

NARRAGANSETT BAY WATERSHED ECONOMY

The ebb and flow of natural capital



Ports & Maritime Trade Overview

Since colonial times, the Narragansett Bay watershed (NBW) has provided Rhode Island (RI) and Massachusetts (MA) with strategic outlets for maritime trade and transport (for a map of the NBW, please refer to the “Geography” section). Although the purpose of these ports has evolved over the past four centuries, they have remained a pivotal element of the local economy and culture and have exerted a profound influence on the history of the area. These ports have seen a shift from the trade of agricultural products between colonies, to marking RI’s involvement in the slave trade, to housing a naval stronghold, and finally, to boasting one of the top automobile import ports in the country. Although their purpose has adapted to the needs of NBW economies, they continue to be a source of jobs, economic stimulation, and pride for both RI and MA.

History

The NBW is home to a rich history of maritime trade and activity that spans over 400 years and a variety of export/import products. The NBW’s maritime trade is rooted in Newport, RI, which, due to its strategic location and natural deep-water harbor along the coast, was one of the first and most vital ports in the development of maritime activity in the area. Maritime trade in colonial Newport dates back to the early 1600s, and originally focused on the exchange of agricultural goods with neighboring colonies. By the 1700s, trade expanded outward from the colonies to European powers such as France, Spain, and the Dutch. Manufactured products, such as spermaceti candles, rum, and twine, made in RI and neighboring cities across the border, such as New Bedford and Nantucket, took the place of agricultural goods (Figure 1).¹ This manufacturing and exportation of rum marks RI’s involvement in the “triangle trade” (the trade of molasses, rum, and slaves between West Africa, the West Indies, and RI) and, subsequently, RI’s involvement in the slave trade. In addition to the triangle trade, Newport brought in tens of thousands of individuals over a hundred-year period to serve as slaves, making it one of the top slave ports in the colonies—the port at Newport brought in over 30,000 slaves between 1751-1775.² This trade continued even after it was outlawed by the RI General Assembly in the 1770s and 1780s. It eventually declined by the start of the 19th century but ramped up again with exports generated by Brown & Sharpe, Nicholson File, US Rubber Company and American Screw Company, all leaders in their respective fields.



Figure 1: The Port of Newport (ca. 1730)

Source: University of Massachusetts

Around this time, Newport’s port activity peaked, and Providence usurped Newport as the hub of maritime trade. The once-booming maritime trade industry slowly faded, and by the 19th century, was overshadowed by alternative industries, such as coastal tourism, including steamboats stopping through coastal ports. The decline in trade, however, was coupled with the establishment of the U.S. Navy’s presence in Newport, RI. In the late 19th century, the Navy established the Naval War College and the Naval Training Station—previously, Newport experienced heavy activity during the American Revolution and the Civil War due to its strategic positioning. The Navy maintained a strong presence in Newport until 1973. At this time, the active fleet was removed and activities at Port of Davisville, Quonset were suspended. This was part of a larger trend of the U.S. government closing naval bases in 33 states because they were considered excess capacity after the Vietnam War ended (for more information, refer to the “Defense” section).

In 1973, seizing this opportunity, the State of RI purchased lands at Quonset and the Port of Davisville from the U.S. Navy for \$10 million. Over the span of five decades, the RI government has continuously invested in the expansion and renovation of the Quonset Business Park and the Port of Davisville. This park now includes rail access, an airport, and an access road, making it the only port in the state with all four forms of access. In addition, it is the port with the most import vessel arrivals in the state (Figure 2).³



Figure 2: The Port of Davisville

Source: Quonset Development Council (QDC)

Methodology and Data Sources

This report will focus on the two major ports in the NBW: ProvPort (privately owned) and the Port at Davisville. Information in this section relies on publicly available information prepared for the state, including the RI Coastal Resources Management Council’s (CRMC) “Ocean Special Area Management Plan” for the Narragansett Bay for 2010, and a 2014 economic analysis conducted by ProvPort regarding their impact on the state between 1994 and 2014. Additional information on the Port of Davisville was sourced from the Quonset Development Council (QDC), a quasi-government agency responsible for managing the port. Information regarding recent port activities was sourced from the Providence Journal, the leading local news reporter in the state. Historical information regarding the NBW and its connection to the slave trade was sourced from public news sources (RI NPR) and Clark-Pujara (2009). Both sources pulled heavily from primary source historical documents to account RI’s involvement in the slave trade. Additionally, data for RI maritime trade were also obtained from a 2018 report *The Economic Impact of Rhode Island’s Marine Trades Sector* (Sproul and Michaud).

For information on the methodologies that were used in this report, please refer to the “Methodology” section.

Current Status and Trends

The Port of Davisville has experienced substantial growth since its purchase in 1973. Currently, the Port of Davisville, the only public port in the state, is home to approximately 200 companies and employs over 11,000 individuals. The success of the Port of Davisville benefits the local and state economies, marking a resurgence of maritime trade and related activities throughout the NBW. The Port of Davisville is one of the top ten automobile importers in the country and brought in over 227,000 cars by port in 2015 alone, which marked a 27% (48,800 cars) increase from 2014 and the

sixth consecutive year of increased auto imports.^{4 5} An additional 42,000 arrived by rail and truck to the Quonset Business Park, bringing the total to over 269,000 cars imported to Quonset in 2015.⁶ The Port of Davisville is also capable of importing and managing a variety of projects. For example, it imports and stores wind turbine materials, seafood products, sub-ocean pipeline materials, and other large project cargo and specialty items.

Aside from its successful port, Quonset Business Park is home to leading submarine manufacturer Electric Boat. The company, like the Port of Davisville, has experienced a resurgence in recent years. Electric Boat was founded in 1974 with a little over 100 employees. Despite almost collapsing in the late 1990's due to a lack of funding, support from the U.S. Navy has allowed Electric Boat to thrive. Today, the company employs over 3,700 individuals and is expected to continue growing until the 2020s. In addition to Electric Boat and submarine manufacturing, the ship and boat building and repair industry are successful in the NBW. Currently, there are 61 companies in the watershed involved in boat/ship building and repair, generating over 350 jobs and approximately \$20 million in wages.⁷ The boating and submarine industries provide opportunities for growth over the next few decades, both in Quonset and across the NBW. Additionally, the Port of Davisville is likely to grow in coming years. In early 2016, RI Governor Gina Raimondo announced a \$90 million plan to update Pier 2 at the port, allowing it to expand and increase its capabilities and import capacity. Out of its 3,212 acres, 1,347 are still developable.⁸

Comparable to the Port of Davisville, ports in the Greater Providence Area, such as ProvPort, have also experienced growth in recent years. Founded in 1994, ProvPort is a privately owned and managed company and is the largest port in the Greater Providence Area. ProvPort's leading export is used automobiles, and it is the main hub of petroleum imports for RI and parts of MA and Connecticut, which is used for both gasoline and as heating oil.⁹ ProvPort is also a major importer of cement, road salt, specialty chemicals, and large project cargo, such as parts for wind turbine projects. During its two decades of operations from 1994 to 2004, ProvPort has directly generated 975 jobs in RI, along with \$122.3 million in economic output in the state and almost \$18 million in state and local taxes (Figure 3).¹⁰ A majority of these jobs, almost 833, are located in the City of Providence, which also had a \$117.9 million share of ProvPort's output from 1994-2004. These figures only reflect the direct impact of ProvPort. There are also indirect and induced effects—more information on these impacts can be found in 4Ward Planning's Economic Impact Analysis of ProvPort. 4Ward Planning's modeling predicts an increase in employment (direct effect) of over 5,500 throughout the state, accompanied by an estimated output of approximately \$2.3 billion from 2014-2010.

In 2016, voters in RI approved Question 5 for RI Port Infrastructure Bonds. This measure approved \$50 million for infrastructure modernization in Davisville and \$20 million for the expansion of ProvPort.¹¹

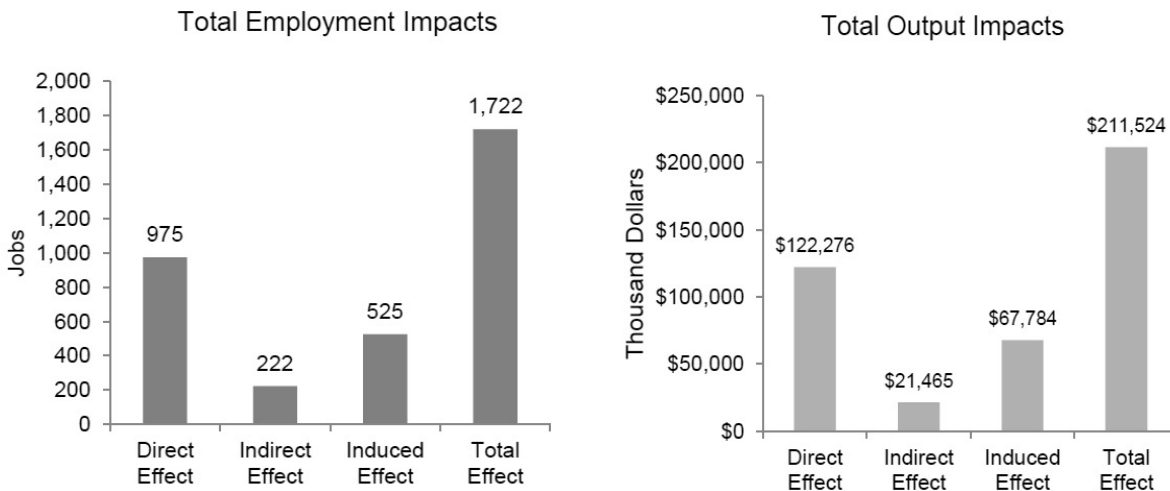


Figure 3: Economic Impact of ProvPort
The impact of ProvPort on employment and economic output for the years of 1994-2014
 Source: 4Ward Planning, 2015

Unlike ProvPort and Davisville, the ports in Newport and Galilee are not focused on maritime trade. Instead, the Port of Newport, making a transition from its historical roots, now primarily receives small and large cruise ships for tourism purposes. In Galilee, the focus is on seafood and seafood processing. Galilee’s outputs, such as Point Judith calamari, are well known to those in South County and across the state.

Overall, the growth of these ports in the NBW marks the growth and revitalization of the marine trade sector in the watershed. Aside from direct employment and benefits, the presence and growth of these ports has spurred economic development through both direct and indirect impacts. Although the definition of marine trade and its subsequent impacts on the economy vary, they represent and illustrate a positive trend for the NBW. For example, in 2012 the RI Department of Labor classified over 300 companies and 5,000 employees being related to “marine trade,” while broader definitions estimate that over 650 companies and almost 7,000 employees are related to the marine industry.¹² Furthermore, Sproul and Michaud (2018) estimate that the marine trade sector in RI makes up 4.7%, or 1,712, of the firms in the state’s economy. These firms employed over 13,000 people and generated \$2.65 billion in annual gross sales and \$2.64 billion in value added to the state’s economy. The two largest subsectors are marine services and supply, which accounts for 431 firms with over 2,700 jobs and \$583.6 million in gross annual sales, and marines, docks, and yacht clubs, which has 269 firms, over 2,700 jobs, and gross annual sales of \$367.4 million.¹³ Marine trade is a wide-encompassing industry, and despite the wide range of estimates, it is clear the ports and maritime trade industry has a positive impact on economies within the NBW (and one that will continue to grow over the coming decades).

Future Opportunities and Threats

Sea level rise

As the earth's climate warms, so do its oceans and waterbodies. This increase in water temperature causes the water to expand and icecaps to melt, leading to sea level rise across the globe (8.2 feet by 2100). Due to a culmination of effects, this impact will be greater in the Northeast Atlantic, with a rise in sea level predicted to be 9.8 feet by 2100. Although this sea level rise has been occurring over the past century, this growth rate is expected to increase dramatically in coming decades. For example, from 1930 to 2015, Newport has experienced an average of one inch of sea level rise per decade, and in Providence the rate was 0.9 inches per decade from 1938-2015. NOAA projects a maximum sea level rise of one foot from current levels by 2035 and two feet by 2050 in Newport.¹⁴ Given the reliance of ports and maritime trade on coastal areas, any rise in sea level could potentially threaten the location of current ports, while giving way to the development of new ports in areas that previously did not have coastal access.

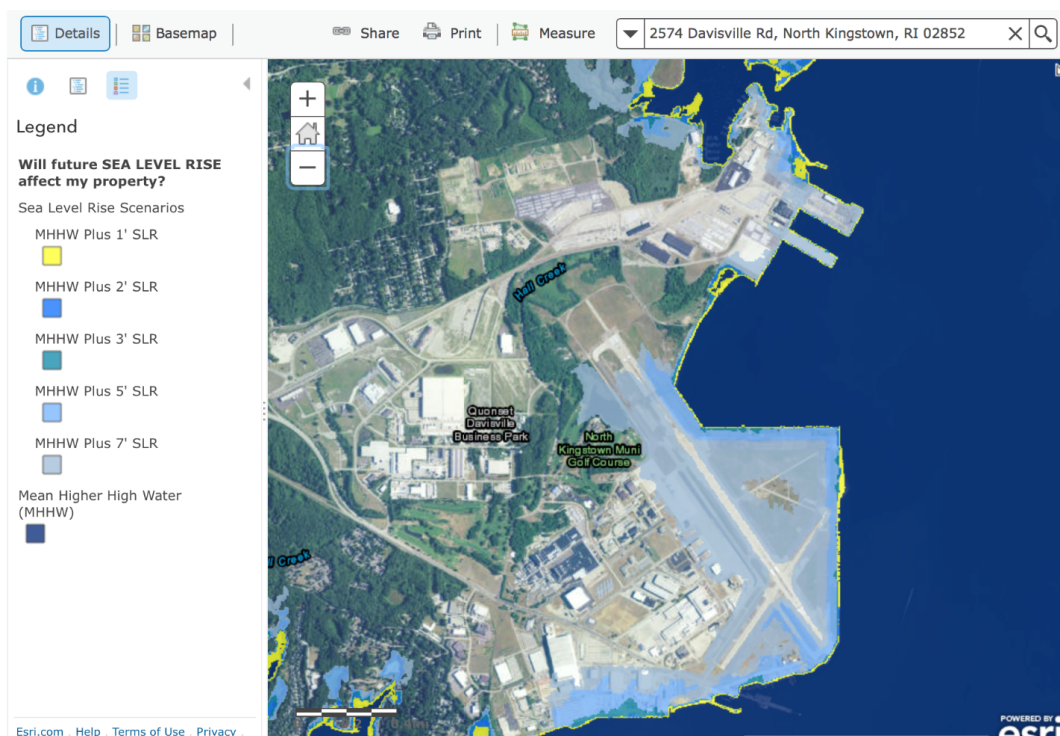


Figure 4: Sea Level Rise and its Impact on the Port of Davisville, Quonset, RI

Note: The rise in sea level is based on an increase in sea level rise (SLR) from the mean higher high-water point (MHHW)

Source: STORMTOOLS, n.d.

Both the Port of Davisville and ProvPort are vulnerable to future sea level rise. Using STORMTOOLS, a predictive software from URI and the RI CRMC, basic projections for the impact of sea level rise were made for the Port of Davisville and ProvPort. The Port of Davisville, one of the most productive ports in the state, will experience partial submersion under sea level rise predictions of just one foot (Figure 4) with the most significant impact occurring at a rise of seven feet (this is

still well below the 2100 NOAA prediction of 9.8 feet). Additionally, ProvPort, although not directly on the coast like the Port of Davisville, would still potentially be vulnerable to sea level rise through an increase in water level in the Providence River, a tidal river leading to the NBW (Figure 5). Adaptation to these changes is necessary for ensuring the future of ports and maritime trade in the NBW.

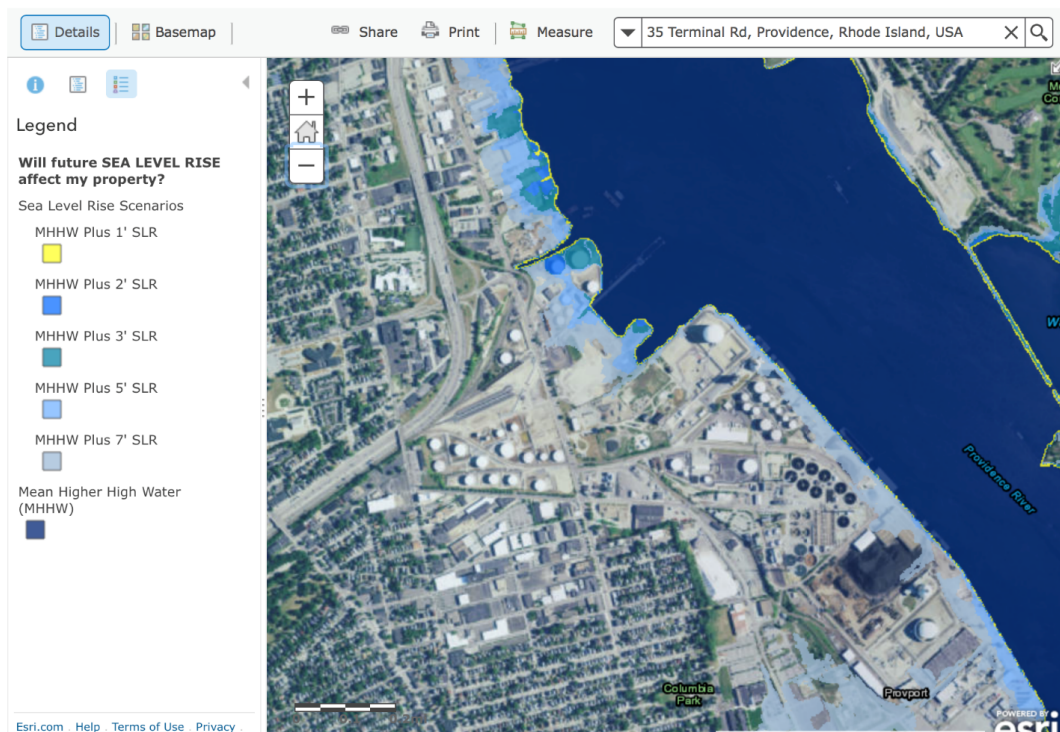


Figure 5: Sea Level Rise and its Impact on ProvPort, Providence, RI

Note: The rise in sea level is based on an increase in sea level rise (SLR) from the mean higher high-water point (MHHW)

Source: STORMTOOLS, n.d.

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¹ Source: RI CRMC, 2010.

² Source: Clark-Pujara, 2009.

³ Source: QDC, n.d.

⁴ Source: QDC, n.d.

⁵ Source: Bramson, 2016.

⁶ Source: Bramson, 2016.

⁷ Source: RI Department of Labor and Training, 2017.

⁸ Source: QDC, n.d.

⁹ Source: EIA, 2017.

¹⁰ Source: 4Ward Planning, 2015.

¹¹ Source: Ballotpedia, n.d..

¹² Source: Planning Decisions, 2014.

¹³ Source: Sproul and Michaud, 2018.

¹⁴ Source: NBEP "Sea Level," 2017.

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