

Rhode Island's Ports: Opportunities for Growth

Executive Summary

By:

Martin Associates
Lancaster, PA

Sponsored and Funded by:

The Rhode Island Bays, Rivers, and Watersheds Coordination Team

April 2011

This comprehensive assessment of development opportunities for Rhode Island's three major port areas, Providence, Davisville, and Newport, entitled Rhode Island's Ports: Opportunities for Growth was conducted by Martin Associates, LLC, of Lancaster, PA. The purpose of this report is to provide a comprehensive review of Rhode Island's existing port infrastructure, the marine cargo market of the U.S. east coast and, based upon these analyses, recommend port investments with the greatest potential to bolster the State's maritime economy and create jobs.

The report objectively examines the potential for economic growth through the highest and best use of Rhode Island's waterfront assets in the Ports of Providence, Davisville, and Newport, and quantifies the economic benefits and effects that may result from RI's most promising maritime transportation market opportunities.

The report is the culmination of a six-month study funded by the RI Bays, Rivers, and Watersheds Coordination Team (BRWCT) and conducted by Martin Associates, an internationally recognized port consulting firm. Martin Associates assessed the competitive position of Rhode Island's major marine cargo facilities, developed "macro-level" operating profiles of ProvPort, Port of Davisville, and Newport Harbor as a cruise ship destination; compared projected cargo activity with existing port facilities, and assessed the potential economic benefits associated with identified market potentials.

The report confirms that the auto imports/exports sector, which has made substantial gains at the Port of Davisville, as well as ProvPort, has continued growth potential. In addition, it identifies growth opportunities in break bulk imports (perishables). It points out that the scale and timing of the expansion of port facilities to support offshore wind facilities depend primarily upon successful power purchase agreements being struck between windfarm developers and electric utilities; and that container feeder operations could be viable in the future, particularly as ocean carriers introduce more direct all-water services using routings from Asia via the Suez Canal and a widened Panama Canal).

Finally, the report projects that full development of the identified opportunities in auto import/export, offshore windfarms, container feeder, and break bulk, could result in:

- 1,000 new jobs
- \$70 million in personal income
- \$127 million in business revenue
- \$10 million in local purchases
- \$8.1 million in state and local tax revenues

The assessment was comprised of the following analytical pathway. First we reviewed the maritime markets in which the Rhode Island Ports of Providence, Davisville, and Newport compete:

- Break Bulk (imports and exports): cargoes that are typically palletized, bagged or handled in individual pieces such as steel, fresh fruit, forest products, automobiles, and wind turbines.

- Bulk (imports and exports): Liquid and dry products that are not packaged but move in large, fungible lot sizes and include petroleum, liquid bulk, cement, limestone, coal, scrap.
- Containerized cargo: General cargo that is moved via a 20 ft., 40 ft. or 45 ft. ocean container, and is typically higher value cargo including apparel, electronics, furniture, machine parts, etc.
- Cruise Ship visits to Newport

Second, we identified potential growth in cargoes currently handled at the Ports of Providence and Davisville, and potential new markets. Third, we assessed the competitive position of Rhode Island Ports in New England and East Coast Markets. Based upon this analysis, we assessed facility needs in these Ports relative to the potential growth opportunities. Finally we identified the potential direct and indirect economic benefits of these growth opportunities for the three Rhode Island ports.

Break Bulk and Dry Bulk Exports and Imports

The following sections summarize details and trends in the cargo markets that RI's ports participate in:

Break Bulk Imports:

The east coast break bulk import market has been in decline since 2006, from a peak of 23.5 million tons in 2006 to 9.1 million tons in 2009. From 2003 to 2009, the cumulative annual growth rate was -8.4%. Philadelphia, Baltimore, Charleston, and Newark are the leading east coast ports for break bulk imports. The New England break bulk import market is currently less than 5% of the east coast market about 400,000 tons annually. The leading break bulk imports are iron, steel, and autos. Together, Davisville and ProvPort (the federal data cargo data reports Davisville and ProvPort together) are the leading New England port break bulk importers, primarily in autos at 170,870 tons in 2009 and a cumulative annual growth rate of 2% from 2003-2009.

Break Bulk Exports:

The east coast break bulk export market showed an increasing trend from 2003 to 2008, with a cumulative annual growth rate of 6% from 2003-2009. New York, Savannah, GA, and Norfolk, VA, are the leading east coast ports for break bulk exports. New England port break bulk exports comprise about 5% of total east coast break bulk exports and has shown no overall trend in the last decade. Eastport, ME, and Boston are the leading New England break bulk exporters, with wood and paper scrap/waste the top exported materials. Autos are the leading break bulk exports from ProvPort and Davisville averaging about 12,500 tons annually for 2008 and 2009.

Bulk Imports:

Dry bulk imports (coal and salt, but excluding petroleum-based fuel imports) have declined for all east coast ports. Baltimore, Jacksonville, and Newark are the leading east coast dry bulk importers. New England ports handle about 10% of all east coast dry bulk imports and show no overall trend in the last decade. Bridgeport and Providence are the major New England dry bulk import ports, but Providence has shown a cumulative annual rate of -14.8% from 2003-2009 to a low in 2009 of 552,000 tons. The declines have due to declines in salt and coal imports.

Bulk Exports:

Dry bulk exports increased across U.S. east coast ports from 2003-2008. The New England ports' share of the east coast market is consistently less than 5%; but there has been reasonably consistent growth in this segment since 2006. Boston is the leading dry bulk exporting port in New England with about 968,000 tons in 2009. Providence is the second leading New England port at about 373,000 tons in 2009. Ferrous waste and scrap is the leading exported material, followed recently by coal.

Overview of Bulk and Break Bulk Imports and Exports:

Several break bulk commodities have grown over time and represent potential opportunities for Rhode Island ports. Although, overall break bulk imports have not shown growth over the past decade, some key break bulk cargoes have shown growth over time, including break bulk fruit imports and auto imports and exports (with ProvPort focusing on the export of previously own vehicles, and Davisville handling the imports of new vehicles). Pulp imports and scrap exports have also shown increases over time. While autos are the key break bulk imports and exports in ProvPort and Davisville, paper scrap exports are a key break bulk export from Boston, pulp is the major break bulk export from Eastport, and steel is the major import via New Haven.

Current Status of Rhode Island Ports

Port of Davisville:

The Davisville Waterfront District is comprised of 289 acres, of which 239 acres are developed or developable and 50 acres are undevelopable. The Port of Davisville (Figure 1) is served by two piers: Pier 1 has a load capacity of 500 lbs/sq ft, and Pier 2 is a filled cofferdam structure with load capacity of 1,000 lbs/sq ft. The Piers are accessed via a 29 foot deep channel with 31 feet of depth alongside the piers.

The Port of Davisville currently has two tenants:

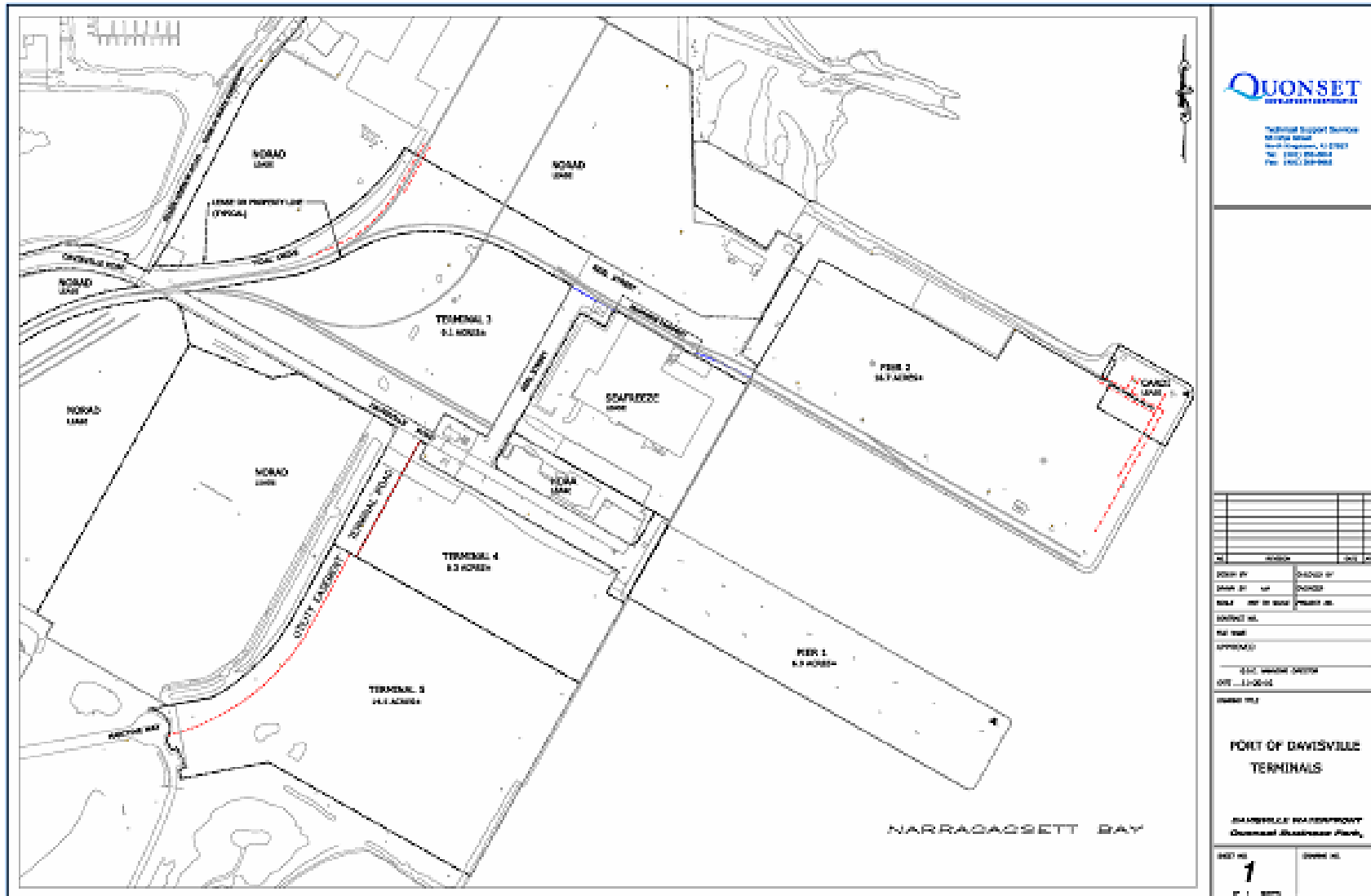
North Atlantic Distribution (NORAD), which imports automobiles. NORAD holds a 50 year lease on 160 acres. It is currently developing the last 35 acres of this leased area.

Seafreeze, which provides cold storage for seafood, utilizing a 15,000 ton freezer facility and holds a 3-acre lease.

ProvPort:

ProvPort is a privately owned marine terminal located in Providence and occupying about 105 acres along the Providence River (Figure 2). Its facilities include an "on-dock" rail system with 3 rail spurs, 20 acres of open lay down area, and 300,000+ ft² of enclosed warehouse space. This warehouse facility includes an indoor rail spur, is located adjacent to the pier face and on-dock rail lines. ProvPort has the capacity to expand on-site at the southern end of terminal adjacent to Ports America – (see Port Tenants map)

Figure 1: Port of Davisville- Piers and Tenant Leaseholds.



QUONSET
CONSTRUCTION SERVICES

Technical Support Services
 10000 ROUTE 1
 QUONSET, RI 02881
 TEL: 401/884-1000
 FAX: 401/884-1001

NO.	REVISION	DATE	BY

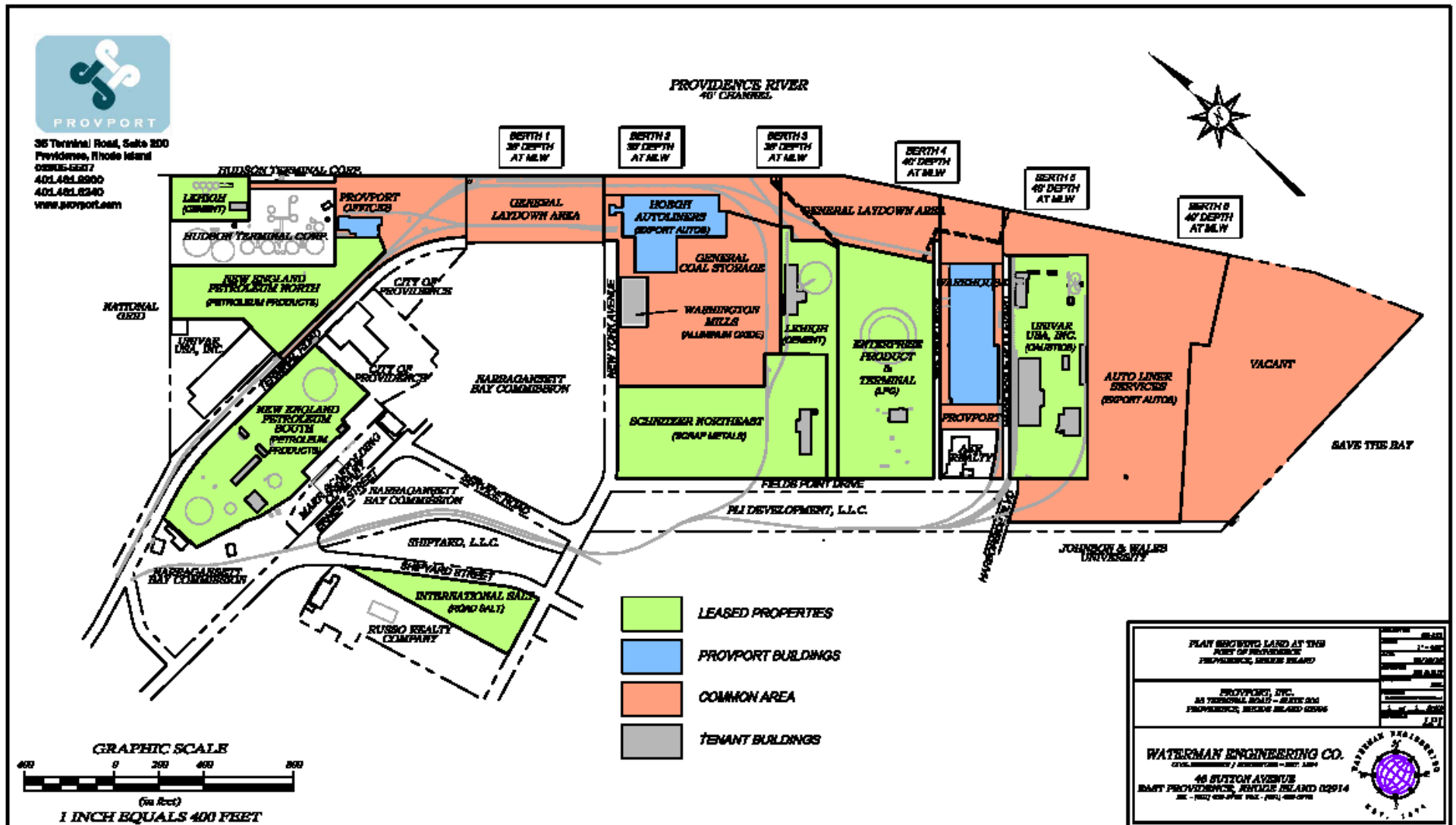
DESIGN BY	DRAWN BY
CHECK BY	PROJECT MGR.
DATE	DATE
SCALE	PROJECT NO.
SOURCE NO.	
DATE	
APPROVAL:	
DATE	
SITE	
DRAWN BY	

**PORT OF DAVISVILLE
 TERMINALS**

QUONSET CONSTRUCTION
 Coastal Infrastructure Group,

Sheet No. **1** of 1

Figure 2: ProvPort Lease Plan



Growth Opportunities for Davisville, ProvPort, and Newport

Autos

The automobile market shows potential growth market for Davisville and ProvPort. Davisville currently pursuing new auto export markets, as well as imports and domestic distribution. Its exemption from Harbor Maintenance Tax is a key competitive advantage for Davisville. Water depth could become an issue for the auto carriers that Davisville/NORAD serve; if the harbor deepening were to be undertaken by the federal government (Army Corps of Engineers), then the competitive advantage of Davisville as an auto port would be eroded due to the imposition of the Harbor Maintenance Tax.

Previously Owned Vehicles – (POV) have been a growing auto export market from ProvPort.

Break Bulk- Fruit

The break bulk fruit and perishables import market has demonstrated stable growth and is currently concentrated in the Delaware River area. ProvPort and Davisville are located in proximity to key perishable goods distribution centers in New England. The break bulk banana business has recently moved from Bridgeport, CT, to the Delaware River; but the return of break bulk operations to New England is underscored by the recent start of break bulk fruit service between Mexico and New Bedford.

Development of a perishable import operation appears to present growth potential for the Rhode Island Ports, but further analysis is necessary to develop detailed logistics costs, and to target potential tenants and terminal operators. Initially, market development efforts should focus on:

- Dole
- Del Monte
- Chiquita
- Banacol
- Holt Logistics: The key terminal operator on the Delaware River

Container Feeder Service

Container feeder or short sea shipping operations entail consists of smaller vessels that connect load center ports such as New York with secondary ports. Container feeder operations are intended to compete with rail and truck services from the load center ports to the smaller markets. Container feeder systems have been used in the northeastern U.S. since the 1980's, with container feeder operations developed between Halifax and New England to take advantage of constraints at U.S. North Atlantic ports.

There has been an increase in all-water service for Asian container operations since 2002, due to several factors: The U.S. west coast port shutdown in 2002; truck and rail capacity issues in 2002-2004 at the west coast ports; infrastructure and environmental fees at west coast ports; and expansion of the Panama Canal in 2014.

Increased usage of the Suez Canal for Asian imports to the U.S. is anticipated as U.S. export production centers proliferate in Vietnam and India. India has committed \$210 billion in private and public sector funds to port infrastructure development. The growth in Suez Canal usage will favor North Atlantic container ports as North American

destination points. Imported Asian container service has increased at U.S. east coast ports, including New York, Boston, and Baltimore, and potentially at Halifax in the future.

The company Columbia Coastal operated a weekly container-on-barge feeder service between the Ports of New York and Boston. However, this service was discontinued in August, 2010 as volumes declined sharply from 2008-2010 due to lower truck rates, and new all water services were introduced into Boston, eliminating the need for feeder operations. By 2010, the Columbia Coastal feeder service was operating at a 50% utilization rate: about 100-150 containers per week with cargo consisting mostly of heavy weight refrigerated containers, which could not move over the road. Columbia Coastal is now working with the Port of Davisville to develop New York-Rhode Island container barge feeder operation. This container feeder service would be compatible with the development of the Marine Highway Initiative, and the overall effort to remove truck traffic from congested highway systems in southern New England and the New York City metro region.

With aggressive marketing, this may be a viable opportunity which would serve as an alternative to the trucking of containerized cargo between the Port of New York/New Jersey and the Providence area, as well as containerized cargo from other mid-Atlantic ports. (Figure 3) This assessment has shown that the Port of New York/New Jersey handles 80% of southern New England's container import/exports.

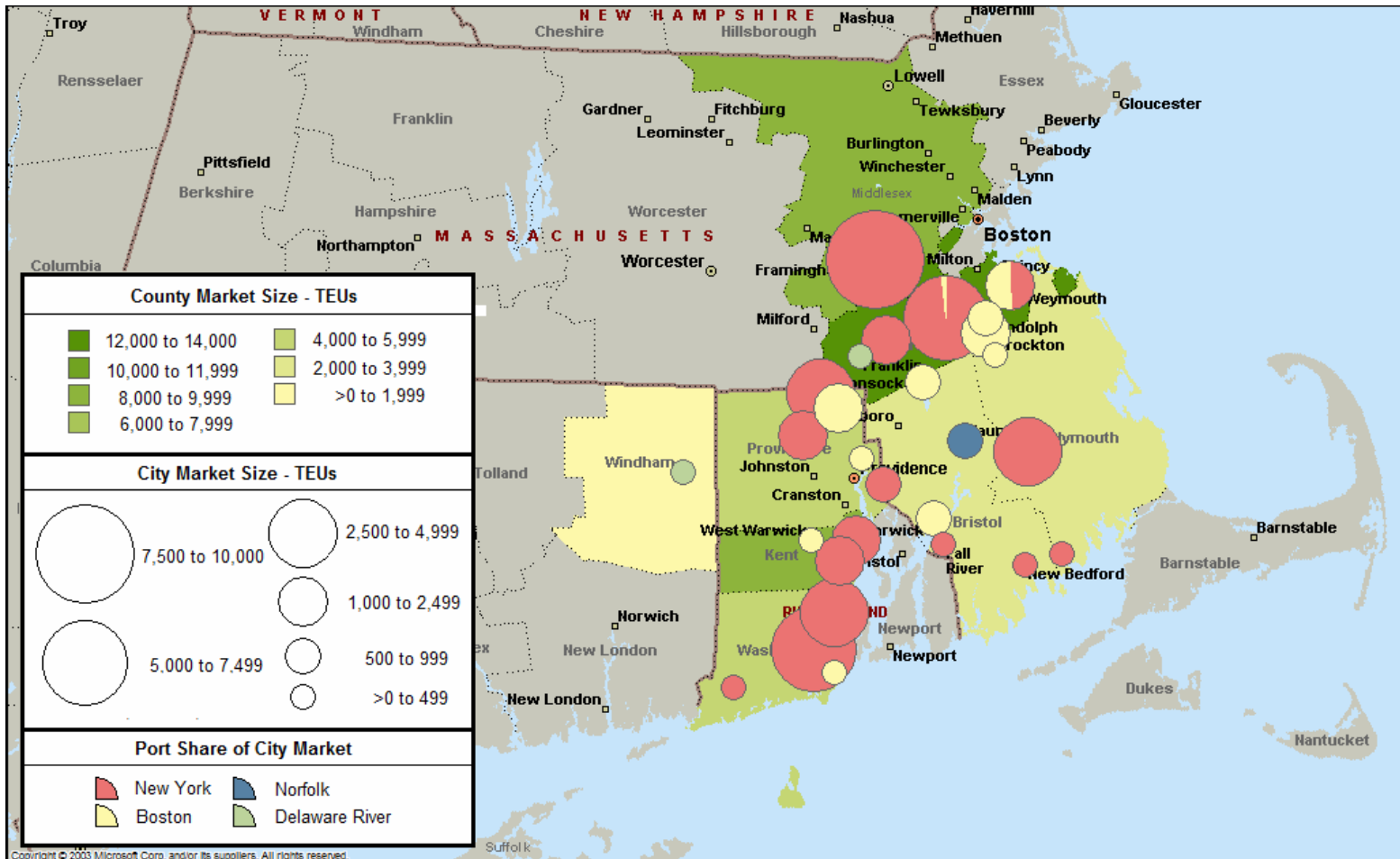
Over 48,000 twenty-foot equivalent units (TEU's) of cargo have been identified to be destined or originate in South Eastern New England. These importers/exporters currently use the Port of New York /New Jersey. If one-half of the 48,000 TEU market could be captured by a barge feeder operation, this would equate to a 24,000 TEU's annually that could move via barge/feeder operations. Assuming a weekly service, this suggests a weekly service moving about 400-450 TEU's per call. Success in this market opportunity depends upon:

- Competitive pricing of the barge/feeder operation compared to truck
- Commitment by ocean carriers to use the feeder operation
- "Buy-in" of beneficial cargo owners

Offshore Wind Energy

This port growth opportunity entails development of a land side support facilities for offshore wind energy operations. The windfarm developer Deepwater Wind is looking to develop a landside operations base at the Quonset Business Park and the Port of Davisville to support construction and operation of utility-scale offshore windfarms. However, the wind-generated electricity power market is uncertain, and this assessment cautions that investment in wind energy support and facilities should be placed on the private sector, and not on the state of Rhode Island. The price of offshore wind-generated electricity is projected to be significantly higher than alternative electricity sources. Deepwater estimates the wholesale price of its electricity will be in the mid-teens, significantly higher than wholesale prices from conventional electricity generation. Offshore windfarm development projects will require commitments from electrical utilities to purchase the electricity to be generated offshore. In addition, new delivery infrastructure (power grids) will be required at least in connecting the offshore windfarms to the regions electrical grid, and investment in this infrastructure also remains unresolved. Therefore, it is recommended that Rhode Island Ports should invest

Figure 3: Strong Market Concentrations in the I-95, I-495, and Rte 128 Corridors. (TEU- Twenty foot equivalent unit containers). Circles indicate containers delivered to New England markets via truck from the ports of New York, Norfolk, Delaware River, and Boston.



Source: PIERs data provided by Port of Davisville – Joint QDC/PANYNJ assessment of barge feeder market - PIERs data provided PANYNJ for September, 2006-August, 2007.

in port facility expansions only after power purchase commitments have been established between the windfarm developers and the electrical utilities. Furthermore, private sector investment and public/private partnerships should be considered pre-requisites for any port terminal development in support of the wind energy programs.

Cruise Ship Visits to Newport:

Newport enjoys the benefits of an active cruise market. In 2010, 71 cruises made a Newport port-of-call in 2010; 70% of those visits took place between September 1-November 1, helping to bolster Newport's fall "shoulder tourism" season.

American Canadian Caribbean is the only cruise line that docks in Newport. It operates a 184 ft vessel, homeported in Warren, RI, with a capacity of 96 passengers; with a draft of 6'6" this vessel is able to dock at Ft. Adams.

All other cruise lines anchor their much larger vessels off of Newport and tender passengers between the cruise ship and Perotti Park in downtown Newport. While this tendering operation entails only a 15 minute transit, shipboard passengers are required to queue up on ship up to 2 hrs in order to disembark via the tender. Then passengers must queue up onshore up to 1 hr to return to the cruise ship.

For the cruise lines that visit Newport, Newport is the only destination for their passengers. When in Newport, it is estimated that 10% of cruise ship passengers stay aboard ship, 30% take package tours, and 60% wander around Newport on their own. One major potential benefit of a new dock is that it would eliminate tendering (and its attendant costs to the cruise ships), and improve access to the City of Newport, thereby enticing the remaining 10% to come ashore.

However, the Newport waterfront and downtown area are fully developed with no waterfront land available to develop a cruise terminal. There is no berthing capacity available other than possibly constructing docking dolphins offshore and improving connect passenger connections to the shore via a new "T" dock. In addition, there is strong community opposition for expanding cruise capabilities in Newport, including opposition to new, additional waterfront that would further impede shoreline views. The yachting community also tends to oppose cruise ship activities altogether as the larger cruise ships anchor in waters used for regattas and recreational sailing.

In sum, the cruise market centered on Newport will likely remain limited. Newport is the only cruise destination/market, there is limited berthing capability, and there is community opposition to expansion of the cruise ship activities. Nevertheless, additional traffic from existing cruise business could be enhanced with the construction of mooring dolphins and a "T" berth in Newport to eliminate tendering

Potential Targeted Public Sector investments to Support Future Port Operations

Port of Davisville: A “Roll Off”/Roll On” (RO/RO) Ramp – \$1.75 million

This new facility would be designed to support potential RO/RO container feeder operations. (Traditional RO/RO vessels have ramps incorporated in their design and do not require use of a ramp.)

Port of Davisville: A chill facility for perishables break bulk perishables imports – \$2 million

This facility would support potential fresh fruit import market and could be financed with public and private sector support. Estimated cost would be about \$100 per sq ft investment for facility.

Port of Davisville: Reefer Plugs – \$5,000 per unit

These units enable the handling of containers which have their own refrigerated units. The Reefer Plug units would enable them to be connected to electrical power once offloaded into the port facility.

Port of Newport: Cruise Ship Dock – \$12.5 million

This would entail construction of a “T” dock to expedite passenger embarking/debarking, including the construction of two “mooring dolphins”. This assumes the location of the T dock would be located in relative proximity to deep water to accommodate ships (i.e. off of Goat Island).

Additional Sites to consider for Future development

Providence & Worcester Rail Quay – East Providence:

This undeveloped site consists 35 acres adjacent to water depths of 40 ft. To utilize the site the waterfront would have to be bulkheaded.

Cumberland Farms property – Providence:

This is a 10-acre site that could handle a pier built out to 38-40 ft. Although there is a building on-site can not be demolished due to a national historical designation, additional adjacent sites could be merged to create 24-acre terminal. These adjacent sites include:

- The Rhode Island Recycling site – 5 acres
- The Verizon Maintenance Depot – 6 acres
- A tow truck operation – 3 acres

Former Chevron site – East Providence:

This site has been for sale for 20 years for either commercial or residential development. Additional expansions could entail expansion of ProvPort and construction of a new cruise dock/terminal on Aquidneck Island, possibly on former Navy lands in Coddington Cove.

Summary of Potential Market Opportunities

Base Cargo:

There is a good possibility that imported auto units at the Port of Davisville could grow from 200,000 units to 300,000 units.

Potential Opportunities:

- Develop of a break bulk fruit operation (will require aggressive marketing)
- Possible container barge feeder operations – 24,000 TEU's (will require significant reduction in barge rate/stevedoring charges and a Ro/Ro operation)
- 130 utility scale wind turbine generator units – Still an uncertain opportunity, and should entail significant port infrastructure investment by private sector. The State of Rhode Island should not invest until it is confident of adequate private sector commitment of offshore windfarm development.

Modeled Potential Economic Benefits- Annual

Martin Associates' ProvPort Economic Impact Model (developed in a separate study for ProvPort in 2006) was adjusted to reflect the potential annual economic impact of the above identified opportunities for Rhode Island's Ports. The 2006 ProvPort study included the development of local models to estimate induced and indirect economic impacts of the direct operations at marine terminals in Providence. Specific terminal models were developed for ProvPort operations.

In addition, Martin Associates has developed more than 300 economic impact studies for most ports in the United States and thus we were able to use direct impact models to estimate the types of impacts that could be anticipated from the growth in new automobile exports and imports, the development of a fruit import operation similar to the size of operations of a terminal in the Delaware River, and the development of a container feeder barge operation. Our wind energy models for Gulf Coast and Pacific Northwest ports were used to estimate the impacts of the potential wind energy imports, but not manufacturing/assembly.

Table 1: Modeled economic benefits of Most Promising Rhode Island Port Development Opportunities.

	100,000 Potential Autos	130 Units Wind Energy	24,000 TEU Barge Feeder	Break Bulk Fruit
JOB				
Direct	183	154	52	58
Induced	187	152	57	59
Indirect	<u>65</u>	<u>28</u>	<u>6</u>	<u>5</u>
Total	435	334	115	122
PERSONAL INCOME (millions)				
Direct	\$8.4	\$6.8	\$2.6	\$2.7
Responding/Local Consumption	\$18.9	\$15.2	\$5.8	\$5.9
Indirect	<u>\$2.7</u>	<u>\$1.2</u>	<u>\$0.2</u>	<u>\$0.2</u>
Total	\$30.0	\$23.2	\$8.6	\$8.8
BUSINESS REVENUE (millions)				
	\$79.1	\$34.2	\$7.2	\$6.5
LOCAL PURCHASES (millions)				
	\$6.3	\$2.7	\$0.6	\$0.5
STATE AND LOCAL TAXES (millions)				
	\$3.5	\$2.6	\$1.0	\$1.0

Source: Martin Associates