

NORTH CAROLINA
MARITIME Strategy

**NC Maritime Strategy
Technical Memorandum on Competitive Landscape**

**Prepared for the
North Carolina Department of Transportation**

by

**AECOM
in association with URS**

May 31, 2012

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ACKNOWLEDGEMENTS

Initiated by the Governor's Logistics Task Force (GLTF), the *North Carolina Maritime Strategy* takes a fresh look at North Carolina's maritime assets and the needs for improvement to ensure that our State remains competitive in the future. A *Maritime Strategy* Executive Team has been formed to oversee this process, evaluate the results and provide an objective technical and economic analysis. The *Maritime Strategy* Executive Team includes: Lieutenant Governor Walter Dalton; the Governor's Senior Policy Advisor, Al Delia; Secretary of Transportation, Gene Conti; Secretary of Commerce, J. Keith Crisco; and Secretary of Environment and Natural Resources, Dee Freeman. The following North Carolina Department of Transportation (NCDOT) and North Carolina Department of Commerce (NCDOC) staff have provided day-to-day direction, guidance and support for study execution: NCDOT Director of Strategic Initiatives, Roberto Canales PE; NCDOT Project Manager, Virginia Mabry; NCDOT Liaison to the Lieutenant Governor, W. Seth Palmer; NCDOT/Commerce Liaison Joseph (Jed) McMillan; and Transportation Consultant to NCDOT and Global TransPark, Charles Diehl.

A Maritime Advisory Council, comprising State officials and staff, along with industry representatives from ocean shipping, trucking, rail and manufacturing interests, as well as community-at-large representatives, has provided further guidance and support to the study team. A roster of Advisory Council membership is included in the appendix of this report.

Finally, broad-based stakeholder outreach is key to successful development of the statewide *Maritime Strategy*. A comprehensive and ongoing public involvement program has provided additional input to the study by engaging the public, agencies and others through a series of informational meetings, public workshops and focused discussions with industry, as well as environmental and community groups.



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EXECUTIVE SUMMARY

The *North Carolina Maritime Strategy* is being developed to connect maritime goods and economic development in North Carolina. This is accomplished through the following primary tasks:

- Facilitated collaboration of freight transportation, economic development and community interests as input to the statewide strategy,
- Definition of North Carolina's economic context and maritime market positioning strategies that would offer the greatest economic benefit to the State, and
- Identification of infrastructure investments and policies that would most significantly enhance North Carolina's economy through improved performance of the State's maritime gateways and related trade corridors.

The *North Carolina Maritime Strategy* will define maritime market scenarios in which the State could realize economic and public benefit. Opportunities to be explored will include those associated with import and export of containerized cargo, as well as the potential for expanded bulk, breakbulk, petrochemical and military cargoes. Special emphasis will be made to link potential market positions with industry in the State. The range of market position alternatives to be investigated may include regional transshipment of goods, container-on-barge service and major international container terminal operations.

For each viable market scenario, the Strategy will define its infrastructure needs. Transportation investments to be examined may include reconfiguration or modernization of existing port facilities, new terminal developments, wharf and channel improvements, road and rail connections, and inland intermodal facilities. A comparative analysis of development alternatives will be conducted to measure the relative benefits, effectiveness and costs associated with various alternatives for market positions and associated infrastructure.

In framing North Carolina's *Maritime Strategy* and its subsequent implementation, it is essential for policymakers to understand and to monitor the competitive position of North Carolina's port facilities relative to their competitors. The purpose of this technical memorandum is to identify regional peers in the region and benchmark the performance of the North Carolina ports against those regional peers.



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1 INTRODUCTION

In framing North Carolina's *Maritime Strategy* and its subsequent implementation, it is essential for policymakers to understand and monitor the competitive position of North Carolina's port facilities relative to their competitors. The purpose of this technical memorandum is to identify regional peers and benchmark the performance of the North Carolina ports against these regional peers. The matrix table at the end of this memorandum assembles data from a variety of sources – both published data and technical studies developed as part of this study in order to provide a snapshot of the current competitive landscape for North Carolina's ports.

North Carolina imports and exports are handled primarily through ports in Virginia, South Carolina, Georgia, and North Carolina. The Port of Wilmington competes for a share of the container market with peer ports on the US east coast, including Norfolk, VA, Charleston, SC, Savannah, GA, and to a lesser extent, Jacksonville, FL. For the non-container market, the extent of competition varies based on the type of cargo handled and proximity of importer/exporter to the port location.

1.1 Identification of Peer Ports

The peer ports identified in this study are Norfolk, Charleston, and Savannah. The criteria used in their selection were:

- Similar location in the southeastern US: all of the ports selected are likely to serve directly some portion of the emerging Piedmont Atlantic Megaregion (PAM), which is composed of core metropolitan areas, including Birmingham, Atlanta, and two in North Carolina--Charlotte and Raleigh-Durham,
- All have interstate landside access to major North Carolina market areas without passing one of the other peer ports,
- All are designated as strategic military ports,
- They are leading ports for North Carolina waterborne exports, and
- They handle the same freight types as the North Carolina facilities.



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2 STRENGTHS AND WEAKNESSES OF PEERS

2.1 Port Characteristics

North Carolina's ports rank the best and worst among the regional peers in terms of distance to the ocean. Morehead City has a highly advantageous location that is closest to the ocean and nearly the best water depth—only Norfolk is currently deeper. Wilmington, by contrast, is the most distant from the ocean. In terms of water depth, it ranks at the bottom among the peers, tied with Savannah. Despite the variation in water depth, none of the regional peers with the possible exception of Norfolk can currently accommodate the post-Panamax ships. Thus, the differences in water depth are less critical in determining current competitive advantage than in positioning the ports for future post-Panamax opportunities.

Table 1: Summary of Regional Peer Port Characteristics

Characteristic	Wilmington	Morehead City	Norfolk	Charleston	Savannah
Distance to sea buoy	26 miles	4 miles	18 miles	16 miles	20 miles
Depth (maximum ft)	42	45	NIT: 50 (with authorization to dredge to 55) APMT: 55	45 (harbor channel and dockside)	Garden City Terminal: 42
Type of facilities	Container Limited Ro/Ro Breakbulk Limited refrigerated cargo Selected Bulk	Ro/Ro Breakbulk Selected Bulk	Bulk Grain Container Ro/Ro Breakbulk	Container Ro/Ro Breakbulk Bulk Refrigerated cargo Cruise	Container Ro/Ro Breakbulk Bulk Refrigerated cargo Cruise
Military Use	Yes--Strategic Seaport	Yes--Strategic Seaport	Yes-- Strategic Seaport	Yes--Strategic Seaport	Yes--Strategic Seaport
Hours of operation	Container Terminal: M-F 8am -12pm ; 1pm - 4:30pm General cargo: M-F 7:30am to 3:30pm	General Terminal: M-F 8am - 4pm	NIT: M-F 6am - 6pm APMT: M-F 6am - 6pm NMMT: M-F 8am - 12pm; 1pm – 5pm	Container gates: 7am - 6pm Breakbulk gates: 8am - 12pm; 1pm - 5pm	GCT Gate 3: M-Th 7am - 6pm; F 7am– 5pm GCT Gate 4: M-F 7am - 6pm Saturday 8am – 12pm; 1pm – 5pm

Source: USACE, NOAA, individual port web sites

North Carolina's ports have the most limited hours of operation among the regional peers. While this has the benefit of containing operating costs, it also limits shippers' ability to access the port

and deliver multiple truckloads in a day—ultimately constraining volumes and making other ports more attractive in terms of trucking costs and ability to move containers.

In general, the cargo facilities at North Carolina’s ports are more limited than the peers in terms of the variety of freight types that can be stored and handled.

2.2 Landside Characteristics

Measured in terms of distance to the nearest interstate, both North Carolina ports are at a disadvantage relative to their peers, although in the case of Wilmington, the margin of difference is small. Morehead City, however, is at a significant disadvantage to its peers in terms of landside highway access.

Measured in terms of landside rail access, North Carolina’s ports are served by a single rail provider while each of its peers is served by two Class I providers. This reduces the potential for competition and is perceived in the market as a disadvantage for shippers needing rail service. It also imposes a “directional bias” on rail shipments from the Port of Morehead City. Norfolk Southern serves Morehead City; its main routes from the port run East-West; it would require a transfer (adding cost and a time penalty) to another line in order to move North-South upon leaving the port.

Table 2: Road and Rail Access to Regional Ports

Characteristic	Wilmington	Morehead City	Norfolk	Charleston	Savannah
Distance to interstate from gate	7.8 miles to I-140 and US 17	111 miles to I- 795	5.8 miles to I-264	2.5 miles to US 17 and I-26	5.6 miles to I-95 from Garden City Terminal 1.2 miles to I-16; 10 miles to I-95; 1.5 miles to I-516 from Ocean Terminal
Rail access	CSX service; In-port switching by Wilmington Terminal Railroad; Substantial rail car storage	NS service; In-port switching by Carolina Coastal Railway; Railroad scale; Substantial car storage	CSX and NS service to Hampton Roads; NS and CSX service to Norfolk via Suffolk and the Commonwealth Railway	CSX and NS service to Union Pier, Columbus St, N. Charleston and Veterans; On-terminal rail yards at Columbus St, N. Charleston	CSX and NS service to Garden City and Ocean Terminal; On-terminal ICTF at Garden City

Source: AECOM/URS team analysis, FAF 3.1 data, NCDOT rail maps, individual port web sites

2.3 Population and Employment

The surrounding business base (measured by employment) in close proximity to the ports (within 300 miles) is the smallest for the North Carolina ports; each of the regional peers has a greater density of economic activity to generate trade. The ranking changes, however, at a broader 500 mile radius. Both Morehead City and Wilmington have larger markets compared to Savannah and Charleston. As illustrated in Table 3 and US container volumes and growth rates closely track gross domestic product (GDP) and can also be correlated to regional population. A total of 37.2 million containers (import and export, loaded and empty) was handled through US ports in 2009, supporting GDP of \$14.2 trillion and US total population of about 308 million people. This equates to a total container demand of 121,000 TEU per million population. Due to the global recession, this figure has dropped from an estimated 140,000 TEU per million population in 2007.

Table 3. Employment Density and Population

Characteristic	Wilmington NC	Morehead City NC	Norfolk VA	Charleston SC	Savannah GA
300 Miles	9,835,746	11,299,091	25,709,948	13,763,843	15,884,074
500 Miles	41,704,522	41,900,520	50,527,138	33,299,436	29,043,452
2010 Statewide Population	9,535,483		8,001,024	4,625,364	9,687,653
2010 TEU Handled	250,048		1,895,018	1,280,000	2,825,178
TEU per million population	23,615		218,126	255,408	243,249
TEU at US Average	1,149,607		964,611	557,639	1,167,953

Source: AECOM/URS, ESRI, US Census Bureau, US Bureau of Transportation Statistics

Among the four coastal states of North Carolina, Virginia, South Carolina, and Georgia, North Carolina's 2010 population of 9.5 million people was a close second to Georgia and ahead of Virginia and South Carolina. North Carolina's recent population growth has outpaced the region, adding 1.5 million people between 2000 and 2010 -- one of only six states to add more than one million during the decade. Moreover, North Carolina's metropolitan communities frame the northern segment of the emerging Piedmont Atlantic Megaregion, which is anchored by the metropolitan areas of Atlanta GA, Birmingham AL, Raleigh-Durham, and Charlotte. This megaregion is projected to realize significant growth in the coming years, generating strong demand for a full range of consumer goods.

Figure 1, only Norfolk’s market density exceeds that of North Carolina at a 500 mile radius. This represents a significant local economy to be served by the state’s port facilities.

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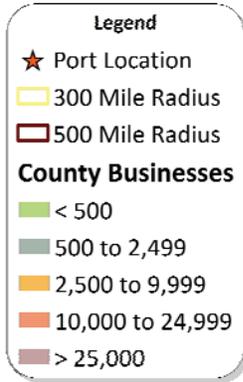
Among the four coastal states of North Carolina, Virginia, South Carolina, and Georgia, North Carolina’s 2010 population of 9.5 million people was a close second to Georgia and ahead of Virginia and South Carolina. North Carolina’s recent population growth has outpaced the region, adding 1.5 million people between 2000 and 2010 -- one of only six states to add more than one million during the decade. Moreover, North Carolina’s metropolitan communities frame the northern segment of the emerging Piedmont Atlantic Megaregion, which is anchored by the metropolitan areas of Atlanta GA, Birmingham AL, Raleigh-Durham, and Charlotte.³ This megaregion is projected to realize significant growth in the coming years, generating strong demand for a full range of consumer goods.

¹ USDOT Bureau of Transportation Statistics, Research and Innovative Technology Administration, *America’s Container Ports: Linking Markets at Home and Abroad* (January 2011), Table 2. US v. World Maritime Container Traffic and Gross Domestic Product: 1995–2009.

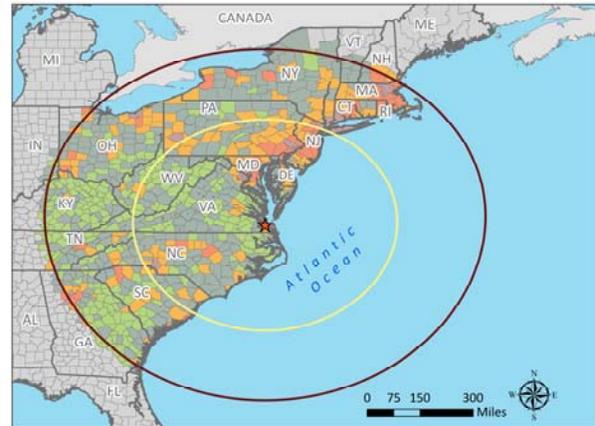
² Per the 2010 Census, US population was 308,745,538 in 2010.

³ The Regional Plan Association has written extensively on the trend of individual urban economies to grow into larger more complex urban agglomerations and coined the term “megaregion.” Using population and employment projections from Woods and Poole, they have defined the most distinct megaregions that are developing in the US. There has been substantial research on megaregions in the past decade; the RPA definition and projections are cited here—other definitions differ slightly in the details but all project that a megaregion will develop in the Piedmont Atlantic region.

Figure 1: Employment Densities around Regional Ports



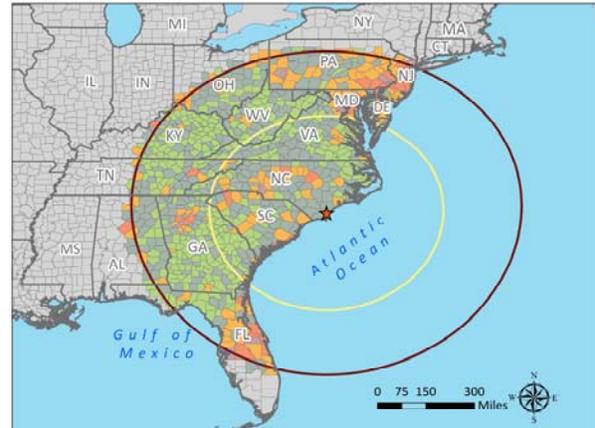
Norfolk



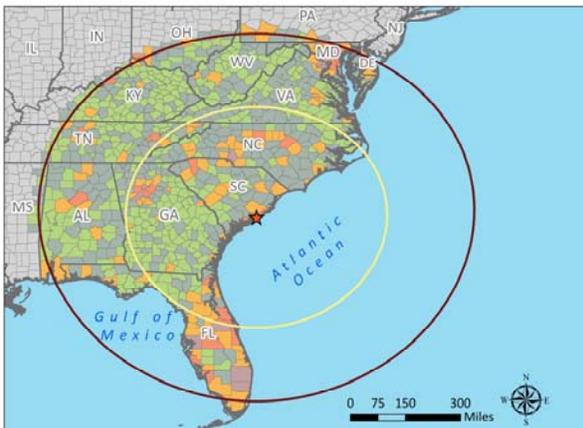
Morehead City



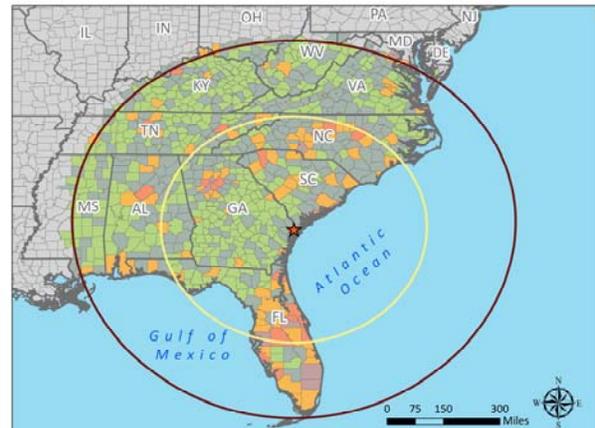
Wilmington



Charleston



Savannah

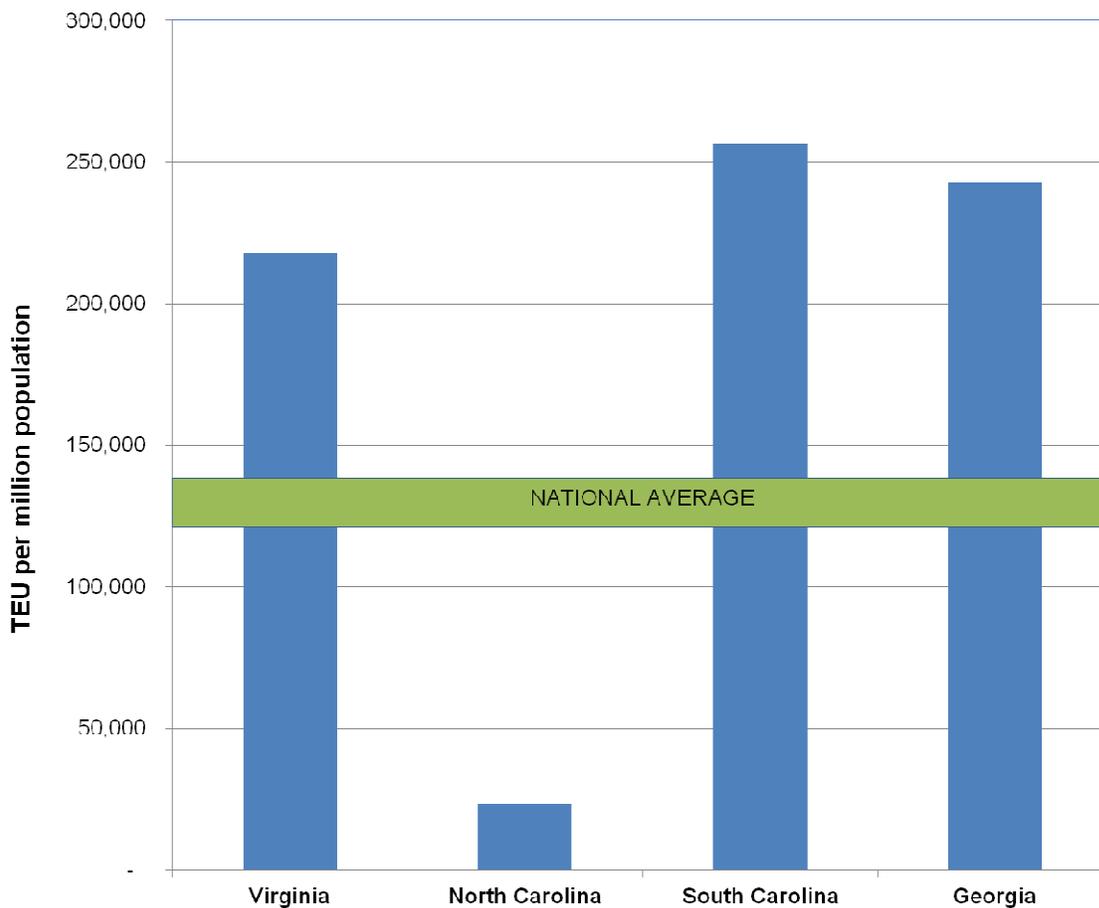


Source: AECOM/URS, ESRI, United States Census Bureau

Despite apparent proximity to significant employment density, North Carolina’s ports handle only a small percentage of containers needed to support the state’s foreign trade and economic growth. By contrast, ports in Virginia, South Carolina, and Georgia support the demand for import and export containers within their states and beyond. Based on state population alone, Norfolk could be expected to handle 964,611 TEU; however, the port’s 2010 container volume was nearly double that figure. Virginia is supporting global maritime trade needs of states beyond its borders, including inland landlocked states as well as North Carolina. In fact, Virginia Port Authority counts the State of North Carolina as the largest domestic destination of inbound container traffic, accounting for 14 percent of containers handled through Norfolk container terminals.⁴

Ports in neighboring states of South Carolina and Georgia and similarly capturing containerized goods destined for consumption or produced in North Carolina, which goods are transported via truck and rail to those facilities.

Figure 2: Per Capital Container Volumes Handled by Regional Ports, Twenty-foot Equivalent Unit (TEU) per Million Statewide Population



Source: AECOM, from US Census, US Bureau of Transportation Statistics data

⁴ Source: Delcan, *Private Data for Public Purposes*, AASHTO Special Committee on Intermodal Transportation & Economic Expansion, Richard Mudge PhD, Delcan (October 14, 2011)

2.4 Port Capacity and Capability

A detailed, terminal-by-terminal analysis of the capabilities and capacity of regional peer ports is presented in the *Peer Ports Existing and Planned Port Infrastructure* technical memorandum. Cargos handled and throughput capacities at the NC Ports facilities are examined in detail in the *Existing and Planned Port Infrastructure* technical memorandum. This information is summarized in Table 4 below. Historical throughput, as reported for 2010, is also provided to indicate relative market position of each port.

Table 4: Regional Ports Capacity and Utilization

	Containers (TEU)	Breakbulk (Tons)	Bulk (Tons)	Ro/Ro (Units)
Wilmington NC				
Terminal Capacity	530,000	1,475,000	2,220,000	
2010 throughput	250,048	207,135	1,304,756	
% Utilization	47%	14%	59%	
Morehead City NC				
Terminal Capacity		1,080,000	2,730,000	
2010 throughput		220,986	1,547,929	
% Utilization		20%	57%	
Virginia				
Terminal Capacity	3,630,000	6,820,000		320,000
2010 throughput	1,895,018	230,246		
% Utilization	52%	3%		0%
South Carolina				
Terminal Capacity	3,230,000	4,030,000	100,000	200,000
2010 throughput	1,280,000	991,705	0	106,498
% Utilization	40%	25%	0%	53%
Georgia				
Terminal Capacity	4,500,000	7,440,000	2,110,000	1,070,000
2010 throughput	2,825,178	1,239,091	1,772,897	477,851
% Utilization	63%	17%	84%	45%
Jacksonville, FL				
Terminal Capacity	1,800,000	3,550,000	2,400,000	950,000
2010 throughput	826,580	580,326	1,515,161	795,773
% Utilization	46%	16%	63%	84%

Source: AECOM, from port data. Wilmington and Morehead City 2010 throughput compiled from port operations and capacity survey information, operating budget reports, and NCSPA FY10 audit report. Other port throughput data obtained from port websites.

Breakbulk and bulk capacities are based upon current assignment of berths and storage areas.

Although Wilmington’s container capacity utilization is comparable or lower than at peer ports, the overall size of its capacity is much smaller than its regional peers. The unused container capacity at Norfolk, Charleston, and Savannah exceeds the total capacity at Wilmington.

Georgia and South Carolina are the region’s dominant handlers of breakbulk cargo. North Carolina, like each of the other regional ports, has significant unused breakbulk capacity. This is reflective of the flexible nature of much breakbulk cargo, which requires little specialized equipment. The actual capacity to handle heavy and project cargo or breakbulk cargo requiring special handling or storage may be less than indicated by these statistics.

Among the peers, the North Carolina ports have the greatest bulk handling capacity, with more than half of it used. This aggregate measure of bulk capacity, however, neglects that bulk facilities are often specialized (chemicals and aggregates in this case) and that the capacity at North Carolina’s ports may not directly transfer over to handle key bulk commodities that benefit other key industries for the state. The capacity utilization can mask the mismatch between facilities and key markets that could use the port. North Carolina, for example, does not have bulk storage and handling facilities to handle grain exports so these products

Finally, in terms of dedicated Ro/Ro facilities, North Carolina has not entered this market although it can accommodate certain types of Ro/Ro ships through other means. The other peers have at least some capability in this market, with the greatest regional capacity in Savannah. Ro/Ro services at Savannah and Charleston are focused on the auto market.

2.5 Port Operating Revenues

Revenue per ton varies significantly from port to port. Per-ton revenue is generally higher for those ports for which containers are a higher share of cargo handled.

Table 5: Operating Revenues at Peer Ports

2010	Revenue (in millions)	Revenue per ton
North Carolina State Ports Authority	\$33.32	\$6.41
Virginia Port Authority	\$193.79	\$12.44
South Carolina State Port Authority	\$111.74	\$10.80
Georgia State Port Authority	\$238.32	\$11.11
JAXPORT		

Source: NCSPA Independent Audit Report, peer port websites



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3 INLAND TRANSPORTATION MODE SPLIT

Most freight using North Carolina port facilities arrives by truck and trucking is the predominant mode of freight transport for shipments destined to North Carolina plants and distribution centers. Overall, North Carolina is more reliant on truck freight than its peers. The two tables provided below summarize the mode of travel to North Carolina's ports and its peers for exports and imports. Because truck freight is more readily divertible than rail freight, this could support efforts to retain North Carolina shipments and attract freight from other ports through targeted highway investments within the state.

Efforts to retain North Carolina-destined or -originated freight would support the *Maritime Strategy* objective to support in-state economic development potential; reducing truck transport costs for North Carolina shippers translates directly to productivity gains and competitiveness for the North Carolina economy. Attracting the freight from out-of-state shippers increases volumes at North Carolina's ports that may yield scale efficiencies that benefit all port users and the state's costs of operation, but the productivity gains for out-of-state shippers remain out of state.

Table 6: Mode of Travel by Weight, 2010

Port	NC Exports Leaving from Port (A)			Goods Imported to NC Arriving at Port (B)		
	% Trucks Only	% Rail Only	% Other Modes including Multiple Modes	% Trucks Only	% Rail Only	% Other Modes including Multiple Modes
North Carolina	97.3	0.3	2.5	94.8	4.6	0.7
Norfolk	83.8	3.2	13.0	90.8	0.0	9.2
Charleston	83.2	3.3	13.5	70.8	14.2	15.0
Savannah	55.9	2.8	41.3	91.9	1.7	6.4

Source: FAF, 3.1

Note: Because of their spatial proximity, the North Carolina ports cannot be isolated in the FAF, 3.1 commodity data. (A) North Carolina exports shipped to the port by the mode indicated. (B) North Carolina imports shipped inland from the port by the mode indicated.

Table 7: Mode of Travel by Value, 2010

Port	NC Exports Leaving from Port (A)			Goods Imported to NC Arriving at Port (B)		
	% Trucks Only	% Rail Only	% Other Modes including Multiple Modes	% Trucks Only	% Rail Only	% Other Modes including Multiple Modes
North Carolina	77.0	0.0	23.0	94.7	2.4	2.9
Norfolk	70.2	1.4	28.4	81.6	0.0	18.4
Charleston	86.3	1.1	12.7	76.0	8.4	15.6
Savannah	84.1	0.5	15.4	90.2	2.0	7.8

Source: FAF 3.1

Note: Because of their spatial proximity, the North Carolina ports cannot be isolated in the FAF 3.1 commodity data. (A) North Carolina exports shipped to the port by the mode indicated. (B) North Carolina imports shipped inland from the port by the mode indicated.



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4 PORT GOVERNANCE AND FUNDING

US seaports operate under various structures for governance and funding. Most port authorities are financially self-supporting. In addition to owning land, setting fees, and sometimes issuing bonds and levying taxes, port districts can also operate shipping terminals, airports, railroads and even such things as irrigation facilities. As a general rule, port authorities operate as businesses, sustaining themselves on their revenue streams, and, as significant economic engines, in some cases contribute funds to state (or other governmental) coffers. Two of North Carolina's peer ports (Norfolk VA and Jacksonville FL), however, are the beneficiaries of dedicated public funding to support operations and capital expansion.

The North Carolina State Ports Authority (NCSPA), founded in 1945, has an 11-member Board of Directors comprising of: six members appointed to four-year terms by the Governor, a chair with a six-year term also appointed by the Governor, and an additional two members appointed by each of the Speaker of the House of Representatives and President Pro Tempore of the Senate for two-year terms. Per NC General Statute 136-260, NCSPA and its board falls under the jurisdiction of NCDOT and reports to the NC Secretary of Transportation. NCSPA owns and operates its terminals and facilities. The primary source of revenues to NCSPA is from these operating activities; however, NCSPA has received project-specific grants and aid from the State of North Carolina to support its capital program. State capital grants and capital aid totaled approximately \$423,000 in fiscal year 2010-11. The fiscal year 2011-12 budget includes approximately \$1.7 million in state capital aid and capital grants to infrastructure investments that include port-wide berth structure repairs and fire sprinkler replacement at Morehead City. NCSPA has also been the recipient of federal grants to support capital investments, primarily security-related. No state or local funds or tax revenues are used to support operations.

The Virginia Port Authority (VPA) is an autonomous agency (political subdivision) of the Commonwealth of Virginia that owns the Port of Virginia. As an agency of the Commonwealth, the VPA reports to the Virginia Secretary of Transportation. The Governor appoints 11 citizens to form the Virginia Port Authority Board of Commissioners; the state Treasurer is an ex-officio member of the Board. Commissioners serve staggered five-year terms at the pleasure of the Governor, and no commissioner may serve more than two consecutive terms. Law dictates that there must be one, but no more than one, commissioner from Norfolk or Virginia Beach; one, but no more than one, commissioner from Portsmouth or Chesapeake; and one, but no more than one, commissioner from Hampton or Newport News. Traditionally, an active or retired senior executive from Norfolk Southern Railway and an individual with ties to the coal industry have served as members of the Board. The Board elects a chairman and vice chairman from within its membership. The Board of Commissioners appoints the executive director of the Virginia Port Authority, who is responsible for overseeing the daily execution of the agency's policies, as well as serving as an ex-officio member of the Board of Directors of Virginia International Terminals, Inc. (VIT), which is the VPA's non-stock, non-profit affiliate responsible for operating the Port of Virginia. The VPA receives 4.2 percent of the Commonwealth Transportation Trust Fund (from vehicle and fuel taxes), equating to about \$35 million a year for capital projects, and, similar to several other states, the Commonwealth contributes to payment of outstanding bond debt service.

The South Carolina Ports Authority (SCPA) is governed by a nine-member Board of Directors, each appointed by the Governor and confirmed by the Senate, along with two non-voting, ex-officio members – the state Secretary of Commerce and Secretary of Transportation. Despite its

status as a public agency dedicated to the economic development of the State of South Carolina, the Authority does not receive direct appropriations from the state for capital or operations expenses. Instead, the Authority operates like a private business, and funds its operations and investment efforts through its own revenue stream and ability to issue bonds. The Authority has no taxing authority. Founded in 1942, the Authority owns and operates public marine terminals at two port facilities: The Port of Charleston and the Port of Georgetown. These facilities are owner-operated terminals, meaning the Authority owns the terminals, operates all container cranes, manages and operates all container storage yards, and leads all customer service functions in both the yard and the channel. Similar to the case in other states, the State of South Carolina does provide funding for access roads and other outside-the-gate projects and has been a co-share sponsor for harbor deepening projects that serve both Authority public terminals and also private terminals along the ship channel.

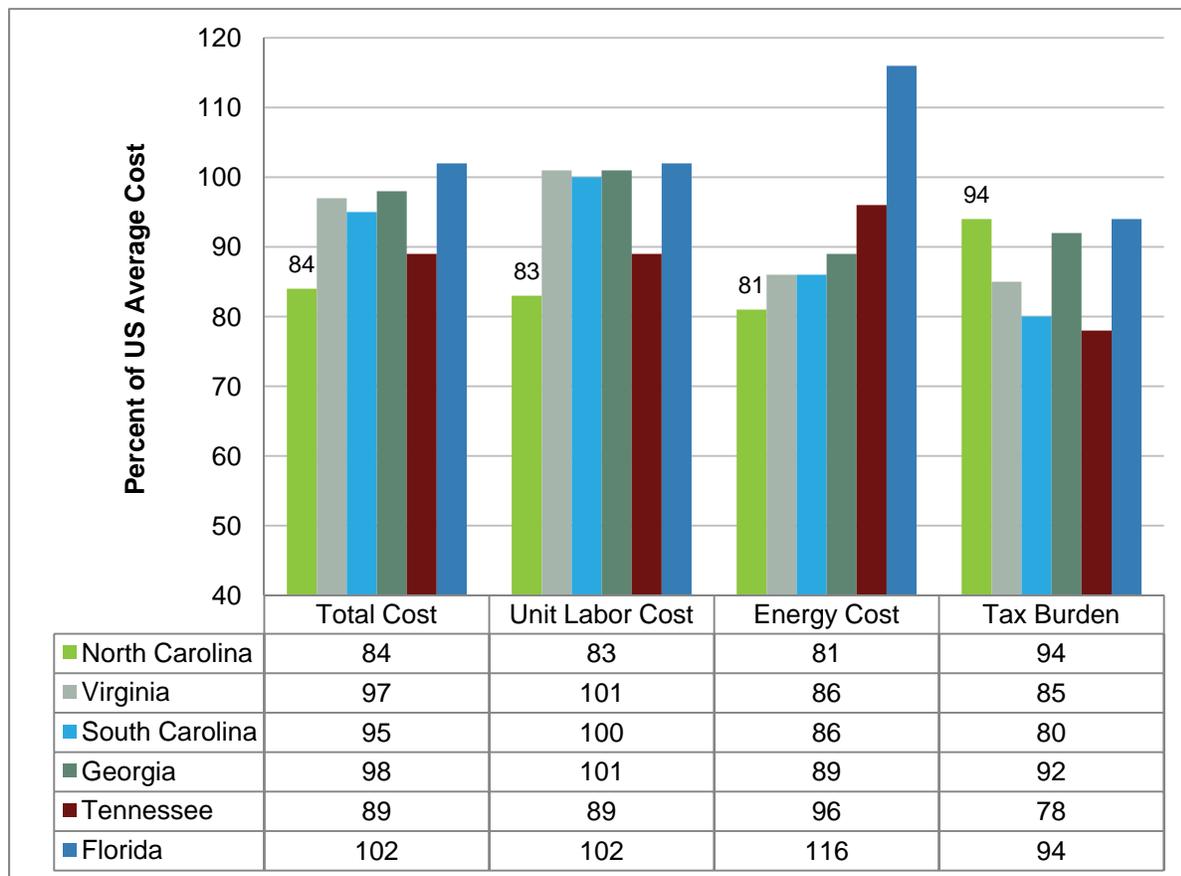
The Georgia Ports Authority is a quasi-state agency whose activities are governed by a 13-member Board of Directors, appointed by the Governor from the state at large to serve staggered four-year terms. Policy directives, administrative duties, and managerial controls are implemented by a chief executive officer. The GPA owns and operates most of its facilities, but it leases some (such as the inland Port Columbus) to private terminal operators. The GPA does not receive a regular state funding allocation but has on occasion received legislative appropriations as needed.

Florida's northernmost major port, the Port of Jacksonville is a local port overseen by the Jacksonville Port Authority (JAXPORT). JAXPORT is governed by a seven-member Board of Directors. The Mayor of Jacksonville appoints four members, and the Governor appoints three members, with each member serving a four-year, unpaid term and eligible for appointment to one additional term. JAXPORT is an independent government agency created by the Florida Legislature, operating primarily as a landlord, managing the upkeep, improvement and expansion of Authority facilities and coordinating their use by private companies. The physical facilities owned by JAXPORT include docks and wharfs, cranes, a passenger cruise terminal, warehouses, paved open storage areas and road connections to the public highway system. The Port Authority provides and maintains the terminals and their equipment and manages the overall use of the facilities. JAXPORT receives multiple revenue streams on a monthly basis (the monthly basis better facilitating bonding capability) as follows: \$250,000 from the Jacksonville Electric Authority; an \$800,000 allocation from the City of Jacksonville; and a split share with the City from a communications service charge (on phone, cellular and cable bills), less payments related to prior debt service.

5 BUSINESS COSTS

In terms of relative cost of doing business, North Carolina compares favorably to other states in the region. Moody's Analytics, an internationally-recognized economic firm defines the total business cost as the aggregate of three components: unit labor costs, energy costs, and tax burden. Unit labor costs are a measure of labor compensation per dollar of output—wage costs adjusted for productivity. This is an important adjustment as firms are willing to pay higher costs for more productive labor, all else held equal. The energy cost component compares the average commercial and industrial electricity cost to the national average. Tax burden is measured as the total tax revenue as a percent of total income, indexed to the national effective tax rate.

Figure 3: Relative Business Costs within Southeast Region States



Source: AECOM, compiled from Moody's Analytics 2011 Cost of Doing Business Review, updated April 2011 using the most recent available data as of December 2010. Rankings are out of 51 (50 states plus the District of Columbia). A rank of 51 indicates a location has the lowest cost; a rank of 1 indicates a location has the highest cost.

An index value of 100 means that the cost is equal to the US average cost. An index value of 105 by comparison means that the state's cost is five percent greater than the US average. An index value of 92 means the state's cost is eight percent lower than the US average; that is, a

producer in that state saves eight cents for every dollar of production cost relative to other producers in the nation.⁵

As the figure above shows, North Carolina has very favorable business costs. In fact, the state ranks 50 out of 51 (50 states plus the District of Columbia) in terms of overall business costs. Only South Dakota's business costs are lower. Of particular note, North Carolina has a 10 percentage point cost advantage relative to its coastal peers of Virginia, South Carolina, Georgia and Florida, and a five percent advantage on Tennessee. Looking at the individual components, both labor and energy costs are low relative to North Carolina's neighbors—these are particularly important costs for manufacturers of capital goods and agricultural processors who are likely port users.

⁵ The full methodological description of the Cost of Doing Business Index is provided in "2011 Cost of Doing Business Review," Moody's Analytics, updated annually, last updated April 2011 using the most recent available data as of December 2010. The index has been continuously published for 16 years and is used in Forbes' annual *Best States for Business* report, as well as numerous other studies.

6 INDUSTRY PERCEPTION

Meetings with industry stakeholders including shippers and ocean carriers as well as logistics and transportation providers revealed perceived benefits and disadvantages of North Carolina ports as compared to other regional ports. While customer needs and perceptions vary by industry, the following is a summary of input received:

Advantages of NC Ports

- High dock crane productivity for loading and unloading of containers.
- Competitive stevedoring at Wilmington.
- Overall low port handling costs.
- High level of customer service.
- Good interstate highway access into Wilmington via I-40.
- Morehead City's deep water and proximity to open ocean.
- Strength in bulk handling.

Disadvantages of NC Ports

- Infrequent containership calls to Wilmington, particularly for Asia-Pacific service.
- Lack of intermodal facilities at Wilmington and poor connectivity between Wilmington and intermodal yards in Charlotte.
- Insufficient rail service to Wilmington and to Morehead City.
- Navigational challenges such as S-turn, channel depth, and size of turning basin at Wilmington.
- Lack of interstate access and no backhaul opportunities at Morehead City.
- Lack of community support for port development.
- Limited gate hours.
- Need for certain specialized services and facilities: bulk handling for export of grain and wood pellets; near-port refrigerated storage; Ro/Ro at Wilmington.



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7 DIVERSION OPPORTUNITIES AND POTENTIAL INVESTMENTS

The potential to retain North Carolina freight that is currently exported through out-of-state ports is an important factor necessary to determine the potential for greater capture of the state's trade flows and the associated reduction in shipping costs, and ultimate realization of a maritime freight-focused economic development strategy. Projecting freight flows and the associated savings that might be realized by North Carolina shippers thus requires an understanding of the type of freight movements that would be attracted to North Carolina facilities once the capacity at other ports was exceeded, if the appropriate infrastructure was in place to facilitate the movement, or if investments were made that altered the cost advantage between North Carolina port facilities and those of competitors. The actual freight diversion analysis is constructed in a subsequent technical memorandum; the current discussion provides an overview of the main factors to consider in the context of the peer ports.

There were four main factors driving the diversion potential to North Carolina port facilities. These included: 1) retention of North Carolina-origin trade that is currently exported through other southeastern ports, 2) investments to permit North Carolina facilities to handle new types of freight, 3) investments that improve North Carolina's cost advantage relative to competing ports, 4) overall growth in maritime trade due to rising global demand for US products and US demand for foreign goods and changes in shipping patterns. The following is a brief description of each major factor considered.

7.1 Investments to Handle New Types of Freight

The most significant driver of freight diversion to North Carolina facilities may be investments in specialized equipment to accommodate some of the state's key exports and market opportunities. Through the development of this study it became apparent that the single biggest influence on the freight diversion potential is the development of the in-state infrastructure. For the purposes of this study, the North Carolina port infrastructure includes investments to permit port users to efficiently load bulk grain and specialized facilities to handle wood pellets, as well as the dredging of the port to accommodate larger container vessels.

7.2 Retention of North Carolina-Origin Trade

Provided that the requisite equipment were available in North Carolina, the second most significant source for freight diversion may be the dwindling capacity at neighboring ports. For example, bulk capacity at Savannah is estimated at 84% currently. Particularly if peer ports elect to invest limited land and financial resources in other types of freight—containers for example—this creates a niche market opportunity for North Carolina.

7.3 Improvements to North Carolina's Cost Advantage

Provided that there is the requisite equipment and capacity to handle freight, relative costs are the next important driver of diversion potential. Particularly for key North Carolina commodities such as forestry and agricultural products, profit margins are thin, making these commodities highly sensitive to differences in shipping costs. Investments to improve the landside travel time and reliability can change the relative costs between shipping locations in North Carolina's favor.

7.4 Overall Growth in Maritime Trade

Finally, underpinning the three factors highlighted above is the projected growth in the overall market—driven by a fast-growing urban concentration in the southeast megaregion, rising demand in China and other developing countries for US goods, and changes in shipping patterns.

8 PARTNERSHIP OPPORTUNITIES

Ports in the southeastern US are best characterized as competitors in the current environment. Looking ahead, a number of factors provide incentives to ports to consider forming alliances and partnerships with other public sector agencies to a greater degree than in the past. These include:

- Tight government budgets—a large federal budget deficit and the expectation of reduced federal spending (including for dredging) and similarly tight budgets at the state and local level limit resources for investment,
- Reduced reliance on federal earmarks and greater emphasis on transparent project justification and identification of projects of regional or national significance,
- Identified infrastructure needs (across all modes) that far exceed available resources—transportation program managers are seeking creative ways to do more with less and to demonstrate that new investments are not in redundant facilities,
- In prioritizing federal investments, a greater federal emphasis on interjurisdictional and regional collaboration as a selection criterion in making investments in state and local economies, and
- Greater recognition that partnership opportunities can reduce risk relative to a single-owner approach to providing infrastructure.

Successful partnerships among public facilities can take a variety of forms, as participants identify opportunities to complement their core competencies. There is no single model for a public partnership. Examples include:

Port Metro Vancouver and the Ports of Seattle and Tacoma are collaborating on a clean air strategy. This includes developing common goals for ships, cargo-handling equipment, rail, trucks, harbor craft and port administration through cooperative relationships with customers, tenants, and regulatory agencies. The partnership advances a common regional goal that could not be attained by one port acting alone.

Ports of New York and New Jersey operate under a long-standing partnership under a common authority. The partnership provides multiple points of entry into the complex, high-cost, and highly congested New York region, as well as its hinterland.

Port of Houston Authority and the Port of Galveston signed a memorandum of understanding (MOU) to explore opportunities for the development and use of property on Pelican Island as a future container-handling facility. The partnership develops additional capacity and shares the risk of that development.

The Ports of Charleston and Savannah are in discussions to develop a new facility in Jasper County SC. Still in the early stages of framing of the partnership and with many outstanding issues to be resolved, the new facility would develop additional capacity and share the risk of that development.

Port Everglades is partnering with Florida East Coast Railway to grow its intermodal business in the coming years. The project is a \$72.8 million objective to build an intermodal transfer facility (ITCF) at Port Everglades in Fort Lauderdale.



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