

North Carolina Maritime Strategy Public Information Meetings

December 13, 2011	St. James, NC
December 14, 2011	Wilmington, NC
December 15, 2011	Morehead City, NC

AECOM



URS

Study Goal and Outcome

Goal

- Analyze and investigate how ports can help with job creation and improve the economic situation for all of North Carolina.

Outcome

- The study will present a menu of options to the State so the best opportunities for future maritime development can be chosen.

Maritime Strategy is driven by objectives of the Governor's Logistics Task Force

- The Governor's Logistics Task Force (GLTF) recommended that the *Maritime Strategy* be initiated to evaluate North Carolina ports' current and future role in strengthening the state's economy.
- The *Maritime Strategy* will complement and coordinate with the 7 Portals Study, also initiated by the GLTF.
- The study will also integrate the directive of the Governor's Executive Order 99

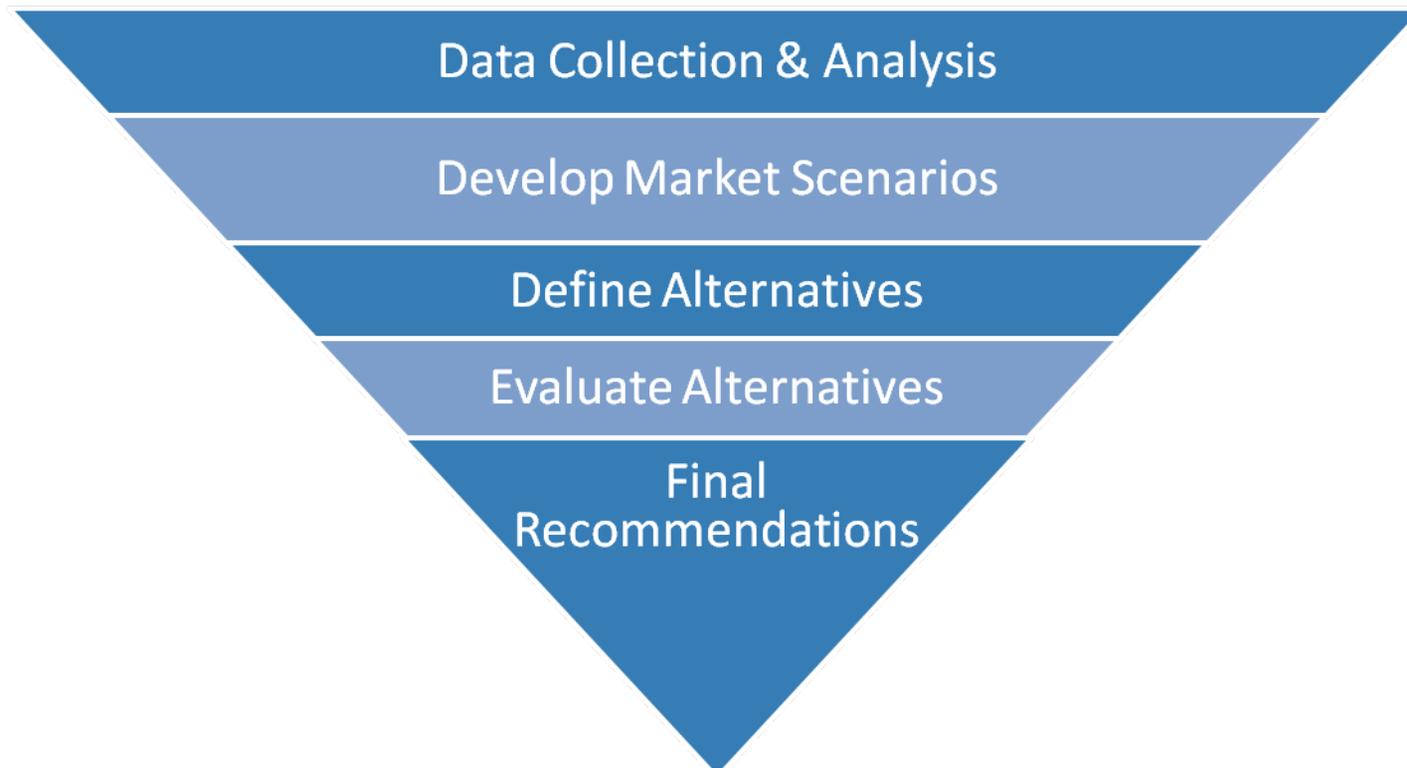


Maritime Study Scope

- Evaluate North Carolina's position, opportunities and challenges as a portal for global maritime commerce;
- Examine the role of North Carolina ports in sustaining and strengthening the State's economy;
- Obtain input from freight transportation, economic development, and community interests, and
- Identify specific strategies to optimize benefits received from the State's investments in port and associated transportation infrastructure.

Summary Timeline

Project Kickoff – May 2011



Final Report – February 2012

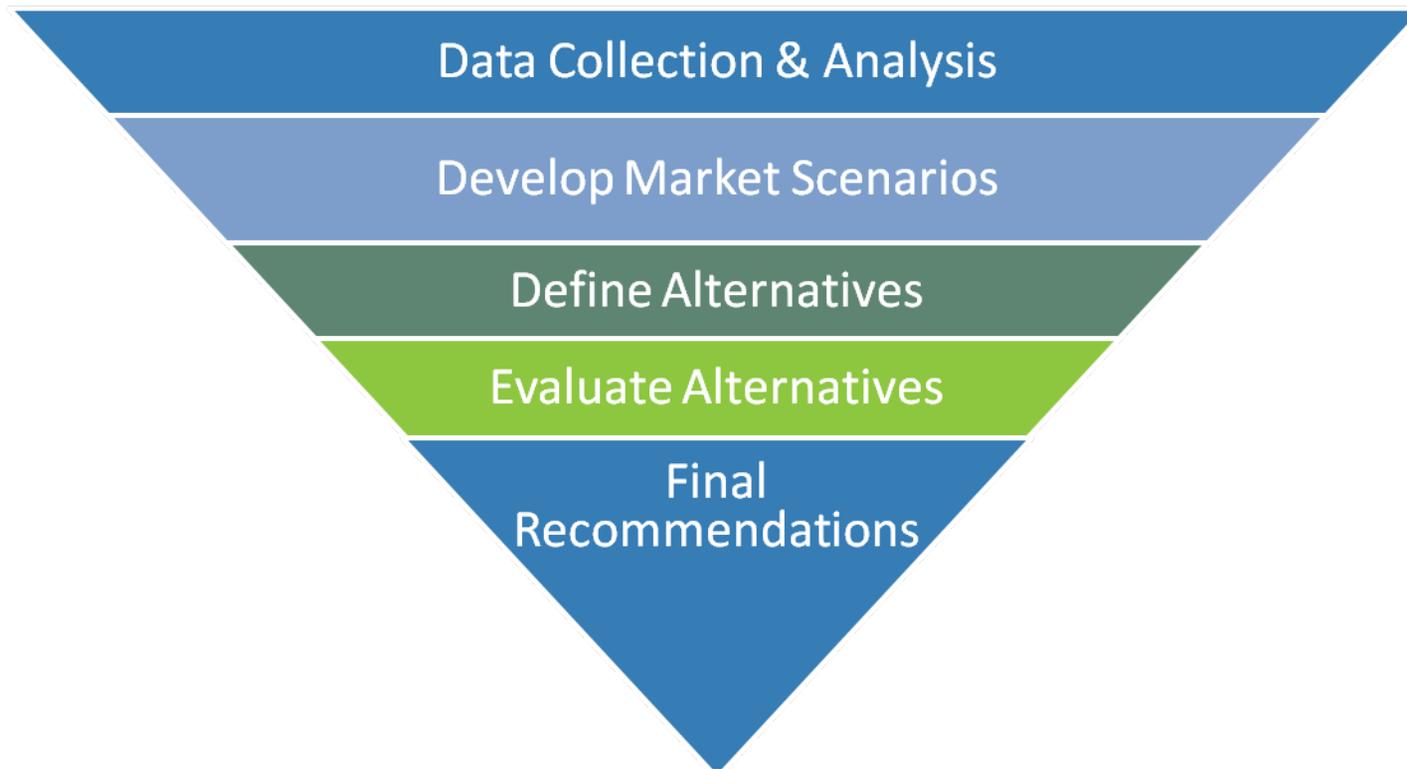
AECOM



URS

Summary Timeline

Project Kickoff – May 2011



Final Report – February 2012

Your Role

- Review meeting materials which include analysis of current port operations, import/export and specific market growth opportunities, transportation system overview and potential port improvements
- Ask questions
- Provide input/comments

Data Collection and Analysis

- Reviewed more than 100 existing documents and reports to identify available and verifiable information that is applicable to the Maritime study.
- Obtained updated import/export market forecasts for US southeast region from IHS Global Insight
- Performed independent analysis of infrastructure constraints
 - GIS-based evaluation of regional highway and rail networks
 - GIS-based evaluation of waterways
 - AECOM's proprietary port modeling tools to assess regional port capacity
- Developed independent Delivered Cost Model to evaluate time-based benefits of infrastructure improvements
- Integrated input from diverse industry stakeholders to assess market needs and opportunities

Industry and Stakeholder Meetings

■ Industry Workshops

- Agriculture
- Break-Bulk
- Shipping Lines
- Logistics & Special Zones
- Non-Ag Shippers
- Military
- Railroad & Trucking

Effort supported by hands-on Maritime Advisory Council

■ Focused discussions and interviews

- Metropolitan Transportation Organizations
- Economic Development Commissions
- NC Department of Commerce
- NC Department of Transportation
- NC State Ports Authority
- NC Railroad
- UNC Wilmington
- Southport/Oak Island Chamber of Commerce
- US Army Corps of Engineers
- Progress Energy
- No Port Southport
- Save the Cape
- Clean Carteret County Coalition
- Morehead City Port Committee
- YesPort NC

■ Public workshops

Summary of Stakeholder Input

- Jobs, economic growth, and the environment are top concerns
- Landside costs represent up to half of the total transportation cost of North Carolina exports
- Enhanced road and rail connections are critical to the cost-effective movement of goods
- Cost to transport NC goods is increased by localized congestion and lack of back-haul opportunities on key routes
- Rail freight cannot be competitive within NC without sufficient volumes to support regular rail service

Summary of Stakeholder Input (cont'd)

- Competitive containerized trade requires regular service by ocean carriers
- Maritime trade opportunities and needs include:
 - Refrigerated storage,
 - Facilities to support roll-on/roll-off and oversize cargo
 - Bulk handling for wood pellets and grain
- An integrated strategy for NC will include Commerce, Transportation, and the US Military
- Better communication on maritime needs is sought – with the public and with local shippers

Overview of NC Ports

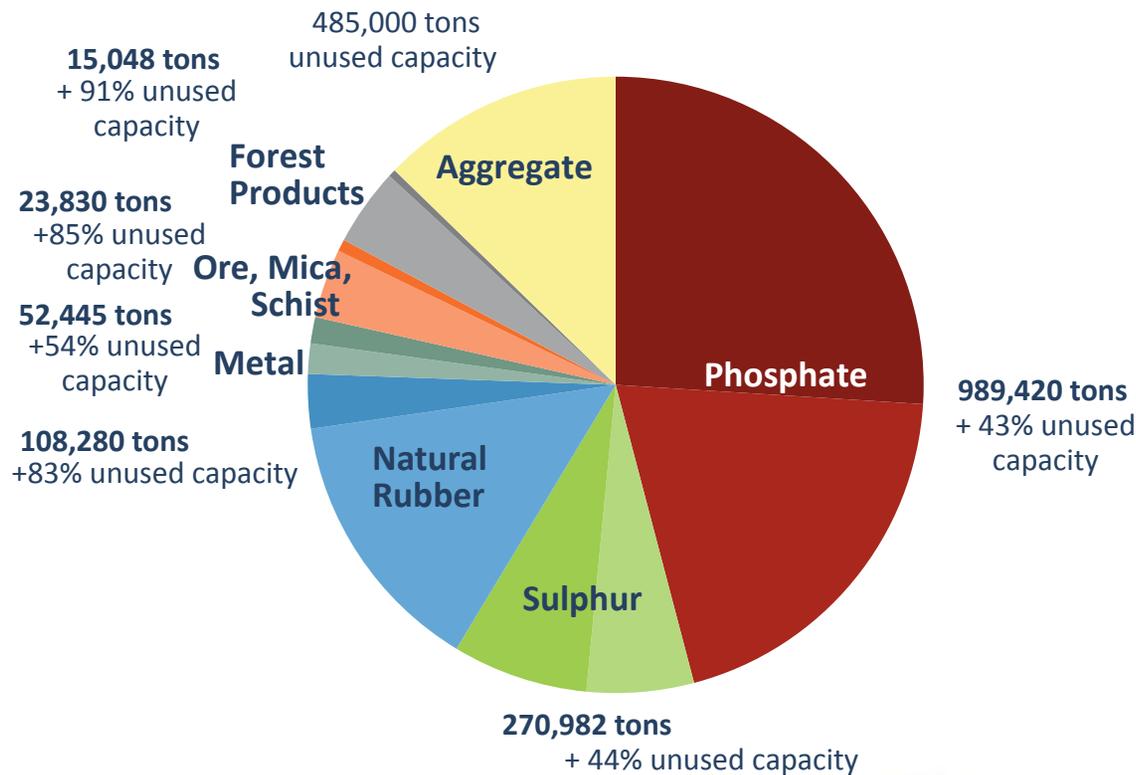
- North Carolina ports have available capacity for business growth and some ability to expand (with limitations)
- Strength in non-containerized cargo
- Low port costs, but offset by landside costs and distance to ocean
- NC is the leading destination of imports through NC ports; however, NC exporters often use port facilities at Norfolk, Charleston, and Savannah instead of NC ports
- Both Wilmington and Morehead City are strategic military ports

Port	Miles to sea buoy
Wilmington	26
Morehead City	4
Norfolk	18 (estimated)
Charleston	16
Savannah	13
Jacksonville	10 (Dames Point)

Source: Port websites and NOAA

Port of Morehead City

Non-Containerized Goods Handled and Available Capacity (2010)

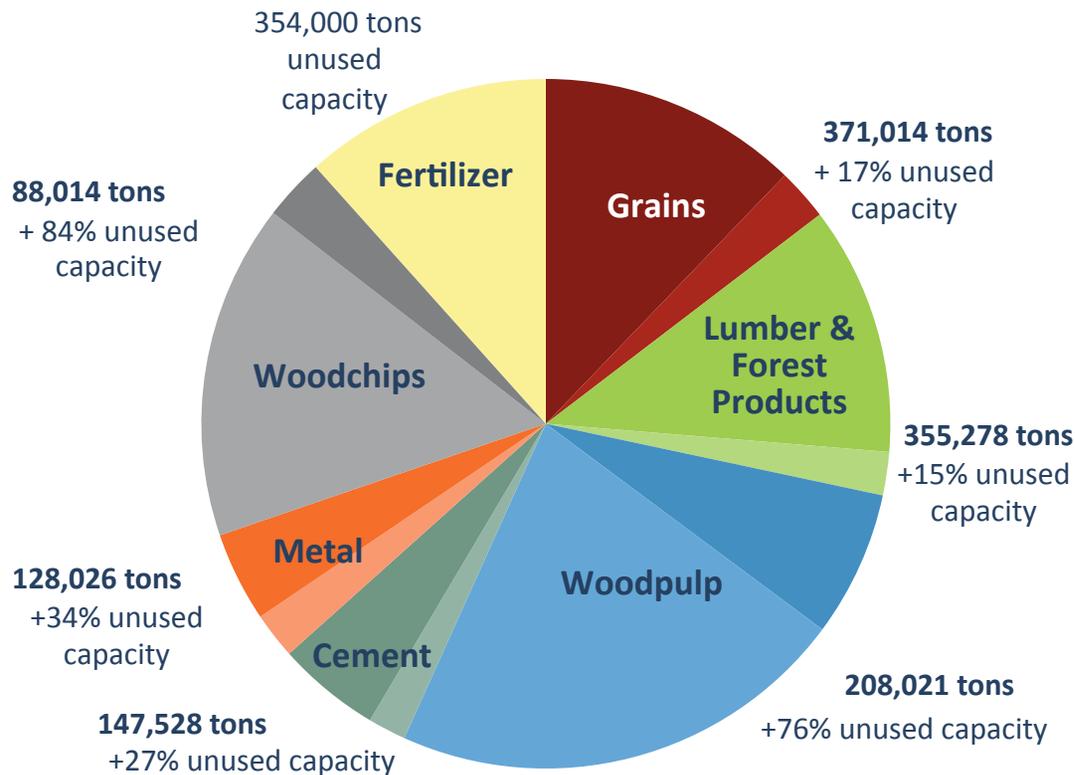


- Phosphate and sulphur products represent 86% of total tonnage in 2010
- NC Ports provide value-added inventory management and warehousing services for natural rubber
- Slowdown in construction industry has affected import lumber, aggregate, and other construction materials

Source: AECOM from NCSA data

Port of Wilmington

Non-Containerized Goods Handled and Available Capacity (2010)

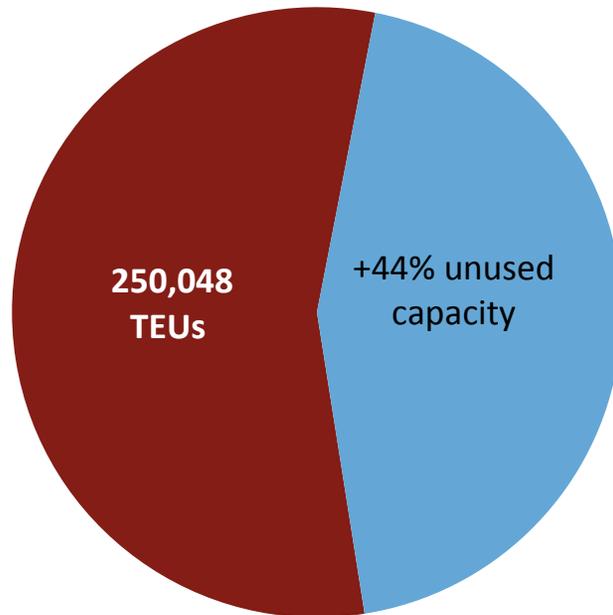


- Grains and various wood products represent 79% of non-containerized tonnage handled at the Port of Wilmington in 2010
- Volumes of grain and breakbulk lumber products are limited by currently available storage capacity on the terminal

Source: AECOM from NCSPA data

Port of Wilmington

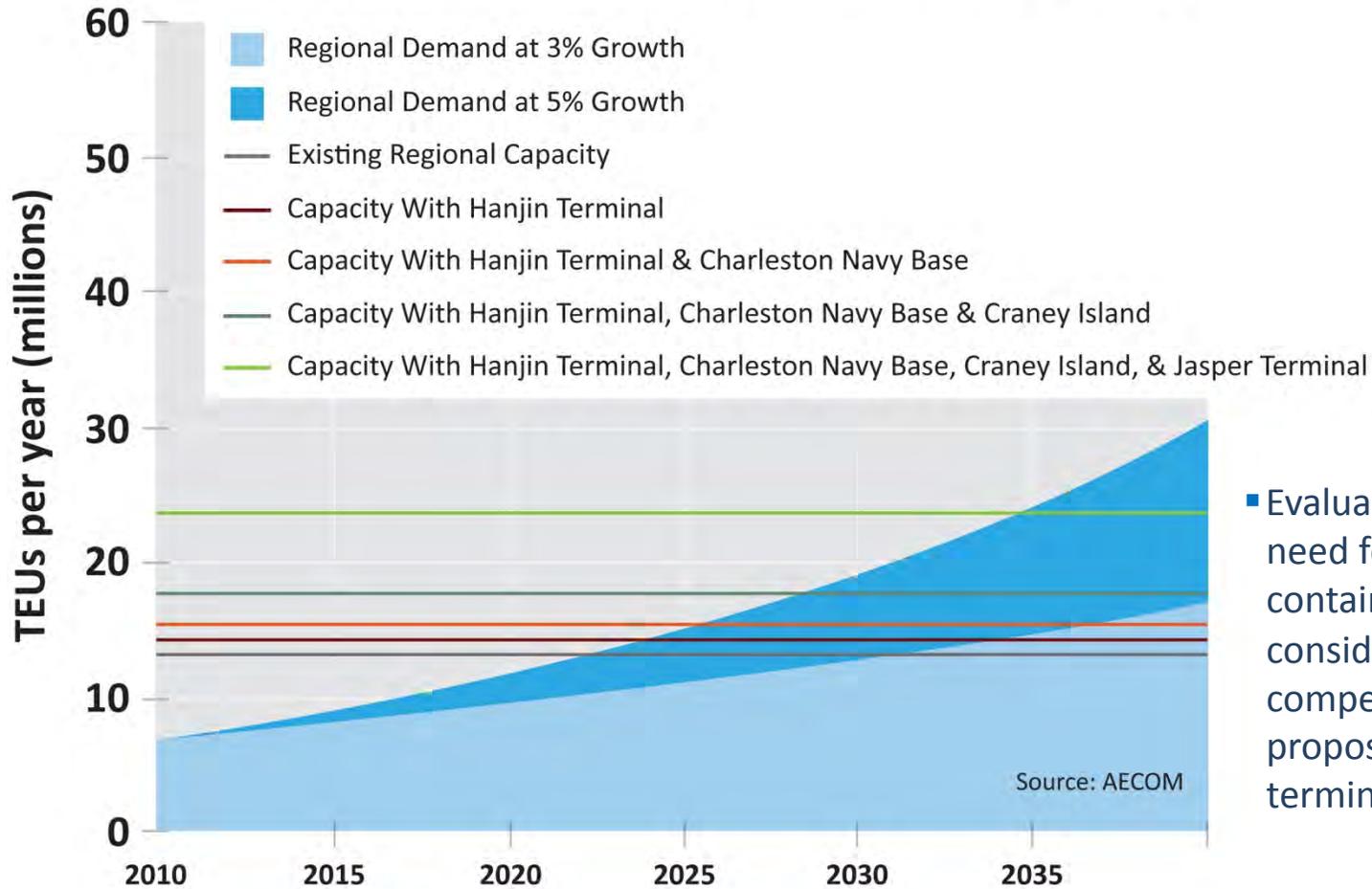
Containerized Goods Handled and Available Capacity (2010)



- Container handling capacity at the Port of Wilmington is currently limited by the capacity of the single premium berth available to unload Panamax vessels
- Available container handling and storage capacity in the yard is also a factor in long-term capacity for expansion at Wilmington

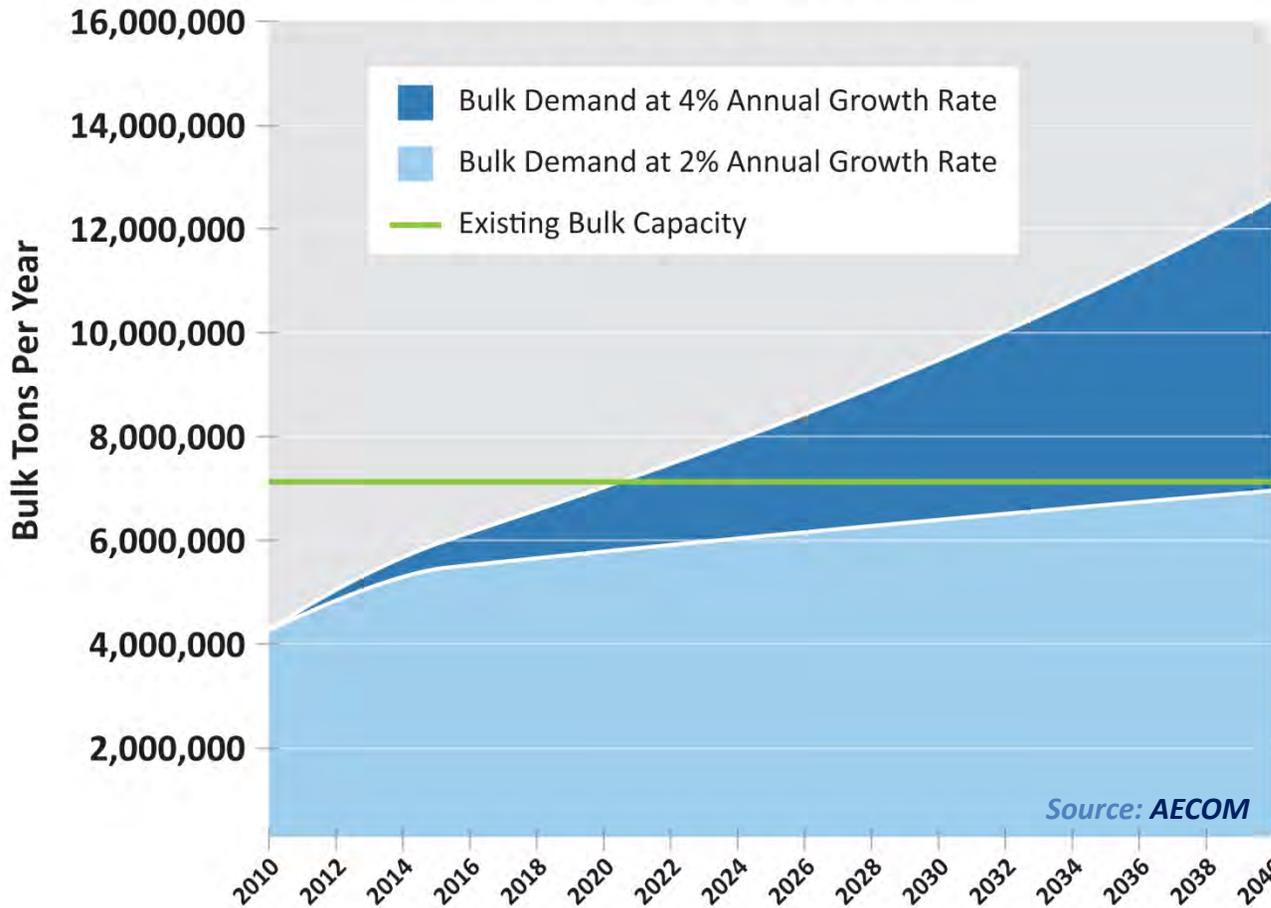
Source: AECOM from NCSA data
TEU = twenty-foot equivalent unit

Regional Container Demand vs. Capacity



- Evaluation of regional need for additional container capacity must consider likelihood and competitiveness of proposed container terminal expansions

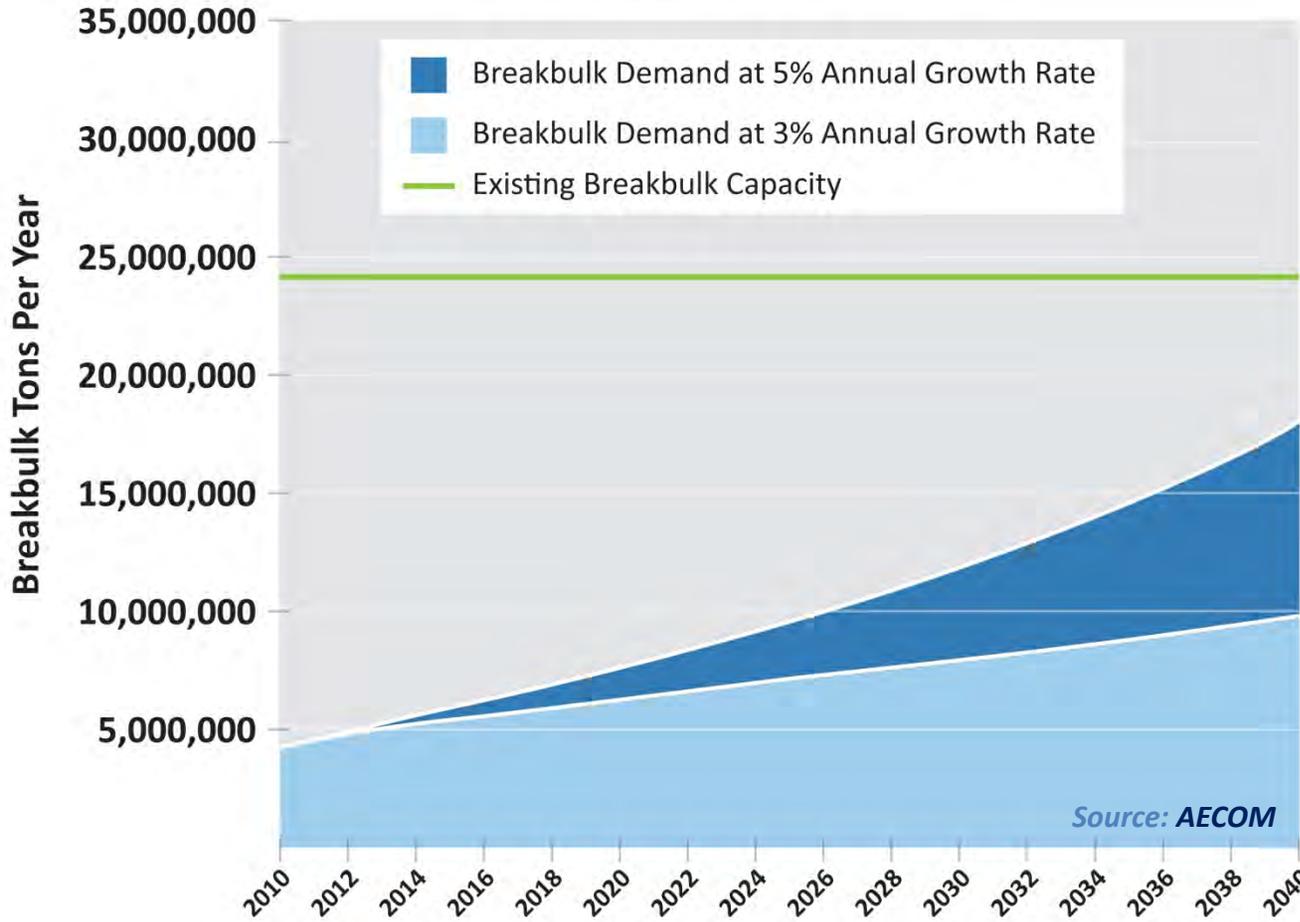
Regional Bulk Demand vs. Capacity



Source: AECOM

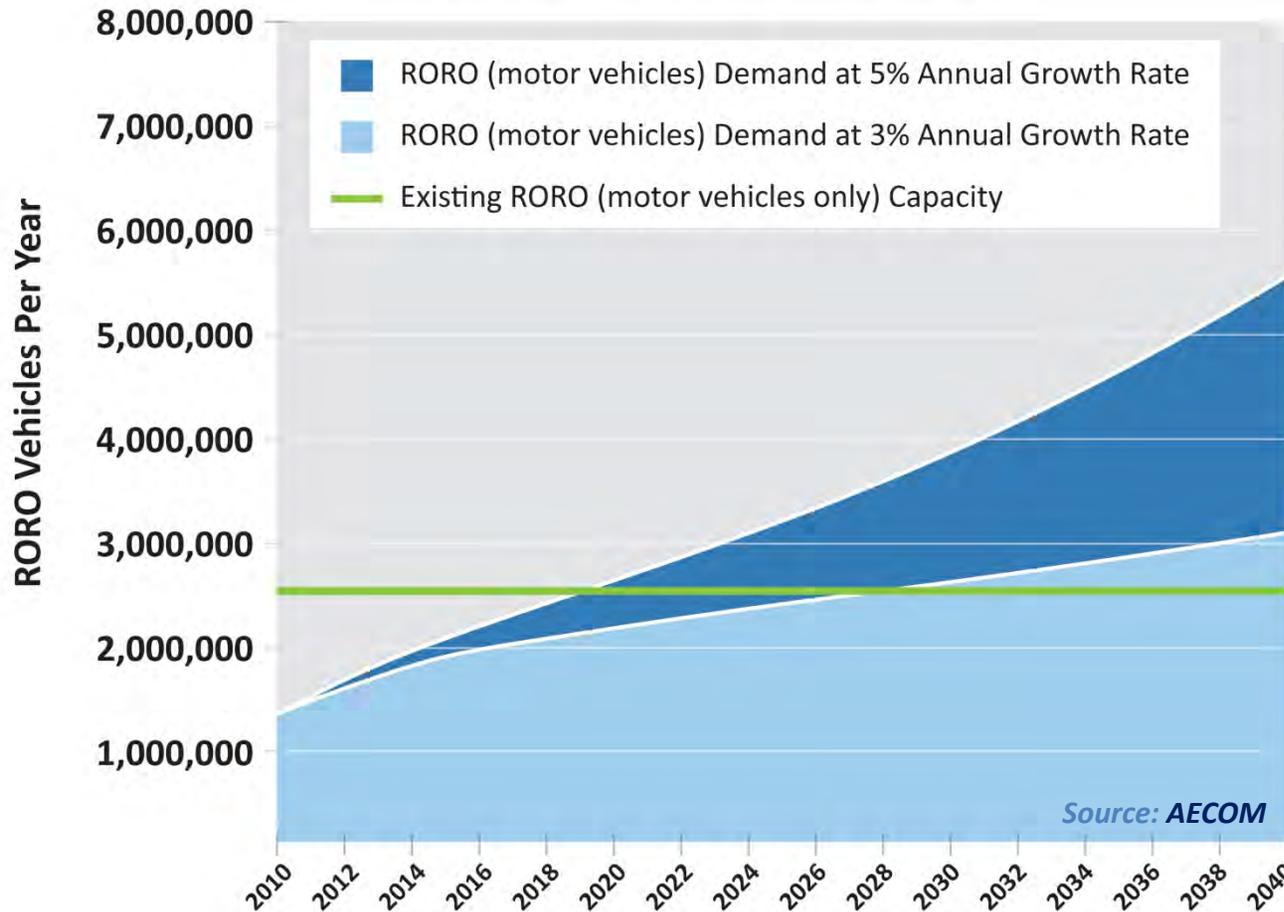
- Excludes coal and petroleum
- Neglects specialized equipment needed to handle individual bulk commodities – e.g. local grain exporters have identified a need for more grain-handling equipment at regional ports

Regional Breakbulk Demand vs. Capacity



- Neglects constraints and specialized needs for large or heavy cargo – e.g. *oversize cargo is likely to use the port closest to its ultimate origin or destination due to land-side restrictions and costs*

Regional Ro-Ro Vehicle Demand vs. Capacity



- Capacity based on motor vehicle volumes only
- Auto Ro-Ro could be re-purposed to support equipment only if facilities are able to handle large or heavy cargo

Grain and Soybeans

Annual Tonnage



Source: AECOM, from IHS Global Insight projected growth and PIERS historical data

- Greater capacity to export grain and soybean through North Carolina ports would support State’s existing strength.
- World demand for grain and soybean is projected to grow strongly, so increased exports would attract more income to the State.
- Potential for grain and soybean producers to export more at lower cost if closer in-state ports became an option.
- Currently there is no bulk grain terminal at either port to handle exports of grain and soybeans.

Potential Sites for Grain Export Facilities

Radio Island



Wilmington



Containerized Goods

Annual Container Volumes (twenty-foot equivalent units)



Source: AECOM, from IHS Global Insight projected growth, PIERS historical data, and FAF 2.1

- Supports export and import activity across a large variety of industries--from sweet potatoes and frozen chickens to consumer goods destined for local retailers
- Growth in NC port container activity makes containers and vessels available for export needs of NC producers.
- Infrastructure needs:
 - 50-ft+ water depth for Neo Panamax vessels, 40-ft+ for Panamax vessels
 - 2 or 3 contiguous berths each 1200' long
 - Container storage area of 150-200 acres+
 - Truck and rail access

Refrigerated Container Goods

Annual Tonnage



Source: AECOM, from IHS Global Insight projected growth, PIERS historical data, and FAF 2.1

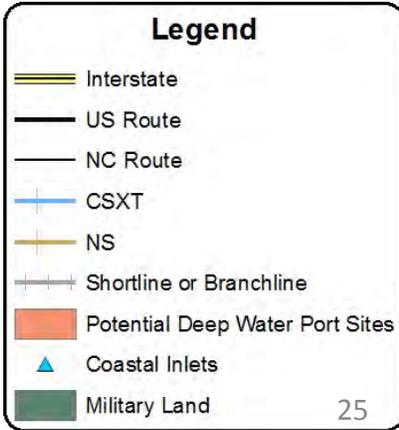
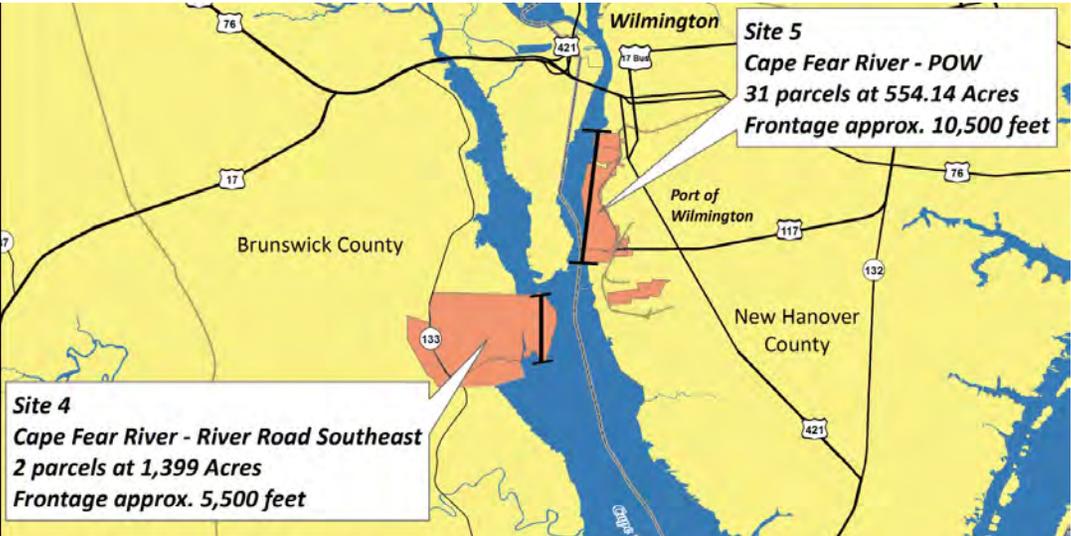
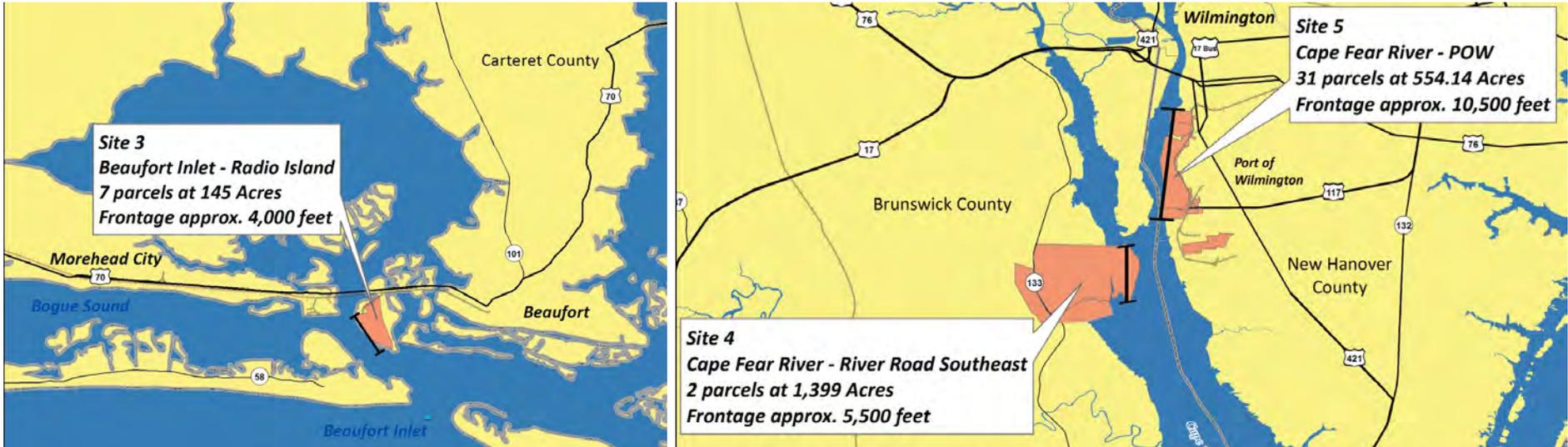
- Serves a variety of markets—both agricultural and manufactured goods
- Potential for greater capture of North Carolina production at North Carolina ports
- Supports sweet potatoes, specialized textiles, fresh and frozen meats and fish
- Requires cold storage facilities and plug-ins for refrigerated containers at or near the port

Criteria Used for Selecting Potential Container Port Sites



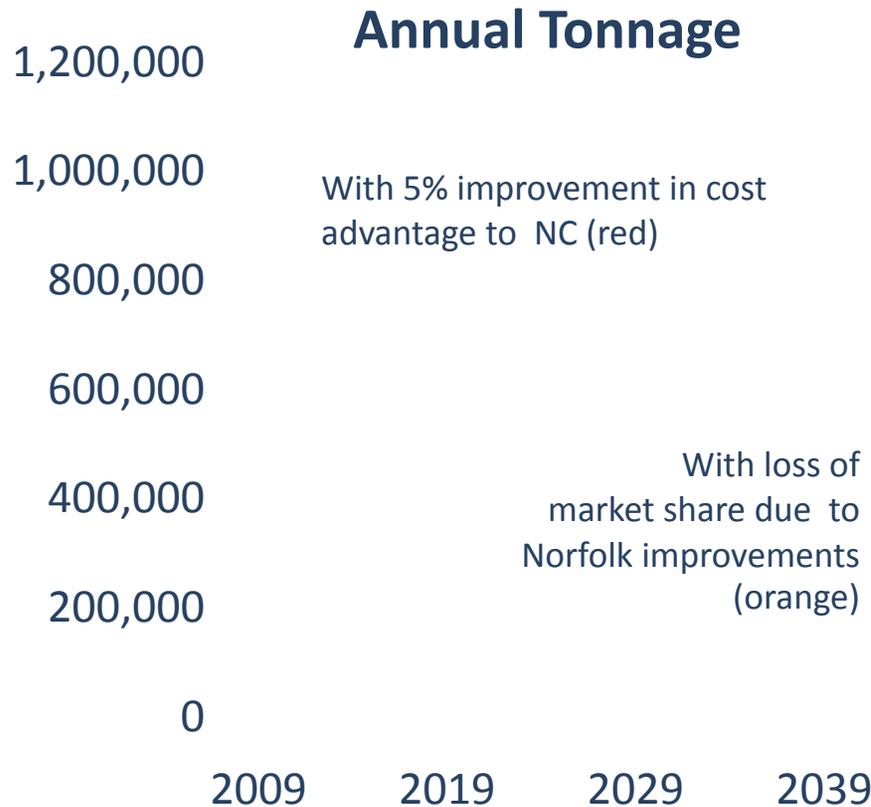
* Environmental screening does not include full environmental impact analysis

Potential Deepwater Container Port Sites Meeting Minimum Initial Screening Criteria



Source: AECOM/URS compiled from ESRI, NCDOT, Brunswick County, New Hanover County, USGS ThematicMapping world borders dataset, SeaMap SA 2001, and Moser and Taylor 1995

Wood Products

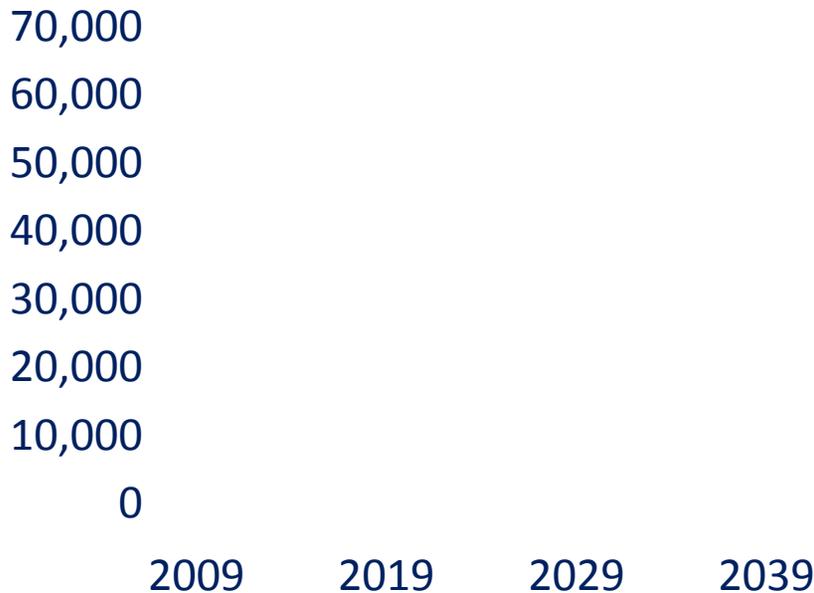


- Increased export of wood products through North Carolina ports would support an important existing industry in the State.
- World demand for wood products, such as pellets as a source of replenishable energy, is expected to grow strongly in next 10 years.
- Heavy commodities such as wood and wood products are particularly affected by transportation costs.
- Improved land access and handling facilities at NC ports would support greater capture of world market by NC producers.

Source: AECOM, from IHS Global Insight projected growth and PIERS historical data

Ro-Ro and Oversize Cargo

Annual Tonnage

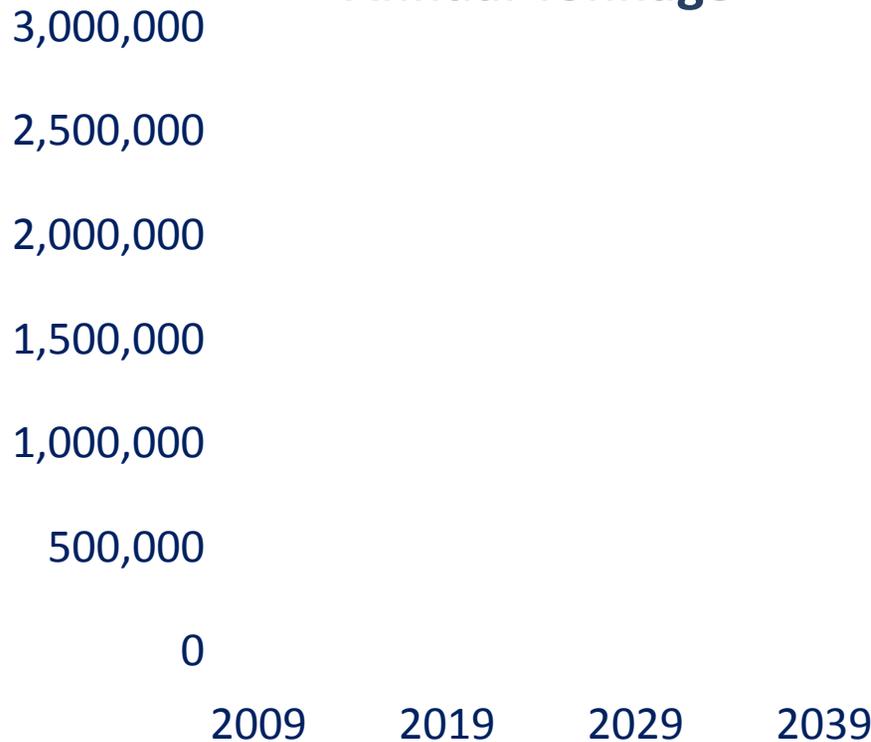


Source: AECOM, from IHS Global Insight projected growth and PIERS historical data

- Producers of manufactured goods, especially those who make large bulky products such as Caterpillar and Spirit AeroSystems, rely on port access to receive parts and to deliver products to customers.
- Opportunity includes wind power.
- These are attractive employers because they not only hire workers directly, but they also make large purchases of goods and services from the economy, which also indirectly supports jobs.
- Requires port, road, and rail facilities that can handle large/heavy goods.

Chemicals and Phosphates

Annual Tonnage



- Supports large existing industry with solid baseline growth
- This is already a source of strength for NC Ports; no cost or other impediment to remove to foster stronger growth

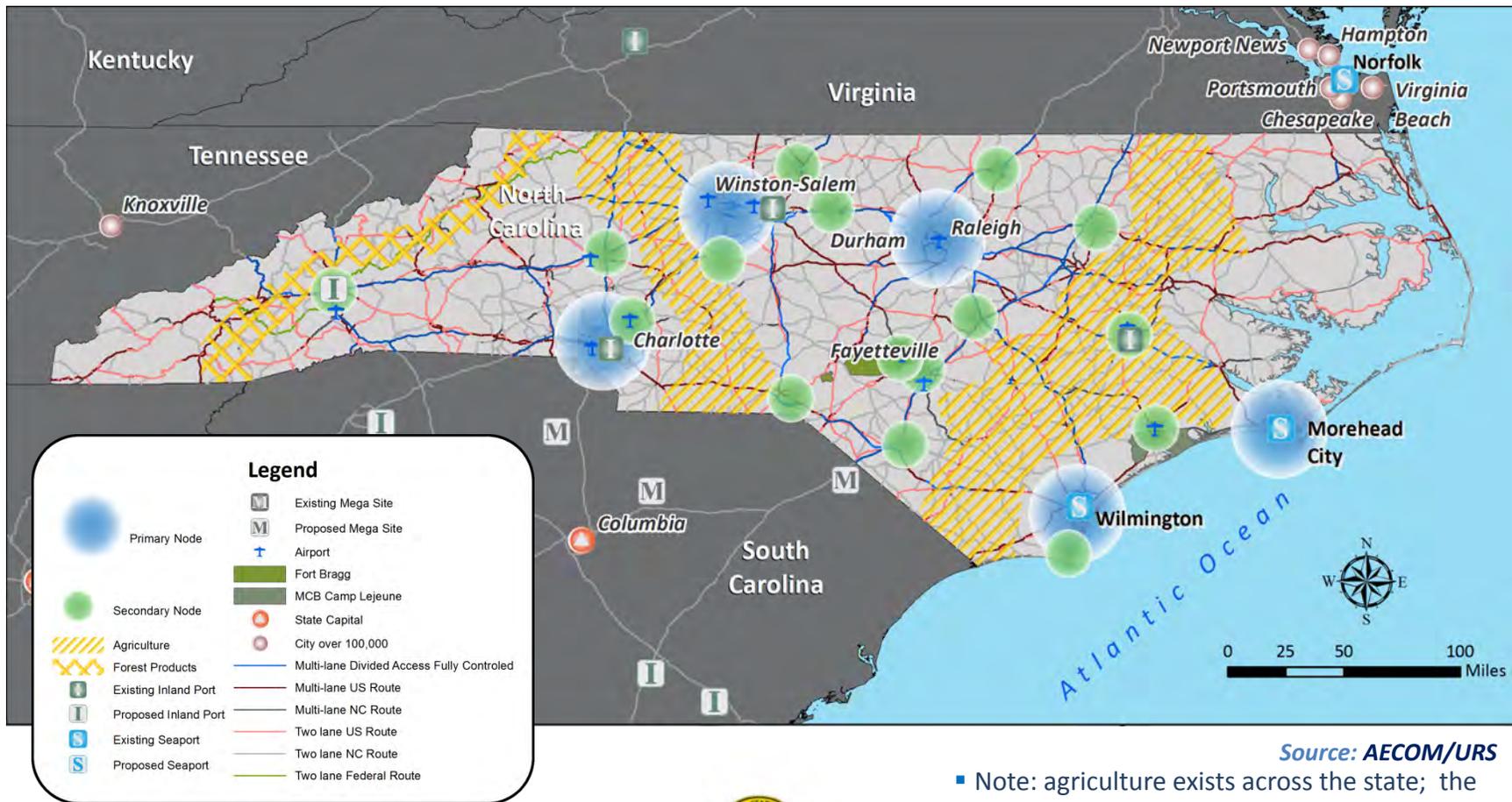
Source: AECOM, from IHS Global Insight projected growth and PIERS historical data

Military Cargo

- Both the Port of Wilmington and the Port of Morehead City are designated as Strategic Seaports, two of just 15 nationwide.
- Infrastructure needs to handle military cargo:
 - 35-ft+ water depth
 - Container cranes and mobile harbor cranes with various grabs
 - Ro-Ro facilities
 - Open area near the wharf that can meet military storage and security needs
 - Truck and rail access that can accommodate heavy loads
- The economic return on investment to preserving the Ports' attractiveness to the military is important. Military facilities support over 416,000 workers, about 8% of total State employment, through military or jobs supported by military installations in the State.



NC Freight Nodes and Facilities



Source: AECOM/URS

- Note: agriculture exists across the state; the areas of dense agricultural production illustrated are intended to be representative

Transportation Challenges

- Improving water, road and rail access to existing and potential port locations is important to the cost-effective movement of goods. Limited State and Federal funding means that these investments must be prioritized for greatest benefit.
- **Highways**
 - Gaps in North Carolina highways limit access between inland trade centers and port locations.
 - Due to road congestion, trucks leaving Morehead City or Wilmington will be able to travel fewer miles in one day in 2040 than they did in 2007.
 - On average, trucks using all East Coast ports will be able to travel fewer miles in one day in 2040 than they did in 2007.

Transportation Challenges (cont'd)

■ Railroads

- Lack of sufficient volume on NC's freight rail network makes rail service more costly to the State's businesses.
- Improved at-port rail connections are needed.

■ Water

- The existing Cape Fear Channel is limited to 42-ft authorized water depth.
- The Port of Wilmington lies 26 miles upriver from the ocean.
- Larger vessels are challenged to navigate the S-turn configuration at the Cape Fear entrance channel.
- Morehead City is authorized to 45-ft water depth and is located less than 4 miles from open ocean.

Next Steps

- Quantify investments that can reduce transport costs to North Carolina shippers
- Evaluate shipper cost savings that can be achieved through more efficient transportation network
- Translate growth in maritime volumes into economic benefits
- Align strategies with other North Carolina initiatives
- Develop evaluation measures

- For more information and project updates, please visit our website at www.ncmaritimestudy.com