snug Harbor.

Summary of water dependence of uses and infrastructure

South Kingstown has eight recreational marinas and some private docks within the study area that are also utilized by charter fishing boats and commercial lobster boats. Salt Pond Marine Railway has a marine railway that was once used by draggers and lobster boats, but was recently converted to recreational craft service only.¹ There are three additional marinas located on 15 acres of town-owned land in the upper area of Pt. Judith Pond, which is outside of the Ports and Harbors study area. In total, South Kingstown has over 1,000 slips amongst all of its 16 marinas.

Harbor Governance Structure

South Kingstown has a Waterfront Advisory Commission with seven members charged as "an advisory body to the Town Council on matters concerning the maintenance and development of the Town's property in the coastal zone and the management of recreational and commercial waterfront activities, the preservation of existing shoreline access and the expansion of both physical access and visual and scenic enjoyment of the shoreline by the public."²

¹ Town of South Kingstown, Harbor Management Plan DRAFT, 2008, p. 19. Obtained from Ray Nickerson, South Kingstown Planning Dept. ; Personal Communication with Dan Goulet, CRMC, July 19, 2008.

² Town of South Kingstown, Boards and Commissions Page at <http://www.southkingstownri.com/code/boardsdisplay.cfm?grpID=31>

SOUTH KINGSTON STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	0	0
Commercial	14.17	12
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	1.6	2
Commercial Marine Recreation	14.34	13
Marine Recreation, Not Commercial	0	0
Not Water Related	0.21	1
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	15.94	15
Water Related	0	0
Water Enhanced	0	0
Not Water Related	0.21	1
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0	0
5. Marine Commercial Infrastructure	Number	Comments
Lifts	1	65 ton
Piers	34	Used for commercial marine recreation. 1 Pier used for commercial fishing
Berthing	412	410 Slips used for marine recreation, 2, 35ft slips used for commercial fishing

Rhode Island's Ports and Commercial Harbors

South Kingstown: Parcel Purpose: Commercial and Recreational Use



Rhode Island's Ports and Commercial Harbors

South Kingstown: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

South Kingstown: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Tiverton, Rhode Island**



Project contact:

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Phone: (401) 874-6127

This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Tiverton

Principal Contact: Chris Spencer, Principal Planner

Visit Date: June 30, 2008

Harbor Master: Phil LaPoint 624-3796 harbormaster@tiverton.ri.gov

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Tiverton is located at the head of the Sakonnet River and the mouth of Mt. Hope Bay, east of Aquidneck Island. Like many other coastal towns in Rhode Island, Tiverton was once a farming and fishing community. In the 19th and 20th centuries, industries including cotton milling and fish oil processing thrived. Today, there is more residential use of the coast, although there are small pockets of working waterfront.

Harbor Governance Structure

Tiverton has a Harbor & Coastal Waters Management Commission (THCWMC) which consists of nine members and meets regularly. Recently, CRMC staff attended two harbor commission meetings to identify and discuss the deficiencies in the HMP that will have to be addressed to meet CRMC approval requirements. As of August 2008, the task of completing the HMP revisions is on hold.

Summary of uses and infrastructure

Tiverton has two main pieces of commercial/industrial marine infrastructure, in addition to a few marinas and recreational boating areas.

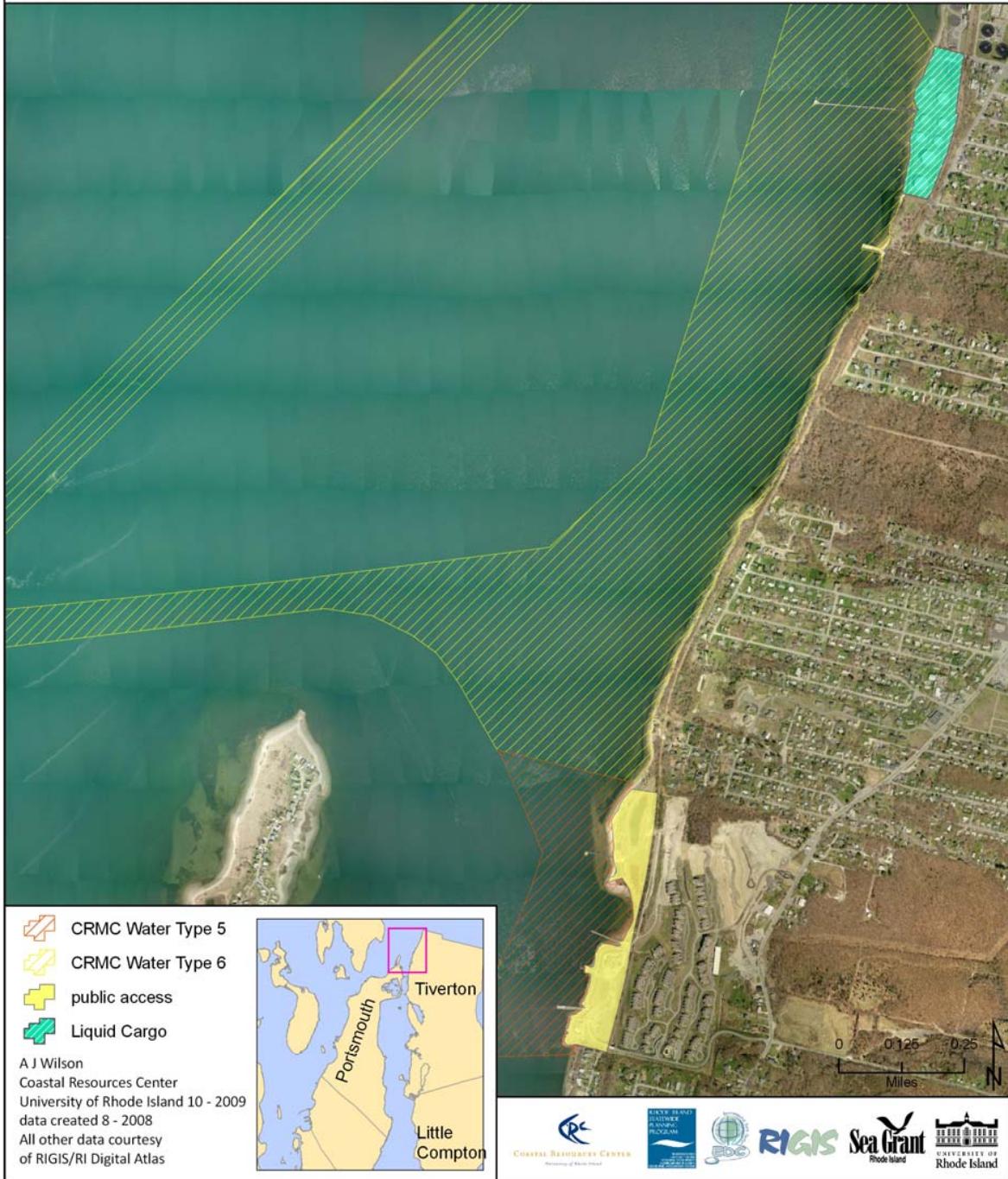
1. Inland Fuel Terminals, one of Rhode Island's five principal fuel terminals, is located at the northern end of town. The terminal features a 789 ft pier and storage facilities for methanol and petroleum products¹. Two to three ships per week call on the pier, delivering methanol and petroleum products. Inland Fuel Terminal has just invested significantly in its pier and fendering system. Inland Fuel Terminal was the first in Rhode Island to get a Fitness of Purpose Certificate from CRMC (Pers. Comm. Dan Goulet, 2008.)
2. A small working waterfront area is located south of the new Sakonnet Bridge. This area includes a pier with fish processing, truck access, and gear storage. Quality Yachts

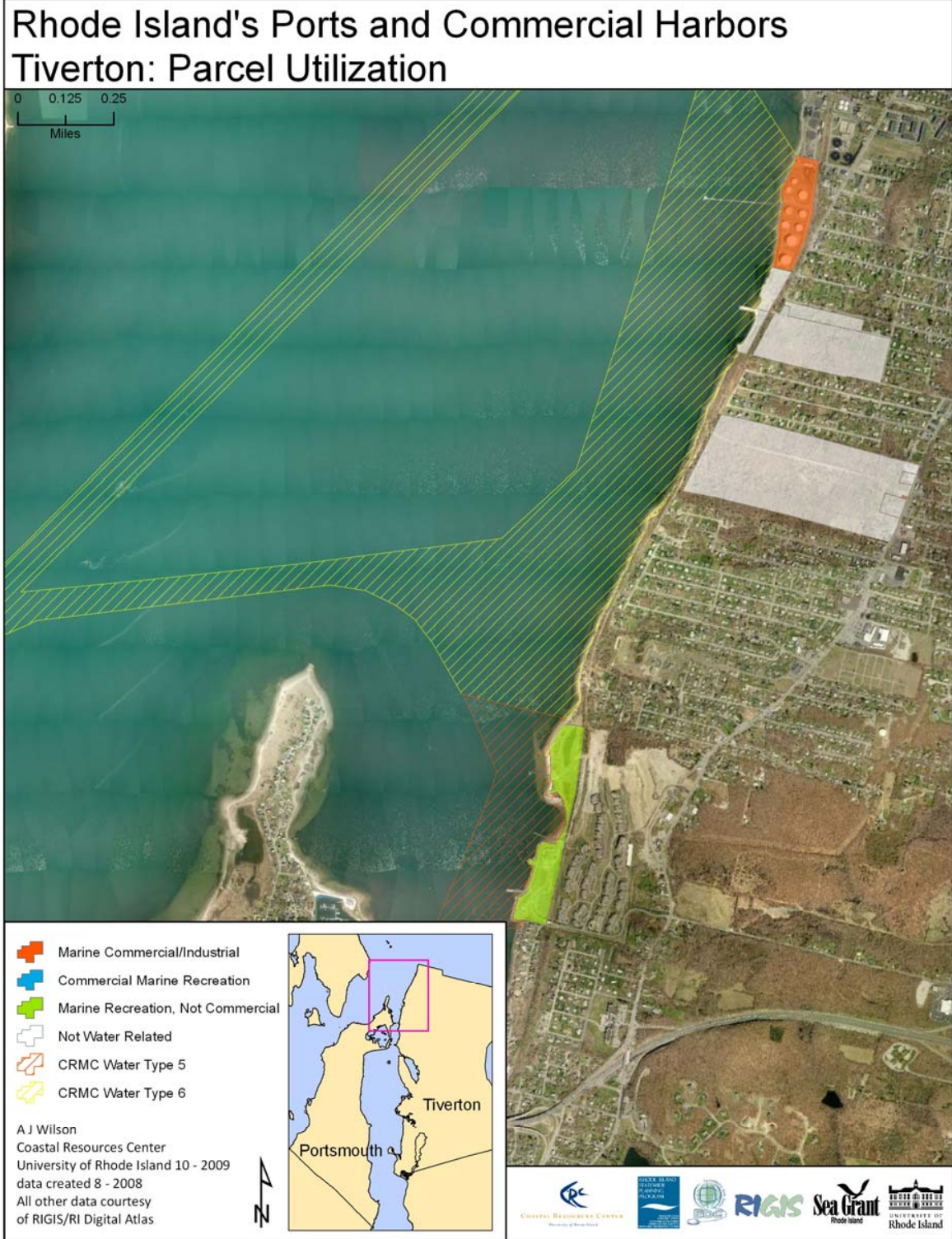
is a marine repair/small marina that berths some commercial fishing vessels just south of the bridge; however, this use is being phased out in favor of recreational boating (Dan Goulet, 2008).

TIVERTON STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	0	0
Commercial	40.81	9
Mixed Use	104.47	4
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	14.34	3
Commercial Marine Recreation	0.09	1
Marine Recreation, Not Commercial	20.34	1
Not Water Related	111.46	9
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	34.69	3
Water Related	0.08	2
Water Enhanced	0	0
Not Water Related	111.46	9
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	108.8	6
5. Marine Commercial Infrastructure	Number	Comments
Tanks	9	564000 barrels petroleum
Piers	4	3 used for marine recreation, 1 used for liquid cargo
Floats	Unknown	1 parcel with floating docks used for marine recreation

Rhode Island's Ports and Commercial Harbors

Tiverton: Parcel Purpose: Commercial and Recreational Use







Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Warren, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Warren

Principal Contact: Michelle Maher, Town Planner; Matt Calouro, Harbormaster

Visit Date: June 23, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Located at the head of the Warren River, Warren has a long history as a working waterfront. Whaling, shellfishing, fishing, and shipbuilding were all mainstays of Warren's economy at various points over the past two hundred years. With a river depth ranging from 7-14', Warren still has an active fishing fleet today.

Harbor Governance Structure

Warren has an approved Harbor Management Plan and a seven member Harbor Commission. A Waterfront Zoning Overlay area was created, but generally protects the aesthetic nature of the waterfront and does not require marine uses for the waterfront. The main purpose, as stated in the town ordinances is, "to establish and maintain a zoning district of mixed uses characterized by architectural and design standards consistent with traditional New England maritime centers, with sidewalks; pedestrian-friendly access; storefront windows allowing window shopping; walkways, bicycle paths; off-street parking dispersed into small, landscaped lots; trees; and access and visual right of ways to waterfront."¹

A Waterfront Plan was supported by the community and adopted by the Town Council in 2002, but the zoning recommended in the plan has not yet been adopted. The recommended zoning would support marine uses and limit residential uses along the town's mile-long working waterfront. The Waterfront Committee that created the plan was dissolved by the Town Council in 2003.²

¹ Town of Warren Zoning Ordinances (2003). Article XXVI. Waterfront Overlay District Development Plan Review, p. 96.

² Personal Communication with Davison Bolster, 7/11/2008.

Summary of uses and infrastructure

Some 40-45 quahog boats, several dealers, and facilities for landing and resale are located on the docks and piers along the waterfront. There are also larger fishing vessels and two large trawlers that dock at the Town Wharf.³ Warren is used both by recreational and commercial marine interests. There are four main working waterfront uses of note: Blount Boats, Inc., Blount Seafood, Ginalski Boatyard (a third generation boatyard), and Dyer Boats. Warren has also successfully preserved a number of areas considered to be working waterfront.

Two parcels totaling about 1.25 acres have had marine related and water-dependent use deed restrictions placed on them. These two parcels, between Baker and Church Streets, were purchased by the Trust for Public Land and re-sold with the new easement recorded, with \$250,000 of support from Luther Blount. This was part of a joint initiative with the Town of Warren meant to, "maintain the Warren Waterfront National Register Historic District's maritime heritage, provide public access to the waterfront, and create new economic opportunities."⁴ Currently, Warren River Boatworks, a boat repair business, occupies part of this area. The other portions of the property are still vacant and have not been utilized for the past six years.

The Town Wharf was purchased by the town with a \$750,000 donation from Luther Blount, founder of Blount Boats, and \$500,000 from the RI DOT with the hope that a ferry service will be created on this property in the future. The Town Wharf has a public access easement with the RIDOT. The adjacent lots have commercial use restrictions, but not marine commercial use restrictions. A town dock is located directly adjacent to the sewage treatment plant. The town dock is used by small boat fishermen, including quahog fishermen.

Blount Boats, Incorporated is an all purpose shipyard at 325 Water Street. It is one of the most active commercial/industrial uses of the Warren waterfront. Blount builds work boats, ferries, passenger vessels, and other types of ship up to 200' long, 45' wide, and 500 tons. Blount has a 400 ton lift dock, a 500 ton marine railway, a number of sheds, and can berth four large vessels at its Water Street docks and two at its main dock. Blount Boats also repairs vessels and has a construction shop, fabricating and machine shop. Since incorporation in 1949, Blount Boats has built over 300 boats.⁵

Rhode Island Cruise Company is located in the southern end of the waterfront. The company has a fleet of 85 ft + vessels that are used for dinner cruises and private charters in Narragansett Bay, including the Vista Jubilee, the Bay Queen, and the Majestic. The company has subsidiaries including Newport Cruise Company, Majestic Catering, and Bay Queen Cruises.

³ Warren Harbor Management Plan Draft (2004). P. 11.

⁴ Trust for Public Land, (2002). **First Purchase for Warren Waterfront Plan (RI)**. Online at http://www.tpl.org/tier3_cd.cfm?content_item_id=10923&folder_id=257. Accessed 7/11/08.

⁵ Personal communication with Julie Blount 6/23/2008.

American Canadian Caribbean Cruise Line operates out of Warren and has a slip directly adjacent to the Rhode Island Cruise Company.

Blount Seafood processes clams and other seafood for wholesale supply to restaurants, soup manufacturers, and other customers. Clams are harvested by the Blount-owned Wando River dredging boat which fishes offshore in the Block Island and Martha's Vineyard area. Blount Seafood's activities also include its own line of soups, a local fish retail operation, and a local seafood shack on the waterfront in Warren.⁶

Dyer Boats (The Anchorage) built the first fiberglass boat in the world during the 1940's. It is a third generation family-run business that has been building on a few prototype designs since the 1930's. Dyer continues to build high quality products that are shipped worldwide and considered classics.⁷

O'Connell's Marina, located in the old Dye House on the waterfront, offers berthing and repairs to all types of recreation and commercial vessels.

⁶ Blount Seafoods, Inc. About Us. Online at <http://www.blountseafood.com/contentmgr/showdetails.php/id/610>. Accessed 7/11/2008.

⁷ Personal Communication with Davison Bolster, 7/11/2008.

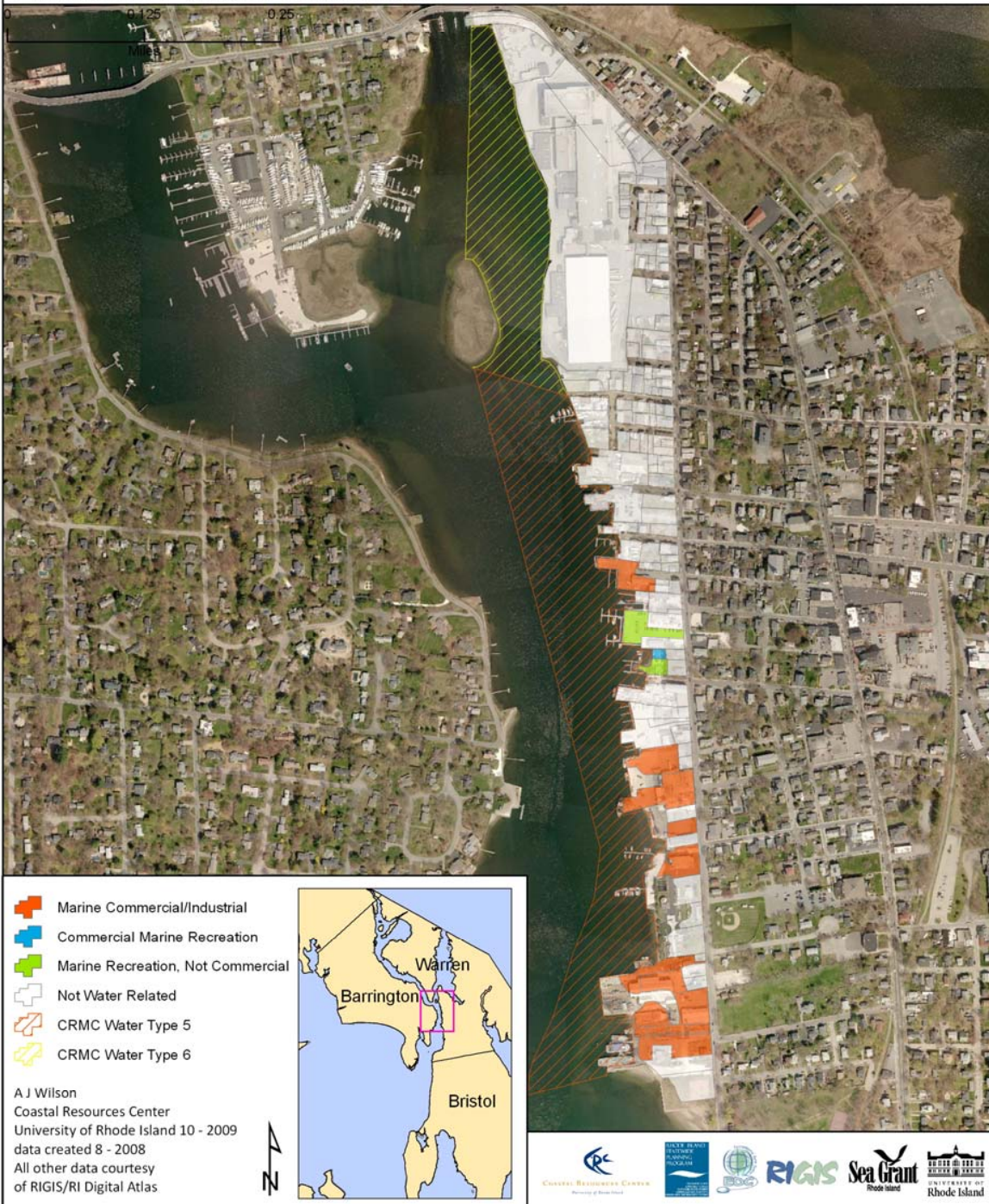
WARREN STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	0	0
Commercial	4.75	40
Mixed Use	35.53	86
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	5.98	14
Commercial Marine Recreation	0.08	1
Marine Recreation, Not Commercial	0.78	2
Not Water Related	34.08	113
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	5.97	15
Water Related	0.87	2
Water Enhanced	0	0
Not Water Related	34.08	113
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	1.98	4
5. Marine Commercial Infrastructure	Number	Comments
Lifts	1	300 ton
Cranes	1	
Piers	2	Used for general berthing
Wharves	2	Used for boat building and marine transportation
Berthing	4	Used for commercial boat building
Laydown Acreage	0.35	Used for seasonal recreational laydown

Rhode Island's Ports and Commercial Harbors

Warren: Parcel Purpose: Commercial and Recreational Use



Rhode Island's Ports and Commercial Harbors Warren: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

Warren: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Warwick, Rhode Island**



Photo credit: <http://www.blogger.com/profile/13622007067801790652>

Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Warwick

Principal Contact: Jodi King, Warwick Harbor Commission, Chair; RI Marine Fisheries Council; RI Shellfishing Association, Vice President;

Jeff Baris, Harbormaster (phone interview 7/22/2008)

Visit Date: June 10, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Warwick has two areas of Type 5 waters: Apponaug Cove and the waters at the East Greenwich/Warwick town line. Warwick has a strong shellfishing and aquaculture industry. About 150-200 full time shellfishermen, or seventy percent of all Rhode Island's shellfishermen, work out of Warwick. There are five shellfish transplant operations in Warwick each year, during which shellfish are pulled from "no shellfishing areas" and moved to preservation and protected areas.

Apponaug Cove is shallow and a railroad bridge that stretches across the upper part of the cove has only 25' of vertical clearance. These two conditions make Apponaug Cove unsuitable for commercial navigation and prevent the cove from being used for more marine commercial/industrial purposes.

Harbor Governance Structure

Warwick has an active Harbor Management Commission that consists of one representative from each of the following groups: the recreational boating community, the commercial fishing industry, the commercial mooring operators and the environmental community, plus three other members. Warwick does not have any special waterfront zoning or overlay districts in place. Warwick has a CRMC approved Harbor Management Plan.

Summary of uses and infrastructure

There is a bait/fuel dock (Ray's Bait) just east of the railroad bridge, which is used by the shellfishing fleet. There is also a parcel with a floating dock owned by the City that is used heavily by commercial fishermen. On this parcel, the pier adjacent to the Town Landing has berths leased exclusively to 18-20 small commercial boats. There are also six moorings off the

Town Landing that are used by commercial fishermen. These are the only berths and moorings in Warwick designated specifically for use by commercial fishermen. The boat ramp is used heavily by commercial fishermen for transferring gear and launching boats. Some commercial fishermen who do not have in-water berthing use the ramp to launch their boats daily. There is no space for gear storage or repair on the city owned parcel.

There is also a strong recreational boating presence in Warwick. Warwick has the highest density of marinas and recreational boats in the state.¹ Some of these marinas will offer discounted dock space to fishermen, though these slips tend to be in “short water” where the boats may be aground at low tide.

There are about sixteen dealers who handle the shellfish catch. Most are accessible by truck, meaning that the catch must be offloaded from boats into pickup trucks and transported overland to the dealers. This is a significant extra step for the fishermen. There once were “buy boats” that serviced the fishing fleet by buying the catch directly from the fishing boats, saving the fishermen this extra step. But, currently there are no “buy boats” in Warwick.

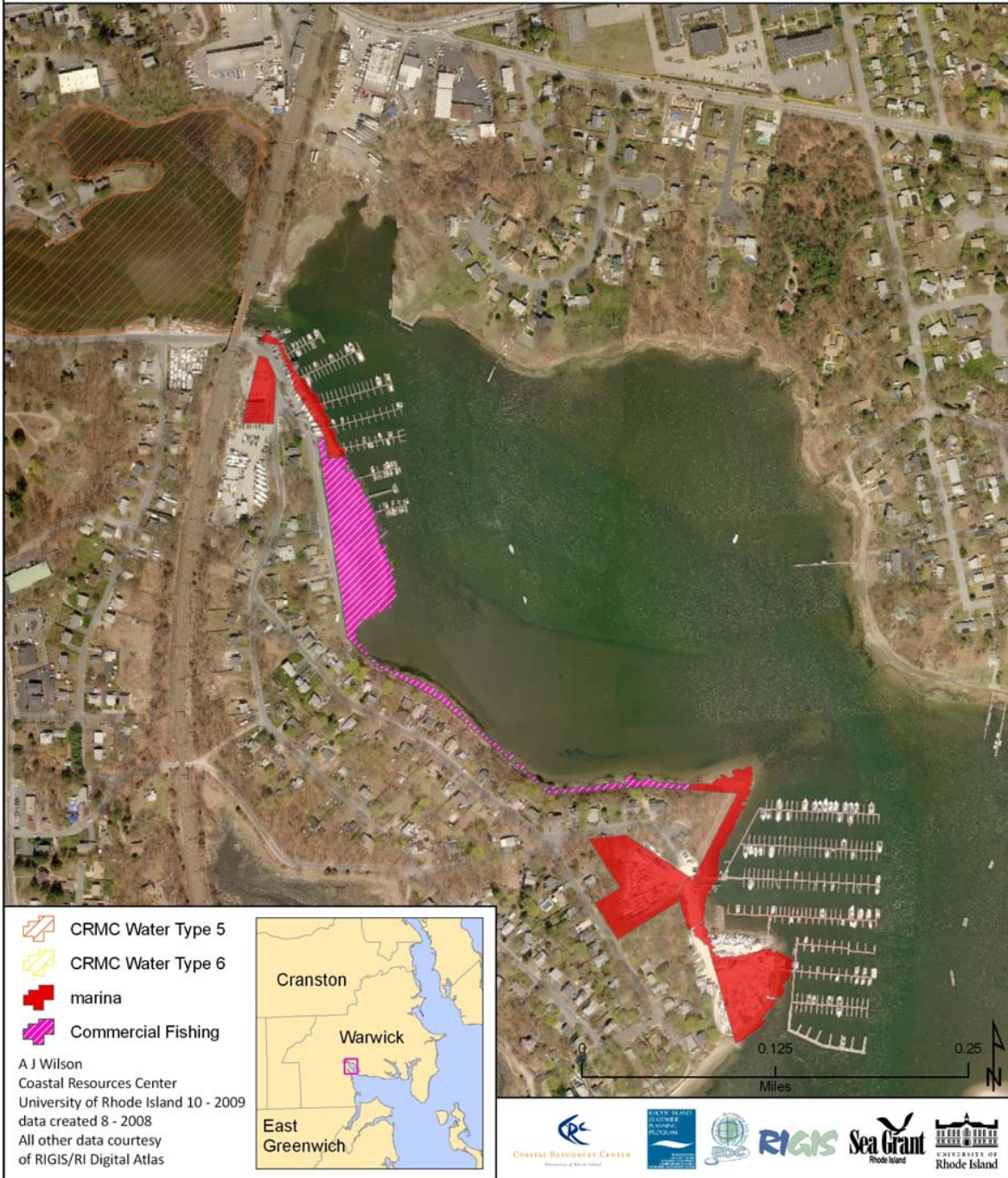
There are also a few barges in Warwick Cove that are used for dredging, pile driving, mooring service, and other maintenance services primarily in the recreational sector.

¹ Personal Communication with Jodi King, 6/10/2008

WARWICK STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	27.89	6
Commercial	10.5	11
Mixed Use	1.22	2
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	2.62	1
Commercial Marine Recreation	12.41	8
Marine Recreation, Not Commercial	0	0
Not Water Related	7.06	33
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	12.78	8
Water Related	2.25	1
Water Enhanced	0	0
Not Water Related	7.06	33
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0	0
5. Marine Commercial Infrastructure	Number	Comments
Lifts	3	1 at 35 ton and 2 at 25 tons each
Cranes	2	Used for commercial fishing and marine recreation
Piers	8	Used for marine recreation
Wharves	1	Used for marine recreation
Floats	Unknown	3 parcels with floating docks used for marine recreation
Berthing	533	Slips used for marine recreation
Laydown Acreage	6.78	Used for seasonal recreational laydown

Rhode Island's Ports and Commercial Harbors

Warwick: Parcel Purpose: Commercial and Recreational Use



Rhode Island's Ports and Commercial Harbors Warwick: Parcel Utilization



Rhode Island's Ports and Commercial Harbors

Warwick: Water Dependency



Rhode Island's Ports and Commercial Harbors: A GIS Inventory of Current Uses and Infrastructure

Municipal Inventory Report: **Westerly, Rhode Island**



Project contact:

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This project is supported by the Rhode Island Statewide Planning Program with funding provided by the US Department of Transportation, Federal Highway Administration



Westerly

Principal Contact: Marilyn Shellman, Principal Planner; Chief Mello, Harbormaster

Visit Date: June 30, 2008

Maps for Review

1. Parcel boundaries and reference numbers and vacancy status that correspond to tables with parcel description.
2. Parcel utilization based on the technical analysis (marine commercial/industrial; commercial marine recreation; marine recreation not commercial; and usage that is not water related.
3. Parcel use water dependence.

Description of Port/Harbor and its role within the state

Westerly has no commercial/industrial marine uses. There are a number of recreational marinas, but in general, the shore side uses of this water front are not marine related. The Type 5 area at the northern end of the Pawcatuck River sees no commercial use and very little recreational use. The harbor area is also designated as Type 5 and has little or no commercial activity, outside of recreation-related commercial activity.

Harbor Governance Structure

Westerly has a part-time harbormaster who is also the Chief of Police. The town is in the process of drafting a Harbor Management Plan and a Harbor Management Commission.

Summary of uses and infrastructure

Westerly has six recreational marinas. Some of these marinas have travel lifts or small cranes and offer repair and maintenance service to recreational vessels. No non-recreational commercial uses were noted, with the exception of a fishing charter boat that operates out of the Watch Hill Yacht Club. There is a sewage treatment plant (Westerly Water Treatment) and a dock building company has proposed locating along the river.

Marinas include:

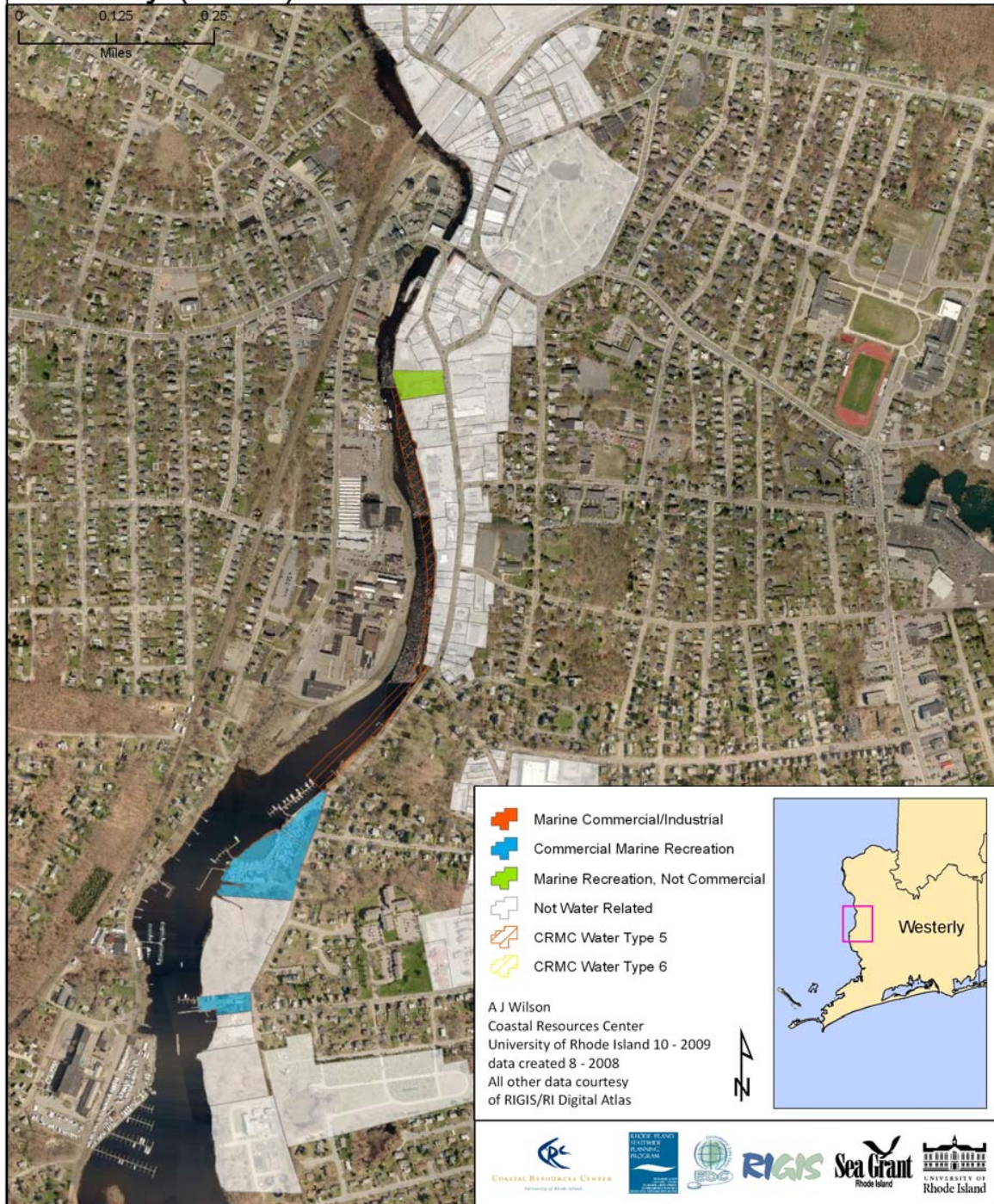
- Watch Hill Marina
- Watch Hill Yacht Club
- Avondale Marina
- Frank Hall Boatyard
- Grays Boatyard
- Pier 65 Marina

WESTERLY STUDY AREA SUMMARY		
1. Zoning within study area	Acres	# of Parcels
Industrial	27.89	6
Commercial	124.55	198
Mixed Use	0	0
2. Utilization of parcels	Acres	# of Parcels
Commercial/Industrial	0	0
Commercial Marine Recreation	6.86	4
Marine Recreation, Not Commercial	3.09	2
Not Water Related	185.74	212
3. Water Dependence of Parcels	Acres	# of Parcels
Water Dependent	9.95	6
Water Related	0	0
Water Enhanced	0	0
Not Water Related	185.74	212
4. Vacant Parcels	Acres	# of Parcels
Vacant Parcels	0.92	1
5. Marine Commercial Infrastructure	Number	Comments
Lifts	3	25 tons each
Piers	8	Used for marine recreation

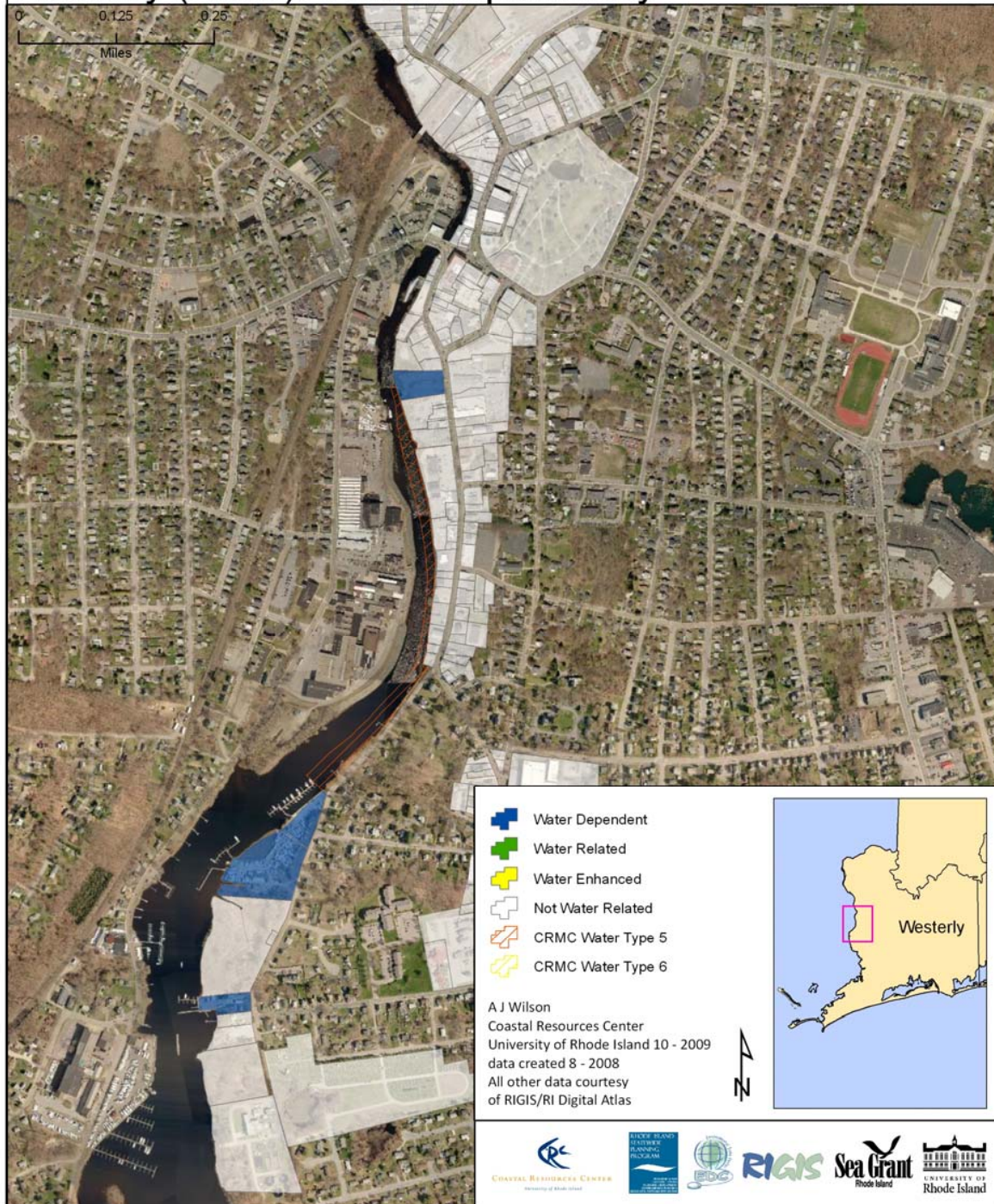
Rhode Island's Ports and Commercial Harbors Westerly (North): Parcel Purpose: Commercial and Recreational Use



Rhode Island's Ports and Commercial Harbors Westerly (North): Parcel Utilization



Rhode Island's Ports and Commercial Harbors Westerly (North): Water Dependency



Rhode Island's Ports and Commercial Harbors Westerly (South): Parcel Purpose: Commercial and Recreational Use



Rhode Island's Ports and Commercial Harbors Westerly (South): Parcel Utilization





APPENDIX C: Definitions

Available: The GIS attribute “Available” identifies the parcels that are: vacant; zoned commercial or industrial by the municipality; within 200 feet of Type 6 waters; and within 200 feet of 25 feet or more of water depth. These characteristics are required for most maritime industrial activities to take place.

Marine Commercial and Industrial Use: This classification is made for parcels that have an identified use that is predominately marine commercial or industrial, and not related to the marine recreation sector. Examples: Commercial Fishing Piers, charter vessels, general berthing, commercial ship building or repair.

Marine Commercial/ Recreational: This classification is made for parcels that have an identified use that is predominately commercial in nature and falling within the recreational sector and boatyards. Examples: Marinas, recreational boat repair, seasonal commercial passenger vessels.

Not Water Related: All other uses found on parcels within the study area. It is important to note that vacant parcels are also classified Not Water Related, since by definition vacant parcels have no current use. Zoning and a number of other characteristics are collected for vacant parcels and determine whether a parcel is potentially available for a particular use.

Parcel Purpose: The purpose of a currently utilized parcel is the specific commercial/industrial or recreational activity occurring on the parcel. It reflects the specific business type, facility, activity, or predominant use. More than one use may occur on a single parcel, and therefore will appear under both recreational and commercial purpose classifications. A total of 33 purposes (Appendix C) were identified for Commercial/Industrial utilization, and Marine Recreational utilization.

Parcel-based Approach: The land parcel is a convenient unit for analysis because it can be mapped, and there are several sources of data tied to parcels. Business owners may have several parcels within the boundaries of their operation however the inventory does not identify the boundaries of entire business operations. More broadly, working waterfronts continue to exist because of the unique services they provide, the advantage they provide to water associated businesses, and the synergies among firms within the Narragansett Bay region. These interconnections are not well captured using parcels alone. Additional information on how waterfront facilities and businesses are connected to market areas in terms of transportation, goods and services is needed for a more comprehensive understanding of the economics of Narragansett Bay waterfronts.

Recreational Not Commercial: This classification is made for parcels that have an identified use that primarily involves recreational uses with little or no commercial activity associated with them. Examples: Yacht Clubs, public parks, memorial sites, public boat ramps.

Special Features: These parcels (17) were outside the study area and are not reflected in the study's 1,546 parcels. However, the steering committee decided that these parcels are critical to Rhode Island's overall ports and harbors "picture," so information about them is included in the inventory. It should be noted that some parcels outside the area attained study area status; the steering committee had determined that such parcels, such as Bristol's marine industrial parks and Warwick Cove acreage used by shellfisherman.

Vacant: Describes any parcels within the study area that in July 2008 had no current use or activity. The parcel may host structures or equipment but is not currently in operation. The term does not mean that a parcel is potentially available for a particular use, nor does it mean that the parcel is suitable for development.

Water Associated: Parcels are either water dependent, water related, or water enhanced. Parcels with this description constitute everything in the study area that is not deemed "Not Water Related."

Water Dependent Use: Requires direct access to marine or tidal waters, or a location which is proximate to marine or tidal waters, for its continued viable operation and which therefore cannot be reasonably located inland. Examples : Marinas (Oyster House, Edgewood), Ship repair facilities (PROMET), Fish off-loading facilities, Container ports, Fishing Piers, Petroleum facilities served via marine pipeline, Ferry terminals and water taxis, Cruise ship terminals, Boat rentals/charter facilities (fishing, sailing, etc), Bulk cargo handling facilities, coast guard facilities, tugboat dock.

Water Enhanced Use: Water enhanced uses do not require access to the water for viable operation, but are enhanced by a waterfront location. Examples: Restaurants and bars with a water view, Hotels, offices, residential with a water view, Museums and other educational facilities.

Water Related: Water related uses do not require direct access to the water, but provide goods or services associated with water dependent uses. They are uses that do not strictly require a waterfront location, but are generally understood to be closely associated with the harbor. These facilities are better sited close to the water. Examples: Chandleries, Marine supply stores, Bait shops, Repair facilities (welding, engine repairs, etc), Fish processing, Tugboat dispatch, Ice House.

Appendix D: Inventory Questionnaire

Rhode Island's Ports and Commercial Harbors:
A GIS Inventory of Current Uses and Infrastructure and Recommendations for Future
Enhancement
RI SEA Grant/Coastal Resource Center

Infrastructure and Uses Questionnaire

The purpose of this questionnaire is to gain a general understanding of the marine commercial/industrial uses and infrastructure in Rhode Island. Questionnaires are administered by a member of the project team.

Name/position: _____ Date: _____

Name of Study Area: _____ ID# _____ Town: _____

Email: _____ Phone: _____

Maritime infrastructure within the Study Area:

Petroleum Tanks

Number of tanks

Tank Capacity

Bulk Liquid Cargo Transfer Station

Types of liquid?

Rail

Is Rail Active?

Is there a rail yard?

Pipeline

Fire Fighting Facilities

Shore Power

Power Source

Amperage

Water Service

Waste Pumpout

Sewer Service

Dry Docks

Number of dry docks

Dry dock capacity

Piers

Pier purpose

Number of piers

Pier loading capacity

Pier depth/draft

Berths

Berthing purpose

Number of berths

Berth length

Berth depth/draft

Wharves

Wharf purpose

Number of wharves

Wharf capacity

Wharf depth/draft

Floats

Float purpose

Number of floats

Float linear footage

Laydown areas

Laydown Acreage

Warehouses

Warehouse size

Cranes

Number of cranes

Crane capacity

Crane type

Crane freight

Travel lifts

Number of Lifts

Lift Capacity

Commercial Fishing Berths

Fish Processing Facilities

Deed Restrictions

Fuel

Please identify maritime uses within the Area of Study

Shipyards (building)

Shipyards (repair)

Tugboat/pilot operations

Petroleum imports

Freight imports

Freight exports

Please identify recreational/marine uses within the Area of Study

Marinas

Yacht Clubs

Boat Yards

Marine Supply Stores

Rental Moorings