

North Carolina Department of Transportation Board Meeting

August 3, 2011
Wilmington, NC

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.



Project Team

- **AECOM**
 - Global engineering firm with 52,000 staff in 100 countries
 - Industry leader in transportation, rail/transit, ports & marine
 - 25 years in North Carolina
- **URS**
 - Global engineering firm with 45,000 staff
 - 45 years in North Carolina
- **Eydo**
 - public involvement for NCDOT and NCRR

THE TOP 500 DESIGN FIRMS		
RANK		
2010	2009	FIRM
1	2	AECOM TECHNOLOGY CORP., Los Angeles, Ca
2	3	URS CORP., San Francisco, Calif.†
3	1	JACOBS, Pasadena, Calif.
4	4	FLUOR CORP., Irving, Texas†
5	5	CH2M HILL, Englewood, Colo.†
6	7	BECHTEL, San Francisco, Calif.†
7	10	AMEC, Tucker, Ga.†
8	8	TETRA TECH INC., Pasadena, Calif.†
9	9	KBR, Houston, Texas†
10	6	THE SHAW GROUP INC., Baton Rouge, La.†
11	13	HDR, Omaha, Neb.†
12	11	PARSONS BRINCKERHOFF INC., New York, N
13	12	PARSONS, Pasadena, Calif.†
14	15	BLACK & VEATCH, Overland Park, Kan.†



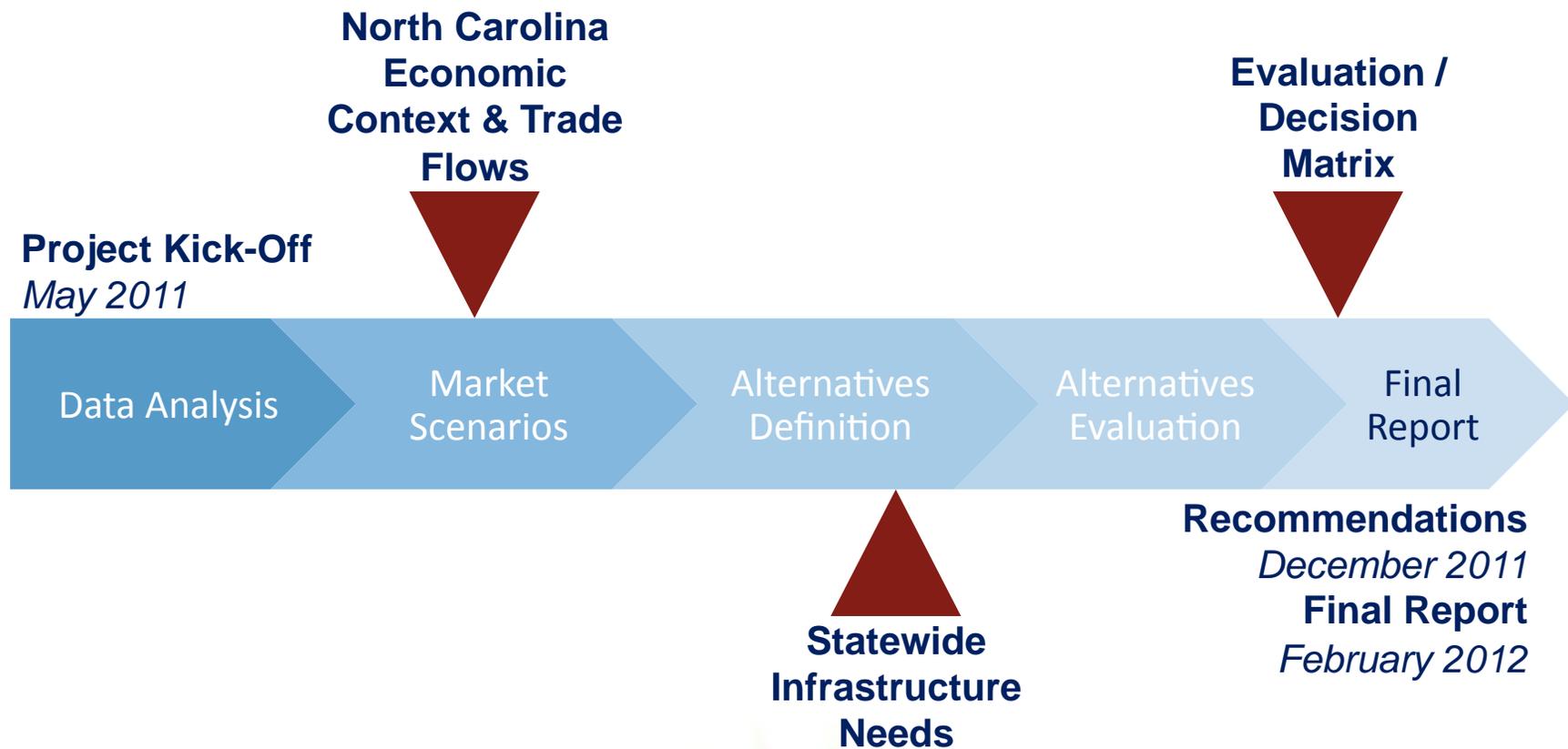
Maritime Study Scope

- Conduct an open evaluation of 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.

Study Outcomes

- ✓ Decision tool and process for evaluating port and related multi-modal investments
- ✓ Basis for long- and short-term investment strategy for more efficient, effective and safe movement of waterborne cargo in and out of the state
- ✓ Identification of priority projects
- ✓ Support for long-range planning
- ✓ Address institutional issues to approach maritime transportation issues in a more seamless manner

Summary Schedule and Milestones



Maritime Strategy Executive Team

- Walter Dalton – Lt. Governor (Chair)
- Al Delia – Governor’s Policy Advisor (Vice Chair)
- Keith Crisco – Secretary Department of Commerce
- Dee Freeman – Secretary Department of Environment and Natural Resources
- Gene Conti – Secretary of Transportation

Maritime Advisory Council

- Public and private sector industry representatives:
shippers, shipping lines, trucking, railroad, agricultural and manufacturing interests, along with government, policy, academic and community-at-large representatives

Feedback from Advisory Council

- Vast and varied knowledge of Advisory Council
- Highly engaged
- Topics of interest :
 - **Market:** demand-based goals for capture of regional waterborne trade; niche market opportunities
 - **Port competitiveness:** better coordination between port-related industries, increased port availability, examination of “deep water” facility in NC
 - **Infrastructure needs:** road and rail access; container-handling capacity; reduction of total delivery time/cost

Stakeholder Coordination

- Focused meetings
 - US Army Corps
 - NC Dept of Coastal Resources
 - Progress Energy / NRC
 - NC Tourism
 - NoPort Southport
 - Save the Cape
 - Yes Port NC
 - Metropolitan Planning Organizations
 - Chambers of Commerce
- Industry workshops
 - Trucking and railroads
 - Shippers
 - Agriculture
 - Military
 - Non-Ag manufacturing
 - Special zones
 - Shipping lines

Focused Meetings Held to Date

- No Port Southport and Save the Cape
 - Economic and market need for NCIT
 - Safety and security
 - Environmental impacts: aquifer and channel
 - Health impacts of port operations
 - Landside infrastructure and impacts
- US Army Corps of Engineers
 - Limited funding for dredging
 - Priorities based on port volumes, channel distance, military needs
 - Feasibility study at Cape Fear will examine shoaling at Bald Head Island, S Turn at Battery Island, and enlarged turning basin

Focused Meetings Held to Date

- Southport/Oak Island Chamber of Commerce, Brunswick County Economic Development Commission
 - Need for new industry and jobs to sustain the region
 - New port developments must be “green”
 - Objective facts and documentation
- YesPort NC
 - Need for jobs
 - Proposed NCIT site and new 4-lane highway should be considered
 - Port operations should not be blamed for environmental damage to fisheries in the Cape Fear River (agricultural and suburban runoff)

Industry Workshops Held to Date

- Railroad, Trucking and Distribution
 - Interest in ongoing coordination and input to North Carolina port strategies
 - Promising markets for North Carolina: wood pellets and other bulk commodities
 - Volume is key to enhancing rail service to ports
 - Look to highway improvements for distances 300 miles or less (match competitive trucking distances)

Public & Stakeholder Outreach

Media release / public project launch	May 6, 2011
Advisory Council meeting 1 (freight flows/trends)	May 10
Project website launch: www.ncmaritimestudy.com	May
Project brochure	September
Public workshops – series 1	Early Fall
Stakeholder meetings and workshops	May thru September
Advisory Council meeting / input (market scenarios)	July
Advisory Council meeting / input (infrastructure needs)	September
Advisory Council meeting / input (evaluation approach)	October/November
Public workshops – series 2	Late Fall / Winter
Advisory Council meeting / input (decision matrix)	December

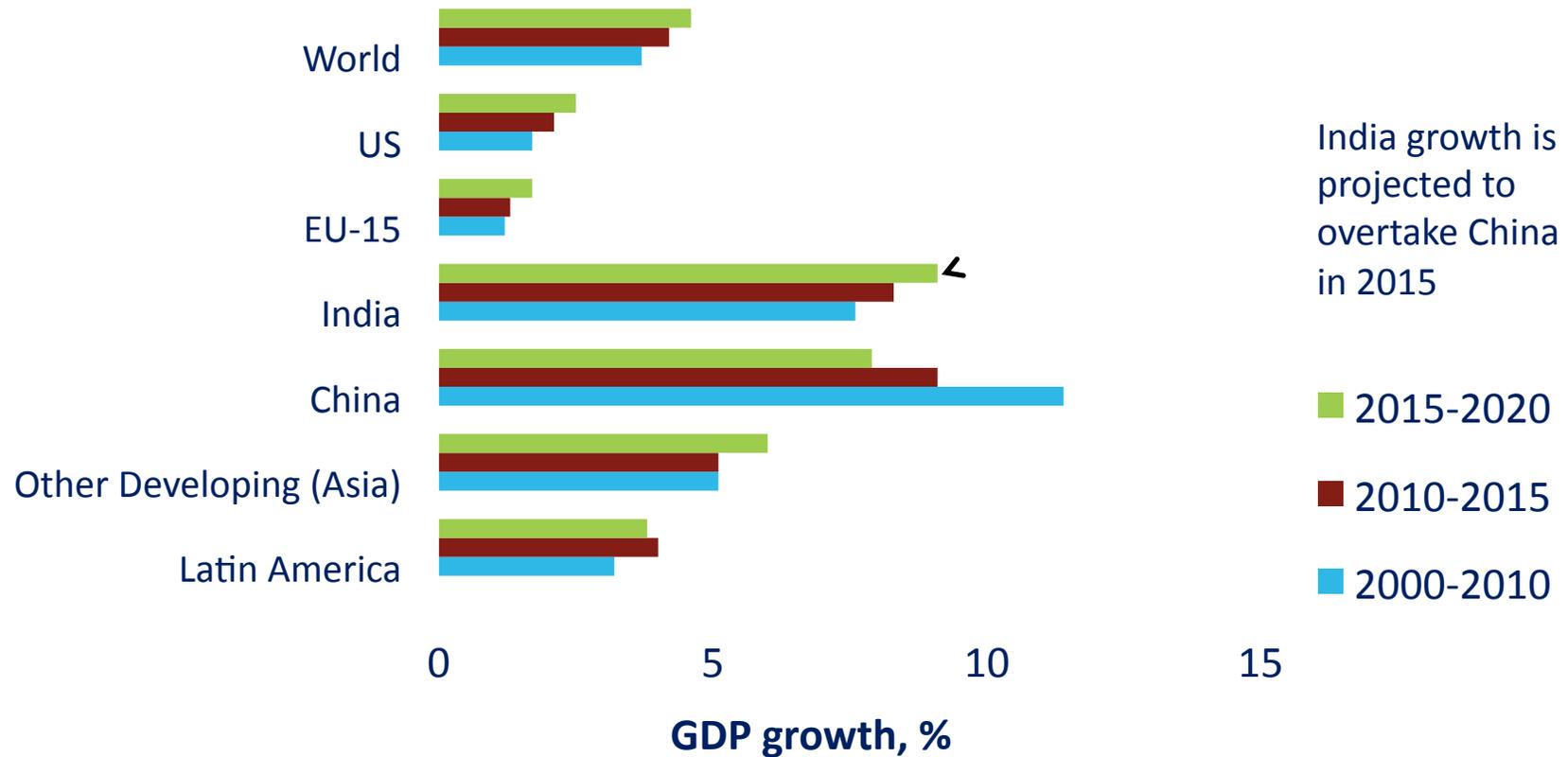
North Carolina's Global Trade Partners

NC Ports Top Import Origins (by Volume)	NC Ports Top Export Destinations (by Volume)
1. China (Port of Wilmington [POW])*	1. China (POW, Port of Morehead City [MC])*
2. Brazil (POW)*	2. India (MC)
3. Mexico (MC)	3. Brazil (MC)*
4. Korea (POW)*	4. Korea (POW)*
5. Columbia (POW)	5. Belgium (POW)*
6. Venezuela (MC)	6. Taiwan (POW)*
7. Belgium (POW)*	7. Turkey (POW)
8. Indonesia (MC)	8. Great Britain (POW)
9. United Kingdom (POW)	9. Argentina (MC)
10. Taiwan (POW)*	10. Honduras (POW)

Source: US Census, NCSPA

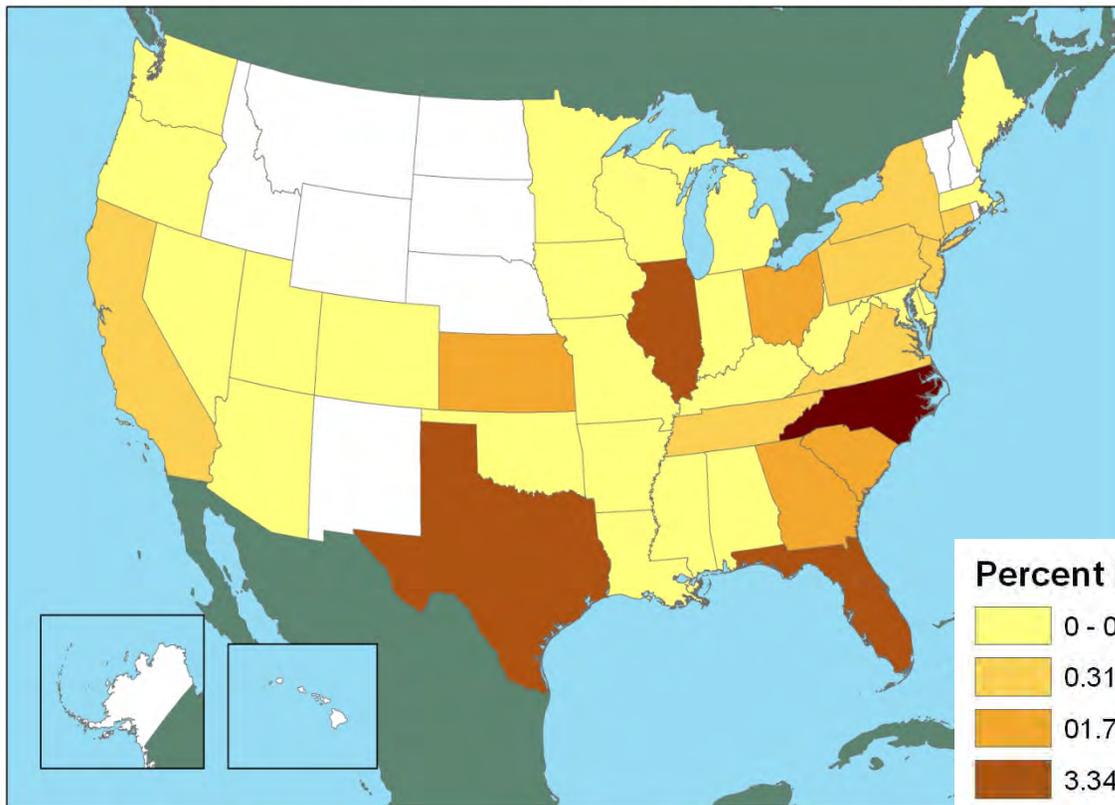
* Top ten trading partner for both imports and exports

Growth Outlook for North Carolina's Global Partners



Source: Conference Board Global Economic Outlook, March 2011

Domestic destination of imports entering the US through North Carolina ports in 2009

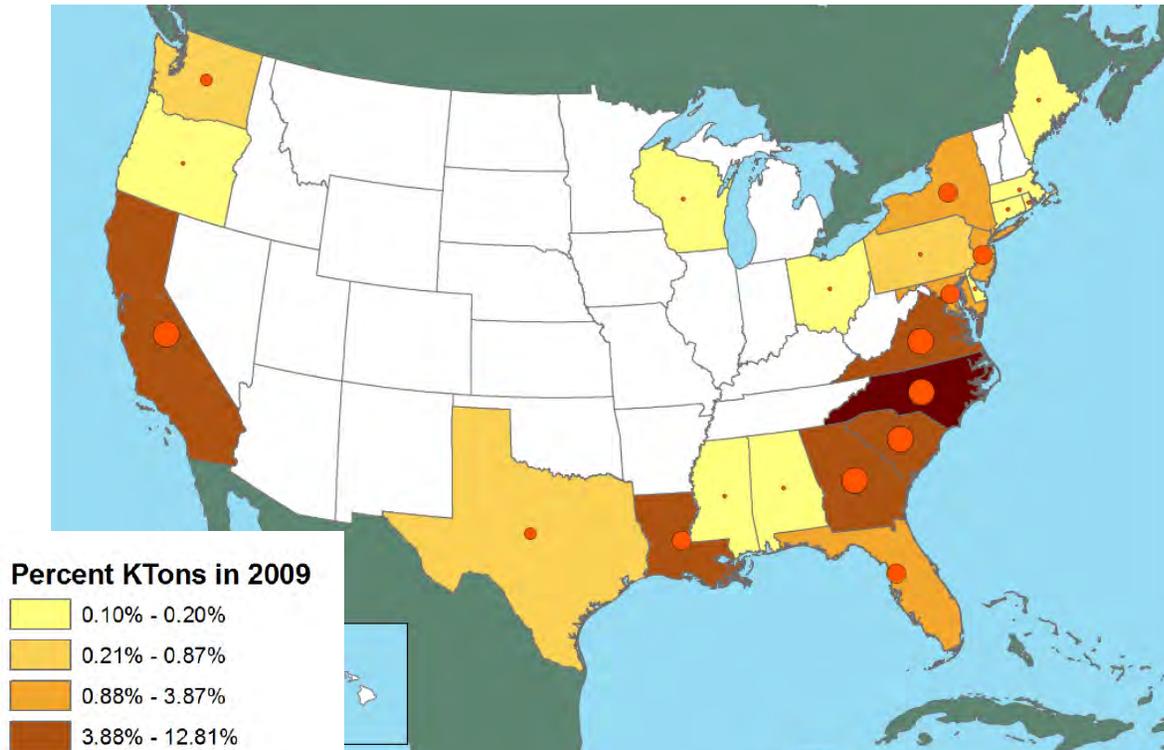


- North Carolina is the leading destination for NC port imports
- Florida, Illinois and Texas importers use North Carolina facilities despite the distance and their own port facilities

Shading in chart reflects exports by volume.

Source: AECOM /URS, assembled from FAF 3.1 and USGS ThematicMapping

States of entry for North Carolina waterborne imports, 2009 & 2040

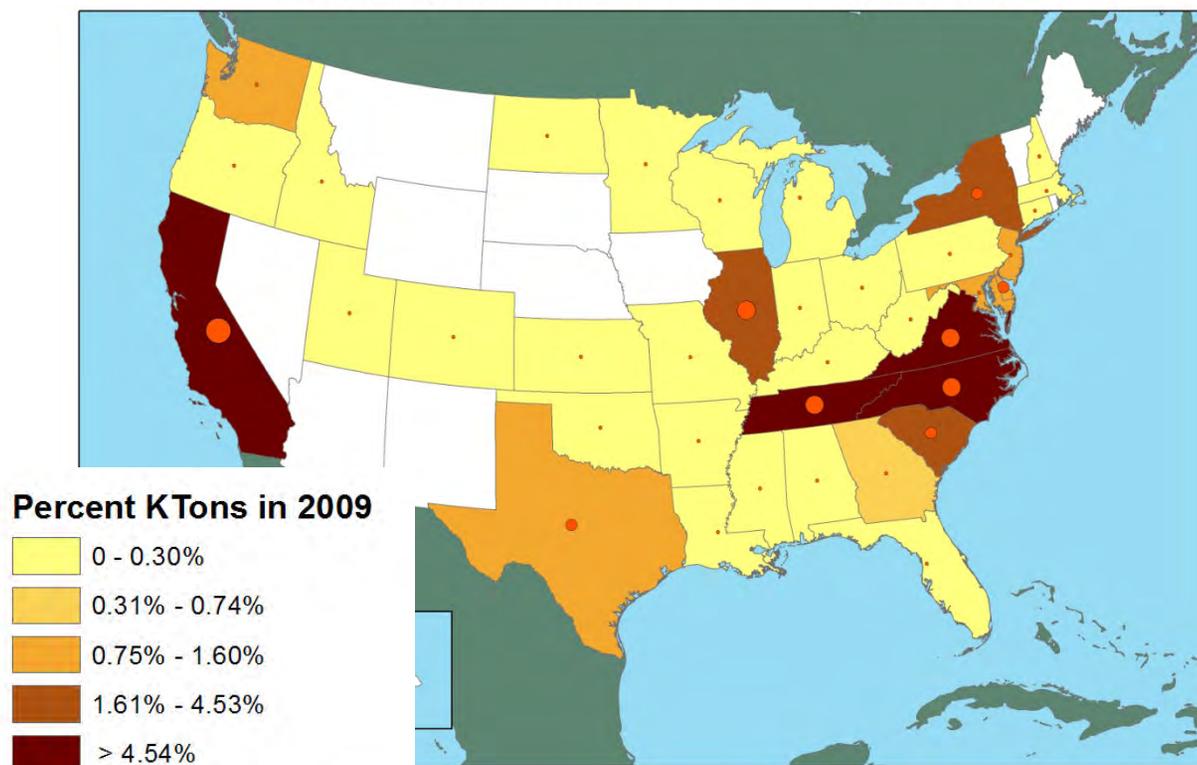


- More than 80% of NC imports arrive through ports in North Carolina, Virginia, Georgia, South Carolina, California and Louisiana
- In 2040, use of North Carolina and Louisiana ports for import is projected to decline in favor of ports in Georgia and California

Shading in chart reflects exports by volume.

Source: AECOM /URS, assembled from FAF 3.1, 2010, United States Geological Survey, ThematicMapping world borders dataset

States that use North Carolina's ports to export, 2009 & 2040

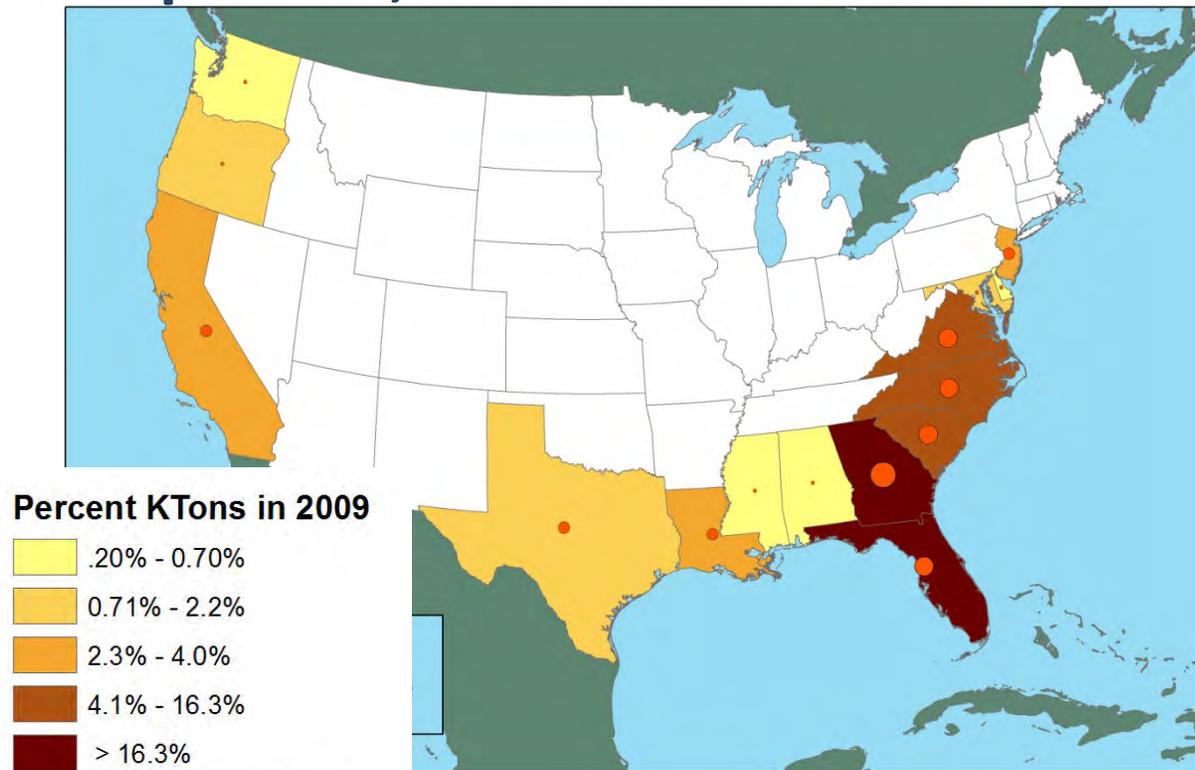


Source: AECOM /URS, assembled from FAF 3.1 and USGS Thematic Mapping

- Tennessee shippers use NC port facilities more than in-state shippers do (by volume)
- California shippers are the third largest customer base for NC ports (by volume)
- Despite the ports in their own states, Virginia and South Carolina shippers still rank in the top ten for use of NC ports
- Illinois shippers use NC port facilities more than in-state shippers do (by value)

Shading in chart reflects exports by volume.

Waterborne exports from North Carolina by state of departure, 2009 and 2040

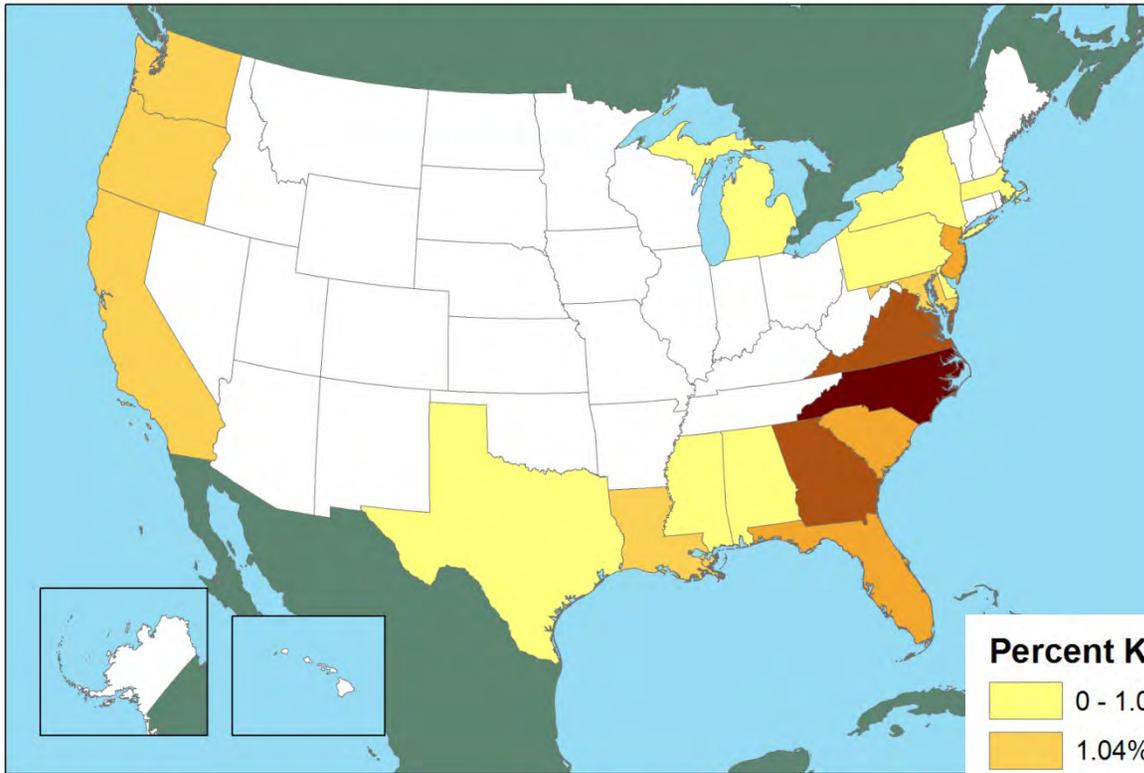


Source: AECOM /URS, assembled from FAF 3.1 and USGS ThematicMapping

- North Carolina shippers use facilities in Florida and Georgia more than they use NC ports
- Virginia and South Carolina are also important to North Carolina shippers
- Southeastern gateways favored

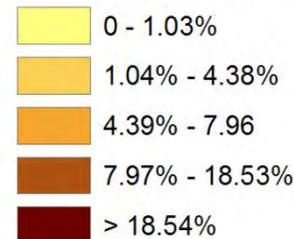
Shading in chart reflects exports by volume.

Waterborne agricultural exports from North Carolina by state of departure, 2009



- North Carolina exporters of agricultural goods rely most heavily on in-state facilities.
- Virginia and Georgia are also important for North Carolina’s agricultural exports.
- Ag products also shipped cross-country to West Coast ports.

Percent KTons in 2009

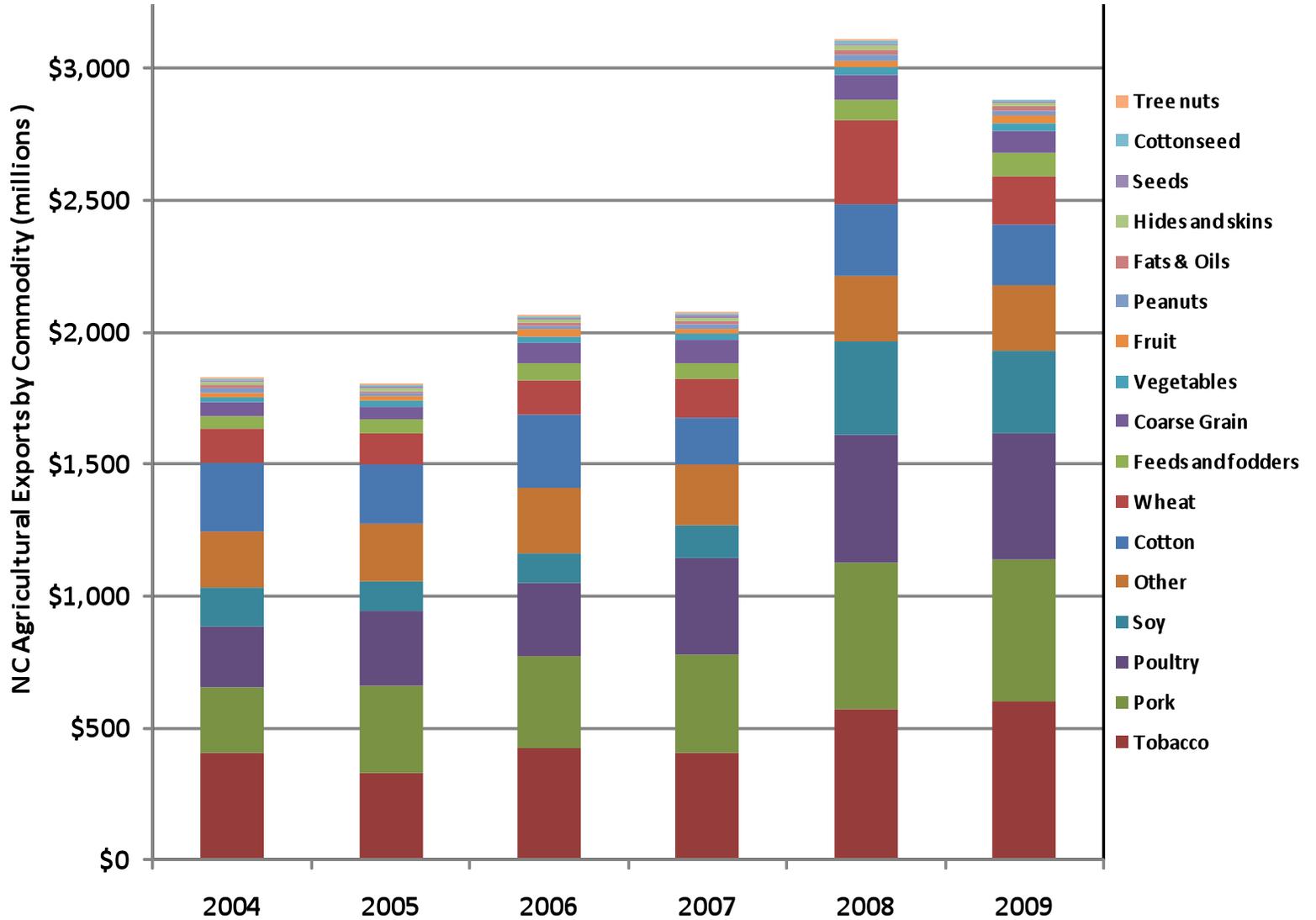


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Source: AECOM /URS, assembled from FAF 3.1 and USGS ThematicMapping

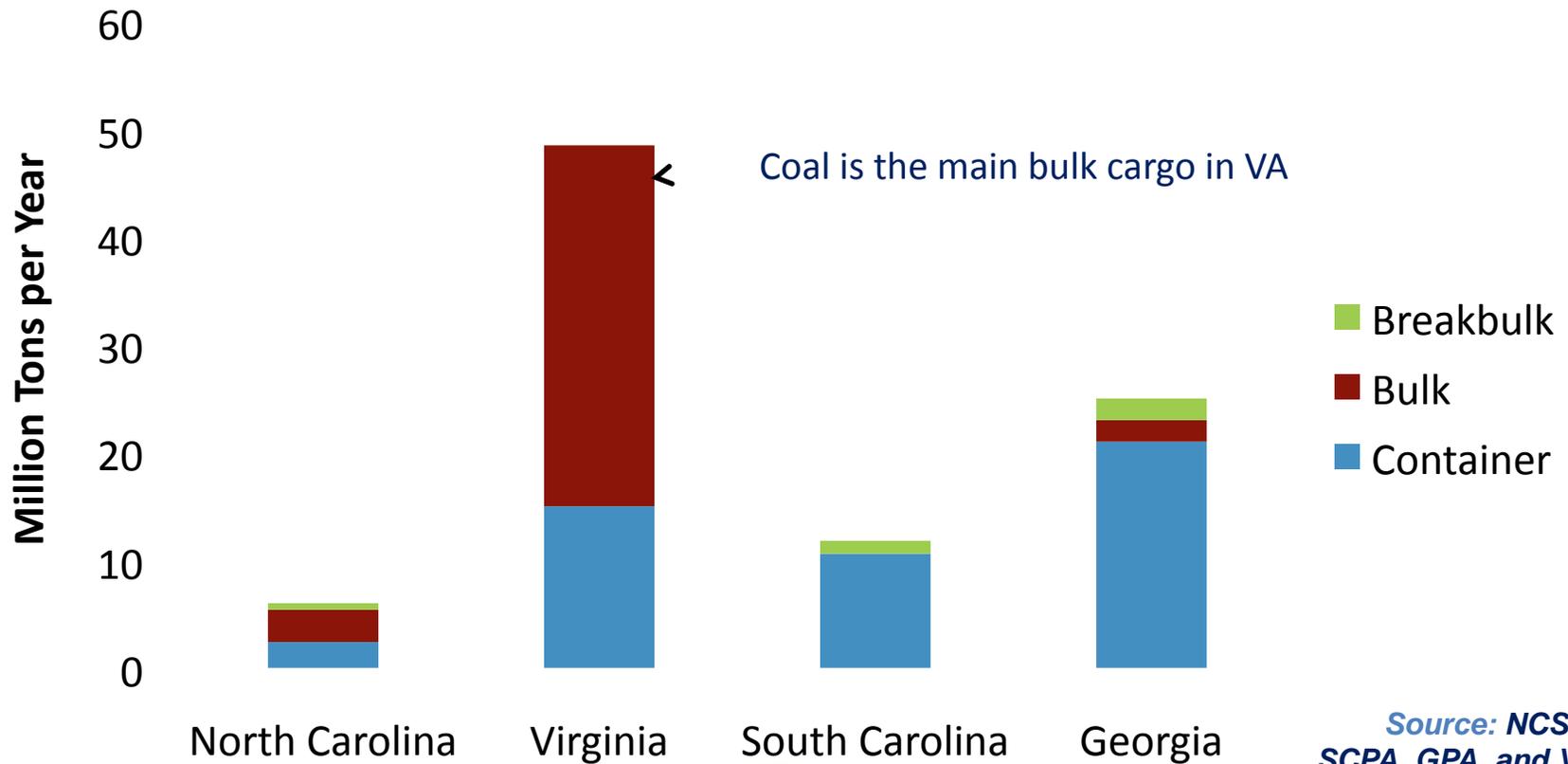
North Carolina Agricultural Exports

Includes goods exported via all modes

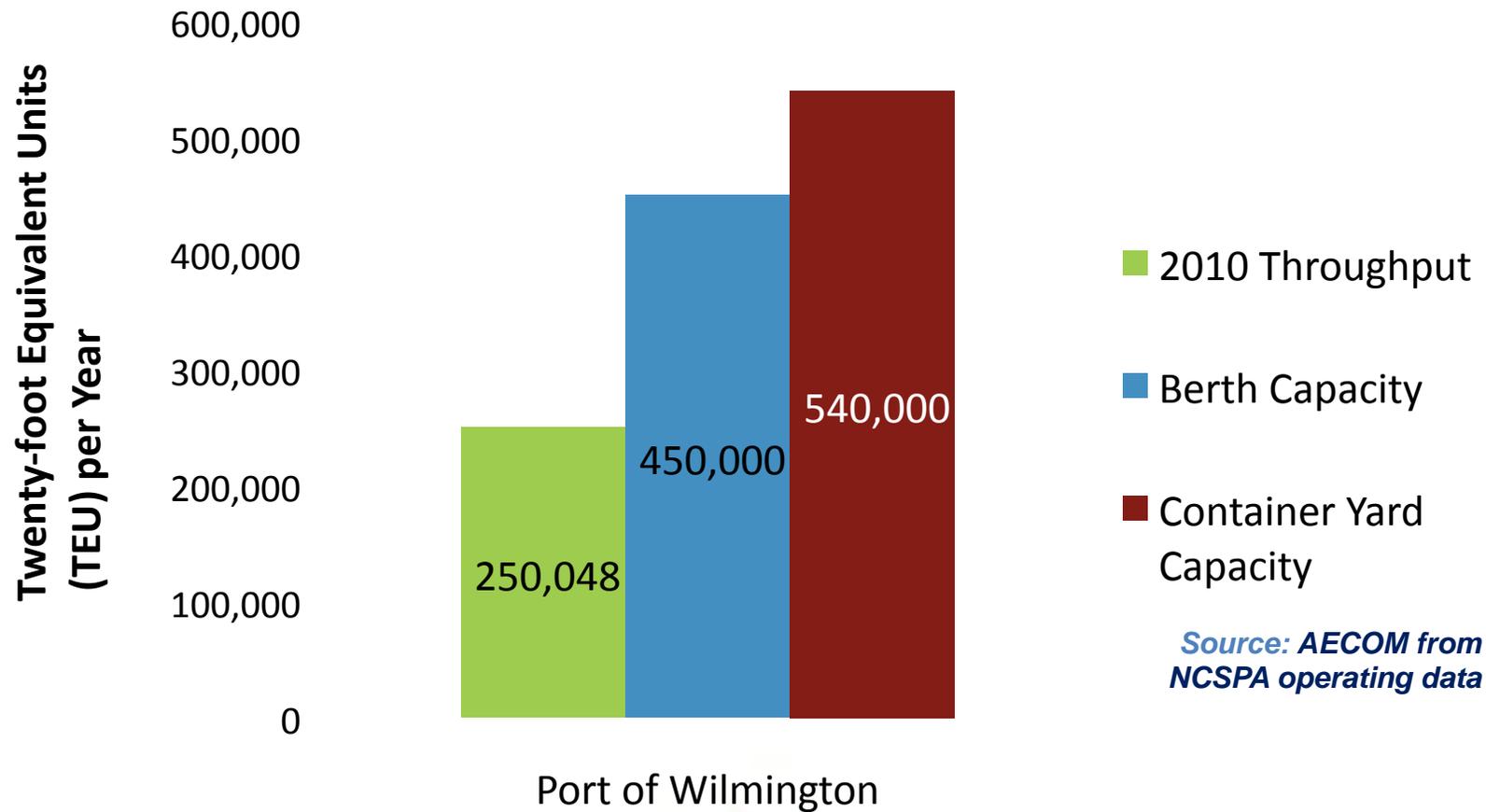


Data source:
 NC Dept of
 Agriculture

How do North Carolina Ports Compare to the Competition?

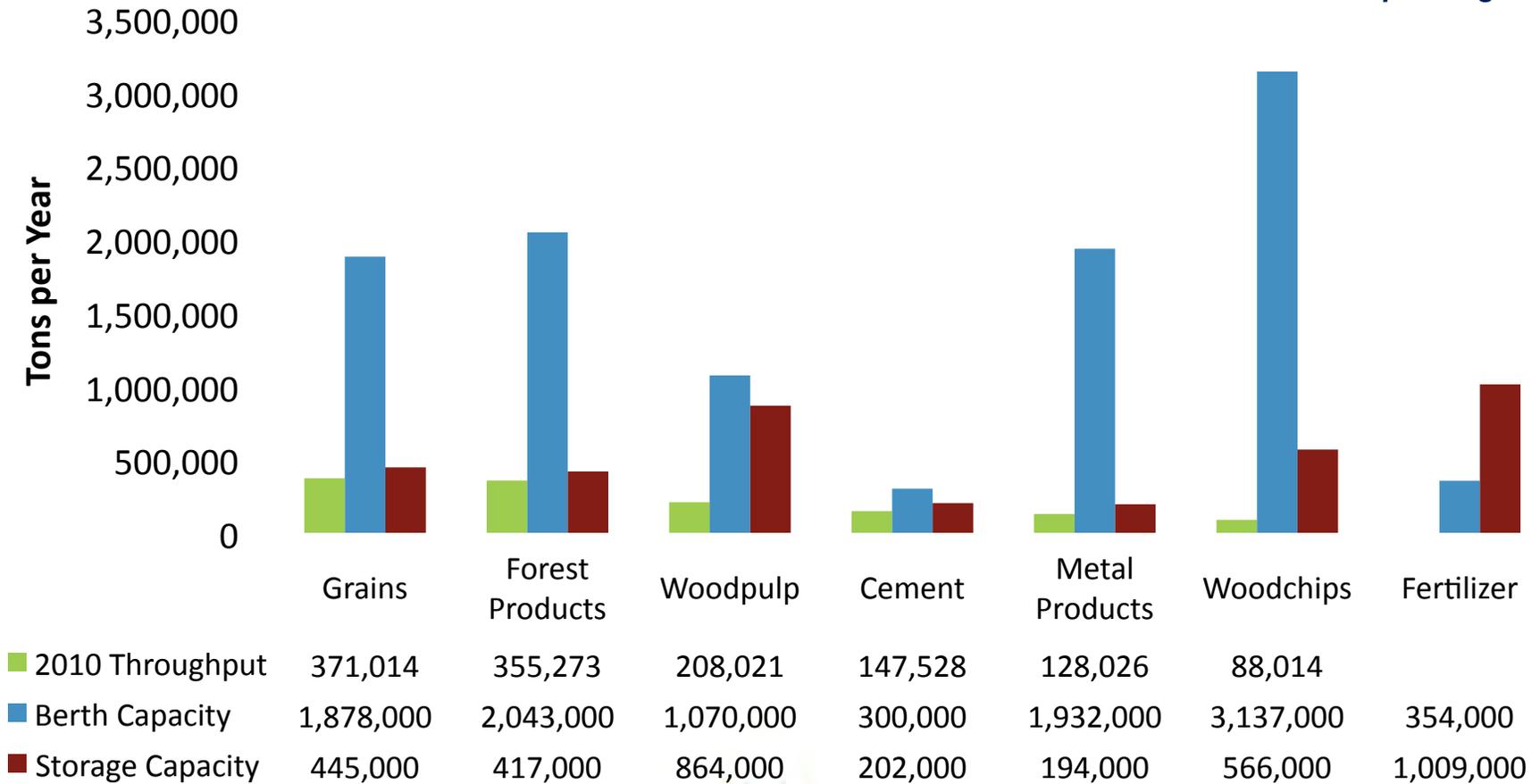


Wilmington Container Capacity



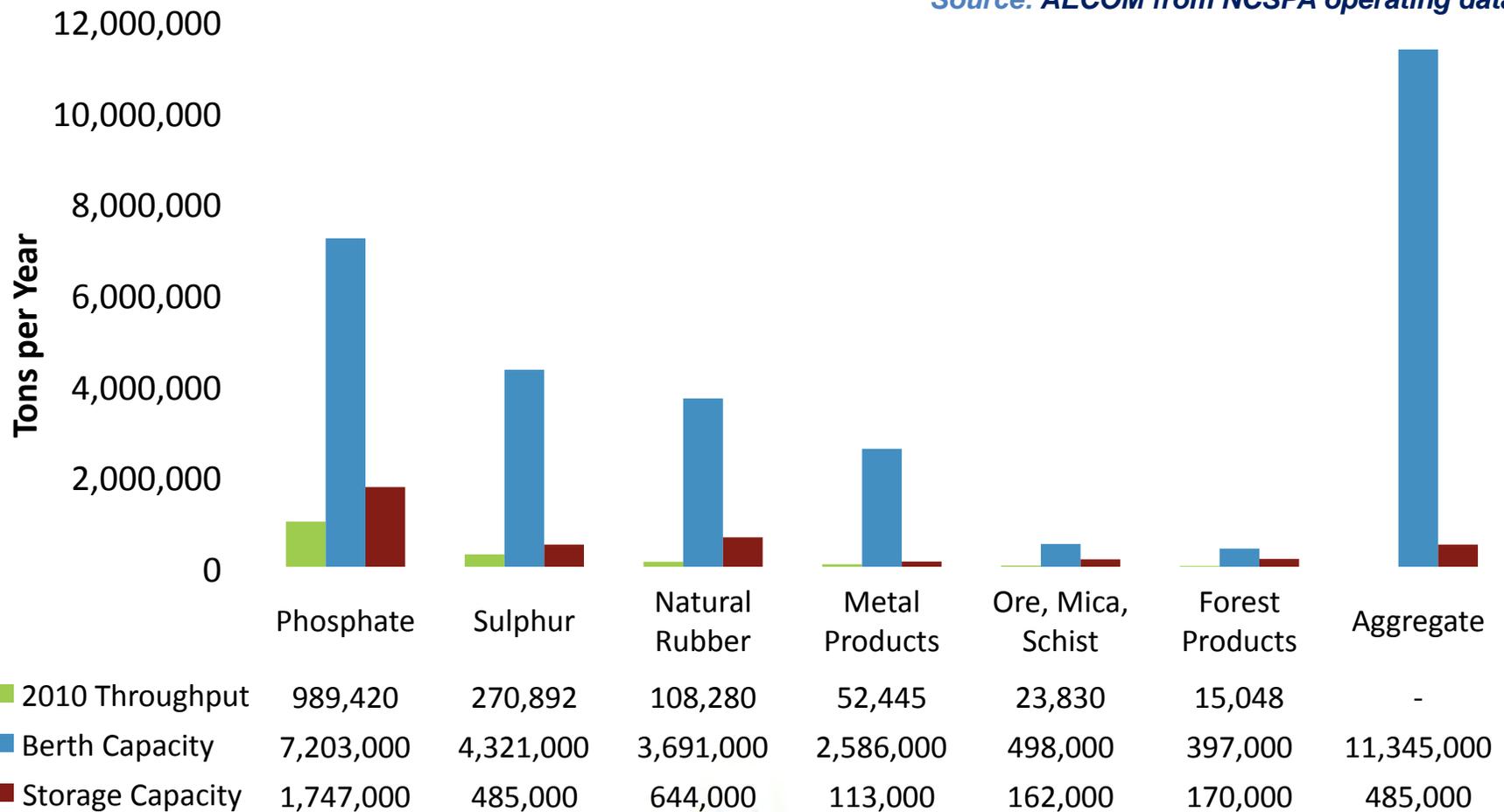
Wilmington Bulk & Breakbulk Capacity

Source: AECOM from NCSPA operating data



Morehead City Bulk & Breakbulk Capacity

Source: AECOM from NCSPA operating data



Initial Profile of North Carolina Ports

- North Carolina ports have available capacity for business growth and some ability to expand (with limitations)
- Import/export trade imbalances – different at Wilmington and Morehead City
- Comparatively uncongested highways relative to other Atlantic ports , but there are landside access challenges
- Low in-port costs are offset by landside and water access (time and distance to market)
- Strength in non-containerized cargo
- 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

Market Scenario Framework

Upper Bound	Conservative	Lower Bound ("Do Nothing")
Advance Market Position	Maintain Market Position	Declining Market Position
Growth Outcome		
<ul style="list-style-type: none"> Market share capture or decline 		<ul style="list-style-type: none"> New markets
Necessary Conditions		
<ul style="list-style-type: none"> Vessel calls and sizes 	<ul style="list-style-type: none"> Port capacity and equipment 	<ul style="list-style-type: none"> Land and water access Industry growth
Risks		
<ul style="list-style-type: none"> Improvements at competitor ports outpace NCSPA investments in capacity, reliability, and efficiency Competitor ports attract more frequent ship calls Business costs rise in NC, tempering manufacturing growth Spending profile of aging NC population shifts away from goods; migration weakens Key bulk and breakbulk markets falter Containerization of bulk/breakbulk accelerates 		
Strategies		
<ul style="list-style-type: none"> Cooperative agreements 	<ul style="list-style-type: none"> Niche markets 	<ul style="list-style-type: none"> Targeted infrastructure investments Leverage strength in bulk and breakbulk

Potential Benefits from Port Investment

- Job creation and associated earnings
- Economic diversity
 - Resilience to economic cycles
 - Compatibility with the State’s other significant economic drivers
- Productivity gains to industry: competitiveness
- Public benefits
 - Fiscal returns to the state
 - Potential to reduce road VMT when part of larger freight plan
 - Potential to focus freight in particular corridors and reduce freight and passenger conflicts when part of larger freight plan
 - Alignment with State sustainability objectives for land use and environmental impacts

Mega container terminal

- 50+’ water depth to accommodate Neo Panamax vessels
- Dock cranes of minimum 20 container reach
- 3 or more contiguous berths
- High density (stacked) container storage area (backland)
- Automated or automatable
- On-terminal rail in North America
- Truck access



AECOM



URS

Mid-range container terminal

- 40+' water depth to accommodate Panamax vessels
- Dock cranes with minimum reach of 13 containers
- 2 or more contiguous berths
- Medium to high density (stacked) container storage area (backland)
- Rail on- or near terminal is desirable
- Truck access



Container-on-barge services

- Requires only 10'+ water depth
- Barges can be 36 TEU or larger
- Single tug can move multiple barges
- Very common in Europe
- 4% of Norfolk containers move via barge



Roll-on, Roll-off (Ro-Ro) service

- 35'+ water depth
- No cranes required
- Open storage area near wharf
- Rail access is desirable for auto market
- Truck access



Bulk goods

- 40'+ water depth, considerably more for some cargoes
- Specialized vessel loaders, or mobile harbor cranes with grabs
- Custom storage facilities
- Silos/buildings for dry goods
- Custom loaders for trains/trucks
- Road and rail capacity to match vessel demand



Breakbulk goods

- 40'+ water depth
- Mobile harbor cranes with various grabs are most common
- Open storage area or warehousing near wharf
- Road and rail capacity to match vessel demand

Many traditional breakbulk goods are now moving by container...



Project and military cargo

- 35'+ water depth
- Mobile harbor cranes with various grabs are most common
- Loading/storage/security needs vary for various military cargo
- Open storage area near wharf
- Rail access on dock is appealing for heavy loads
- Truck access – heavy/wide loads



...Wind turbines have been a high-growth market

Port of Wilmington: Existing Container Terminal

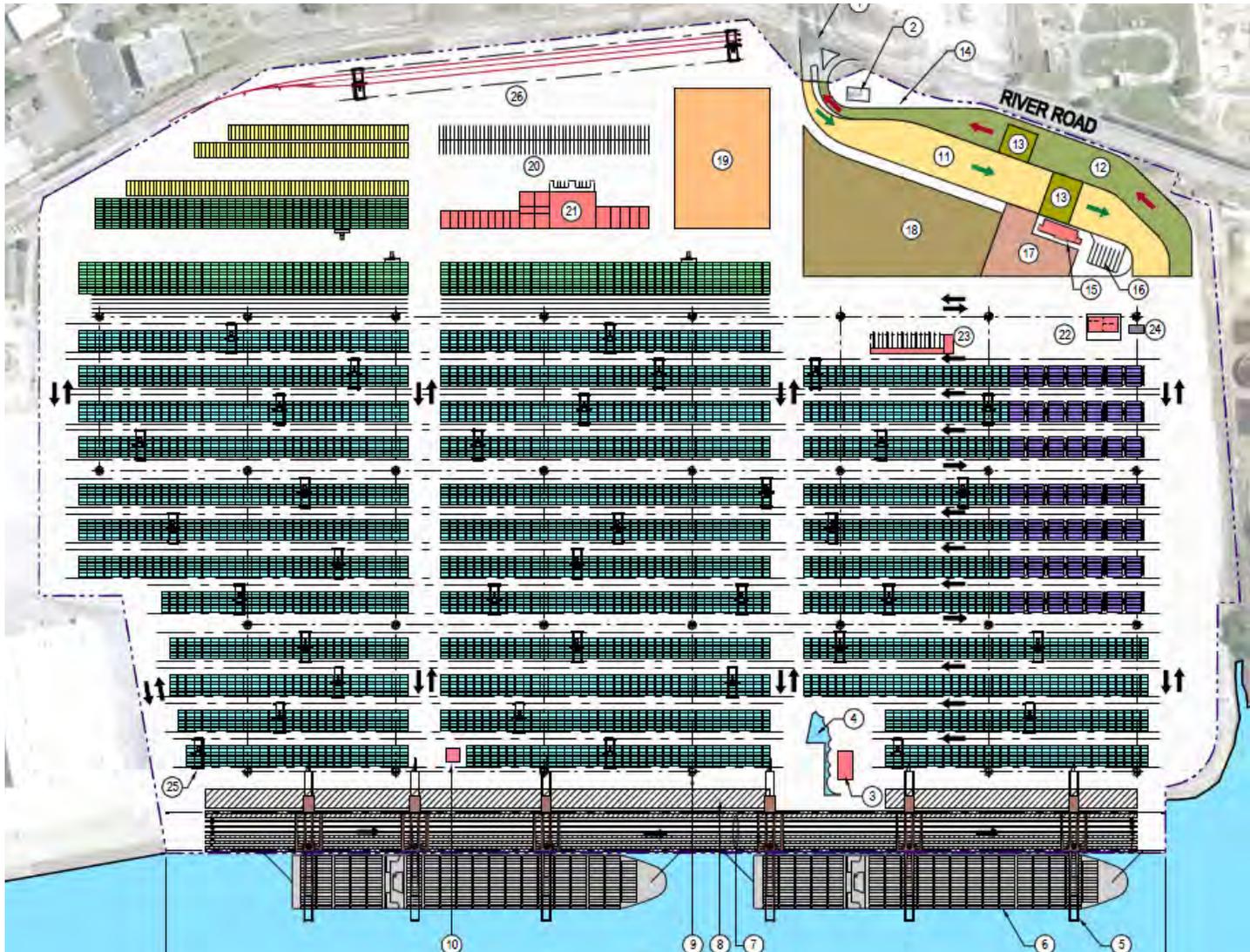


Key Features

- 1- 100' rail gauge wharf with 4 cranes (Berth 9)
- 106 acre terminal gross terminal area
- Reach stacker operations
- Entry/exit gate and other uses in center of container yard
- 450,000 TEU/ year capacity

Source: NCSPA and AECOM

Port of Wilmington Alternate Layout: 2 Berths, Rubber Tired Gantry Operations



Key Changes from Existing

- 2nd 100' rail gauge wharf for total 2670' premium berth length
- Entry/exit gate relocated
- Expanded to 143 acres
- Fumigation building and transit shed removed
- 1,070,000 TEU /year capacity

Source: AECOM

Port of Morehead City, Radio Island Alternate Layout: 2 Berths, Rubber Tired Gantry Operations

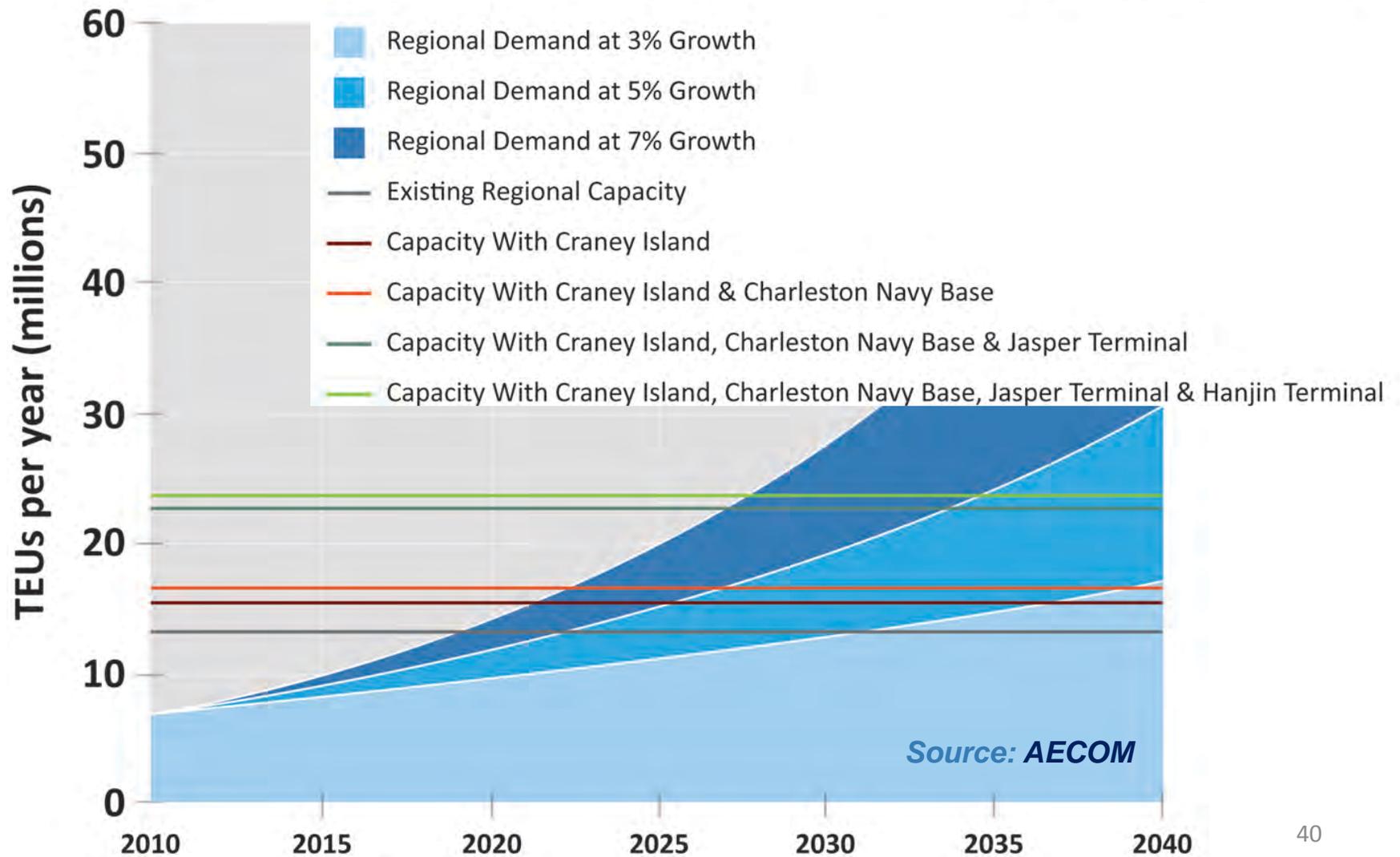
Key Features

- 2 premium berths with 2700' total length
- 136 acre terminal area
- Leaves intact existing bulk terminal
- Rubber-tired gantry operations
- 960,000 TEU/year capacity



Source: AECOM

Regional Container Demand vs. Capacity



The Importance of Travel Time

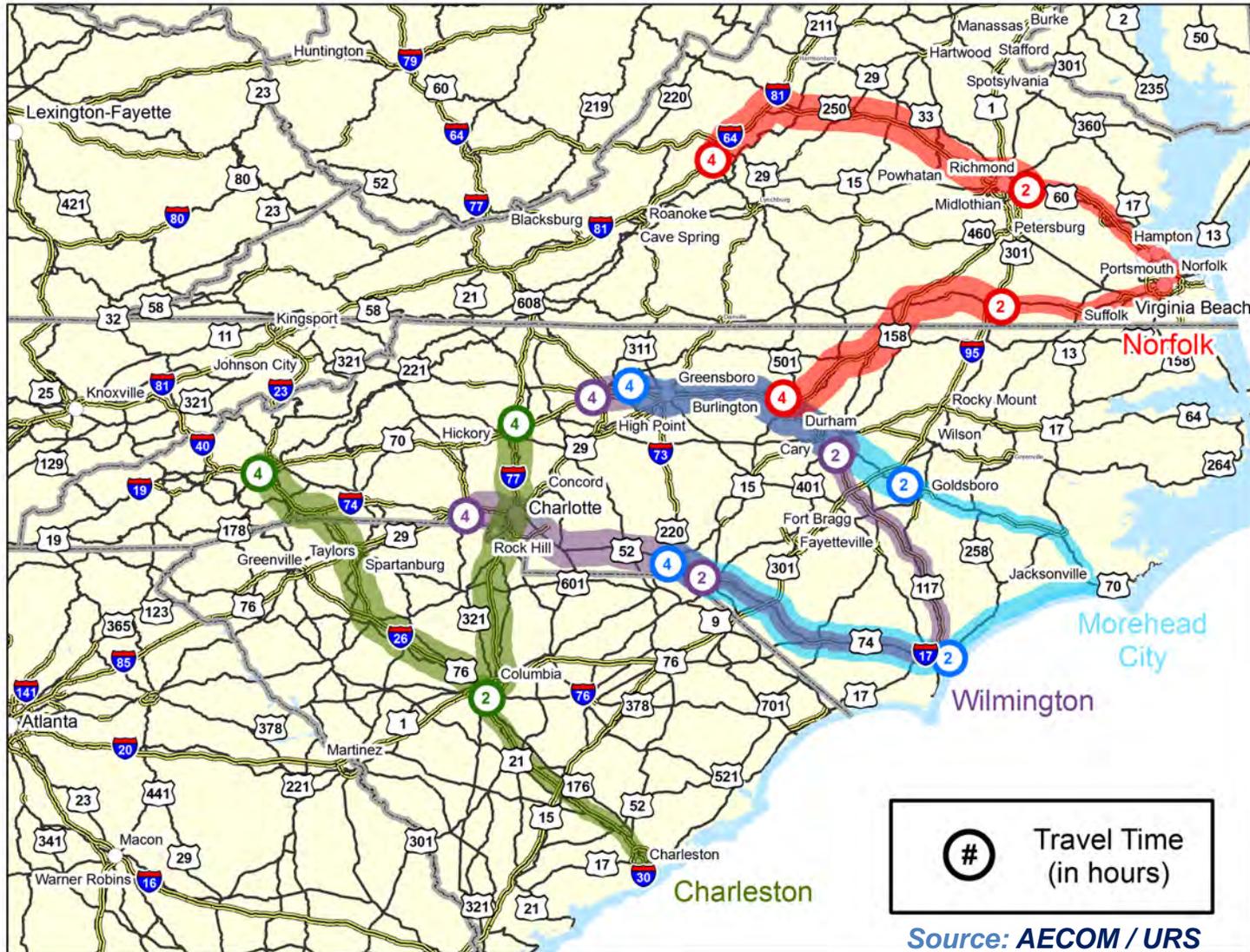
- Total cargo transport time – across water, through port, on road and rail – is a key factor in choosing a port
- Water route, channel length, handling and re-handling, drayage, highway speed and capacity, and railroad service all affect cargo transport time
- Proposed infrastructure investments will be driven by ability to reduce cargo travel time and delivered cost

Advisory Council survey rankings of importance:

1. Total delivery time
2. Reliable travel time
3. Overall transportation cost
4. Highway access
5. Railroad access
6. Port handling cost

Note: Ranking of selected transportation issues in choosing a port for import/export, from online survey of Advisory Council members

Travel Time from Regional Ports



Next Steps

- Finalize market scenarios
- Define infrastructure needs
 - Port, water, road, rail and inland facilities
 - Investment required
- Determine economic benefits
- Develop matrix of alternatives
- Continued coordination with industry and public stakeholders

Related and Parallel Efforts

- Additional public workshops
 - Morehead City and Wilmington
- Support to NCSPA Strategic Plan
 - Organizational structure
 - Mission and goals
 - Maintenance and preservation of assets
 - Port operations, including near term investments and cash flow projections

NORTH CAROLINA
MARITIME Strategy

Thank You!

questions & answers

AECOM



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