

NORTH CAROLINA
MARITIME Strategy

**NC Maritime Strategy
Action Plan for Further Data Collection and Analysis
Prepared for the North Carolina Department of Transportation**

by

**AECOM
in association with URS**

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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 cargos. 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.

As an initial activity of the Maritime Strategy development, the AECOM / URS team has assembled and reviewed the information available in existing and concurrent studies to assure that current work builds upon these prior efforts. This review included more than 100 total documents including available port studies, statewide economic and goods movement studies, and reference materials identified by stakeholders as potentially relevant to the goals and objectives of the North Carolina Maritime Strategy. These documents were examined to identify areas where further data collection, research or analysis will be required to support the identification of market opportunities and definition of related infrastructure needs. This *Action Plan for Further Data Collection and Analysis* provides a summary of existing documents and reports that have been reviewed to support the *Maritime Strategy* development, identifies gaps or confirmations needed, and proposes an approach for additional data collection and analysis.

ABBREVIATIONS

The following abbreviations are used in this report:

7PS	Seven Portals Study
BCA	benefit-cost analysis
BTS	US Bureau of Transportation Statistics
CAGR	compound annual growth rate
CARB	California Air Resources Board
CDF	common data format
ECU	East Carolina University
EPI	Economic Policy Institute
FHWA	Federal Highway Administration
GIS	geographic information system
GSPA	Georgia State Port Authority
GTP	Global TransPark
ITRE	North Carolina Institute for Transportation Research and Education
LATTS	Latin America Trade and Transportation Study
LCMA	least cost market area
MARAD	Maritime Administration
MHC	Morehead City
MTS	marine transportation system
NC	North Carolina
NCAT	North Carolina Agricultural and Technical State University
NCDOC	North Carolina Department of Commerce
NCDOT	North Carolina Department of Transportation
NCHRP	National Cooperative Highway Research Program
NCIT	North Carolina International Terminal
NCRR	North Carolina Railroad
NCSPA	North Carolina State Ports Authority
NCSU	North Carolina State University
NETS	USACE Navigation Economic Technologies program
NS	Norfolk Southern Railway
POW	Port of Wilmington
ROI	return on investment
SWOT	strengths-weaknesses-opportunities-threats
TEU	twenty-foot equivalent unit
UNCC	University of North Carolina at Charlotte
UNC-CH	University of North Carolina at Chapel Hill
UNCG	University of North Carolina at Greensboro
US	United States
USACE	United States Army Corps of Engineers
USFWS	US Fish & Wildlife Service
USGS	US Geologic Survey
VA	Virginia
VPA	Virginia Port Authority
w.r.t.	with respect to
WSA	Wilbur Smith and Associates

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1.0 INTRODUCTION

As an initial activity of the Maritime Strategy development, the AECOM / URS Team assembled and reviewed the information available in existing and concurrent studies to assure that the team's work builds upon these prior efforts. This review included available port studies and statewide economic and goods movement studies that may be relevant to the goals and objectives of the North Carolina Maritime Strategy.

The North Carolina Maritime Strategy project team has reviewed more than 100 individual reports and documents in order to establish baseline data available to support further analysis. This action plan identifies both useful baseline information and data gaps in existing documents relevant to the completion of the Strategy.

2.0 REVIEW OF EXISTING DOCUMENTS

The inventory of existing documents to support development of the North Carolina Maritime Strategy were identified based on input from NCDOT, members of the Governor's Logistics Task Force, Advisory Council members, other stakeholders, and team research. Each of these documents was collected, tabulated and reviewed as the starting point for efforts under subsequent project tasks.

The intent of this document review was to identify source data upon which the study team could base its further analysis. Available documents and reports were evaluated to determine whether claims, results, and conclusions have been fully supported in the text or by reference to other documentation, or are reasonable and reproducible based on the study team's professional experience and expertise. When possible, authors or sponsors of prior reports were consulted to obtain clarifying information on scope, methodology, and intent.

A list of documents that have been reviewed by the study team are included in the References section of this report. Brief document summaries are included in the report appendix. It should be noted that additional documents and reference information beyond those described herein will be collected, reviewed, analyzed, or otherwise incorporated into the study team analysis as appropriate to support development of the North Carolina Maritime Strategy.

3.0 MARKET DATA COLLECTION AND ANALYSIS

3.1 Economics

Numerous economic analyses have been completed to assess the likely market demand for and potential economic impacts of port-related improvements. Reference documents also include studies that consider the methodology and approach to defining economic impacts of port and freight transportation investments.

Table 1 lists the documents reviewed that discuss economic findings and indicates how these will be incorporated into the study team analysis. Figure 1 identifies follow up actions to address unresolved issues and gaps in economic background data or analysis presented in existing studies.

Table 1: Use of Economic Findings and Forecasts

Doc No.	Year	Document Title	Incorporation into Data Analysis
012	2010	EPI Briefing Paper #260: Unfair China Trade Costs Local Jobs - 2.4 Million Jobs Lost, Thousands Displaced in Every U.S. Congressional District	Data regarding impact of China trade on US and North Carolina jobs and economy may be cited as useful background context to importance of global trade on national and local economy; however the report ignores the positive economic benefit of lower cost goods that has resulted from China trade.
014	2010	NC Ports - Keep NC Working	Cite average wage is higher with a port job than the average for NC jobs overall.
016	2008	Analysis of Port of Cleveland Container Market	Qualitatively consider impact of port densification on market competition and port viability.
017	2010	USACE Section 905b Analysis	Acknowledge the conducted analysis.
018	2010	A Look at the Economic Impacts for the Proposed NCIT	Acknowledge the conducted analysis.
019	2011	Economic Contribution of the North Carolina Ports	Recognize the open approach (no black box) for data collection and analysis. Check reasonableness of IMPLAN multipliers and conclusions.
032	2006	Guide to Quantifying the Economic Impacts of Federal Investments in Large-Scale Freight Transportation Projects	Consider benefit measures and metrics proposed in this guide when defining evaluation criteria and methodology. Recognize there are several similar studies and that this is not definitive guidance.
034	2001	LATTS I Final Report	Acknowledge the economic forecasts in LATTS I.
043	2011	NCSPA Port Business Case	Review Moffatt & Nichol forecasts of freight markets, competing port infrastructure expansion, and shipping industry changes. Mention the POW changes recommended by them. Compare to forecasts, data and analysis prepared by the study team.
047	2000	Current Practices for Assessing Economic Development Impacts from Transportation Investments: Synthesis 290	Describe in the background section the key economic development assessment practices (US, UK, Canada) used in year 2000 or earlier. Acknowledge the recommendations to improve analyses.

Doc No.	Year	Document Title	Incorporation into Data Analysis
051	2010	North Carolina Global TransPark Authority Strategic Plan	Acknowledge NCDOC's estimates of GTP's economic development benefits. The analysis is in 051's Appendix D.
060	2004	Savannah Harbor Expansion Project, Deep Draft Channel Improvements; Economic Analysis: Commodity Projections	Acknowledge the economic forecasts for world and US waterborne trade from 2003 to 2050 – long range container volume forecasts are less sensitive to economic cycles than near-term projections. Note opportunity for Ohio as low-cost market for Port of Wilmington. Mention the anticipated high and low growth commodity groups forecasted.
063	2008	Statewide Logistics Plan for North Carolina	Cite this study as a key predecessor to the NC Maritime Strategy project with its suggestion to redouble efforts to scope the ports.
064	2010 (est.)	Total Value of North Carolina Agricultural Exports	Cite the jobs and dollars figures related to the NC agriculture industry.
069	2008	The Implications of Panama Canal Expansion to US Ports and Coastal Navigation Economic Analysis	Assess the transit time and volume of vessels impacts of decreased wait time for entering the canal (high season wait can be up to 10 days). Highlight the factors that might affect vessel volume projections.
070	2008	The US Government's Uncompetitive Manufacturing Policy Hinders Economic Growth in North Carolina	Acknowledge the contraction of manufacturing in NC and that it is higher than the national rate for 2001-2008.
074	2008	Economic Status of Areas Surrounding Major US Container Ports	Acknowledge need to balance regional/state economic benefits and local economic impacts. Several mitigations are offered to offset negative impacts.
075	1997	Maritime Economics	Cite this textbook as needed for standard definitions and background descriptions of principles.
078	2010	Ports of Wilmington and Morehead City Feasibility Study	Present an overview of the cargo compositions at each port based on this analysis, noting that subsets of commodities were used for forecasting. Tie into other forecasts. Consider and evaluate the Least Cost Market Area (LCMA) defined by the authors for POW.
096	2008	NCIT Pro Forma Business Plan	Present and assess the anticipated container volumes and Compound Annual Growth Rate (CAGR).
104	2008	Projected Economic Impacts of the NCIT	Acknowledge this standard economic impact analysis by Martin Associates. Determine whether this analysis is currently reasonable, including key conclusions: 1) Direct jobs were calculated at 2057 per 916,418 TEU. Or about 225 direct jobs per 100,000 TEU, and 2) sales taxes were calculated at \$40 per TEU. Note whether the underlying model and parameters are available (open source) or not (proprietary).

Figure 1: Actions for further Data Collection and Analysis re Economic Findings and Forecasts

- Clarify how competitiveness of NC-based industries would be affected by improved efficiency or capacity of NC ports (rather than relying on other regional ports). Examine how and where port-related investments that improve market access (such as suggested in LATTIS I for phosphates and grains) could realize benefits on employment and output [012, 017, 018, 019]
- Compare results of the NC Maritime Strategy to the economic impacts/contributions presented in various studies to place findings in the context of preceding work. [018, 019, 043, 051, 104]
- Evaluate appropriateness and approach to apply second-order logistics benefits (e.g. through industry accepted multiplier) to proposed freight transportation improvements, as mentioned in the *Guide to Quantifying Economic Impacts* and the FHWA's report on *Freight Transportation: Improvements and the Economy*, which is referenced therein. [032]
- Recognize the Latin American forecasts and note the NC Maritime Strategy cargo demands will be forecasted taking into consideration such issues as the economic downturn and the growth of emerging economies. [034]
- Determine how second and fourth tier benefits can best be estimated to capture benefits of public investment in freight infrastructure. [040]
- Compare results of the NC Maritime Strategy regarding when container capacity on the US East Coast will be at a shortfall to prior studies while including regional port expansion details. Identify downside risks of market projections. [043, 096]
- Compare our team's methodology with that of the recent assessment practices (pre-2000); note reasons for differences. [047]
- Cite, as needed, generalized conclusions and long-term (2050) forecasts; note they may not be fully valid in light of the recent global recession. Determine the US regional shifts that are forecasted as a result of the 2014 Panama Canal expansion. Consider what challenges or opportunities may be presented by a forecasted "leveling" of worldwide trade around the globe (i.e. a less dominant US share of global cargo offset by the growth of emerging economies). [060]
- Determine the status of the study proposed by USACE to assess the US ports' capacity and ability to handle post-Panamax vessels. Examine the key variables driving port choice and the attraction/diversion of containers to different ports. Determine the status of proposed study to examine the potential of traffic diversion from the ports of Los Angeles and Long Beach. [069]
- Incorporate (as possible) recommendations to mitigate negative impacts of ports while still realizing their economic benefits in the NC Maritime Strategy. [074]
- Determine the Least Cost Market Area (LCMA) for Morehead City. Given more recent NC State and Moffatt & Nichol work related to container volumes, explore if the POW analysis in this study has been superseded and how that might affect Maritime Strategy decisions. [078]

3.2 Freight Patterns

Several available reports provide data on freight flows or make conclusions with respect to the volume of goods forecast to use North Carolina ports or to travel to, from, or within the state.

Table 2 lists the documents reviewed that discuss global and regional freight patterns and indicates how these will be incorporated into the study team analysis.

Table 2: Use of Findings and Forecasts for Waterborne Freight Patterns and Trends

Doc No.	Year	Document Title	Incorporation into Data Analysis
016	2008	Analysis of Port of Cleveland Container Market	To the extent that factors are similar for short sea shipping options, incorporate qualitative data and approach to evaluate viability of similar options for NC ports.
034	2001	LATTS I Final Report	Acknowledge interest of Southeastern states to improve freight movement.
035	2004	LATTS II Economic Development	Show the LATTS II trade patterns and how they differ from LATTS I.
048	2011	Summary of South Atlantic Container Terminals: Capacity, Growth and Expansion FINAL REPORT	Highlight the global trade factors influencing US East Coast shipping. Note ties to port expansion plans across the Southeast. Cite worldwide forecasts of TEU growth through year 2040.
051	2010	North Carolina Global TransPark Authority Strategic Plan	Describe proposed GTP intermodal facility, planned railroad connections, and target industries. Mention that GTP has recently been added to the US Dept. of Homeland Security's Critical Infrastructure database.
063	2008	Statewide Logistics Plan for North Carolina	Cite the global and regional freight flows analysis. Note any changes that might be necessary because newer data are available. Discuss the pass-through traffic recommendations.
064	2010 (est.)	Total Value of North Carolina Agricultural Exports	Discuss the agricultural landscape in NC by major commodities and value-added processing performed. Note the current flows from NC to other regions.
072	2006	Multiport Analysis for the Savannah Harbor Expansion Project	Evaluate key commodities and the cargo shifts anticipated through 2050 as calculated in this report for both exports and imports. Of note, the same regional area is being used as in the NC Maritime Strategy study. Discuss the authors' position that Wilmington will become a high tech export niche market. Other data of potential use is for delivered container costs.
073	2007	Shipping Statistics Yearbook	Refer to as needed for background/general information.

Figure 2 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Figure 2: Actions for further Data Collection and Analysis re Freight Patterns and Trends

- Consider factors and methodologies included in the Voyage Costing Model used by John Martin & Associates in the *Analysis of Port of Cleveland Container Market*. [016]

- Through conversations with shipping lines, determine how NC ports could capitalize on the US maritime industry's hub-and-spoke system with focus on optimal vessel sizes. [034]
- Identify container volumes that could reasonably be diverted from regional ports based on port capacity and landside and waterside access improvements. [034, 048]
- Map manufacturing and agricultural clusters (primarily exports) to compare with regional port locations, distribution center locations, and major transportation corridors. [035]
- Compare worldwide forecasts of TEU growth among different sources. [048]
- Identify risks and opportunities to realization of proposed intermodal service at GTP. [051]
- Forecast relative growth by origin/destination of East Coast container and commodity traffic based on updated World Trade Service international trade data assembled by Global Insight. Compare container data against regional data presented in GEC study for the Port of Savannah. [060, 072]
- Identify the greatest opportunities to reduce delivered container costs to/from Wilmington. Explore whether cost figures in the Savannah Harbor report can be used or updated to calculate delivered costs to/from NC ports. [072]

3.3 Current and Future Competitive Position

The future competitive position of NCSPA relative to its regional competitors will be driven by efforts of other East Coast ports to be more competitive, through improved efficiency or capacity or by strategic business arrangements. Documents can be divided into four broad categories: global focus, Southeast US or NC focus, and a national security focus.

Table 3 lists the documents reviewed that discuss regional port competition and indicates how these will be incorporated into the study team analysis. Figure 3 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Table 3: Use of Existing Data and Forecasts Affecting Regional Port Competition

Doc No.	Year	Document Title	Incorporation into Data Analysis
013	2009	A Look at the Business Plan for the Proposed NCIT	Acknowledge issue of NCIT covering the same Least Cost Market Area as POW. Identify peer port container rates and productivity.
036	2004	LATTS II Foreign Trade Zone	Consider the success and barrier factors to FTZs. Cite the percent of FTZ activity occurring in the Alliance states.
045	Unkn	Morehead Port Grain Loading Opportunity	Consider SWOT analysis for grain loading at MHC. Note outcome was NC soybeans (and wheat) as opportunity. Acknowledge cost estimate of grain silo construction and projected return on investment (ROI).
048	2011	Summary of South Atlantic Container Terminals: Capacity, Growth and Expansion FINAL REPORT	Consider strategic investments planned by competitor ports in the evaluation of future competitiveness of NC Ports under various market scenarios. Cite expansion plans by the ports analyzed (Norfolk, Charleston, and Savannah). Consider conclusions made in this report regarding port costs and trucking costs.

Doc No.	Year	Document Title	Incorporation into Data Analysis
049	2005	Report to Congress on the Performance of Ports and the Intermodal System	Highlight the Defense Production Act of 1950 (DPA) because of its implication for NC ports supporting military activities.
054	2011	A Look at Container Ports Available to North Carolina Importers and Exporters	Mention the capacity and demand numbers described herein. Note market areas were simply defined as 400-mile arcs around each port. Consider land-side infrastructure at competitor ports.
058	2011	America's Container Ports: Linking Markets at Home and Abroad	Reference 2009/2010 BTS data on volume and value of goods, vessel sizes, etc. as presented. Cite the data on container ship calls and lifts per call.
064	2010 (est.)	Total Value of North Carolina Agricultural Exports	Based on the anticipated agricultural flows exported from NC, consider the strengths and weaknesses of the bulk operations at the Port of MHC. Include: channel depth, distance to open sea, lack of grain storage and loading equipment, limited farm storage, lack of container loading facilities, and poor road access during high tourist season.
076	Unkn	Western North Carolina Inland Port Feasibility Study	Acknowledge that Western NC may pursue an inland port that would most directly connect with non-NC ports (competitors) because of the existing surface networks (road, rail).
098	2008	Strategic Seaports: North Carolina as a Critical National Asset	Recognize that the two NC ports are deemed Strategic Seaports by the US Department of Defense and that the NCIT would be in the All American Defense Corridor.
101	2009	Assessment of the Marine Transportation System (MTS) Summary Report	Describe the MTS strategic goals and how NC ports tie into them. Consider the security and technological recommendations presented when developing the NC Maritime Strategy alternatives.
105	2008	Statewide Logistics Plan for NC Appendices	Examine the detailed SWOT analyses and recommendations (such as the land side access ideas) for the NC ports included in the document. Consider performing SWOT analyses for the alternatives developed for the NC Maritime Strategy.
106	2003	Freight Movement in a Global Economy	Refer to this 2003 document for background on trade patterns and supply chains. Includes policy ideas and some NC-specific recommendations.

Figure 3: Actions for Further Data Collection and Analysis re Regional Port Competition

- Examine port capacities from various studies (existing and projections) to determine NC competitive position. See Section D1 in LATTS I. See the Davis 2011 study. Use AECOM PRECAP and BERTHA models to evaluate current and future capacity of East Coast terminals. [034, 048]
- Offer suggestions on how NC can reactivate and/or reinvigorate its FTZs to enhance maritime trade. [036]
- Find the source analysis for market opportunities and calculated return on investment related to soybeans and wheat shown in this overview presentation. Determine if conclusions are consistent with project team market analysis. [045]
- Independently assess the likely schedule of implementation of planned improvements by regional ports based on (1) available funding; (2) status of required institutional agreements; (3) permitting progress and status; and (4) any nascent changes in strategic direction through research of funding programs, port documents, and stakeholder interviews. [048]
- Determine if the existing, programmed, and proposed container capacities as presented in Davis (2011) for the four East Coast ports and Risingwater (2011) are reasonable and accurate. Determine impact on size and shape of market areas comparing 400-mile radii arcs versus areas defined by travel times on road and rail. [048, 054]
- Use AECOM operational cost models to evaluate cost efficiency of NC port operations – container, bulk, and breakbulk – relative to regional ports.
- Determine if NC ports can better partner with MOTSU, Ft. Bragg, Camp LeJeune, and other NC military facilities to improve peacetime and wartime handling of military cargo. Consider how NCSPA facilitate the use of MHC by US Marines. Discuss the needs and opportunities for NC related to redeployment of military equipment. [049, 063]
- Use GIS-based analysis to examine least cost market areas and assess value – in terms of time and cost savings, reliability, and capacity – of potential waterside and landside access improvements.
- Explore if MHC can handle Panamax ships with limited infrastructure work. [064]
- Determine if Western NC has moved forward with the inland port concept. [076]
- Evaluate the capabilities of NC ports in the context of each being a Strategic Seaport, which is defined by as a port that is “unique in its capabilities and provides the Department of Defense with operational flexibility/redundancy and port facilities and services that are critical in meeting a wide range of national security missions and timelines.” Where is the All American Defense Corridor and are there special freight needs here beyond the port? Determine how often the military uses the current NC ports in a typical year (non-deployed/peacetime, deployed/wartime) and by how much it impacts regular port operations. [098]
- Determine what information and technology systems (e.g. truck appointments and scheduling) could be employed in NC to enhance port efficiency. How can NC ports serve to provide resiliency to regional container and cargo movements? What are NC opportunities and prospects for self-propelled feeder vessels (medium-speed small ships) to support short sea shipping and feeder service within the region? [101]

4.0 INFRASTRUCTURE DATA COLLECTION AND ANALYSIS

Document research did not reveal any comprehensive, statewide analysis of North Carolina’s goods movement needs across port, railroad, and highway infrastructure. Several existing documents, however, provide useful information regarding certain site-specific infrastructure improvements. To the extent that previously identified transportation improvements meet the infrastructure needs of defined market scenarios, the study team will use the concepts and alternative improvements defined in these prior reports. Where conceptual physical configurations have been previously defined, the study team will use the available conceptual plans and alignments upon confirmation that they will meet the capacity and operational needs the team has identified. Physical configurations will be incorporated into the Maritime Strategy GIS database to allow for uniform assessment of potential impacts and benefits.

4.1 Port Facilities

Information about on-port facilities was sought to cover North Carolina issues in detail and other US ports in general. Four studies were focused on productivity and capacity issues at US ports and investment plans by regional ports. Two documents, both from the NC Statewide Logistics Study, addressed state-level concerns and coordination. Several documents were NCIT-specific and at the planning or initial design level. Finally, two documents cover proposed improvements to other NC ports facilities.

Table 4 lists the documents reviewed that discuss port facilities and indicates how these will be incorporated into the study team analysis. Figure 4 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Table 4: Use of Existing Concepts and Recommendations for Port Facilities

Doc No.	Year	Document Title	Incorporation into Data Analysis
048	2011	Summary of South Atlantic Container Terminals: Capacity, Growth and Expansion FINAL REPORT	As a reference, use the current and proposed container capacities as well as expansion plans (see appendix of the 048 document for conceptual plans) of four Southeastern ports (Norfolk, Wilmington, Charleston, and Savannah).
049	2005	Report to Congress on the Performance of Ports and the Intermodal System	Note that military deployments require adequate rail infrastructure, large staging areas (for vehicles and aircraft), special handling of non-containerized equipment, adequate communication between military and port staff, and stringent security. State which other Southeastern ports serve the military.
063	2008	Statewide Logistics Plan for North Carolina	Acknowledge the ports-related research and cite specific recommendations to improve NC port operations and facilities. Point to this document when presenting the alternatives matrix, ensuring determination of: 1) what customers it should serve, and 2) how large it should be.
077	2008	The Virginia Port Authority 2040 Master Plan	Reference the Craney Island development and the plans for a barge service (to reduce the carbon footprint and remove 58K trucks from VA roads.

Doc No.	Year	Document Title	Incorporation into Data Analysis
082	2010	Improving Marine Container Terminal Productivity: Development of Productivity Measures, Proposed Sources of Data, and Initial Collection of Data from Proposed Sources	Use this as a potential source of productivity measures and theoretical calculations. It includes data for several ports and terminals, but said data is now dated.
087	2008	NCIT Security and Technology	Acknowledge that security was addressed with the strategy providing regulatory compliance for a preliminary investigation.
088	2008	NCIT Site Utilities	Note the utility analysis included water, sewer, electric, and fire issues.
089	2008	NCIT Conceptual Civil Design	Acknowledge that a conceptual design was created that included site grading, materials for terminal surface, and stormwater management.
093	2008	NCIT Port Planning and Terminal Concept	Note the container terminal equipments type and quantity recommended by the authors. Note that early operations were to be semi-automated; under this condition, what additional equipment would be necessary and how would it affect the moves per hour for unloading and loading?
094	2008	NCIT Conceptual Wharf Design	Reference the wharf design presented in the report.
095	2008	NCIT Planning Assumptions	Review the planning assumptions in light of the current economic climate and the State's goals (such as derived from the Statewide Logistics Plan, the Seven Portals Study, and the upcoming 2040 Plan).
097	2008	NCIT Infrastructure Report	Reference the the concept-level plan and the assumptions it is based upon. Descriptions of equipment, infrastructure components, and access issues are discussed in the report. The Class IV cost estimate as well as its accuracy (-30% to +50%) is mentioned.
100	2005	NCSPA Facility Analysis of Pfizer Property for Development of North Carolina International Port	Cite this as the earliest study on the NCIP which was later renamed the NCIT. Note the planning assumptions are slightly different that the later CH2M Hill studies. Note the report mentions the container growth plans at POW (560K TEUs by 2012).
102	2006	Container Yards Improvement Report	Note the interim upgrades for POW recommended by the authors and consider the ideas for future port alternatives.
103	2007	Request for Letters of Interest – Development of Radio Island	Reference the characteristics of Radio Island and that it has a State-approved EIS (2001, updated 2006) for breakbulk terminal development. Note the listings of existing and planned highway and rail facilities contained in the document.
105	2008	Statewide Logistics Plan for NC Appendices	Examine the detailed SWOT analyses and recommendations (such as acquiring land for container storage at POW and developing Radio Island) for the NC ports included in the document.

Figure 4: Actions for further Data Collection and Analysis re Port Facilities

- Determine capacity of each peer port based on the existing and planned Port infrastructure and compare it with results of published data and previous studies [048]
- Determine impact of military needs on NC ports. Assess how security might need to be increased for military shipments. [049, 063, 087]
- Independently evaluate the NCIT port concept when considering the port alternatives for the NC Maritime Strategy and develop an estimated cost, capacity and feasibility of the project.
- What, if any, of these improvements have been implemented? Is this a reasonable short-term solution to enhance operational effectiveness and capacity at Wilmington? [102]
- Develop recommendations for port infrastructure improvements at existing Port of Wilmington and Port of Morehead City in order to meet the market forecast and assess if additional capacity gain will be sufficient and cost effective to capture potential market growth

4.2 Channels and Waterways

Document research included identification, evaluation, and extension of navigation and dredging related data and information from existing sources. The majority of reports, data, and information regarding port expansion options in NC revolve around options at the Port of Wilmington and the Port of Morehead City. Specific information discovered that will be useful for evaluating five port alternatives include:

- Current and future shoaling rates and volumes.
- Current and future dredge material excavation, transport, and placement options (i.e., offshore, inshore CDFs, and beneficial use such as beach nourishment, aquatic habitat restoration, and living shoreline restoration).
- Significant environmental and permitting issues related to dredging in NC.
- Current and future dredging quantities and costs for various options.
- Benefit-cost (B-C) information for current and planned alternatives with respect to dredging for deeper draft vessels.
- Maneuverability within existing channels and requirements for other sites.
- Geophysical information (i.e., geology, bathymetry, natural resources, meteorological information, and climate).

Table 5 lists the documents reviewed that discuss channels and waterways and indicates how these will be incorporated into the study team analysis. Figure 5 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Table 5: Use of Existing Concepts and Recommendations for Channels and Waterways

Doc No.	Year	Document Title	Incorporation into Data Analysis
015	2010	A Look at the Channel Turns in the Cape Fear River	Evaluate limitations of existing S turn and proposed straighter path at the Cape Fear Inlet. Identify options under consideration to widen the turn or bypass the S-turn through channel realignment.
017	2010	US Army Corps of Engineers Section 905(b) Analysis -Wilmington Harbor Navigation Improvement Project North Carolina International Terminal DRAFT	Acknowledge a Reconnaissance Phase Study has been recommended.
043		NCSPA Port Business Case	Use design vessel dimensions and underkeel clearance estimates (i.e., 4', inner channel, 6' outer channel). Evaluate assessment criteria at POW and MHC. Consider major road and rail summary with new port locations. Evaluate comparison of other port capacities with respect to water access. Evaluate existing channel conditions summary at POW & MHC. Evaluate channel depth analysis & maneuverability analysis.
046		NC Beach, Inlet, and Management Plan (BIMP)	Evaluate and extend multiple GIS layers (i.e, shoreline features, development, etc.) pertinent to new location evaluations.
050	2011	USACE Wilmington Harbor Navigation Improvements 905b	Cite dredging particulars including volumes (dredging, disposal), rates (shoaling), and costs (mobilization/demobilization, unit, maintenance). Use dredging references as necessary. Cite available results of USACE analysis of proposed deepening, bend widening and channel realignment alternatives, including feasibility, environmental impact and cost.
054	2011	A Look at Container Ports Available to North Carolina Importers and Exporters	Refer to dredging costs for Norfolk, Charleston, and other competing ports.
055	2010	A Look at the Environmental and Economic Aspects of the Proposed NCIT	Discuss December 2009 draft, recommended water resource study outline and how it differs from the typical USACE assessment. Mention the results presented.
056	2010	A Review of the Section 905(b) Analysis – Wilmington Harbor Navigation Improvement Project, North Carolina International Terminal	Describe the strong opinions presented in this report.
061	1999 (est.)	Cape Fear River Channel Improvement Study	Describe the proposed improvements to three reaches of Cape Fear River. Refer to the analysis of currents and ship simulations as needed. Evaluate pilot maneuverability results w.r.t. channel alternatives.

Doc No.	Year	Document Title	Incorporation into Data Analysis
062	2007	Smart Rivers 2007 Conference: Positioning Inland Navigation as a Powerful Link in the Global Supply Chain, Final Report	Evaluate problems described for deepening the Cape Fear River (i.e., dredging rock, aquifer intrusion, offshore channel extension length, maneuverability, erosion impacts, and archeological impacts)
081		The Proposed NCIT - A Perspective	Evaluate dredge estimates, costs, and impacts for proposed deepening.
090	2006	NCIT Conceptual Dredging Study	Incorporate geologic information into dredging challenges, impacts, and costs.
091		NCIT Cost Estimate	Evaluate deepening costs (emphasis on dredging).

Figure 5: Actions for further Data Collection and Analysis re Channel and Waterway Needs

- Conduct interviews with USACE to identify the constraints and issues related to the Cape Fear Inlet configuration (i.e., current alignment, depths, widths, and bends), along with other options (such as reopening of the New Inlet) that may exist to overcome these constraints. [015, 017, 050]
- Compare dredging costs across competing Southeastern ports. Which ports can inexpensively modify channels and which cannot? [054]
- Search for results of PIANC InCom Working Group 32 with respect to inland waterway performance measures. Find out if the MARAD program advanced sufficiently to provide useful input to the NC Maritime Strategy. Determine what conclusions have come out of the USACE Navigation Economic Technologies (NETS) program. [062]
- Assess whether the channel layout, dredge and disposal assumptions, and associated costs for NCIT are still valid. Check whether academic geology departments with the State university system were consulted for the geotechnical analysis assumptions of this study. [090]
- Summarize major challenges to deepening the Cape Fear River (extend as applicable to other sites).
- Summarize maneuverability existing conditions and future options within Cape Fear River.
- Modify dredge volume and cost template to incorporate geologic conditions for proposed channel modifications in Cape Fear River.
- Secure, as available, GIS data used to support the various reports.

4.3 Highways

Trucking is a primary mode of transport to haul commodities to/from ports. Therefore, a reliable, accessible, and redundant highway system is ideal. Various studies have explored how to improve the road network and associated services to/from ports.

Table 6 lists the documents reviewed that discuss highway improvements and indicates how these will be incorporated into the study team analysis. Figure 6 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Table 6: Use of Existing Concepts and Recommendations for Highway Improvements

Doc No.	Year	Document Title	Incorporation into Data Analysis
014	2010	NC Ports “Keep NC Working”	Mention recent and upcoming highway improvements supporting port traffic.
034	2001	LATTS I Final Report	Consider truck speeds in Section D3 be used in the GIS analysis.
035	2004	LATTS II Economic Development	Mention the strategic transportation investments recommended by LATTS II.
039	2004	LATTS II Highway Connectors	Consider focused investments in highway connectors to ports as part of infrastructure recommendations.
040	2004	LATTS II Freight Investment Decision Principles	Cite the carrier valuation of transit time savings (\$144-\$192). Consider the performance measures for freight movement outlined.
045	Unkn	Morehead Port Grain Loading Opportunity	Cite highway access and travel times to/from MHC.
063	2008	Statewide Logistics Plan for North Carolina	Present the strategic highway investments, noting how they are to support commodity flows to/from NC ports. Cite the suggestion to support pass-through traffic.
086	2008	North Carolina International Terminal Roadway Planning	Assess the conceptual-level traffic analysis conducted, its assumptions (such as container movements and mode split), and the results in the context of more recent forecasts.
105	2008	Statewide Logistics Plan for NC Appendices	Examine the detailed SWOT analyses and recommendations (such as the land side access ideas including upgrading US 17 and US 74 to interstate standards) for the NC ports included in the document. Consider performing SWOT analyses for the alternatives developed for the NC Maritime Strategy.

Figure 6: Actions for further Data Collection and Analysis re Highway Needs

- Consider recommended investments in LATTS II. [035]
- Consider the subset of 115 highway connectors (and any new ones constructed) that are tied to the ports of interest. State whether their conditions have worsened, stayed the same, or improved to-date. [039]
- Determine how second and fourth tier benefits can best be estimated to capture benefits of public investment in freight infrastructure. [040]
- Explore if FHWA developed additional tools or recommendations since the 2001 BCA report. [040]
- Find out what were conclusions of NCHRP study projected for completion in 2004. [040]
- See if University of Minnesota cost elements can be applied to define per -mile truck costs (or savings). [040]
- Explore facility investments (roadway sections, rest area services, warehousing/ distribution centers/ value-added manufacturing) for port-related traffic and how they may also serve pass-through traffic to further improve economic development in NC.
- Evaluate container terminal mode split. [086, 095]

4.4 Railroad and Intermodal

Rail facilities, like highways, are vital to most port operations. Many reports were found that examine rail movements and offer recommendations for rail corridors.

Table 7 lists the documents reviewed that discuss railroad and intermodal facilities and indicates how these will be incorporated into the study team analysis. Figure 7 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Table 7: Use of Existing Concepts and Recommendations for Railroad and Intermodal Infrastructure

Doc No.	Year	Document Title	Incorporation into Data Analysis
001 thru 009	2010	Seven Portals Study Results: Possible Logistics Villages	Consider sites proposed by the Seven Portals Study team where inland facilities (“logistics villages”) or road and rail connections would be useful to achieve objectives of specific market scenarios, make site visits to suggested locations.
021	2007	Track Relocation Study, Havelock to Morehead City	Include Alternatives 3/5 (relocation through Dixon) and Alternative A in future consideration for improvement of rail access to Morehead City port facilities. Alternatives for crossing consolidation or elimination along US-70 will be considered. Capital costs as presented in the report will be reviewed and updated to current cost of construction.
040	2004	LATTS II Freight Investment Decision Principles	Cite the carrier valuation of transit time savings (\$144-\$192). Cite the performance measures for freight movement outlined.
041	2004	LATTS II Strategic Railroad Connectors	Cite the LATTS criteria for identifying key railroad corridors. Cite the key corridors found in LATTS II.
045	Unkn	Morehead Port Grain Loading Opportunity	Cite railroad access and travel times to/from MHC.
051	2010	North Carolina Global TransPark Authority Strategic Plan	Recognize the planned railroad connections to GTP.
063	2008	Statewide Logistics Plan for North Carolina	Present the strategic railroad investments and arrangements, noting how they are to support commodity flows to/from NC ports. Highlight NC’s short line opportunities to add or increase competitiveness between Class I railroads.
081	2010	The Proposed NCIT, A Perspective	Verify, then cite the double-stacking service information mentioned.
092	2008	NCIT Conceptual Rail Plan	Acknowledge the rail plan and note the service assumptions it is based upon. Discuss the drawbacks to only having one Class I railroad (CSX) serving NCIT and explore if NS can also be given access to the proposed alternatives in the NC Maritime Strategy to maintain competitiveness.
105	2008	Statewide Logistics Plan for NC Appendices	Examine the detailed SWOT analyses and recommendations (such as improving rail intermodal service and building select rail connectors) for the NC ports included in the document. Consider performing SWOT analyses for the alternatives developed for the NC Maritime Strategy.
107	2006	North Carolina Waybill Analysis	Highlight the commodity flow trends on the Class I railroads in NC.

Doc No.	Year	Document Title	Incorporation into Data Analysis
109	2004	Restoration of the Wallace to Castle Hayne Rail Corridor and Associated Port / Rail Improvements	Acknowledge the restoration potential of the Wallace to Castle Hayne rail corridor that used to be serviced by CSXT before going dormant. Highlight that CSXT was not involved in the study and their input may now be useful.

Figure 7: Actions for further Data Collection and Analysis re Rail and Intermodal Needs

<ul style="list-style-type: none"> • Validate the need, physical inventory, engineering deficiencies, and strategic potential for use of the comprehensive database and inventory of railroad connections in the LATTIS II Report. Verify rail route information against current operations with the railroads. [041] • Collect, and incorporate into GIS, data on ownership, customers, volumes, condition, and constraints of railroad lines accessing current and potential port sites, including CSX line into Port of Wilmington, NS line into Morehead City, spur providing access to proposed NCIT site in Southport. • Interview railroads to identify operational constraints and issues along major routes within region and on lines serving existing and proposed port terminals. • Evaluate means for improving existing NS line from Havelock to Morehead City, including conceptual approach for eliminating or consolidating grade crossings and potential location and use of near-dock rail yard. • Consider (if possible) as part of infrastructure recommendations the inland port facility sites identified by Seven Portals Study Team. • Review and evaluate further findings and recommendations made by the Seven Portals Study Team when their final report is made available. • Determine if the rail yard layout is reasonable and operationally efficient. Determine what railroad shared use agreements would be required. Verify that needed off-site rail improvements to support an intermodal container terminal are fully defined. [092] • Identify availability of more recent annual waybill samples since this data is from 1999 to 2003. [107] • Validate the Wallace to Castle Haynes route restoration with current rail operations and current capital construction costs. [109]

4.5 Environmental Impacts

Evaluation criteria and methodology for considering or measuring certain environmental impacts are discussed in several of the documents reviewed.

Table 8 lists the documents reviewed that discuss regional port competition and indicates how these will be incorporated into the study team analysis. Figure 8 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Table 8: Use of Environmental References and Analyses

Doc No.	Year	Document Title	Incorporation into Data Analysis
010	2009	National Objectives, Principles, and Standards for Water and Related Resources Implementation Studies	Incorporate economic, social, and environmental criteria into evaluation of water-related impacts. Recommend that future studies follow procedures to be issued (not yet available) in response to these National Objectives.
011	2008	Floating Smokestacks: A Call for Action to Clean Up Marine Shipping Pollution	Acknowledge potential for negative air quality impacts, and related impacts to human health and the environment, caused by an increased number of ocean-going vessels. Identify vessel shore power as a means to minimize impacts while ships are at berth.
013	2009	A Look at the Business Plan for the Proposed NCIT	Include potential impacts to Castle Haynes aquifer in evaluation of environmental impacts of Cape Fear dredging.
015	2010	A Look at the Channel Turns in the Cape Fear River	Include potential impacts of deepening or straightening the Cape Fear River channel. Mention operating challenges due to current ship designs (re: smaller rudder).
017	2010	USACE Section 905b Analysis	Acknowledge potential impacts of Wilmington Harbor navigation improvements.
033	2003	Hydrogeology and Groundwater Quality of Brunswick County	Acknowledge potential impacts of deepening of the Cape Fear channel on the upward migration of brackish water into overlying aquifers, or upconing beneath areas of pumping.
053	2008	US Container Ports and Air Pollution: A Perfect Storm	Cite techniques to reduce vessel emissions and note which ones are currently aggressively applied including establishment of global environmental standards and cold ironing of vessels in port.
068	2008	Potential Environmental Problems from Building the Proposed North Carolina International Terminal: Preliminary Report	Acknowledge and consider the various environmental impacts and proposed mitigations associated with NCIT on and off site (road, site, channel, estuary, site clearing, construction, and operation).
071	Unkn	Health Effects of Diesel Particulate Matter	Cite paper for presenting negative health effects of diesel. Mention premature death statistics can be found on the CARB website.
077	2008	The Virginia Port Authority 2040 Master Plan	Describe the VPA's strategies to reduce the carbon footprint.
083	2010	Wilmington Harbor, North Carolina, Supplement to the Final Fish and Wildlife Coordination Act Report	Note FWS's environmental impacts / concerns of the studied channel alignment and their recommendations.
084	2010	Wilmington Harbor Initial Appraisal (Section 216 Report)	Acknowledge that two areas were requested for consideration – the Bald Head and Battery Island portions – and the appraisal determined that a Reconnaissance Report should be pursued to determine if there is a Federal interest.
108	2010	Wilmington Harbor, NC, Supplement to the Final Fish and Wildlife Act Report	Outline the concerns of the USFWS, including recommendations made in five areas to minimize harbor impacts. Consider the issues for the Maritime Strategy alternatives.

Figure 8: Actions for further Data Collection and Analysis re Environmental Screening

- Use GIS mapping to identify potential impacts of infrastructure alternatives to significant natural habitat areas, floodplains, and flood-prone areas.
- Incorporate discussion of possible contamination or other impact to aquifers that may result from channel dredging into interviews with US Army Corps of Engineers and other stakeholders with an interest in coastal water quality to determine if this issue has been addressed in previous or ongoing dredging analyses.

4.7 Capital and Operating Costs

A small selection of papers was found to detail capital and/or operating costs for ports and related facilities and infrastructure.

Table 9 lists the documents reviewed that discuss regional port competition and indicates how these will be incorporated into the study team analysis. Figure 9 identifies follow up actions to address unresolved issues and gaps in data or analysis presented in existing studies.

Table 9: Use of Existing Capital and Operating Cost Data

Doc No.	Date	Document Title	Incorporation into Data Analysis
013	2009	A Look at the Business Plan for the Proposed NCIT	Note the costs cited in development of unit costs for capital dredging.
016	2008	Analysis of Port of Cleveland Container Market	Reference the cost of densification of existing ports.
017	2010	USACE Section 905b Analysis	Compare the general cost estimate with other channel options. Note that these are tied to land-based options that have not been included in the cost.
021	2007	Track Relocation Study, Havelock to Morehead City	Review and update capital costs as presented in the report to current cost of construction.
054	2011	A Look at Container Ports Available to North Carolina Importers and Exporters	Refer as needed to operating revenues at Norfolk, Charleston and other competing ports, including dredging costs.
081	2010	The Proposed NCIT, A Perspective	Cite the costs already incurred and the projected capital costs for the terminal. Acknowledge the costs versus benefits argument posited by the authors.
091	2008	NCIT Cost Estimate	Cite the total project development cost of \$2.3 billion for on-site and water-side elements; this is a Class 4 Estimate. Note that no probability or risk analysis of the costs was performed. Consider the additional cost of providing landside access (road/rail).
099	2010	NCIT Review of Planning Concepts and Privatization Options	Reference the recommendations presented by the authors to reduce the costs and improve operations so as to encourage private investment – should similar actions be incorporated in the Maritime Strategy alternatives? Examine the six alternative locations for the terminal footprint.

Figure 9: Actions for further Data Collection and Analysis re Capital and Operating Costs

- If identified as a potential port site, costs for NCIT will be estimated in a manner consistent with other potential port sites. [081, 091]

5.0 REFERENCES

- 001_7PS Results-Possible Logistics Villages-Seven Portals Study (7PS) Intro (NCSU 2010-12-15)
- 002_7PS Results-Possible Logistics Villages-Southeast Region (UNCG 2010-12-15)
- 003_7PS Results-Possible Logistics Villages-East Region (UNC-CH 2010-12-15)
- 004_7PS Results-Possible Logistics Villages-Northeast Region (ECU 2010-12-15)
- 005_7PS Results-Possible Logistics Villages-Triangle Region (ITRE 2010-12-15)
- 006_7PS Results-Possible Logistics Villages-Triad Region (NCAT 2010-12-15)
- 007_7PS Results-Possible Logistics Villages-Charlotte Region (UNCC 2010-12-15)
- 008_7PS Results-Possible Logistics Villages-West Region (ITRE 2010-12-15)
- 009_7PS Results-Possible Logistics Villages-7PS Continuing Items (NCSU 2010-12-15)
- 010_National Objectives for Water Resources (White House Council on Env Qual 2009)
- 011_Floating Smokestacks (Env Defense Fund 2008)
- 012_Unfair China Trade Costs Local Jobs (EPI 2010)
- 013_A Look at the Business Plan for the Proposed NCIT (Risingwater 2009)
- 014_NC Ports - Keep NC Working (Carlson 2010)
- 015_A Look at the Channel Turns in the Cape Fear River (Draft) (Risingwater 2010)
- 016_Analysis of Port of Cleveland Container Market (Martin 2008)
- 017_USACE Section 905b Analysis (2010)
- 018_A Look at the Economic Impacts for the Proposed NCIT (Risingwater 2010)
- 019_Economic Contribution of the NC Ports (ITRE 2011)
- 020_ExecOrder32 Governors Logistics Task Force (Perdue 2009)
- 021_Track Relocation Feasibility Study - Havelock to Morehead City (NCRR 2007)
- 022_Email from TJ Bronstein to Roberto Canales RE- NCIT Competitive Analysis
- 023_Star News Online - Cape Fear Watchdogs No Ports Response to the NCPorts ITRE Study
- 024_Cape Fear Firebird 12.14.10 (Save the Cape newsltr)
- 025_Cape Fear Firebird 1.1.11 (Save the Cape newsltr)
- 026_Cape Fear Firebird 1.15.11 (Save the Cape newsltr)
- 027_Cape Fear Firebird 1.20.11 (Save the Cape newsltr)
- 028_Cape Fear Firebird 2.1.11 (Save the Cape newsltr)
- 029_Cape Fear Firebird 2.7.11 (Save the Cape newsltr)
- 030_Cape Fear Firebird 2.12.11 (Save the Cape newsltr)
- 031_Star News Article NC Ports Pump Billions of Dollars into State_s Economy
- 032_Guide to Quantifying Econ Benefits of Fed Investmt (CSI 2006)
- 033_Hydrogeology and Groundwater Quality of Brunswick Co (USGS 2003)
- 034_LATTS1 Final Report (WSA 2001)
- 035_LATTS2 Economic Development (WSA 2004)
- 036_LATTS2 Foreign Trade Zone (WSA 2004)
- 037_LATTS2 Finance Strategy and Techniques (WSA 2004)
- 038_LATTS2 Transpo Infrastructure Financing Strategies (WSA 2004)
- 039_LATTS2 Highway Connectors (WSA 2004)
- 040_LATTS2 Freight Investment Decision Principles (WSA 2004)
- 041_LATTS2 Strategic Railroad Connectors (WSA 2004)
- 042_LATTS2 Documenting Successes (WSA 2004)
- 043_NCSPA Port Business Case (Moffatt 2011)
- 044_Market and Port Assessment for NC Ports (Moffatt 2007)
- 045_Morehead City Grain Loading Opportunity
- 046_NC Beach and Inlet Management Plan (Moffatt)
- 047_Current Practices for Assessing Eco Dev Impacts from Transpo Investmts (NCHRP_syn_290)

- 2000)
- 048_Summary of South Atlantic Container Terminals-Capacity Growth Expansion (Davis 2011)
 - 048a_Summary of South Atlantic Container Terminals-Capacity Growth Expansion Exec Sum and Conclsn (Davis 2011)
 - 049_Rpt to Congress-Perf of Ports and Intermodal Sys (USDOT 2005)
 - 050_USACE Wilmington Harbor Navigation Improvements 905b_CJM
 - 051_NC Global TransPark Authority Strategic Plan Summary (NCGTPA 2010)
 - 052_SC River Commission Picks Apart Deepening and Park Circle NB Rally Against Rail Plan
 - 053_US Container Ports and Air Pollution (Cannon 2008)
 - 054_A Look at Container Ports Available to NC (Risingwater 2011)
 - 055_A Look at Env and Econ Aspects of NCIT (Risingwater 2010)
 - 056_A Review of Section 905(b) Analysis Report (Risingwater 2010)
 - 057 Reference Number Not Used
 - 058_Americas Container Ports (RITA 2011)
 - 059_PIERS data sets (2009) [not summarized]
 - 060_Savannah Harbor Expansion Economic Analysis (USACE 2004)
 - 061_Cape Fear River Channel Improvement Study (1999 est)
 - 062_Smart Rivers 2007 Inland Waterways Conference
 - 063_Statewide Logistics Plan for NC (NCSU 2008)
 - 064_Total Value of NC Ag Exports (2010 est)
 - 065_Fwd Email from Michael Rice for Channel Turns
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 - 067_Fwd Email from Michael Rice for NCIT Review
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 - 069_Implications of Panama Canal Expansion to US Ports and Coastal Nav Econ Analysis (USACE 2008)
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 - 071_Health Effects of Diesel Particulate Matter (CA Air Resource Bd)
 - 072_Multiport Analysis for the Savannah Harbor Expansion Project (USACE 2006)
 - 073_Shipping Statistics Yearbook 2007
 - 074_Economic Status of Areas Surrounding Major US Container Ports (Grobar 2008)
 - 075_Maritime Economics (textbook Stopford 1997)
 - 076_WNC Inland Port Feasibility Study (Smith)
 - 077_The VA Port Authority 2040 Master Plan (Moffatt 2008)
 - 078_Ports of Wilmington and Morehead City Feasibility Study (Moffatt 2010)
 - 079_Environmental Economics in Theory and Practice (textbook)
 - 080 Reference Number Not Used
 - 081_The Proposed NCIT - A Perspective (Risingwater 2010)
 - 082_Improving Marine Container Terminal Productivity-meas_data sourc (Tioga 2010)
 - 083_Wilmington Harbor NC Supplement to the Final Fish & Wildlife Coord Act Report (USFWS 2010) (follow-on to Record of Decision FEIS Cape Fear Rivers Comprehen Study (USACE 1996))
 - 084_Wilm Harbor Initial Appraisal-Sec 216 Rpt (USACE 2010)
 - 085 Reference Number Not Used
 - 086_NCIT Roadway Planning (CH2M Hill 2008)
 - 087_NCIT Security and Technology (CH2M Hill 2008)
 - 088_NCIT Site Utilities (CH2M Hill 2008)
 - 089_NCIT Conceptual Civil Design (CH2M Hill 2008)
 - 090_NCIT Conceptual Dredging Study (CH2M Hill 2006)
 - 091_NCIT Cost Estimate (CH2M Hill 2008)

- 092_NCIT Conceptual Rail Plan (CH2M Hill 2008)
- 093_NCIT Port Planning and Terminal Concept (CH2M Hill 2008)
- 094_NCIT Conceptual Wharf Design (CH2M Hill 2008)
- 095_NCIT Planning Assumptions (CH2M Hill 2008)
- 096_NCIT Pro Forma Business Plan (CH2M Hill 2008)
- 097_NCIT Infrastructure Report (CH2M Hill 2008)
- 098_Strategic Seaports - NC as a Critical National Asset (NCSPA 2008)
- 099_NCIT Review of Planning Concepts and Privatization Options (PF Richardson 2010)
- 100_Facility Analysis Pfizer Property (Moffatt 2005)
- 101_Assessment of the Marine Transpo Summary Rpt (Volpe 2009)
- 102_Container Yards Improvement Report (Moffatt 2006)
- 103_Request for LOI Development of Radio Island (Moffatt 2007)
- 104_Projected Economic Impacts of NCIT (Martin 2008)
- 105_Statewide Logistics Plan for NC Appendices (NCSU 2008)
- 106_Freight Movement in a Global Economy (FHWA 2003)
- 107_North Carolina Waybill Analysis (NCDOT 2006)
- 108_Wilmington Harbor Suppl to Final Fish and Wildlife Act Report (USFWS 2010)
- 109_Restoration of the Wallace to Castle Hayne Rail Corridor and Associated Port / Rail Improvements (HDR 2004)

APPENDIX: DOCUMENT SUMMARIES

DOCUMENT SUMMARY

REPORT:	Seven Portals Study Results on logistics villages, the seven regions, and continuing items		
AUTHOR:	Seven Portals Study Team: NCSU/ITRE lead, ECU, UNCG, UNCC, NCA&T, and UNC	REPORT No:	001 - 009
AGENCY:	Governor's Logistics Task Force	DATE:	December 2010
CONTACT:	George F List gflist@ncsu.edu , (919) 515-8767	REVIEWER:	Griffin, Vandenberg
DESCRIPTION:	<p>This report comprises a series of nine powerpoint presentations that were presented to the Governor's Logistics Task Force in December 2010. Key demographics, employment statistics and sector information are provided for each of the state's seven economic regions. The presentations provide a high-level qualitative assessment of means to improve logistics in North Carolina through investments in inland "logistics villages" within each region. Potential locations for logistics villages – including site plans along with strengths and weaknesses – are presented for each region. Requirements for associated rail, roadway, and port infrastructure are described in a general manner. The concept of "virtual villages" is introduced where volumes are insufficient to justify a centralized logistic center.</p>		
KEY INFORMATION:	<p>The following alternative locations for logistics villages were suggested (by region):</p> <ul style="list-style-type: none"> • Southeast: Laurinburg-Maxton Airport (MEB); Fayetteville Airport (FAY); International Logistics Park (ILP); and Wilmington International Airport (ILM). • East: Rocky Mount; Global TransPark; Jacksonville; and Morehead City. • Northeast: Ahoskie; Edenton; Elizabeth City; and Williamston. • Triangle: Raleigh-Durham International Airport (RDU); Warren (Triangle North); Johnston County (Four Oaks); and Lee County (adjacent to Executive JetPark). • Piedmont Triad: Aerotropolis Airport City (PTI); Burlington/Alamance; and Montgomery County/Heart of NC Mega-Site. • Charlotte: Charlotte Douglas International Airport (CLT), including Dixie Berry Hill Area or Steele Creek Area; Monroe (Legacy Park); Salisbury (Summit Corporate Center); and Statesville Airport Area. • West: Andrews; Asheville; and Wilkesboro. <p>A railroad assessment recommends a 3-tier rail network (regional, state, local), but this is not further explained. The Wallace to Castle-Hayne project and Pembroke Wye are identified as examples of beneficial railroad improvements.</p> <p>A highway assessment similarly recommends a 3-tier perspective. Possibly beneficial highway improvements: US-70 Morehead City to Raleigh; I-40 to Greensboro; US-74 Wilmington to Charlotte; bypasses (e.g. Goldsboro, Holly Springs), freeway connections (Felix Harvey Parkway); along with local investments such as interchanges, connectors, local bridges, site access enhancements that are not specifically identified.</p> <p>A high-level maritime assessment identifies four alternatives: (1) maintain the status quo; (2) minor enhancements to include a good inland distribution system and developing niche markets; (3) major enhancements to include development of niche markets, inland support facilities, intermodal capabilities at both ports, landside access, and waterside access; and (4) become a major deepwater port competitor.</p>		
FOLLOW UP QUESTIONS:	<p>Would proposed sites be suitable to meet needs of potential inland port facilities to defined in study team market scenarios? Was any decision made based upon the information presented at this meeting? What is status of complete Seven Portals Study report?</p>		
REFERENCES:	<p><i>A Vision Plan for North Carolina's Eastern Region</i></p>		

DOCUMENT SUMMARY

REPORT:	National Objectives, Principles, and Standards for Water and Related Resources Implementation Studies		
AUTHOR:		REPORT No:	010
AGENCY:	White House Council on Environmental Quality	DATE:	December 2009
CONTACT:		REVIEWER:	Griffin
DESCRIPTION:	<p>These National Objectives and the supporting Planning Principles and Standards were proposed in 2009, and will formulate the national water resources planning policy and the framework for the planning process that supports decisions regarding the federal implementation of solutions to water resources problems, needs and opportunities.</p> <p>An interagency process that developed the Guidelines began in 2009, and public comment followed. Each agency will develop its own "Procedures" to outline how the new Principles and Guidelines apply to their agency-specific missions. These Procedures will be developed soon after the Guidelines are completed, possibly in 2011</p>		
KEY INFORMATION:	<ul style="list-style-type: none"> • Federal water resources planning and development should both improve the economic well-being of the nation for present and future generations and protect and restore the environment. • The National Objective for water resources planning is to develop water resources projects based on sound science that maximize net national economic, environmental, and social benefits. <p>The report includes an outline of what a plan should contain and criteria for analyzing and projects.</p> <p>Recommendations include:</p> <ul style="list-style-type: none"> • Protect and restore natural ecosystems and the environment while encouraging sustainable economic development. • Avoid adverse impacts to natural ecosystems wherever possible and fully mitigating any unavoidable impacts. • Avoid the unwise use of flood plains, flood-prone areas and other ecologically valuable areas. 		
FOLLOW UP QUESTIONS:			
REFERENCES:	<p>Full report is available here: http://www.whitehouse.gov/sites/default/files/microsites/091203-ceq-revised-principles-guidelines-water-resources.pdf</p>		

DOCUMENT SUMMARY

REPORT:	Floating Smokestacks: A Call for Action to Clean Up Marine Shipping Pollution		
AUTHOR:	Janea Scott, Hilary Sinnamon	REPORT No:	011
AGENCY:	Environmental Defense Fund	DATE:	Early 2008
CONTACT:		REVIEWER:	Agrawal, Sisson
DESCRIPTION:	<p>This report factually describes impact of ocean going vessels on human health and environment and their contribution to air pollution nationwide, including discussion on air pollution control technologies. The report was prepared as “A CALL TO ACTION”, before the International Maritime Organization (IMO) October 2008 meeting to consider amendments to Annex VI of the MARPOL treaty, where the agency encourages the parties to the MARPOL treaty to vote “yes” on the U.S.-proposal, in an effort to achieve cleaner, healthier air by reducing ship and port-related pollution. Based on the published data, the report describes the amount of air pollution ocean-going ships generate (Chapter 2) and their impact on human health and local/national air quality (Chapter 3 and 4).</p> <p>In Chapter 5, discussion on alternative solutions is provided for reducing pollution from ocean-going vessels such as use of low sulfur fuel and emissions-reducing technology to ship engines. It describes benefits of cold ironing in reducing hotelling emissions.</p> <p>Chapter 6 summarizes policy recommendations of implementation in four steps to cut the harmful pollution from ships.</p>		
KEY INFORMATION:	<p>The report suggests four steps to cut ship pollution:</p> <ol style="list-style-type: none"> 1. Stringent clean-up standards be put in place for both U.S. and foreign ships, either by updating international standards through the IMO or through EPA. 2. Establish an emissions control area along North American coastlines 3. Address greenhouse gas emissions from ocean-going ships 4. Reduce or eliminate in-port emissions from ships by using cleaner fuel while at the berth, or use of cold-ironing (plug-in the ship in electric outlet), or by vessel speed reduction. <p>From the perspective of developing North Carolina Maritime Strategy, we should consider building the berth with cold-ironing capabilities in order to meet future local or national policy.</p>		
FOLLOW UP QUESTIONS:	None		
REFERENCES:	This report lists 127 references, provided on the last few pages of the report.		

DOCUMENT SUMMARY

REPORT:	EPI Briefing Paper #260: Unfair China Trade Costs Local Jobs - 2.4 Million Jobs Lost, Thousands Displaced in Every U.S. Congressional District		
AUTHOR:	Robert E. Scott	REPORT No:	012
AGENCY:	Economic Policy Institute	DATE:	March 23, 2010
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	<p>This briefing paper describes negative effects that China's entry into the World Trade Organization (WTO) has had on U.S. workers and the domestic economy.</p> <p>Job displacements resulting from growing trade deficits are calculated as the net of the amount of labor (number of jobs) required to produce a given volume of exports and the labor displaced when a given volume of imports is substituted for domestic output.</p> <p>Total US-China import and export volumes, along with overall growth or reduction, are presented across various industries for the years 2001 and 2008. Job losses in that period are also presented for each industry.</p> <p>It should be noted that the author did not include the beneficial impact to the economy of having lower-cost imports. In addition, China is already one of NC's export destinations.</p>		
KEY INFORMATION:	<p>The following statistics are presented:</p> <ul style="list-style-type: none"> • North Carolina, having an estimated loss of 2.3% of its job statewide from 2001 to 2008, was among the states hardest hit due to loss of manufacturing industries to China trade (second in percentage only to New Hampshire, also a manufacturing state). • Biggest losers in terms of total numbers: California (370,000 jobs), Texas (193,700), New York (140,500), Illinois (105,500), Florida (101,600), Pennsylvania (95,700), North Carolina (95,100), Ohio (91,800), Georgia (78,100), and Massachusetts (72,800). • The hardest-hit states, as a share of total state employment, are New Hampshire (16,300, 2.35%), North Carolina (95,100, 2.30%), Massachusetts (72,800, 2.25%), California (370,000, 2.23%), Oregon (38,600, 2.19%), Minnesota (58,800, 2.17%), Rhode Island (10,600, 2.01%), Alabama (39,300, 1.97%), Idaho (13,500, 1.97%), and South Carolina (38,400, 1.97%). • Of the top 20 hardest hit US congressional districts, four were in North Carolina (10th – 3.55% of district jobs displaced to China, 6th – 3.22%, 4th – 3.04% and 5th – 2.89%). 		
FOLLOW UP QUESTIONS:	None.		
REFERENCES:	USITC DataWeb (2009) for US-China trade data US Census Bureau, ITC, and BLS data		

DOCUMENT SUMMARY

REPORT:	A Look at the Business Plan for the Proposed NCIT		
AUTHOR:	Risingwater Associates	REPORT NO:	013
AGENCY:	Save the Cape	DATE:	February 10, 2010
CONTACT:		REVIEWER:	Demers, Sisson
DESCRIPTION:	<p>The report authors review the NCIT Pro Forma Business Plan by CH2M Hill from 3/15/2008 and discuss the forecasts by Moffatt & Nichol (M&N) from 2/2010. The Port of Wilmington and the NCIT are considered. Infrastructure and environmental issues are discussed followed by a detailed analysis of the assumptions and forecasts for the container traffic market. Mentioned is the issue that POW and NCIT would have the same market area and POW could adequately serve the need, except if the containers come on post-Panamax ships that are too large for the channel and berths there. A financial analysis of funding the NCIT is lastly mentioned.</p>		
KEY INFORMATION:	<p>The authors conclude that NC would best be served by the Port of Wilmington (POW) for container traffic if expanded based on existing plans and not the NCIT. The authors think it is unlikely that the NCIT could capture six times the container traffic typically handled by POW from other Southeastern ports. Especially since neighboring ports are expanding capacity and can sufficiently meet forecasted market needs, they are dredging deeper to accommodate the larger ships, and the travel times are not significantly different. POW offers lower rates than other container terminals and NC businesses receive a tax credit for using an NC port leaving "little opportunity to increase market share". Revenues at NCSPA facilities do not cover capital costs. Also, CH2M Hill's financing plan may significantly underestimate the actual cost of dredging. They estimate \$681.3 million whereas Risingwater estimates \$1.35B based on USACE's recent cost to dredge to 42 feet.</p> <p>At the opening in 2017, the port is to have a 1M TEU terminal and by 2030 it is planned to have 3 million TEUs. Distance to deep water is 22 miles. Moffatt & Nichol forecast POW container trade to compound at an annual rate of 6.9% which Risingwater Associates questions because so many other past rates are lower.</p> <p>Of specific note environmentally: the Castle Hayne aquifer serving eastern Brunswick County is under the Cape Fear River and the terminal site at a depth of 43 feet below sea level so dredging to a depth of 54.5 feet would penetrate the aquifer.</p>		
FOLLOW UP QUESTIONS:	<p>What are the water supply impacts of hydraulically connecting the aquifer and the river? CH2M Hill estimated using the rail line 50% of the time - how much of the time is the single-track railroad line currently (and in the future) used by the US Army for ammunition moves to MOTSU? If a deep-water container port is pursued, what is the planned use for POW?</p>		
REFERENCES:	<p>This report referred to several other documents that we have reviewed: 016, 049, 050, 051, 101,033. Three references that are new: Global Insight's Port Tracker (2008), ISEL's Shipping Statistics Yearbook (2007), and Stopford's Maritime Economics (2009).</p>		

DOCUMENT SUMMARY

REPORT:	North Carolina Ports “Keep North Carolina Working”		
AUTHOR:	Glenn Carlson, Chief Commercial Officer	REPORT NO:	014
AGENCY:	North Carolina State Ports Authority	DATE:	January 12, 2010
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	<p>Presentation by Glenn Carlson to the Legislative Research Commission Advisory Subcommittee on Offshore Energy Exploration.</p> <p>Describes the NCSPA mission; organizational structure; existing and planned port facilities at Wilmington, Morehead City, North Carolina International Terminal; container and general cargo volumes; and North Carolina distribution centers.</p>		
KEY INFORMATION:	<p>The following economic benefits of NC port operations are claimed:</p> <ul style="list-style-type: none"> • Nearly 85,000 statewide jobs • \$299 million state and local tax revenues • Gateway to international trade for NC businesses <p>Port employment:</p> <ul style="list-style-type: none"> • Approximately 300 state employees at port facilities • High-paying jobs: the average employee at the Port of Wilmington (\$53,300) earns 36% higher salary than average NC worker, 51% higher salary than average southeast NC worker <p>Graph of Wilmington’s container move history shows increased TEU growth rate following completion of Cape Fear channel deepening to 42’ in January 2004.</p> <p>Cites the following recently-completed \$234 million in highway improvements to improve landside access to Wilmington port facilities: I-140 Wilmington Bypass, improves connection from container terminal to I-40; I-73 corridor from I-74 to I-85 at Greensboro; Upgrade US 74 to interstate quality west of I-95, major upgrade from container terminal to I-95.</p> <p>Lists the following recently-completed \$332 million in Wilmington port investments: 42’ channel deepening and related berth improvements; 9 new reachstakers; 4 100’ gage container cranes; and new terminal operating system.</p> <p>Describes the following investments at Morehead City: Near-term development - new 177,000 SF warehouse, equipment and security enhancements, rail upgrades; and Future development - US 70 Strategic Corridor, Gallants Channel Bridge, Radio Island Development, further rail access improvements</p> <p>Illustrates declining cargo tonnage through general cargo terminals at POW and at MHC since 2006.</p>		
FOLLOW UP QUESTIONS:	<p>What is basis for and economic contributions (jobs and tax revenues) cited?</p> <p>What was NC Port’s Port Gateway Optimization program cited as the reason behind limited impact (9% drop) of recession in 2009?</p> <p>What is basis for 600,000 TEU capacity at Wilmington container terminal following \$190 million investment?</p>		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	A Look at the Channel Turns in the Cape Fear River (Draft)		
AUTHOR:	Risingwater Associates	REPORT NO:	015
AGENCY:	Save the Cape	DATE:	March 18, 2010
CONTACT:		REVIEWER:	Demers, Sisson
DESCRIPTION:	<p>The report authors examine the current navigation channel and a proposed channel in Cape Fear River that may serve the proposed NCIT at Southport, NC from the perspective of meeting accepted standards for design (US Army Corps of Engineers (USACE), Permanent International Association of Navigation Congress) to accommodate post-Panamax vessels. Design standards, container ship navigation/maneuverability, historic areas (shipwrecks), and environmental impacts are touched upon. Dredging history of the river is detailed chronologically. The Wilmington Harbor Deepening project in 2000 did not fully meet USACE requirements but did proceed with a widening at the apex of the Bald Head Shoal and Smith Island Range turn.</p>		
KEY INFORMATION:	<p>The current channel is 42 feet deep and 400 feet wide with an S-curve near the channel entrance. To service post-Panamax ships with a 50-foot draft, a channel would need to be 52.5 feet with 2 more feet for maintenance. CH2M Hill recommended bypassing the Southport Channel → Battery Island Channel → Lower Swash Channel part of the S-curve with a straighter channel to the east that would cross the John H. Chaffee Coastal Barrier Resource System and the Bald Head Island Natural Area.</p> <p>In the report, it is recommended that the Cape Fear River not be further deepened along either the existing channel path or the proposed straighter path. Issues include beaches now requiring regular replenishing of sand, deepening into rock in channel creates concern of hull damage if/when groundings occur, limitations of container ship maneuverability in the channel (windage, single crew, decreased ratio of vessel length to beam makes checking a turn difficult, trend to smaller rudders makes navigation at slow speeds harder, high minimum bare steerage speeds may be too fast to navigate the channel).</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:	CH2M Hill, Inc., <i>Conceptual Dredging Study</i> , North Carolina State Ports Authority (2008).		

DOCUMENT SUMMARY

REPORT:	Analysis of Port of Cleveland Container Market		
AUTHOR:	Martin Associates	REPORT NO:	016
AGENCY:	Cleveland-Cuyahoga County Port Authority	DATE:	3/12/2008
CONTACT:	Martin Associates: 717.295.2428	REVIEWER:	Demers
DESCRIPTION:	<p>This report looks at the market feasibility of bringing containerized cargo to the Cleveland, Ohio area via a proposed Halifax-Cleveland Feeder Service. The proposed container port in Cleveland would be an inland water port on Lake Erie that uses the Saint Lawrence Seaway. The authors conducted interviews as well as gathered data from various sources; data are through year 2006. Data on imported containers are stratified by exporting country/region as well as by what US port "range" (coastal area) the tonnage is arriving at. It was found that East Coast ports have unused capacity and many can be densified to 5,500 TEU/acre until approximately 2024. The authors estimated and compared container flows in terms of transit times and costs from US ports and the proposed feeder service to the Cleveland area.</p>		
KEY INFORMATION:	<p>Proposed feeder service was not recommended at the time of the report.</p> <p>Minimum travel times and minimum costs from various regions to Cleveland via world trade lanes were calculated with data from an in-house model. Transit times via the feeder service were competitive for the India, Northern Europe, and Singapore trade lanes. In all but one case, the cheapest routing was always through the Port of New York/New Jersey. Shipments from China (designated as from Hong Kong in the report) were not competitive via the proposed Halifax-Cleveland Feeder Service.</p> <p>A concern of shippers is the seasonality of the Seaway which is closed during winter months making contractual agreements complicated and potentially lessening economies of scale because capital assets are not fully used. A further issue is the limited volume needed for the local Cleveland consumption market.</p>		
FOLLOW UP QUESTIONS:	<p>What are the details of the Martin Associates voyage costing model? (it seems to be a black box) Are the approach and conclusions presented in this report relevant to analysis of short sea shipping alternatives for NC ports?</p>		
REFERENCES:	<p>No references were listed in the report.</p>		

DOCUMENT SUMMARY

REPORT:	Section 905(b) Analysis – Wilmington Harbor Navigation Improvement Project North Carolina International Terminal		
AUTHOR:		REPORT No:	017
AGENCY:	U.S. Army Corps of Engineers, Wilmington District	DATE:	February 2010 (Draft)
CONTACT:		REVIEWER:	Griffin
DESCRIPTION:	<p>The purpose of this Section 905(b) Analysis is to document the basis for the Reconnaissance Phase Study as to whether there is a federal interest in participating in a cost shared Feasibility Phase Study to modify the existing Wilmington Harbor project in the interest of navigation improvements.</p> <p>The findings established in this report will serve as the scope of the Feasibility phase. As the document that establishes the scope of the Feasibility study, the Section 905(b) Analysis is used as the chapter of the Project Management Plan that presents the reconnaissance overview and formulation rationale.</p> <p>The scope of investigations is focused on the analysis of potential net economic benefits and potential environmental effects associated with modification of the existing federal (USACE) navigation channel. It is understood that associated land based infrastructure improvements which would be implemented by state and/or other Federal agencies are integral to the feasibility of federal channel modification. These facilities may include upgraded or new terminal facilities, highways and rail improvements or any other such facilities necessary to achieve project benefits. It is the Corps understanding that further evaluation of such landside features by state and other non-federal entities is ongoing and will likely continue concurrent with Corps studies. As the reconnaissance analysis is limited to existing and readily available information, it is assumed for this initial evaluation that all land based infrastructure is feasible.</p>		
KEY INFORMATION:	<p>The report defines the study area, outlines different alternatives, and evaluates the pros and cons of those alternatives from an economic standpoint and environmental standpoint. A general cost estimate and mitigation opportunities are also presented.</p> <p>USACE recommended that the Wilmington Harbor Navigation Improvement Project proceed into the feasibility phase. They entered into a cost share program with the State of North Carolina.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:	<p>Final Feasibility Report and Environmental Impact Statement on Improvement of Navigation, Cape Fear – Northeast Cape Fear Rivers Comprehensive Study, Wilmington, North Carolina, June 1996.</p> <p>Environmental Assessment, Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina, February 2000.</p>		

DOCUMENT SUMMARY

REPORT:	A Look at the Economic Impacts Projected for the Proposed North Carolina International Terminal		
AUTHOR:	Risingwater Associates	REPORT No:	018
AGENCY:		DATE:	April 18, 2010
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	This report makes a critical assessment of the job creation and other economic benefits estimated by NCSPA in its report entitled <i>The Projected Economic Impacts of the North Carolina International Terminal</i> (document number 104) as prepared by John Martin & Associates.		
KEY INFORMATION:	<p>The review of NCSPA's economic impact analysis draws the following conclusions and criticisms:</p> <ul style="list-style-type: none"> • Economic impacts of proposed NCIT are based on CH2M Hill's projected container movements of 3,000,000 TEU per year in 2030. This is not considered credible by the author because this is more than fifteen times the 196,000 TEU volume through the Port of Wilmington in 2008. • The business plan (by CH2M Hill) is based on substantial penetration of markets in other states, but the economic impact report counts all of the economic effects as if they occurred in the State of North Carolina. This contrasts with previous analysis (by Moffatt & Nichol) that concluded that a container terminal at Cape Fear could not expect to gain market share in other states from other ports. <p>The report identifies that NCSPA revenues cannot cover capital costs (relying on the NC legislature), and has relied on USACE to support capital and maintenance dredging costs per federal formulas. The author claims that "port authorities seldom operate at a profit or even cover costs."</p> <p>The report claims that the size of vessel (1263' length, 185' beam) proposed to be accommodated does not exist in commercial or naval service.</p> <p>The report further claims that private investment in NCIT would require an annual return of 15% to 17%, requiring market share of six times the current share of the Wilmington terminal and container handling rates approximately three times what current NCSPA charges.</p> <p>The author is critical that the NCSPA report does not provide a true benefit-cost analysis.</p>		
FOLLOW UP QUESTIONS:	<p>What is basis for conclusions on prerequisites for private investment (including minimum ROI)?</p> <p>What elements of this analysis (and the original NCSPA report upon which it is based) are still relevant given release of 2011 Moffatt & Nichol and ITRE studies?</p>		
REFERENCES:	Several references included, which have also been added to existing documents list for review: document nos. 012, 013, 016, 070, 078, 095, 096, 097, and 104.		

DOCUMENT SUMMARY

REPORT:	Economic Contribution of the North Carolina Ports		
AUTHOR:	ITRE, Moffatt & Nichol	REPORT NO:	019
AGENCY:	North Carolina State Ports Authority	DATE:	February 9, 2011
CONTACT:	Daniel J. Findley, P.E., Lead Author	REVIEWER:	Horst
DESCRIPTION:	Report applies IMPLAN to estimate economic impacts of deepwater ports on the region.		
KEY INFORMATION:	<p>Quoting from the study, “the findings of the study show that there is approximately \$7.5 billion in annual economic contribution to the state’s economy associated with goods moving through North Carolina ports (\$6.4 billion attributed to the Port of Wilmington and \$1.1 billion attributed to the Port of Morehead City). The ports directly and indirectly support over 65,000 jobs across North Carolina.”</p> <p>The validity of these estimates turns on the column entitled “Value Added to NC Imports (\$)” in Exhibit 4. It is unclear how this value added number is estimated. Exhibit 11 indicates most jobs are in retail. Overall value added share of containers is 62 percent. The derivation of this share and its benchmarking is not discussed.</p> <p>Exhibit 8 is surprising as it suggests that the economic impact of container imports (production outside the NC economy) is greater than for NC exports (projection inside the economy).</p>		
FOLLOW UP QUESTIONS:	How were value-added estimates (Exhibit 4) prepared?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Executive Order 32: Governor's Logistics Task Force		
AUTHOR:	Office of the Governor Beverly Purdue	REPORT No:	020
AGENCY:	State of North Carolina	DATE:	December 8, 2009
CONTACT:	Agency contact name and title	REVIEWER:	Griffin
DESCRIPTION:	<p>An executive order issued by the governor that establishes the Governor's Logistics Task Force. This task force was appointed by the governor and given the following mission:</p> <ul style="list-style-type: none"> a. Conduct a thorough inventory and evaluation of existing public and private transportation and commerce assets, including ports, inland ports, airports, highways, railroads, major distribution centers, and business and industrial parks. b. Report on the current system for moving goods and people, including the condition of the system, its overall performance, and its safety. c. Project future needs for the state's multi-modal transportation system and explore challenges and opportunities in meeting those needs. d. Identify relevant research and best practices in transportation and logistics from other states. e. Inventory current laws, rules, policies, processes, and organizational structures that affect the movement of people and goods across the state and make recommendations for changes to improve the efficiency and safety of our transportation system. f. Explore innovative ideas in transportation and economic development that can help support the state's logistics capacity, including public private partnerships. g. Make additional short-term and long-term recommendations to create an integrated logistics plan for North Carolina. 		
KEY INFORMATION:	The Task Force shall report its progress, findings, and recommendations to the Governor every six months, or more frequently, if warranted.		
FOLLOW UP QUESTIONS:	NA		
REFERENCES:	Available online at: http://www.governor.state.nc.us/NewsItems/ExecutiveOrderDetail.aspx?newsItemID=815		

DOCUMENT SUMMARY

REPORT:	Track Relocation Feasibility Study – Havelock to Morehead City		
AUTHOR:	Earth Tech & Wilbur Smith Associates	REPORT NO:	021
AGENCY:	North Carolina Railroad Company	DATE:	March 2007
CONTACT:		REVIEWER:	Heebner
DESCRIPTION:	<p>This was a study to determine the feasibility of relocating the North Carolina Railroad (NCRR) between Havelock and Morehead City while continuing to serve the North Carolina's Port of Morehead City, including Radio Island. The Study goal was to determine the overall feasibility of relocating the railroad, and identify a potential route, if possible. Impacts to human and natural environment, citizen and stakeholder support and possible economic opportunities were considered.</p> <p>Eight (8) alternative railroad relocation corridors were identified and evaluated based on engineering criteria, environmental impacts, community concerns, and economic development potential. In addition, several options to improve the existing alignment, including raising the track on structure or depressing the track in a tunnel section were evaluated.</p> <p>Upgrades to the existing track alignment and the construction of an off-site rail yard to build and break down trains were considered. Current usage requires building trains on the main track and the blocking of grade crossings, including US 70 East causing highway delays of up to 20 minutes.</p>		
KEY INFORMATION:	<p>The best relocation alternative corridor was identified as a combination of Alternatives 3 and 5. The recommended alternative begins south of Havelock and continues eastward along the southern boundary of the Croatan Forest and across the Intercoastal Waterway where it would head southward around the Beaufort-Morehead City Municipal Airport and across Gallant's Channel to Radio Island. This alternative is feasible from an engineering standpoint but challenges would be encountered due to human and environmental impacts.</p> <p>As a result, given the current traffic levels and the development plans of the Port Authority, a rail relocation alternative does not appear to be economically feasible at the time of the report. It is recommended that the NCRR maintain rail service along the existing alignment and consider improvements to include:</p> <ul style="list-style-type: none"> • Crossing closure and consolidation • Relocation of the US 70 eastbound crossover further to the west • Development of an offsite rail yard for building and breaking down trains to and from the Port Terminal and Radio Island <p>These improvements, as well as improvements to the trestle bridge connecting Morehead City Port Terminal to Radio Island should provide for improved rail operations and alleviate some traffic disruptions for the short term.</p>		
FOLLOW UP QUESTIONS:	<p>The relocation alternative described above should be investigated to support increased rail traffic into Morehead City. The relocation alternative could be explored as a joint corridor that accomodates both rail and surface transportation modes. The rail route in the report should be validated for current operations with the railroad.</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Email from TJ Bronstein (Save the Cape) to Roberto Canales		
AUTHOR:	TJ Bronstein	REPORT NO:	022
AGENCY:	North Carolina State Ports Authority	DATE:	12/1/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:	Sent 2 documents obtained from the Association of American Ports Authorities on container movements between 1990-2009 for Wilmington, Hampton Roads, Charleston, and Savannah.		
KEY INFORMATION:	<p>1. Four Terminals Chart: perspective on the relative market importance of those ports; the share of the container market held by Wilmington is solely due to geography.</p> <p>2. Container Port Service Areas: shows the area within 400 miles of each of the container ports serving NC (generally accepted distance for efficient distribution by trucking). Also shows the areas where NCIT and the Port of Wilmington would be the closest container terminal. Outside of the area, other ports would be closer.</p> <p>Conclusion: The service area of the proposed NCIT is within the service area of other ports – as many as three such competing ports in most places.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Star News Online-Cape Fear Watchdogs No Ports Response to the NC Ports ITRE Study		
AUTHOR:	Gareth McGrath	REPORT No:	023
AGENCY:	Star News Online	DATE:	2/11/2011
CONTACT:	Seth Palmer (emailed from him)	REVIEWER:	G Smith
DESCRIPTION:	<p>“Group calls NC Ports’ estimated economic contribution to the state “extravagant”</p> <p>NC State study, commissioned by the NC State Ports Authority found that ports in Wilmington and Morehead City contributed \$7.5 billion to state’s economy and supports 65,000 NC jobs.</p>		
KEY INFORMATION:	<p>Save the Cape believes numbers and study are misleading. NC industries conduct international trade through many regional ports, not necessarily NC ports. The 65,000 jobs supported in part by the ports would likely still exist with or without NC ports.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Cape Fear Firebird		
AUTHOR:	Save the Cape Newsletter	REPORT No:	024
AGENCY:		DATE:	12/14/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:	Dee Freeman, Secretary of the NCDENR sent a letter to the Wilmington District of the US Army Corps of Engineers expressing the intent of the State to participate in the cost of a feasibility study for these dredging projects in the Cape Fear River to “accommodate slightly larger vessels”.		
KEY INFORMATION:	<p>The letter of intent is a blank check: no cost is specified to be shared, no description or scope for the study, no mention of channel depths or widths or size of ships to be accommodated.</p> <p>STC asked for the draft report and was refused. Also asked for details, i.e. how large the container ships would be, how wide and deep the improvements would be and have not received answers.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Cape Fear Firebird		
AUTHOR:	Save the Cape Newsletter	REPORT No:	025
AGENCY:		DATE:	1/1/2011
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:			
KEY INFORMATION:	<p>How dependent is NC on its own ports for international trade?</p> <p>Data from the Port Import Export Reporting Service shows that about 18.5% of North Carolina's exports and 22% of imports of containerized freight move through the Port of Wilmington. Four-fifths of NC's international trade moves through ports in VA, SC, GA, and FL.</p> <p>State loyalty does not overcome considerations of distance, cost, frequency of service, variety of origins and destinations and other business advantages offered by ports in other States.</p> <p>Service at Wilmington is good, charges are low, has a channel deep enough for the largest ships now able to transit the Panama Canal.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Cape Fear Firebird		
AUTHOR:		REPORT No:	026
AGENCY:	Save the Cape	DATE:	1/20/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:			
KEY INFORMATION:	<p>The 600 acres on the Cape Fear River are currently zoned for industrial use. This zone extends over several square miles to the west and north, surrounding 2 schools and a residential area.</p> <p>If the NCIT does not happen and the site is put on the market, the property could be utilized as “Industrial-General”: animal processing, asphalt, concrete manufacturing, hazardous waste disposal, manufacturing, paper mills, petroleum and chemical refining and products, railroad yard, scrap and waste processing.</p> <p>This situation has destructive potential far exceeding that of the NCIT.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Cape Fear Firebird		
AUTHOR:	Save the Cape Newsletter	REPORT NO:	027
AGENCY:		DATE:	1/15/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:	Save the Cape conducted a study on inventory of container ports available for NC's international trade, both in and out-of-state.		
KEY INFORMATION:	<ul style="list-style-type: none"> - Most of NC is within trucking distance of three large container terminals in VA, SC, GA. In most parts of the State, out-of state terminals are closer than the container terminal at Wilmington. - Container terminals have excess capacity and expansion projects underway or in advanced states of planning, will have capacity for traffic growth well beyond 2030. Larger vessels expected to transit the Panama Canal after 2014 can be accommodated by out-of-state ports at no cost to North Carolina. - Ports serving NC, in-state and out, are heavily subsidized by the respective states and the Federal government for capital improvements. -Cost of deepwater port (estimated at \$3 billion) can't be recovered from income. 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Cape Fear Firebird		
AUTHOR:	Save the Cape Newsletter	REPORT NO:	028
AGENCY:		DATE:	2/1/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:			
KEY INFORMATION:	<p>The Cape Fear River was 12 – 20 feet deep during Colonial times. It has been deepened through the years and in 1998, the Corps received authorization and funding to increase the channel depth to 42 feet in the river, 44 feet at the ocean entrance.</p> <p>The deeper and longer channel traps sand from Bald Head Island in the channel instead of moving to the next beach. To rectify this, the sand must be dredged out of the channel and put back onto the beach. The Corps established a maintenance plan with funding from Congress; the annual bill for maintenance dredging of the Cape Fear River is about \$12 million.</p> <p>Congress did not pay and Bald Head Island commenced a civil action against the Corps of Engineers saying that the Corps has failed to fulfill its commitments relating to the re-alignment, deepening and maintenance of the Wilmington Harbor Shipping Channel, which has resulted in substantial erosion of Bald Head Island beaches and near-shore shoals.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Cape Fear Firebird		
AUTHOR:	Save the Cape Newsletter	REPORT No:	029
AGENCY:		DATE:	2/7/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:			
KEY INFORMATION:	<p>Federal Harbor Maintenance Tax, an import tax on shippers intended to contribute to the cost of harbor maintenance.</p> <p>NC ranks 28th in collecting import tax, and is ranked 10th in receiving disbursements from Trust Fund that holds collected tax monies. All money is disbursed by Congress.</p> <p>Harbor Maintenance Tax and Trust Fund provides a cross-subsidy where the larger ports support smaller ports (like Wilmington).</p> <p>Annual cost for dredging Cape Fear River averaged 12.2 million; cost for deepening the channel to 42 ft. - \$533 million. In 2005 (the last year data was available), taxable cargoes at Port of Wilmington provided tax revenue of \$2.6 million.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Cape Fear Firebird		
AUTHOR:	Save the Cape Newsletter	REPORT No:	030
AGENCY:		DATE:	2/12/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:	Response to NC State Ports Authority statement that State ports support 65,000 jobs and \$500 million in taxes due to activity supported by the ports.		
KEY INFORMATION:	Claims that the study is flawed.		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	StarNews Online “NC Ports pump billions of dollars into state’s economy”		
AUTHOR:	StarNews Online	REPORT No:	031
AGENCY:		DATE:	2/11/2011
CONTACT:	Wayne Faulkner Wayne.Faulkner@StarNewsOnline.com	REVIEWER:	G Smith
DESCRIPTION:			
KEY INFORMATION:	<p>NC ITRE study shows the economic contributions directly and indirectly to the state’s economy. (\$7.5 billion overall; 500 million into state and local tax coffers and affects 65,000 jobs)</p> <p>The numbers of jobs affected are those that exist because commodities go through the state ports. It doesn’t mean that if the ports closed those 65,000 jobs would necessarily go away.</p> <p>The \$7.5 billion – \$6.4 billion from the Port of Wilmington – is the value of business activity associated with moving the goods through the ports, including the gross revenues earned by firms that use the port for export and import.</p> <p>The figure, which represents 2 percent of the state’s gross domestic product, includes products brought into and out of the ports that end up in businesses’ inventories and are sold.</p> <p>Estimated cost of the study \$130,000.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Guide to Quantifying the Economic Impacts of Federal Investments in Large-Scale Freight Transportation Projects		
AUTHOR:	Cambridge Systematics, Inc., Economic Development Research Group, Inc., Boston Logistics Group, Inc.	REPORT No:	032
AGENCY:	Office of the Secretary of Transportation, U.S. Department of Transportation	DATE:	August 2006
CONTACT:		REVIEWER:	Horst
DESCRIPTION:	This 97 page report (plus appendices) is a guide to conducting a freight project evaluation. It is comprehensive and provides useful information. It is not federal guidance. There are many similar reports; this particular report is well done but does not represent the definitive thinking on this.		
KEY INFORMATION:	Much of the report provides standard information as the guide is aimed at an audience with a wide spectrum of experience. Appendix A provides a useful framework for dissecting supply chain benefits. Of particular note is the impact of improved reliability on inventory levels (costs). There are some useful graphics.		
FOLLOW UP QUESTIONS:	None		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	Hydrogeology and Groundwater Quality of Brunswick County		
AUTHOR:		REPORT NO:	033
AGENCY:	US Geological Survey	DATE:	2003
CONTACT:	Stephen Harden, Jason Fine and Timothy Spruill	REVIEWER:	Hoyle
DESCRIPTION:	<p>In this report, geologic, hydrologic, and chemical data was used to investigate and delineate the hydrogeologic framework and ground-water quality of Brunswick County.</p> <p>The major aquifers and their associated confining units delineated in the Brunswick County study area include, Castle Hayne, Peedee, Black Creek, upper Cape Fear and lower Cape Fear aquifers.</p> <p>The surficial aquifer in Brunswick County is an important source of water for domestic supply and irrigation.</p> <p>In addition to evaluating the sources of water contained in Brunswick County aquifers, the report evaluated the quality of the water for concentrations of iron and manganese which commonly exceed the drinking-water standards.</p>		
KEY INFORMATION:	<p>The most important information for the Maritime Strategy is the historical analytical data on brackish water in the upper Cape Fear and lower Cape Fear. The impact of deepening Cape Fear for larger vessels would have the potential for upward migration of brackish water into overlying aquifers, or upconing beneath areas of pumping.</p>		
FOLLOW UP QUESTIONS:	Was this report used in evaluating potential deepening the Cape Fear River?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Latin America Trade and Transportation Study		
AUTHOR:	Wilbur Smith Associates, Inc.	REPORT NO:	034
AGENCY:	Southeastern Transportation Alliance	DATE:	March 2001
CONTACT:		REVIEWER:	Griffin, Horst, Vandenberg
DESCRIPTION:	<p>The Southeastern Transportation Alliance was formed “to assess infrastructure development required to capitalize on international trade stimulated by increased trade with Latin America.” This report provides a thorough analysis of the future growth in South America and an assessment on infrastructure development required to capitalize on international trade stimulated by increased trade with Latin America.</p> <p>The report identifies historic and current trade patterns and trade forecasts; economic development impacts; strategic transportation system (waterports, airports, railroads, and highways); and investment needs in strategic transportation systems. Policy and political influences on global trade are discussed.</p>		
KEY INFORMATION:	<p>86% of Latin America imports into the US enter and 71% depart through the Alliance Region. Trade with Latin America is projected to triple from 1996 to 2020.</p> <p>Rising trade with Latin America is projected to create an additional 1.39 million jobs across the 13-state + Puerto Rico region by 2020.</p> <p>The largest seatriade commodity is Petroleum (11mm tons exported; 167mm tons imported in 1996), followed by Agricultural & Natural Resources (23mm tons; 26mm tons), and Primary Manufactured Products (13mm tons; 14mm tons). By value, Manufactured and Primary Manufactured Products are the largest seaborne commodities (\$46b export; \$38b import). Approx. \$8b in Agricultural & Natural Resources are exported and \$8b imported.</p> <p>The greatest seaborne trade volumes and values occur through Texas, Louisiana, and Florida. North Carolina ports handle the smallest amount of Latin American trade.</p> <p>The top two export trading partners are Mexico and Brazil, receiving 40% of 1996 waterborne exports. This is expected to continue in the future.</p> <p>Pass-through exports from central states are a significant opportunity for the Alliance, particularly in the areas of agricultural and natural resource products (bulk products), including grain and non-metallic minerals such as phosphates.</p> <p>Inland modes for maritime trade are primarily rail (highest volume) and truck (handling the most valuable goods). Inland waterways carried about half the volume of trucks in 1996.</p> <p>The report concludes that the hub and feeder concept is the preference of large oceangoing carriers to reduce their number of ports-of-call.</p> <p>Section C3 describes the rail system and forecasts intermodal O-D volumes from Alliance ports. Section C4 identifies strategic highway corridors and connector criteria. Section D1 estimates port capacities for containers, bulk, break-bulk, neobulk, dry bulk and liquid bulk. Section D3 includes truck operating speeds on various highway types.</p>		
FOLLOW UP QUESTIONS:	<p>Are forecasts for Latin American trade growths consistent with other forecasts? How can NC best participate in this opportunity? How can/should NC ports best participate in regional hub-and-spoke ocean carrier concept? Are port capacities in D1 reasonable and useful in assessing NC competitive position? Can truck speeds in D3 be used in?</p>		
REFERENCES:	<p>PIERS data; BTS database; US Census data, REEBIE TransSearch data; Standard & Poor's DRI US Regional Economic Service; numerous economic journal references</p>		

DOCUMENT SUMMARY

REPORT:	LATTS II Economic Development Opportunities – Briefing Paper														
AUTHOR:	Wilbur Smith Associates, Inc. in association with DRI/McGraw-Hill, R.K. Johns and Associates, VZM/Tran Systems, HNTB, and WHM	REPORT NO:	035												
AGENCY:	Southeastern Transportation Alliance	DATE:	2004												
CONTACT:		REVIEWER:	Horst, Vandenberg												
DESCRIPTION:	<p>The paper describes potential economic development opportunities for Southeastern Transportation Alliance region based on the flow of goods to and from Latin America.</p> <p>Various graphics of logistics and regional goods distribution are presented to illustrate that strategic transportation investments will allow the region to be better poised for employment growth and tax base expansion by ensuring seamless movement of goods.</p>														
KEY INFORMATION:	<p>Transport costs are an important element of demand-driven production systems (e.g. JIT manufacturing), comprising roughly 40% of total distribution costs in a demand driven production process as opposed to 20% in a supply-driven process.</p> <p style="text-align: center;">Exhibit 5: Role of Transport Systems in Distribution</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Data for Exhibit 5: Role of Transport Systems in Distribution</caption> <thead> <tr> <th>Production System</th> <th>Inventory (%)</th> <th>Transport System (%)</th> <th>Information System (%)</th> </tr> </thead> <tbody> <tr> <td>Demand Driven</td> <td>10</td> <td>40</td> <td>50</td> </tr> <tr> <td>Supply Driven</td> <td>70</td> <td>20</td> <td>10</td> </tr> </tbody> </table> <p>Key clusters in the Alliance region include: Durable Manufacturing – automotive; wood products; electrical components & appliances Nondurable Manufacturing – beverage & food; industrial & chemicals; and paper products</p> <p>Regional opportunities identified include: Fabricated Metals, Rubber & Plastics, Instruments – input to automotive and electrical/appliances industries Chemicals – input to rubber and plastics, paper products and chemical industries</p>			Production System	Inventory (%)	Transport System (%)	Information System (%)	Demand Driven	10	40	50	Supply Driven	70	20	10
Production System	Inventory (%)	Transport System (%)	Information System (%)												
Demand Driven	10	40	50												
Supply Driven	70	20	10												
FOLLOW UP QUESTIONS:	Where are manufacturing clusters located in comparison to regional ports, distribution centers, and transportation corridors?														
REFERENCES:	<i>A Provisional Typology of Highway Economic Development Projects (FHWA, 2003)</i>														

DOCUMENT SUMMARY

REPORT:	LATTS II Foreign Trade Zone (FTZ) Briefing Paper		
AUTHOR:	Wilbur Smith Associates, Inc. in association with DRI/McGraw-Hill, R.K. Johns and Associates, VZM/Tran Systems, HNTB, and WHM	REPORT NO:	036
AGENCY:	Southeastern Transportation Alliance	DATE:	2004
CONTACT:		REVIEWER:	Horst, Vandenberg
DESCRIPTION:	This briefing paper describes the role of FTZs and subzones in the supply chain. The role of special zones in regional economic development, along with success factors and barriers are discussed.		
KEY INFORMATION:	<p>Some 62 percent of all activity occurring under FTZ status in the US takes place within the Alliance Region.</p> <p>Identifies the success factors and barriers to success for FTZ effectiveness. Two of the most important one are: Gateway congestion a big issue – FTZs go where the demand is. Interviews determined that it is primarily congestion on principal port and airport connectors that is the issue, and in some cases bottlenecks within the local port compound street network.</p> <p>DOTs should stay aware of how changes in trade policy and safety/security may impact FTZs. Transparency in the trade process is required for expansion in Latin American trade with FTZs.</p>		
FOLLOW UP QUESTIONS:	How can NC reactivate or reinvigorate its FTZ's to enhance maritime trade?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Latin America Trade & Transportation Study II - Finance Techniques and Strategies White Paper		
AUTHOR:		REPORT No:	037
AGENCY:	Southeastern Transportation Alliance	DATE:	2004
CONTACT:		REVIEWER:	Horst, Vandenberg
DESCRIPTION:	<p>This document discusses funding and financing strategies to support critical infrastructure investments within the Alliance region.</p> <p>Investment needs, as presented in the original LATTs report, are summarized for marine, air and highway modes within each Alliance state. Traditional funding mechanisms are discussed along with options for transportation financing. Case studies for public-private partnerships are presented. The report concludes with recommendations for future funding.</p>		
KEY INFORMATION:	<p>The paper identifies funding and financing approaches that are fairly routine in the transportation industry in 2011, including:</p> <ul style="list-style-type: none"> • Means to accelerate or match federal highway funds (PCAC, flexible match, toll credits) • Debt financing (GARVEE bonds) • Credit assistance (State infrastructure banks, Section 129 loans, TIFIA loans) • Tolling 		
FOLLOW UP QUESTIONS:	None		
REFERENCES:	LATTs Alliance Report (WSA 2001); Funding and Institutional Options for Freight Infrastructure Improvements (FHWA, November 2002); Freight Financing Options for National Freight Productivity (FHWA, October 2002):FHWA FAF database		

DOCUMENT SUMMARY

REPORT:	LATTS II Transportation Infrastructure Financing Strategies		
AUTHOR:		REPORT No:	038
AGENCY:	Southeastern Transportation Alliance	DATE:	2004
CONTACT:		REVIEWER:	Horst, Vandenberg
DESCRIPTION:	Demand for new and improved transportation infrastructure exceeds available sources of public funding. This white paper examines alternatives to use public funds more efficiently, to accelerate the delivery of projects through federal loan programs like TIFIA, and to augment them with private investment through public-private partnerships. The importance of increasing regional transportation funding is emphasized.		
KEY INFORMATION:	<p>Financing techniques such as PPPs are not funding—they allow existing funding to be used more efficiently.</p> <p>At the time of preparation of this white paper, the most likely sources for the increased funding were considered to be:</p> <ul style="list-style-type: none"> • Increases in the motor fuel tax rates • Development of alternative mileage based user fees 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	LATTS II Highway Connectors Briefing Paper		
AUTHOR:	Wilbur Smith Associates	REPORT NO:	039
AGENCY:		DATE:	2004
CONTACT:		REVIEWER:	Griffin
DESCRIPTION:	<p>The purpose of this briefing paper is to describe the analysis pertaining to the identification and condition examination of the LATTS II highway connectors. These sections are typically called the “critical last miles” due to their short length but high traffic volume. These highway intermodal connectors are sometimes overlooked, even though their deficiencies can significantly impact the efficient movement of vehicles, especially large trucks.</p>		
KEY INFORMATION:	<p>Approximately 115 highway connectors are linked to 40 airports and 47 waterports. It was found that 16 (14%) of the connectors had reported pavement condition deficiencies, while 13 (11%) had no reported data. The majority (75%) of the connectors were not determined to have deficiencies in terms of pavement conditions.</p> <p>The report found that 62 connectors (53%) were found to have physical or geometric deficiencies, and 24 (21%) did not have any data to report. Twenty-four connectors (21%) were found to have deficiencies pertaining to railroad crossings, while 17 (15%) did not have any relevant data to report. Most of the connectors (61%) were found to have deficiencies relating to operations, safety and delays. 23% of the connectors did not have any data to report. Most of the problems leading to deficiencies related to inadequate terminal signage, limited turning, and congestion. In addition to the four categories listed above, an analysis was done based on projected daily truck traffic. By 2020, the truck traffic will almost double in volume, raising the volume to capacity ratio from 0.50 to 0.80.</p> <p>The first item the document recommends that databases associated with port connectors are kept more up to date and include a more complete list. The document suggests improving the connectors based on the fields evaluated in order to improve efficiency, safety, and productivity, which would eventually lead to increased economic activity.</p>		
FOLLOW UP QUESTIONS:	NA		
REFERENCES:	<p>NHS Intermodal Freight Connectors Study, 2000. FHWA Highway Performance Monitoring System</p>		

DOCUMENT SUMMARY

REPORT:	LATTS II - Freight Investment Decision Principles		
AUTHOR:		REPORT NO:	040
AGENCY:	Latin America Trade & Transportation Study	DATE:	2004 (estimated)
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	The purpose of this paper is to document current freight planning tools, techniques and methodologies that may be useful in defining freight investment needs. The white paper states the importance of meaningful performance measures for freight movement.		
KEY INFORMATION:	<p>The white paper states that the use of typical highway benefit-cost models, which focus on travel time savings, crash impacts, vehicle operating costs, and capital costs, do not capture the beneficial effects of investment and improvement of freight infrastructure.</p> <p>FHWA's Freight Benefit-Cost Investment Study is cited to identify a four-tiered evaluation of benefits that include:</p> <ul style="list-style-type: none"> • First-tier benefits: immediate cost reductions to carriers and shippers, including benefits of reduced transit times and increased reliability • Second-tier benefits: reorganization-effect gains from improvements in logistics • Third-tier benefits: additional reorganization effects such as improved products and new products • Fourth-tier benefits: effects not typically considered in benefit-cost analysis, such as increases in regional employment or increases in rate of growth of regional income <p>LATTS acknowledges the increasing difficulty of measuring the benefits through successive tiers. Several methodologies evaluated by FHWA are discussed.</p> <p>Level of Service (LOS) is identified as best, though imperfect, means of estimating reliability costs due to variance in delivery time.</p> <p>Research by the University of Minnesota is cited as a good source for the marginal increase in truck operating costs per additional mile driven.</p> <p>Per the white paper, recent TRB-FHWA studies suggest that carriers value savings in transit time at between \$144 - \$192 per hour.</p> <p>The National I-10 Freight Corridor Study further identifies service sensitivity as an important factor for trucks carrying time sensitive freight and for deliveries of less than 100 miles. This same study looked at competition among modes and concluded that shipper mode choice is driven by distance, freight density, and type of commodity transported. Railroad or barge transport is competitive for: high volume corridors and for line hauls longer than 500-100 miles to transfer / distribution terminals with high capacities.</p>		
FOLLOW UP QUESTIONS:	How can second-tier through fourth-tier benefits best be estimated in order to capture the benefits of public investment in freight infrastructure? Has FHWA developed additional tools or recommendations since the 2001 BCA report? What were conclusions of NCHRP study projected for completion in 2004? Can University of Minnesota cost elements be applied to define per -mile truck costs (or savings)?		
REFERENCES:	<i>Freight Benefit Cost Analysis Study</i> (FHWA, February 2001); <i>The Per-Mile Costs of Operating Automobiles and Trucks</i> (University of Minnesota, June 2003); <i>The National I-10 Freight Corridor Study</i> (Wilbur Smith & Associates, May 2003); <i>Potential for Reserved Truck Lanes and Truckways in Florida</i> (CUTR, May 2002); <i>Rail-Freight Solutions to Roadway Congestion</i> (NCHRP Project 8-42)		

DOCUMENT SUMMARY

REPORT:	Latin America Trade and Transportation Study (LATTS) II Strategic Railroad Connectors Briefing Paper		
AUTHOR:	Wilbur Smith Associates	REPORT NO:	041
AGENCY:	Louisiana Department of Transportation	DATE:	2004
CONTACT:	Thomas Barkiewicz 225-379-1787 Eric Kalivoda 225-379-1248	REVIEWER:	Heebner
DESCRIPTION:	<p>The LATTS II region includes the original 13 states/commonwealths (VA, WV, KY, TN, NC, SC, GA, FL, AL, MS, LA, TX, AR, Puerto Rico and the two (2) newest members – OK and MO. These representatives form the Southeastern Alliance. LATTS II primary goals are:</p> <ul style="list-style-type: none"> • To strengthen the transportation planning process • To enhance the analytical basis for use in developing transportation policy and programs • To monitor and document the implementation of the recommendations contained in the LATTS (Phase I) report • To facilitate additional implementation of the recommendations contained in the LATTS (Phase I) report • To develop appropriate, fact-based, and credible communication formats and procedures for informing the elected and appointed officials in both the private and public sector, as well as the general public, of the benefits, costs, opportunities and problems associated with the implementation or non-implementation of various transportation-related investment recommendations. 		
KEY INFORMATION:	<p>As part of the research conducted in LATTS Phase I, the following criteria were defined to identify key railroad corridors:</p> <ul style="list-style-type: none"> • Rail line had to have annual volumes in excess of 20 MGT • Strategic military STRACNET mainlines were included • Existing rail lines to all ports • Existing rail lines which function as part of an inland port • Additional rail lines of special interest <p>Rail lines identified as key corridors under Phase II include:</p> <ol style="list-style-type: none"> 1. CSXT – Weldon to Rowland (N-S) 2. NS – Shelton to Pineville (N-S) 3. CSXT – Poplar to Brice (N-S) 4. NS – Paint Rock to Marion (thru Asheville) – (N-S) 5. NS – Greensboro to Morehead City (E-W) 6. CSXT – Waxhaw to Wlimington (E-W) 7. CSXT – Bostic to Monroe (E-W) 		
FOLLOW UP QUESTIONS:	<p>The Phase II Report includes a comprehensive database and inventory of railroad connections, additional work is needed to validate the need, physical inventory, engineering deficiencies and strategic potential for use. The rail routes in the report should be validated for current operations with the railroads.</p>		
REFERENCES:	LATTS Phase I report		

DOCUMENT SUMMARY

REPORT:	LATTS II – Documenting Successes Briefing Paper		
AUTHOR:		REPORT NO:	042
AGENCY:	Southeastern Transportation Alliance	DATE:	2004
CONTACT:		REVIEWER:	Horst, Vandenberg
DESCRIPTION:	<p>The purpose of this briefing paper is to provide a summary of projects or initiatives that demonstrate the region’s success in implementing the LATTS strategies. The successes are organized in the following categories:</p> <ul style="list-style-type: none"> • Increasing stakeholder/public awareness • Expanding use of ITS and other technological advances • Integrating freight into planning process • Focusing on projects to increase throughput • Identifying economic development benefits • Expanding use of public-private partnerships 		
KEY INFORMATION:	<p>Among the success stories cited across the Alliance:</p> <ul style="list-style-type: none"> • North Carolina’s freight forum, <i>Freight Mobility and Economic Prosperity</i> (2003), is identified as a model for public awareness. • North Carolina’s <i>US 64 - NC 49 Corridor Study</i> (underway at the time of the white paper preparation) will establish a master plan for the physical and operational elements needed along the US 64 and NC 49 corridors to meet multi-modal and freight objectives. • The white paper presents results of the 2002 economic impact study sponsored by Hillwood Properties that examines the economic, employment and tax impacts of the Alliance TX inland port, including a projected cumulative \$37.5 billion economic contribution to the region from 1990-2009. 		
FOLLOW UP QUESTIONS:	Was the <i>US 64 – NC 49 Corridor Study</i> completed? If so, have projects been implemented or programmed? How can elements be integrated into the NC Maritime Strategy?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	NCSPA Port Business Case Project		
AUTHOR:	Moffat & Nichol	REPORT NO:	043
AGENCY:	NC State Ports Authority	DATE:	February 10, 2011
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	<p>As stated in the report purpose:</p> <p><i>“Moffatt & Nichol was commissioned to review NCSPA facilities to identify how coming shipping and port industry changes will affect their mission. This report provides the NCSPA with a review of the future freight market, competing port infrastructure expansion and shipping industry changes to help determine how existing NCSPA facilities are positioned and what improvements should be made to accommodate these changes to improve how its ports maintain and attract business.”</i></p> <p>The report is specifically focused on container traffic and provides a series of projections for cargo volumes based on level of improvements to the Port of Wilmington, including road and rail improvements.</p> <p>Direct port jobs related to container forecasts are calculated.</p>		
KEY INFORMATION:	<p>Says competing ports are more successful due to better rail connectivity.</p> <p>Predicts 4.2% growth for imports and 5.0% for exports.</p> <p>Does not include benefit/cost analysis of port investments.</p> <p>Claims that Wilmington is only capturing 31.8% of the potential container cargo market available to the port.</p>		
FOLLOW UP QUESTIONS:	<p>Are direct job claims consistent with NC State methodology and supported by available data? What is basis for import and export growth predictions?</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	NCSPA Port Business Case Project		
AUTHOR:	Moffatt and Nichol	REPORT NO:	044
AGENCY:	North Carolina State Ports Authority	DATE:	February 2011
CONTACT:	None provided	REVIEWER:	Horst
DESCRIPTION:	This report provides the NCSPA with a review of the future freight market, competing port infrastructure expansion and shipping industry changes to help determine how existing NCSPA facilities are positioned and what improvements should be made to accommodate these changes to improve how its ports maintain and attract business.		
KEY INFORMATION:	<p>This 230 page report weaves together much of the technical information summarized in the individual technical reports and reviewed elsewhere.</p> <p>Information that is unique to this report among those reviewed is how the Ports' market changes with improved land access improvements. Rail improvements in particular change the ports' competitive position.</p> <p>There are a series of maps illustrating the least cost market area for a number of world markets.</p> <p>The report contains detailed information on fleet changes and cargo handling at the ports. Also contains profiles of competing Atlantic ports.</p> <p>Based on Table 3-2, NCSPA operates one of the most diverse port operation on the South Atlantic Coast in terms of types of cargo handled.</p>		
FOLLOW UP QUESTIONS:	What inland improvements would be most effective in expanding the market area for NC Ports?		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	Morehead Port Grain Loading Opportunity		
AUTHOR:		REPORT No:	045
AGENCY:	North Carolina Department of Agriculture and North Carolina State Ports Authority	DATE:	
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	<p>PowerPoint presentation prepared jointly by NC Department of Agriculture and NC State Ports Authority. Provides an overview SWOT analysis for grain loading at the Port of Morehead City.</p> <p>The presentation provides some background on Morehead City and grain operations in the nearby region.</p> <p>Roadway access (including drive time to Raleigh and Fayetteville) as well as railroad connections to/from Morehead City are illustrated.</p>		
KEY INFORMATION:	<p>The presentation identifies soybeans as major opportunity for Morehead City.</p> <p>Sings the praises of NC Soybeans. Most soybeans are produced in eastern part of state, near ports.</p> <p>Makes a business case to transport soybeans and wheat via Morehead City. Includes a cost estimate for construction of a grain silo and projected return on investment.</p>		
FOLLOW UP QUESTIONS:	Where is the source analysis for market opportunities and calculated return on investment related soybeans and wheat that are shown in this overview presentation? Are conclusions consistent with project team market analysis?		
REFERENCES:	USDA data on soybean and wheat production volumes, sources, and quality.		

DOCUMENT SUMMARY

REPORT:	NC Beach and Inlet Management Plan		
AUTHOR:	Moffatt & Nichol	REPORT NO:	046
AGENCY:	North Carolina Department of Environment and Natural Resources	DATE:	April 2011
CONTACT:		REVIEWER:	Mack
DESCRIPTION:	<p>Evaluation of the natural resources, funding mechanisms and strategies for the comprehensive management of the state's ocean and inlet shorelines. It assesses coastal habitats, functions of coastal ecosystems and fisheries, impacts of beach fill and dredging activities on resources, and socio-economic values of N.C. beaches and inlets. The study contains a statewide compilation of data and issues related to managing the beaches and inlets, which include:</p> <ul style="list-style-type: none"> ○ an overview of the state's coastal geology, geological framework of islands/inlets, ○ an assessment of waves and climate, ○ water levels, including tides and tide stations, storm surge and coastal flooding, and sea level rise, ○ beach profile data, historical shorelines and erosion rates, ○ tropical storm and hurricane history and probabilities, ○ availability of digital orthophotography, ○ assessments of potential sand resources, ○ beach fill and dredging history, ○ inlet channel realignment/relocation, and ○ use and location of erosion control structures. <p>Recommendations for managing coastal areas include delineation of the regions and subregions considering the geologic framework, the physical processes (wave exposure, sediment transport, etc.), geography, sand sources and natural resources, and common socio-political and socio-economic concerns. The report summarizes the geology of the coast "<i>The Northern Province extends from Cape Lookout northward and is characterized by lower, flatter beach slopes, and large shallow sounds having few inlets. This region is underlain primarily by unconsolidated sediments. The low-lying coastal area that evolved consists of wide shallow bays and sounds fronted by long, narrow barrier islands. The Southern Province, by contrast, has many inlets and smaller, narrower sounds with higher, steeper beach slopes. This region is underlain by rock with only a thin and highly variable veneer of sediments.</i>" A dredging cost summary is provided of both navigation projects and beach nourishment projects.</p> <p>Recommendations are summarized generally as follows:</p> <p>1) Establish regional authorities for planning (and funding) of beach and inlet management projects (i.e., 4 regions and 5 subregions); 2) Dedicate state funds (i.e., long-term stable and predictable financial foundation) to support regional projects; 3) Develop strategies, projects, partnerships, and innovative shoreline management practices, and 4) Develop long-term data collection and monitoring of coastal resources and the shoreline.</p>		
KEY INFORMATION:	The above referenced data (much of which is in GIS format) will be extremely useful in evaluating water access and coastal constraints. The regional geology (e.g., rock strata in the Southern Province), met-ocean, and dredge costs information will be useful.		
FOLLOW UP QUESTIONS:	Have the regional authorities been established? Has a dedicated state funding mechanism been established?		
REFERENCES:	See Key Information section of report.		

DOCUMENT SUMMARY

REPORT:	Current Practices for Assessing Economic Development Impacts from Transportation Investments: Synthesis 290		
AUTHOR:	Glen Weisbrod	REPORT No:	047
AGENCY:	NCHRP	DATE:	2000
CONTACT:	None provided	REVIEWER:	Horst
DESCRIPTION:	A synthesis document as part of the NCHRP research series. The focus is on the current state of economic assessment of transportation projects as it stood in 2000. It describes the variety of evaluation methods applied by various planning agencies and departments and the purpose for which they are used. It also considers the state of practise in Canada and the UK.		
KEY INFORMATION:	This document does not offer guidance for conducting studies. It summarizes the state of economic assessment practice in 2000 and outlines recommendations for improving analysis going forward.		
FOLLOW UP QUESTIONS:	None.		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Summary of South Atlantic Container Terminals: Capacity, Growth and Expansion FINAL REPORT		
AUTHOR:	The Citadel, Charleston, South Carolina	REPORT NO:	048
AGENCY:	No Port Southport	DATE:	January 26, 2011
CONTACT:	William J. Davis, Ph.D.	REVIEWER:	Vandenberg
DESCRIPTION:	This report presents an analysis and comparison of port capacity, growth and expansion to evaluate container terminals operated by state port authorities in Norfolk VA, Wilmington NC, Charleston SC and Savannah GA. The author assesses these terminals in terms of facility capacity, maritime operations, recent trends in container volume, forecasted container growth, future/planned port expansion projects, channel dredging initiatives, and budgeted capital expenditures.		
KEY INFORMATION:	<p>The author makes the following conclusions:</p> <ul style="list-style-type: none"> • Current combined capacity of container terminals at Norfolk, Wilmington, Charleston, and Savannah is 10.9 MM TEUs. • Programmed improvements at existing terminals will increase total capacity to 15.1 MM TEUs (Norfolk +1.0 MM; Wilmington +0.2 MM; Savannah +3.0 MM). • Proposed developments at Craney Island (Norfolk 3.1 MM TEU), NCIT (Southport 3.4 MM TEU), Navy Base (Charleston 1.4 MM TEU), and Jasper (6.0 MM TEU) would add a combined 13.9 MM TEU to East Coast container terminal capacity at an estimated capital cost of \$8.5 billion for terminal, landside, and waterside improvements. • Worldwide forecasts predict TEU growth of 3 to 5 percent per year for container shipping through 2040. The author suggests that this does not reflect recession risk. • Global factors influencing container shipping along the US East Coast include: 1) Panama Canal expansion, 2) West Coast congestion, 3) post-Panamax and Ultra Large Container Ships, and 4) Asian shipping lines using the Suez Canal. • There is little difference in port costs per TEU across ports evaluated; however, there are measurable differences in trucking costs to inland cities from South Atlantic Ports. <p>Appendices contain useful concept plans of planned terminal and channel improvements.</p>		
FOLLOW UP QUESTIONS:	Determine capacity of each peer port based on the existing and planned Port infrastructure and compare it with previous studies.		
REFERENCES:	US Dept of Commerce, BTS, AAPA data; <i>The Geography of Transport Systems</i> (Jean-Paul Rodrigue 2009); <i>Report to Congress on the Performance of Ports and The Intermodal System</i> (MARAD, 2005); <i>America's Container Ports: Freight Hubs That Connect Our Nation to Global Markets</i> (BTS 2009); <i>Fiscal Year 2011 Civil Works Budget for the US Army Corps of Engineers Summary</i> (February 2010); <i>National Dredging Needs Study of US Ports and Harbors</i> (USACE 2002); <i>WT100 The East Coast Port Alternatives</i> (Ira Breskin, June 2005); <i>Assessment of the Marine Transportation System (MTS) Challenges, Summary Report</i> (USACE 2009); <i>Savannah Harbor Expansion Project, Draft, Economics Appendix</i> (USACE November 2010); <i>Savannah Harbor Expansion Project, Multiport Analysis for the Savannah Harbor Expansion</i> (USACE, 2006); <i>US Water Statistical Snapshot</i> (MARAD 2009); <i>VPA 2040 Master Plan Executive Summary</i> (2008); IHS Global Insight, "What Happened in 2009 and Where Do We Go from Here?" (presentation to AAPA, November 2009); <i>US Public Port Development Expenditure Report - FYs 2006 & 2007-2011</i> (MARAD 2009).		

DOCUMENT SUMMARY

REPORT:	Report to Congress on the Performance of Ports and the Intermodal System		
AUTHOR:		REPORT No:	049
AGENCY:	US Maritime Administration (MARAD)	DATE:	June 2005
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	<p>The report summarizes the performance of the 14 strategic commercial ports during the military force build-up for Operation Iraqi Freedom (OIF) and identifies general deficiencies and obstacles to port and intermodal efficiencies. Pre-recession projections for port volumes vs. capacity are provided. The report concludes that current federal investments into landside and waterside access to the nation's ports are insufficient. Ongoing policies and initiatives, planning efforts, potential funding and financing to enhance port efficiency and landside and waterside access are described.</p>		
KEY INFORMATION:	<p>MARAD identifies <u>factors affecting port volumes</u>: specialization; regional demand, price of port services; waterside access; carrier investment; quality of port services; business realignment; and availability of national government subsidies. MARAD identifies <u>factors affecting port efficiency</u>: labor efficiency; land use efficiency; waterside access limitations; capacity of port road and rail connections; inland transportation availability; and cargo handling capability.</p> <p>Morehead City and Wilmington are two port facilities among the 14 identified as strategic ports, nationwide. Wilmington handled 5.53% (approx. 50 tons) of OIF cargo. Combined, the ports at Jacksonville, Beaumont, Corpus Christi and Charleston handled more than 75% of the total OIF tonnage. US Marines self-deployed from Morehead City, so those volumes are not included in this report. Military Ocean Terminal Sunny Point is one of three CONUS military ports (others are in CA and WA).</p> <p>Pursuant to the Defense Production Act of 1950 (DPA), DOD can request that DOT require strategic ports to provide priority use of facilities and services to DOD ahead of commercial contractual obligations; however, this authority was not required or invoked for OIF.</p> <p>DOD sealift fleet comprises Large Medium Speed Roll-on/Roll-off Ships (LMSRs), Fast Sealift Ships (FSSs), Maritime Prepositioning Ships (MPSs), and ships in MARAD's Ready Reserve Force (RRF), and commercial vessels for shipments of sustainment cargo.</p> <p>DOD deploys its cargoes through commercial seaports, except for ammunition or dangerous cargoes. While peacetime cargo is primarily containerized, wartime cargo contains wheeled vehicles, tanks, and other materiel. In 2002, DOD ranked 30th among Journal of Commerce's top 100 exporters.</p> <p>Military deployments require adequate rail infrastructure, large staging areas (for vehicles and aircraft), special handling of non-containerized equipment, adequate communication between military and port staff, and stringent security.</p>		
FOLLOW UP QUESTIONS:	<p>How can NC ports better partner with MOTSU, Ft. Bragg, Camp LeJeune, and other NC military facilities to improve peacetime and wartime handling of military cargo? How does NCSPA facilitate the use of MHC by US Marines? What are the needs and opportunities for NC related to redeployment of military equipment?</p>		
REFERENCES:	<p><i>Trade and Transportation: A Study of North American Port and Intermodal Systems</i>, US Chamber of Commerce; <i>Freight Transportation: Strategies Needed to Address Planning and Financing Limitations</i>, GAO-04-165; USTRANSCOM: Strategy, Plans, Policy and Programs Directorate</p>		

DOCUMENT SUMMARY

REPORT:	Section 905b Analysis – Wilmington Harbor Navigation Improvements		
AUTHOR:	USACE Wilmington District	REPORT NO:	050
AGENCY:	USACE	DATE:	2011
CONTACT:		REVIEWER:	Mack
DESCRIPTION:	<p>This Reconnaissance Study 905(b) Analysis concluded there is a Federal Interest in participating in a cost shared Feasibility Study to investigate modification of the existing Wilmington Harbor project in the interest of navigation improvements and water resource development opportunities.</p> <ul style="list-style-type: none"> ○ 		
KEY INFORMATION:	<p>Findings include:</p> <ul style="list-style-type: none"> ○ The Port of Wilmington is a major contributor to the economic activity of both counties, moving \$6.4 billion in goods in 2010, and providing \$500 million in sales, property, corporate and personal taxes (Ref. 1). ○ Entrance channel's authorized depth is 44 feet; channel is 42 feet up from Lower Swash Channel to and including the Between Channel; widened the existing 400-foot wide channel to 600 feet over a total length of 6.2 miles including Lower and Upper Midnight and Lower Lilliput channels; widened five turns and bends by 100 to 200 feet providing a total average channel width of 500 to 675 feet; widened the Fourth East Jetty Channel to 500 feet over a total length of 1.5 miles; and deepened most of the anchorage basin. ○ Several navigation issues are summarized, which include: 1) Baldhead shoaling of navigation channel east side, 2) Battery Island turn restrictions, 3) Restricted turning basin dimensions, and 4) navigation depth limitations due to tide and existing channel depth (38-ft anytime draft). ○ Potential alternatives evaluated include: 1) increase the dimensions of the turning basin, 2) realign or widen the Battery Island Portion, 3) realign Baldhead Shoal portion, and 4) provide channel realignment to support potential "North Carolina International Terminal" (NCIT). ○ Favorable B/C ratios on minor and major alternatives. ○ Environmental impacts summarized in matrix for further investigation. ○ Mitigation to shallow water habitats, tidal marshes, and other aquatic resources noted. ○ Other impacts. <p>Document includes useful dredging-related information as follows:</p> <ol style="list-style-type: none"> 1. Existing and proposed alternative channel alignments. 2. Description of channel dredging alternatives to -48 and to -50 within inner harbor channel. 3. Details from the cost estimate such as estimated dredging volumes, disposal volumes, mobilization/demobilization costs, and unit costs. 4. Details on average annual shoaling rates used for annual maintenance costs. 		
FOLLOW UP QUESTIONS:	<p>Can the existing and proposed alternatives support two-way ship traffic? What is the travel time for ships to/from existing and proposed berths? What is the current footprint and stratification of rock within existing and proposed reaches?</p>		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	North Carolina Global TransPark Authority Strategic Plan		
AUTHOR:		REPORT NO:	051
AGENCY:	NC Global TransPark Authority	DATE:	December 2010
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	<p>The Strategic Plan defines goals and objectives to align the 2,500-acre Global TransPark with the top ten factors considered when making site location decisions for relocating or expanding businesses, as reported by <i>Site Selection</i> magazine, including: (1) workforce skills, (2) state and local taxes, (3) transportation infrastructure, (4) flexibility of incentive programs, (5) availability of incentives, (5-tie) utility infrastructure, (7) land/building costs and supply, (8) state economic development strategy, (9) permitting and regulatory structure, and (10) higher education resources.</p> <p>The document has several appendices, including the following of particular interest: Appendix B2: Dr. Kasarda's concept paper; Appendix D: NC Department of Commerce Economic Impact Analysis; Appendix H: Conceptual Plans and Development Costs</p>		
KEY INFORMATION:	<p>According to ten criteria listed above, the state of North Carolina has ranked #1 for nine of the past ten years. GTP reports the following among its advantages:</p> <ul style="list-style-type: none"> • Airport with 11,500 foot runway • Access to multilane highway and interstate highways (CF Harvey Expressway 2014); • Direct rail to Morehead City port via NCRR main line (November 2011); • Proximity to seven military bases, each growing in size; • Foreign Trade Zone • Recently added to Dept. of Homeland Security Critical Infrastructure database <p>GTP's anchor tenant is Spirit AeroSystems, who has developed a \$200 million, 600,000-SF manufacturing facility on 304 acres, from which Spirit will fill airframe orders to Airbus and Boeing. Spirit was incented with a 100-year, \$100 annual ground lease.</p> <p>NC Dept of Commerce estimates the following economic benefits of GTP tenant operations:</p> <ul style="list-style-type: none"> • \$27.5 mm annual contribution to 13-county regional GDP, including \$16.3 mm in taxes; • \$52.9 million statewide economic impact; and • \$583.9 million projected statewide economic impact in 2014, including \$26.2 million in future tax revenues from existing GTP tenant operations and future Spirit operations. <p>GTP developments and operations have been funded through a combination of public (federal and state) and private sources. GTP is challenged to demonstrate "self sufficiency" and to repay \$38 million in loans and interest to the state. For the last fiscal years, the state has provided \$1.28 million in operating funds to GTP.</p> <p>With rail connections (planned) and a functioning intermodal facility (proposed) GTP seeks to model itself after Virginia Inland Port, which the report claims has generated 7,000 jobs and attracted 24 distribution centers since 1989. Targeted industries include: aerospace and aviation manufacturing; high-tech manufacturing; logistics services; emergency response; and defense & security. GTP seeks greater strategic coordination and alignment with NCRR and NCSPA. Infrastructure and development proposed in medium- and long-term: additional land acquisition; new Spine Road; transload facility; rail expansion; improved Interstate; rail connection to Port of Wilmington.</p>		
FOLLOW UP QUESTIONS:	Are economic impact figures reasonable? How could GTP realize its goal to have multiple rail service providers east of I-95? Can unit costs be used for estimates for similar facilities?		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	S.C. river commission picks apart deepening; Park Circle neighbors rally against rail plan		
AUTHOR:		REPORT No:	052
AGENCY:	Savannah Morning News; ABC News 4	DATE:	January 12, 2011
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	This document contains two separate news articles, one from the Savannah Morning News and one from ABC News 4. The first article summarizes objections and critiques of proposed deepening of the Savannah River that were made by the Savannah River Maritime Commission. The second article describes North Charleston residents' opposition to the a proposed new rail line that would provide rail access to the GSPA's terminal in North Charleston.		
KEY INFORMATION:	<p>As reported in the first article, concerns regarding GSPA's proposed deepening of the channel from 42' to 48' include:</p> <ul style="list-style-type: none"> • Loss of marshes and damage to endangered species habitat • Proposed use of unproven mitigation measures, including oxygen bubblers and fish ladders for sturgeon • Failure to account for full extent and cost of deepening at the entrance channel • Proposed 48' depth would not accommodate post-Panamax vessels, which require 48.5' draft per report appendix • The narrowness of the river, with only a small area designated for two-way traffic, will limit its capacity to 12 to 19 post-Panamax ships a day. • Dredge spoils from initial and maintenance dredging are proposed to be deposited on the site identified for the Jasper Port, so the two projects may not be compatible. <p>S.C. Department of Natural Resources and U.S. Fish & Wildlife advocate deepening to no more than 44' or 45' depth to minimize impacts to water habitat.</p> <p>The second news piece claims that proposed rail access to the port from the north would create traffic congestion and goes against a GSPA memorandum of understanding that stated any new rail access would be from the south.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	US Container Ports and Air Pollution: A Perfect Storm		
AUTHOR:	Energy Futures, Inc.	REPORT NO:	053
AGENCY:		DATE:	2008
CONTACT:	James S. Cannon	REVIEWER:	Sisson
DESCRIPTION:	This report summarizes vessel emissions and techniques used to minimize them.		
KEY INFORMATION:	<p>The report highlights the fact that port operations are nearly 100% dependent on diesel/bunker fuel to support vessel operations. It recommends diversifying away from diesel.</p> <p>This report makes the following recommendations:</p> <ol style="list-style-type: none"> 1. Promote Use of Alternative Fuels and Advanced Technologies for Port Clean Ups. 2. Develop and Implement a National Port Clean-Up Strategy 3. Create a National Funding Mechanism to Finance Comprehensive Port Clean Up. 4. Advocate Global Environmental Standards in the International Arena 5. Create a Clearinghouse of Public Information about Port Clean-Up Efforts 		
FOLLOW UP QUESTIONS:	The document appears to be somewhat dated in that many folks are now aggressively moving forward with many of the recommendations, including establishment of global environmental standards and cold ironing of vessels in port.		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	A Look at Container Ports Available to North Carolina Importers and Exporters		
AUTHOR:	Risingwater Associates	REPORT No:	054
AGENCY:	Save the Cape, Inc.	DATE:	January 3, 2011
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	This report examines the need for container terminal facilities to serve North Carolina importers and exporters. The report evaluates regional capacity and demand at port terminals in Virginia, South Carolina, and Georgia, as well as the State Port at Wilmington. Land-side infrastructure (roads and rail) is also evaluated.		
KEY INFORMATION:	<p>The report concludes that North Carolina is and will continue to be well-served by existing container facilities at Wilmington and larger terminals (existing and planned) in Virginia, South Carolina, and Georgia.</p> <p>The analysis uses simplified 400-mile arcs to define trucking radius for Wilmington and other regional ports.</p> <p>This report provides good data on operating revenues at Norfolk, Charleston and other competing ports, including dredging costs.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	A Look at the Environmental and Economic Aspects of the Proposed North Carolina International Terminal		
AUTHOR:	Risingwater Associates	REPORT No:	055
AGENCY:	No Port Southport	DATE:	March 2010
CONTACT:		REVIEWER:	Griffin, Horst
DESCRIPTION:	<p>This report follows the outline for water resources studies in the proposed National Objectives, Principles and Standards for Water and Related Resources Implementation Studies issued in draft by the White House Council on Environmental Quality (CEQ) on December 3, 2009. The report notes that these CEQ Principles and Standards will replace the current set used by the USACE in its reconnaissance study to determine whether there is a “federal interest” in conducting a feasibility study for such channel improvements in the Cape Fear River. The report contains the following elements:</p> <ul style="list-style-type: none"> • Initiation of studies, the scoping process and defining the study area • Determining existing conditions, including functional aspects and environment • Identifying and describing problems and opportunities • Specifying study objectives • Formulating and evaluating alternatives • Comparing and screening alternatives • Recommending a plan 		
KEY INFORMATION:	<p>The report concludes that the only alternative responsive to the CEQ’s statement of proposed National Objectives is the restoration alternative—allowing the channel in the Cape Fear River to fill by shoaling to a lesser depth of 34 to 38 feet. This deserves further investigation to determine whether the economic penalties of reduced accessibility to river commerce are outweighed by environmental benefits.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:	<p>In its appendix, the report references numerous source documents, which have been added to the list of existing documents for review by the NC Maritime Strategy project team.</p>		

DOCUMENT SUMMARY

REPORT:	A Review of the Section 905(b) Analysis – Wilmington Harbor Navigation Improvement Project, North Carolina International Terminal		
AUTHOR:	Risingwater Associates	REPORT No:	056
AGENCY:	U.S. Army Corps of Engineers, Wilmington District (USACE)	DATE:	April 22, 2010
CONTACT:	NA	REVIEWER:	Camacho
DESCRIPTION:	<p>This report reviews (critiques) the USACE Section 905(B) Analysis - Wilmington Harbor Navigation Improvement Project North Carolina International Terminal. The purpose of Section 905(b) Analysis was to document the basis for the Reconnaissance Phase Study as to whether there is a federal interest in participating in a cost shared Feasibility Phase Study to modify the existing Wilmington Harbor project in the interest of navigation improvements. The original USACE report is reviewed in Report No. 17.</p>		
KEY INFORMATION:	<p>The report alleges that the USACE report was prepared in secret, and has not been released to the public. The review also states that the draft report is of poor quality, considering the data available from: 1) previous studies of the Cape Fear River navigation channel, 2) extensive preliminary engineering work done by CH2M Hill, Inc., 3) statistical information available from the Corps of Engineers and industry sources, 4) extensive background reports available from Federal and State of North Carolina agencies, and 5) comprehensive comment documents from interested parties.</p> <p>The report states that some elements of the report have been done in a workmanlike manner and are useful. The cost estimate for channel dredging and the outline and cost estimate for the recommended feasibility analysis are in this category. The report includes a checklist of environmental issues, and a digest of comments from other agencies and the public.</p> <p>The review states that although the six planning steps specified for USACE studies in its Principles and Guidelines are mentioned, they are not followed. The critique states that fundamentals of any scientific, engineering or planning study—clear statement of the problem and comprehensive inventory of conditions and circumstances—are either stated in a cursory fashion or missing altogether.</p> <p>The review states in very strong language that the Wilmington District report is dangerous, and a work product of a responsible agency of the United States government, and entitled to a presumption of regularity and reliability. The report states that the USACE report betrays that reliance.</p>		
FOLLOW UP QUESTIONS:	Was this report prepared for the NoPort Southport Interest Group?		
REFERENCES:	NA		

DOCUMENT SUMMARY

REPORT:	America's Container Ports: Linking Markets at Home and Abroad		
AUTHOR:		REPORT No:	058
AGENCY:	US DOT, Research and Innovative Technology Administration	DATE:	January 2011
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	The report provides an overview of the movement of maritime freight handled by US container ports in 2009 through mid-2010. Summaries of BTS data on volume and value of goods, vessel sizes, etc. are presented.		
KEY INFORMATION:	The report provides summaries of recent cargo and vessel data. The information offers a good overview of information that is fairly well known within the industry. Container ship calls and lifts per call are presented for various ports.		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Savannah Harbor Expansion Project, Deep-Draft Channel Improvements; Economic Analysis: Commodity Projections		
AUTHOR:	Gulf Engineers & Consultants, and QuERI International	REPORT No:	060
AGENCY:	US Army Corps of Engineers, Savannah District	DATE:	August 2004
CONTACT:		REVIEWER:	Sisson, Vandenberg
DESCRIPTION:	<p>The report includes two parts: (1) World Waterborne Trade Forecast; and (2) US Waterborne Trade Forecast. Waterborne trade is projected using the QuERI model, based on data developed by Merge Global. Historical world trade was compiled for 1995 - 2003 and forecasted annually for the period 2003 - 2050. For purposes of summarizing and reporting, world trade has been compiled by seven global regions (Africa, Asia, Mideast, Europe, North America, South America, Caribbean) and 10 commodity groups (agriculture, capital equipment, chemicals, consumer goods, extractive, food, fuels, high tech, intermediate manufacturing, materials).</p> <p>For the US trade forecast, the US is divided into seven regions (East Coast, South, North, West, Alaska, Hawaii, and Puerto Rico). A second-level US Maritime Model is used to assign waterborne trade to each specific US region. Then, the Port Choice Model assigns regional waterborne trade to specific ports within each region.</p> <p>The report presents forecasted origin-destination tables (all commodities, by volume) for each US maritime region. Annualized growth rates for imports and exports under each commodity group are also forecasted.</p>		
KEY INFORMATION:	<ul style="list-style-type: none"> • Global growth in containerized products is projected to continue to grow at historic averages of 5 to 6 percent through 2050. • Long term forecast for growth rate of US container imports is projected to drop to 3% per year, matching GDP growth. • The growth rate of US exports is forecasted to increase to 5% annually by 2050. • Among export commodity groups, the highest long term growth rates are projected for consumer goods and intermediate manufactured products. Agriculture and fuels have the lowest projected long term growth rates. • Among import commodity groups, the highest long term growth rates are projected for high tech products and intermediate manufactured products. Extractive and food have the lowest projected long term growth rates. • Cargo growth forecasts could be reduced by 1 to 2 percent per year due to various factors such as increased protectionism or higher fuel prices, which would serve to dampen demand for containerized imports and exports. Regional shortages in raw materials could shift the import/export forecasts for those commodities. 		
FOLLOW UP QUESTIONS:	Are generalized conclusions and long-term (2050) forecasts still valid in light of recent global recession? What US regional shifts are forecasted as a result of 2014 Panama Canal expansion? What challenges or opportunities may be presented by forecasted “leveling” of worldwide trade around the globe (i.e. less dominant US share of global cargo)?		
REFERENCES:	Data sources include input from liner companies, Drewry’s, PIERS, UN trade data, Eurostat data, and US DOC data, as well as country specific data from eight more countries.		

DOCUMENT SUMMARY

REPORT:	Cape Fear River Channel Improvement Study		
AUTHOR:		REPORT NO:	061
AGENCY:	US Army Corps of Engineers, Wilmington District	DATE:	1999 (assumed based on timing of simulation studies described in the report)
CONTACT:		REVIEWER:	Mack
DESCRIPTION:	<p>The document summarizes proposed channel improvements within three reaches of the Cape Fear River navigation channel. Reaches are as follows: Reach 1 – Baldhead Shoal to Cape Fear Memorial Bridge, Reach 2 – Cape Fear Memorial Bridge to +750 ft above Hilton RR Bridge, and Reach 3 – 750 ft above Hilton RR Bridge up the Northeast Cape Fear River.</p> <p>Proposed improvements include: Reach 1 – deepen channel from 38 ft to 42 ft, realign, widen to 600 ft along 6.2 miles to accommodate two-way traffic, widen five bends, and improve Anchorage Basin, Reach 2 – deepen to 38 ft, and Reach 3 – deepen to 32 ft and widen to 250 ft, and widen turning basin to 800 ft.</p> <p>The navigation study was conducted by ERDC involving TABS-MD to calculate currents. Ship simulations were done by STAR including inbound ebb & flood and outbound ebb & flood scenarios. Multiple improvements to above mentioned design parameters were recommended and subsequently tested by pilots on the ship simulator. There is a brief summary of the simulations and project revisions proposed by pilots of the ship simulations.</p>		
KEY INFORMATION:	<p>References to useful information are as follows:</p> <ol style="list-style-type: none"> 1. Channel alignments. 2. TABS-MD model and results. 3. Ship simulation graphical summaries of final selected plans. 4. Summary of pilot's navigation notes and tests. 		
FOLLOW UP QUESTIONS:	What final plan was selected? Was it constructed? How much did it cost? Is it being maintained?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Smart Rivers 2007 Conference: Positioning Inland Navigation as a Powerful Link in the Global Supply Chain, Final Report		
AUTHOR:	Institute for Trade and Transportation Studies	REPORT No:	062
AGENCY:	World Association for Waterborne Transport Infrastructure (PIANC)	DATE:	September 2007
CONTACT:	Bruce Lambert, ITTS	REVIEWER:	Sisson, Vandenberg
DESCRIPTION:	This conference summary report comprises the proceedings of the Smart Rivers 2007 Conference, held September 16–19, 2007 in Louisville KY. Smart Rivers 2007 was the third in a series of conferences between U.S. and European partners for the purpose of discussing ways to improve inland navigation.		
KEY INFORMATION:	<ul style="list-style-type: none"> Increasing traffic on inland waterways represents one solution to alleviate domestic transportation congestion while providing linkages to global supply chains. To be successful, inland water transport must satisfy shipper demands for timely and flexible service. PIANC InCom Working Group 32 is examining performance measures to identify waterways that can provide viable transportation service. There are different ways to examine waterway redevelopment in a policy/marketing perspective, including economics and planning tools. Maritime Administration (MARAD) is promoting traffic moving onto waterways to alleviate highway congestion. The US Army Corps of Engineers (USACE) is looking at how shippers plan and depend upon inland navigation, including modal choice and routing decisions in the Navigation Economic Technologies (NETS) program. The need to invest in new technologies is important, including improved locks and dams and communications systems. There are differences between the European and US approaches to improving inland waterway systems. Most significantly, the EU has policies in place to incentivize the use of barge service. Additionally, while the US focuses on capacity expansion through improvements to physical navigation structure, the EU invests in communications and systems performance to improve inland waterway navigation. 		
FOLLOW UP QUESTIONS:	What are results of PIANC InCom Working Group 32 with respect to inland waterway performance measures? Has the MARAD program advanced sufficiently to provide useful input to the NC Maritime Strategy? What conclusions have come out of the USACE NETS program?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Statewide Logistics Plan for North Carolina		
AUTHOR:	George F. List, Ph.D, P.E., Robert S. Foyle, P.E., Henry Canipe, John Cameron, Ph.D., Erik Stromberg	REPORT NO:	063
AGENCY:	North Carolina Office of State Budget and Management	DATE:	May 2008
CONTACT:	George F. List 919.515.8767	REVIEWER:	Griffin
DESCRIPTION:	<p>The report responds to House Bill 1005, Session Law 2007-551, which instructed the North Carolina Office of State Budget and Management to develop a statewide logistics plan that addresses the State's long term economic, mobility, and infrastructure needs. The plan includes three main components:</p> <p>1) priority commerce needs, 2) transportation infrastructure actions, including multimodal solutions that will support key industries vital to the State's long term economic growth, and 3) a timetable to meet these identified needs. It is based on input received from a wide range of stakeholders including State agencies, shippers, carriers, and other private parties.</p> <p>The report contains five chapters, including, an Introduction, Economic Trends, NC's Future, Infrastructure Needs Assessment and Gap Analysis, and Implementation Strategy.</p>		
KEY INFORMATION:	<p>The Department of Commerce identifies agriculture (related to biotechnology and winemaking), textiles (as an emerging high-tech sector), and defense-related industries as key features of the future North Carolina economy. Other key sectors include information and communications technology, motor vehicles and heavy equipment, business and financial services, and chemicals, plastics, and rubber.</p> <p>The report provides an overview of existing publicly-owned companies, committees, advisory councils, and authorities that address freight logistics in North Carolina.</p> <p>The appendix provides funding options that could be applied to build and sustain North Carolina freight logistics projects and operations.</p> <p>Report recommendations relevant to Maritime Strategy include:</p> <ul style="list-style-type: none"> • Facilitate Pass-Through Traffic: support the needs of the traffic traveling north-south, particularly on I-95, I-85, and I-77. • Support Import/ Export Activity: make investments in the ports of Wilmington and Morehead City. Provide on-site improvements and better truck and rail access. Continue to support the development of the North Carolina International Terminal. Redouble efforts to "scope" the port. Carefully determine what customers it should serve and how large it should be. • Partner with Military Investments: make the state's transportation infrastructure align with military logistics needs. 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Total Value of North Carolina Agricultural Exports		
AUTHOR:		REPORT NO:	064
AGENCY:	North Carolina Department of Agriculture	DATE:	2010 (estimated)
CONTACT:		REVIEWER:	Sisson, Horst
DESCRIPTION:	PowerPoint presentation (22 slides) describing recent trends (2003 to 2010) in exports of agricultural products.		
KEY INFORMATION:	<ul style="list-style-type: none"> • Agricultural exports from NC have grown from \$1.7B in 2003 to \$3.0B in 2010 (nominal). • Highest value agricultural exports (in descending order) are tobacco (\$1B), cotton, meat, wood, soybeans, and sweet potatoes, and consumer-ready foods. • Highest volume agricultural exports (in descending order) are wood, cotton, meat, soybeans, and tobacco. Wood accounts for about half of ag exports by volume. • USDA figures say that NC's reliance (exports divided by farm cash receipts) on ag exports was 26 percent in 2006, prior to some of the growth described above. There is also a figure that they support 24,200 jobs on the farm and in food processing storage and transportation, but this is not directly noted for NC. • Total volume of ag exports in 2010 was just under 2.5 metric tons. Of this total, 700,000 metric tons were exported to China including 500,000 metric tons of wood products. • Wood and tobacco have realized the greatest growth in exports to China (by value). • \$3B in NC ag exports support 36,000 jobs. Cotton goes to China; sweet potatoes go to Europe. Christmas trees are noted as well. • NC soybean and small grain growers are exporting in containers. Taiwan buyers pay more than the domestic market. • Grain loading operations near Morehead include: Purdue facility near Norfolk; import only facility in Wilmington owned by local livestock integrators; two shuttered facilities –Bunge in Savannah and SC Farm Bureau in Charleston SC. • Scale points for containerized shipping include: CA Perry and Son at Elizabeth City, Hobbsville and Morgan's Corner; Parkway Ag at EC, Geo Wood Farms in Camden, Rook's Farm Service in Burgaw. New in 2010 are JR Jones Grain in Red Spring and Paul Smith in Warsaw. • Strengths of MC Port are: bulk deepwater port with 45 foot channel four miles to the sea, says that they can handle expanded Panamax sized ships with minimal infrastructure improvement; located near major ag production in NC. • Weaknesses of MC Port are: lack of container loading facilities; lack of grain storage and loading equipment; limited farm storage in NC limits delivery options later in the season; poor road access to the port, especially in summer tourist season; limited rail competition with NS. (emphasis added) 		
FOLLOW UP QUESTIONS:	Can Port of MHC handle Panamax ships?		
REFERENCES:	WISER Trade Database, USDA		

DOCUMENT SUMMARY

REPORT:	Forwarded email from Michael Rice (Risingwater Associates)		
AUTHOR:	Michael Rice	REPORT NO:	065
AGENCY:	Risingwater Associates	DATE:	11/17/2010
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:	<p>Sent 3 reports:</p> <ol style="list-style-type: none"> 1. An analysis of an economic impact study of the North Carolina International Terminal prepared by Martin Associates for the State Ports Authority and delivered in early 2008. 2. An analysis of the channel turns in the lower Cape Fear River, and the prospects of accommodating larger vessels. 3. A report on a ship simulation study done for the US Army Corps of Engineers in connection with the engineering for the dredging project commenced in 2000. This report shows that the design vessel, a Panamax container ship, cannot be navigated around the existing turns in the lower Cape Fear River at Southport under any condition of tide and current without leaving the marked channel. But the Corps of Engineers went ahead with the dredging project anyway. 		
KEY INFORMATION:			
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Email from Michael Rice (Save the Cape)		
AUTHOR:	Michael Rice	REPORT NO:	066
AGENCY:	Save the Cape	DATE:	1/6/2011
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:	<p>Sent a link to the Multiport Analysis done for the Corps of Engineers Savannah District.</p> <p>Thanks DOT representatives for the oversight of the State Port Authority, diligence in seeking out information, plan development and supporting stakeholder participation.</p>		
KEY INFORMATION:			
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Email from Michael Rice (Save the Cape)		
AUTHOR:	Michael Rice	REPORT NO:	067
AGENCY:	Save the Cape	DATE:	2/24/2011
CONTACT:		REVIEWER:	G Smith
DESCRIPTION:	<p>RE: plans for NCIT prepared by TEC/PFRichardson and delivered to State Ports Authority in June 2010.</p> <p>Report provides cost saving suggestions in construction of the terminal and has a new estimate, which includes escalation: \$4.4 billion.</p> <p>Report provides insight into the complexity of the project.</p> <p>Author expresses concern about NCSPA's capabilities in regards to the NCIT.</p>		
KEY INFORMATION:			
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Potential Environmental Problems from Building the Proposed North Carolina International Terminal: Preliminary Report		
AUTHOR:	University of North Carolina, Wilmington Center for Marine Science	REPORT No:	068
AGENCY:	NoPort Southport	DATE:	August 2010
CONTACT:	Michael A. Mallin, Ph.D. UNC Wilmington mallinm@uncw.edu	REVIEWER:	Griffin
DESCRIPTION:	<p>The report provides an analysis of potential environmental problems that are likely to occur on land, in wetlands, and in the river and estuary should the NC International Port at Southport be built. The report addressed the proposal of the North Carolina State Ports Authority to construct an International Terminal (NCIT) for container vessels on a 600-plus acre site on the Cape Fear Estuary near Southport. The report provides details on impacts from the following:</p> <ul style="list-style-type: none"> • The impacts of roadway building and expansion • The impacts of site construction • The impacts of channel dredging on the estuarine environment • The impacts of site clearing and port construction • The environmental impacts of port operations 		
KEY INFORMATION:	<p>The report expresses concern that the primary planned stormwater treatment mechanism for NCIT appears to be a wet detention pond in the northeast corner of the lot intended to achieve 90% removal of TSS. There is no on-site means of stopping erosion caused by armoring a shoreline, and adjacent property owners are likely to be impacted if they do not armor their property. Off shore ballast water exchanges, decontamination of ballast water by heat, ozone, or other chemicals are all solutions currently under investigation, but the U.S. presently has no overall definitive policy or regulations on this critical issue.</p> <p>Petroleum product leakage and other pollutant dumping will require increased surveillance by the Coast Guard, Cape Fear River Keeper, and University research personnel due to the considerable increase in maritime traffic on the estuary. Channel maintenance dredging currently is currently done with some seasonal restrictions to avoid disrupting marine migrations or reproductive cycles to lessen impacts.</p> <p>A number of proposed mitigation recommendations are included in the report.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:	NA		

DOCUMENT SUMMARY

REPORT:	IWR White Paper: The Implications of Panama Canal Expansion to US Ports and Coastal Navigation Economic Analysis		
AUTHOR:		REPORT NO:	069
AGENCY:	Institute for Water Resources, USACE	DATE:	December 2008
CONTACT:	Kevin Knight (lead author) 703.428.7250	REVIEWER:	Sisson, Horst
DESCRIPTION:	This white paper was prepared to address the impacts the proposed Panama Canal's expansion will have on the economics of deep draft navigation projects. The paper provides several recommendations for follow-up studies, which should ultimately lead to standardized assumptions and a revised framework for National Economic Development analyses considering the canal's expansion. The paper draws on data, field experiences, and contacts with planners currently preparing port studies.		
KEY INFORMATION:	<p>The paper's main focus is on container trade. Much of the data summarized in the paper is now old and is summarized in other publications as well. Key findings and data not widely repeated elsewhere include the following:</p> <p>Capacity of new locks is critical to reduce wait times to transit the Panama Canal; it is not unusual for ships to wait ten days to enter the Canal during high season.</p> <p>Today's E-class (~11,000 TEU) vessels are primarily deployed on Far Asia-Europe routes in pendulum rotation. Larger ships are likely to continue to be more prevalent in this rotation due to size of Suez and Malacca Canals, which can handle 14,000 TEU and 18,000 TEU vessels, respectively.</p> <p>Factors affecting projections of volumes through Canal to US East Coast include not only vessel size and water transit cost, but also: potential shifting of manufacturing centers from Far East to India, overall transit time, inventory costs, cargo value, ACP toll prices vs. Suez canal, and Caribbean transshipment options.</p> <p>The white paper cites the conclusion by Gulf Engineers & Consultants that East Coast ports most likely to be affected by the Panama Canal expansion are those serving retail distribution centers (e.g. US midwest) for Asian imports: Norfolk, Charleston, Savannah.</p> <p>The report attributes "west coast congestion" as a possible motivation for shift of cargo to East Coast ports.</p> <p>Useful data and graphics include:</p> <ul style="list-style-type: none"> • Canal transits by tonnage and vessel size • Water depth in the Caribbean • Size of vessel fleets: global (projections) and calling on US ports (historic) • East Coast service options through expanded Canal: traditional, regional, hub-and-spoke, and fourth revolution. (Three of these patterns include calls in Wilmington: Regional Specialization, Hub and Spoke, and Global Grid.) • Main channel and entrance channel depths for major US ports • Provides data on port of entry for containers destined for New England. 		
FOLLOW UP QUESTIONS:	What is the status of the proposed study to assess the ports' capacity and ability to handle post-Panamax vessels, to examine the key variables driving port choice and the attraction/diversion of containers to different ports? What is the status of proposed study to examine the potential of traffic diversion from LA/LB?		
REFERENCES:	Shipping Intelligence Network, Clarkson Research Services, and Lloyd's Register data; ACP Expansion Report, Global Insight; Boston Harbor Feasibility Report--Economic Appendix (2008); TRB Journal, No. 2062 "Ports and Waterways"; Drewry Shipping Consultants, Annual Container Market Review and Forecasts (2007)		

DOCUMENT SUMMARY

REPORT:	The US Government's Uncompetitive Manufacturing Policy Hinders Economic Growth in North Carolina		
AUTHOR:	None provided	REPORT No:	070
AGENCY:	American Manufacturing Trade Action Coalition	DATE:	May 1, 2008
CONTACT:	None provided	REVIEWER:	Horst
DESCRIPTION:	<p>Position paper maintaining that "The U.S. government's uncompetitive manufacturing policy is responsible for much of the steep decline in North Carolina's manufacturing employment and investment that significantly hinders the state's economic growth."</p> <p>Note: this document is a summary. It references an Appendix that is not included with the document that was reviewed.</p>		
KEY INFORMATION:	<p>Manufacturing employment contracted by over 28 percent between 2001 and 2008, a period of national expansion overall. The comparable US figure for manufacturing is a contraction of 20 percent over the same period.</p> <p>Manufacturing losses were experienced by every metropolitan area in the state and rural areas as well.</p> <p>North Carolina manufacturing capital expenditures have declined steadily since 1999.</p> <p>The paper maintains that the erosion of the state and nation's manufacturing base reflects anticompetitive trade policies practiced by other countries and not challenged by the US in international forums.</p> <p>The paper points out that manufacturing jobs are typically high paying and that the contraction of this job base contributes to weaker income growth.</p> <p>The paper is silent on other factors that might contribute such as business costs or whether other states in the US have expanded their manufacturing base during this period.</p> <p>Paper concludes that remaining industry is highly productive and would thrive with more favorable trade policies.</p>		
FOLLOW UP QUESTIONS:	None		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	Health Effects of Diesel Particulate Matter		
AUTHOR:		REPORT NO:	071
AGENCY:	California Air Resource Board	DATE:	Unknown
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	This report discusses the negative health effects of breathing diesel.		
KEY INFORMATION:	<ul style="list-style-type: none"> • Could not find the specific study referenced. The CARB website had many related links including this: <ol style="list-style-type: none"> 1. <i>Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM. In 1998, California identified diesel exhaust particulate matter (PM) as a toxic air contaminant based on its potential to cause cancer, premature death, and other health problems. Diesel engines also contribute to California's fine particulate matter (PM2.5) air quality problems. Those most vulnerable are children whose lungs are still developing and the elderly who may have other serious health problems. Based on year 2006-2008 emissions in California, diesel PM contributes each year to approximately 2,000 premature deaths, with an uncertainty range of 1,500 to 2,400. In addition, diesel soot causes visibility reduction and is a potent global warmer. ARB has sponsored diesel health-related research."</i> <p>Report does not discuss trends in engine specs or related regulation.</p> 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Savannah Harbor Expansion Project: Multiport Analysis for the Savannah Harbor Expansion Project		
AUTHOR:	Gulf Engineers & Consultants	REPORT NO:	072
AGENCY:	US Army Corps of Engineers, Savannah District	DATE:	July 31, 2006
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	<p>The multiport analysis examines potential cargo shifts among alternative ports (Savannah, Jacksonville, Charleston, Wilmington, and Norfolk) that would result from the Savannah Harbor Expansion project. A nine-step analysis process, as defined by the USACE National Economic Development (NED) Manual, was used:</p> <ol style="list-style-type: none"> 1. Identify economic study area that encompasses market area for all ports compared; 2. Define historic container volumes for comparison ports (1995-2003); 3. Establish forecast port container volumes through 2050 (unconstrained); 4. Forecast future vessel composition in 2050; 5. Calculate current delivered container costs for the target port; 6. Calculate current delivered container costs for each competitor port; 7. Calculate future delivered container costs for target port with the proposed project; 8. Determine container volume diversions that would occur with the project; and 9. Calculate present value of NED benefits resulting from the container diversion. 		
KEY INFORMATION:	<p>Nine-year historical trends (1995-2003) for cargo volumes (metric tonnes and TEUs) are presented for imports to and exports from South Atlantic ports with Europe, India/SE Asia, Middle East/Med, NE Asia, and Oceania. Trade with Latin America is not shown. Of world regions studied, the largest historic trading partners for the region for both imports and exports were Europe and NE Asia.</p> <p>Growth in imports was seen by all ports during the study period. Savannah and Charleston saw growth in exports, but other ports suffered decline in export volumes during this period.</p> <p>The top 10 commodity groups are agriculture, extractive, food, materials, consumer goods, chemicals, high technology, intermediate manufacturing, capital equipment, and motor vehicles. All import commodities showed growth, as did exports, but at a lower rate. Consumer goods was the fastest growing and largest import category, while intermediate manufacturing was fastest growing export and materials was the largest export category.</p> <p>Unconstrained forecasts for Wilmington in 2050 with selected world regions: 4.5 million metric tonnes (import); 650,000 TEU (import); 2.8 million metric tonnes (export). Wilmington is projected to establish a niche in export for high technology, with 330,000 TEU of high tech exports forecast in 2050.</p> <p>Section VIII presents delivered container costs by port (sea, port, land).</p> <p>Appendix D presents historic growth rates for selected Europe, India/SE Asia, Middle East/Med, NE Asia container ports with US East Coast service.</p>		
FOLLOW UP QUESTIONS:	<p>Do cargo projections match data from other sources? What about Latin American markets? Where are greatest opportunities to reduce delivered container costs to/from Wilmington? Can cost figures in this report be used or updated to calculate delivered costs to/from Morehead City?</p>		
REFERENCES:	<p><i>National Economic Development Procedures Manual, Deep Draft Navigation (USACE); Savannah Harbor Expansion Project Deep-Draft Channel Improvements Economic Analysis: Commodity Projections (2004);</i></p>		

DOCUMENT SUMMARY

REPORT:	Shipping Statistics Yearbook		
AUTHOR:	Institute of Shipping Economics and Logistics	REPORT NO:	073
AGENCY:	California Air Resource Board	DATE:	2007
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	This report serves as a reference guide to the industry.		
KEY INFORMATION:	<ul style="list-style-type: none"> • The year quoted is now obsolete. • Description from company website: <ol style="list-style-type: none"> 1. <i>The Yearbook supplements the statistical market data published in "ISL Shipping Statistics and Market Review (SSMR)". The Yearbook is recognized worldwide as a standard statistical work for the maritime sector and was created and designed by ISL experts especially to cover the information needs of shipping companies, shipyards, port operators, brokers, banks, consulting companies and research establishments. Since it offers such a wealth of information in a compact and concise form, the Yearbook is not only a statistical work of reference for a large amount of interesting data on the transport and related industries but also a valuable market analysis instrument. The data not only stem from the institute's own data bases but are also collected from a variety of sources worldwide.</i> • The focal topic areas of the Yearbook are: <ol style="list-style-type: none"> 1. <i>Shipping Market – analyses of the world merchant fleet supplemented by development series on laid-up and broken-up tonnages; data on world seaborne trade and relevant information on the development of world trade; detailed overviews of about 30 world commodity markets; time series tracing the development of freight rates; individual profiles on selected shipping nations</i> 2. <i>Shipbuilding – analysis on the world shipbuilding market, information on the current situation of major shipbuilding countries; analysis of ship type</i> 3. <i>Ports and Sea Canals – statistical surveys on ship and goods traffic in selected ports worldwide with a specific focus on container traffic; transit traffic volume on the world's major ship canals</i> 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	The Economic Status of Areas Surrounding Major U.S. Container Ports: Evidence and Policy Issues		
AUTHOR:	Lisa M. Grobar	REPORT No:	074
AGENCY:	Department of Economics, California State University, Long Beach	DATE:	September 2008
CONTACT:	lgrobar@csulb.edu	REVIEWER:	Vandenberg, Horst
DESCRIPTION:	<p>This article, published in <i>Growth and Change</i> (a quarterly publication focused on urban and regional policy), examines the current economic status of port districts (geographic area within 7.5-mile radius of a port) surrounding major US container ports.</p> <p>The study sample includes the 10 largest container ports in the US.</p>		
KEY INFORMATION:	<p>Based on the port districts studied, the author concludes that household unemployment and poverty rates in port districts are significantly higher than the surrounding metropolitan areas.</p> <p>Due to dispersion of port-related functions and port-dependent industries to hinterlands, businesses that rely on maritime trade are no longer typically concentrated in those counties containing ports.</p> <p>Containerization has shifted port benefits from a local scale to regional and national scales.</p> <p>Externalities of port operations can create an undesirable residential environment due to: truck traffic, pollution from ships, warehousing and industrial development.</p> <p>The author recommends that policy makers seek ways to mitigate negative impacts of ports on local economies so that the nation can continue to benefit from expanding trade. Examples include:</p> <ul style="list-style-type: none"> • Reducing ship and truck emissions at the port, • Investment in infrastructure to reduce congestion on local roads and freeways, • Use of “satellite terminals” to reduce local congestion, • Enhancing the aesthetic properties of port-adjacent neighborhoods, and • Job training programs to reduce mismatch of skills in port districts to needs at ports. 		
FOLLOW UP QUESTIONS:	How can the NC Maritime Strategy incorporate the author’s recommendations to mitigate negative impacts of ports while still realizing their economic benefits?		
REFERENCES:	Multiple academic research and journal references are included at the end of the article.		

DOCUMENT SUMMARY

REPORT:	Maritime Economics		
AUTHOR:	Martin Stopford	REPORT NO:	075
AGENCY:	Textbook published by Routledge	DATE:	1997
CONTACT:	None provided	REVIEWER:	Horst
DESCRIPTION:	A 562-page textbook inclusive of index.		
KEY INFORMATION:	<p>Chapter 1: The Economic Organization of the Shipping Market—an overview covering the individual components of the maritime system and the demand for sea transport</p> <p>Chapter 2: The Shipping Market Cycle—a description of cyclicity in shipping and the risks this poses to return on capital</p> <p>Chapter 3: The Four Shipping Markets—freight, second-hand ships, new ships and ships for demolition</p> <p>Chapter 4: Supply, Demand, and Freight Rates—ten key variables that influence supply and demand for shipping industry services</p> <p>Chapter 5: Costs, Revenue and Financial Performance—discussion of the costs and revenues associated with operating merchant ships</p> <p>Chapter 6: Financing Ships and Shipping Companies—four main ways of financing ships are equity, debt, new-building finance and leasing</p> <p>Chapter 7: The Economic Principles of Maritime Trade—a short summary of trade theory followed by a discussion of the connection between sea trade and economic development</p> <p>Chapter 8: The Global Pattern of Maritime Trade—discussion of the Westline—the regional center of sea trade</p> <p>Chapter 9: Bulk Cargo and the Economics of Bulk Shipping—a discussion of the commodities shipped in bulk, their transportation requirements, and the associated economic characteristics</p> <p>Chapter 10: The General Cargo and the Economics of Liner Shipping—discusses the organization of the liner system, characteristics of demand and how liners adapt to changing economic conditions</p> <p>Chapter 11: The Economics of Ships and Ship Designs—a discussion of the types of ships—liner vessel, liquid bulk, dry bulk, specialist bulk, and service vessels. Reports there are three objectives of each ship design—efficient cargo containment, operational efficiency and cost</p> <p>Chapter 12: The Regulatory Framework of Maritime Economics—discusses the impact of regulation on maritime economics including the role of flag states and coastal states</p> <p>Chapter 13: The Economics of Shipbuilding and Scrapping—discusses where ships are built followed by a discussion of production cycles and scrapping</p> <p>Chapter 14: Maritime Forecasting and Market Research—discusses the use of market forecasts that cover the market in general and market research which applies to specific decisions—includes discussion of typical forecast errors</p> <p>Appendix 1: An Introduction to Ship Market Modelling</p> <p>Appendix 2: Tonnage Measurement and Conversion Factors</p>		
FOLLOW UP QUESTIONS:	None		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	Western North Carolina Inland Port Feasibility Study		
AUTHOR:	Advantage West, Louis Berger Group, Tioga Group	REPORT NO:	076
AGENCY:	Western Carolina University	DATE:	Undated
CONTACT:	Michael E. Smith, Ph.D. (828) 227-3697; mesmith@wcu.edu	REVIEWER:	Griffin, Heebner
DESCRIPTION:	<p>The purpose of the Western North Carolina Inland Port Feasibility Study was to determine the most appropriate type of inland port, if any, to promote overall economic development and be suitable to the geography and manufacturing characteristics of the region. For Western North Carolina, the nearest and most utilized sea ports for manufacturers within the region are the Port of Savannah, Georgia and the Port of Charleston, South Carolina. The report notes the transportation and freight networks connecting Western North Carolina to these seaports, as well as the ports themselves, are very reliable and are a vital part of various supply chains in the region.</p>		
KEY INFORMATION:	<p>Despite the region not having the current volume of exports to justify a container facility, Western North Carolina is well-positioned to approach the development of an inland port through a tiered process. This approach provides a more flexible inland port solution which evolves as regional manufacturing characteristics change and proactively works to attract new business.</p> <p>The report recommends that Western North Carolina, through a variety of potential partnerships, begin development of an inland port through the following tiered process:</p> <ul style="list-style-type: none"> • Tier 1 – A Regional Logistics Organization / Alliance; • Tier 2 – A Network of Sub-Regional Freight Consolidation Facilities; and • Tier 3 – A Large-scale Intermodal Facility. <p>Depending on the estimated demand and benefit of a facility, a Tier 1 facility could be created and slowly transformed into a Tier 2 and then a Tier 3 facility.</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	The Virginia Port Authority 2040 Master Plan		
AUTHOR:	Moffatt & Nichol	REPORT NO:	077
AGENCY:	North Carolina State Ports Authority	DATE:	Draft 2008
CONTACT:	http://www.portofvirginia.com/	REVIEWER:	Sisson
DESCRIPTION:	This report provides a description of the Virginia Port Authority's future plans.		
KEY INFORMATION:	<ul style="list-style-type: none"> • This report highlights Craney IS as the future of the port. • Highlights VPA's advantages of deep water, big cranes, and good rail to attract traffic. • <i>"In 2008, the VPA worked with private interests to launch a new barge service between Norfolk and Richmond. When fully operational, the 64 express barge service will remove 58,000 trucks from Virginia's roads."</i> • <i>"The 2040 Master Plan includes strategies to reduce VPA's carbon footprint including:</i> <ol style="list-style-type: none"> 1. <i>Use of lower sulfur fuels well ahead of federal mandates</i> 2. <i>Conversion from diesel to electric equipment</i> 3. <i>Acquisition of low emission hybrid locomotives and</i> 4. <i>Continued air emissions analysis and reduction operations"</i> • <i>"The Commonwealth Port Fund (CPF) has funded the majority of capital projects since 1987. CPF has funded the development of the Virginia Inland Port, the renovation of Norfolk International Terminals (NIT), and the construction of the NIT Central Rail Yard, to name a few of the largest revenue generating projects."</i> 		
FOLLOW UP QUESTIONS:	None		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Ports of Wilmington and Morehead City Feasibility Study		
AUTHOR:	Moffatt and Nichol	REPORT NO:	078
AGENCY:	North Carolina State Ports Authority	DATE:	January 2010
CONTACT:		REVIEWER:	Griffin, Sisson, Demers
DESCRIPTION:	<p>This feasibility study provides a review and forecast of cargo volume throughput and operational performance at Wilmington and Morehead City Ports. The NCSPA will use this report in the bond offering documentation for Lien Revenue Bonds for prospective purchasers.</p> <p>Key elements addressed in the report include:</p> <ul style="list-style-type: none"> • Facility overviews of each port • Macro economic outlook for Global Container Trade • Infrastructure Investment • NCSPA Cargo Composition and Forecasts • Non-container Composition and Forecasts • Review of NCSPA Finance Forecasts <p>The study provides background on US economic drivers, population demographics, etc.</p>		
KEY INFORMATION:	<p>The report makes the following conclusions:</p> <ul style="list-style-type: none"> • Annual container volume growth (by weight) at the Port of Wilmington has been 14.1 % over the past 6 years • Construction-related breakbulk exports and overall breakbulk import volumes have declined following the recession and collapse of the housing market. • M&N calculated a Least Cost Market Area (LCMA) for the Port of Wilmington's (POW) container trade. M&N concluded that the LCMA for POW includes 5 NC Business Economic Areas (BEAs): Charlotte, Greensboro, Greenville, Raleigh, and Wilmington. • M&N estimates 6.9% annual TEU growth at POW over the forecast period of calendar year 2009-2019. Assumes NC ports retain their existing market share of about 26% of the State's business. • "Combined general cargo volumes [(bulk, breakbulk) at the NC ports] ... are forecasted to increase by [sic] at an average rate of 2.8% per year from 2008-2019." Bulk and breakbulk forecast assumptions are detailed on page 59; the primary commodities used for the forecasts are: (1) Imports: fertilizer, cement, grains, rubber, lumber, metal, metal products, chemicals, coal, and (2) Exports: phosphate, fluff pulp, metal products. Bulk and breakbulk forecasts are not as rigorously estimated as containers (i.e. no LCMA process), but the market area is still expected to be localized to NC. 		
FOLLOW UP QUESTIONS:	What is the LCMA for Morehead City?. Given more recent NC State and M&N work related to container volumes, has the POW analysis in this study been superseded?		
REFERENCES:	MARAD, PIERS, US Census Bureau		

DOCUMENT SUMMARY

REPORT:	Environmental Economics in Theory and Practice		
AUTHOR:	Nick Hanley, Jason F. Shogren, Ben White	REPORT NO:	079
AGENCY:		DATE:	1997
CONTACT:		REVIEWER:	Vandenberg
DESCRIPTION:	This textbook examines, through the use of mathematical models and economic theory, the economics of natural resources and the environment, with a focus on resource extraction (mining and forest products) and pollution control.		
KEY INFORMATION:	<p>Economics of pollution control focuses on the trades off of higher permitting and pollution control costs against the public and recreational benefits realized from availability of unspoiled natural resources.</p> <p>Graphics, curves, and formulas presented in the textbook are purely theoretical, with no empirical data that would allow for quantification of costs or benefits.</p> <p>Extensive discussions related to sustainability of timber production and oil and ore extraction are not relevant to the Maritime Strategy effort.</p>		
FOLLOW UP QUESTIONS:	None		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	The Proposed North Carolina International Terminal, A Perspective		
AUTHOR:	Risingwater Associates	REPORT NO:	081
AGENCY:		DATE:	9/13/2010
CONTACT:		REVIEWER:	Horst, Sisson
DESCRIPTION:	This report offers a critique of the weaknesses of the proposed NCIT facility.		
KEY INFORMATION:	<ul style="list-style-type: none"> • Presents a compelling case against any mega-terminals in NC. • Highlights include shallow water that requires massive dredging and poor highway and rail connections. The State spent \$6M on design prior to an EIR. • Overall cost was projected at \$3B and compared to the \$500M APMT terminal that failed to attract much business as startup. • Claims cost is 20x the benefit. There is little benefit to the western part of the state since it's already well-served by multiple ports. • CSX and NS both have double stack service at Norfolk, Charleston, and Savannah. • CSX has double stack capability to Wilmington but does not run service. NS does not have double stack capability 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Improving Maritime Container Terminal Productivity: Development of Productivity Measures, Proposed Sources of Data, and Initial Collection of Data from Proposed Sources		
AUTHOR:	The Tioga Group, Inc.	REPORT No:	082
AGENCY:		DATE:	2010
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	This report discusses how to improve maritime container terminal productivity.		
KEY INFORMATION:	<ul style="list-style-type: none"> • Defines commonly used industry statistics. • Used customer surveys to rank relevance of various factors. • Includes numerous theoretical calculations such as dwell time vs. CY capacity, etc. • Lists statistics for several ports and terminals (now dated). 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Wilmington Harbor, North Carolina, Supplement to the Final Fish and Wildlife Coordination Act Report		
AUTHOR:	Tracy M. Rice and Howard F. Hall	REPORT No:	083
AGENCY:	U. S. Fish and Wildlife Service, Raleigh Field Office	DATE:	July 2010
CONTACT:	http://www.fws.gov/nc-es/pubs/fwca/wilmington/WH_FWCA.pdf	REVIEWER:	Griffin
DESCRIPTION:	<p>This report reviews supplemental modifications to the Wilmington Harbor Project proposed since the Service's most recent report on the project, the Cape Fear- Northeast Cape Fear Rivers Comprehensive Study, New Hanover and Brunswick Counties, North Carolina, Final FWCA Report of May 1996.</p> <p>The major concerns of the FWS include the following potential adverse impacts:</p> <ul style="list-style-type: none"> • The new channel alignment may accelerate erosion on nearby beaches by disrupting the existing longshore sediment transport system at the mouth of the Cape Fear River and result in the loss of sea turtle nesting habitat; • Sediment deposition on area beaches may diminish the habitat quality for nesting sea turtles and adversely affect populations of beach invertebrates; • Sediment deposition on area beaches may result in turbidity and siltation in nearshore areas that adverse affect important hardbottom habitat; • The increased extent of overflowing scows or barges carrying sediment may reduce water quality and adversely affect fish and other aquatic organisms as well as estuarine habitats such as primary nursery areas, and; • The elimination of the bubble curtain around blast areas in the river will kill some fish. 		
KEY INFORMATION:	<p>The Wilmington Harbor Project Modifications may result in significant alterations in the diverse ecosystems of the lower Cape Fear River watershed. The planning process to date has adequately documented the economic justification for the proposed modifications, the range of alternatives considered, and the selection of a preferred alternative.</p> <p>In the past the USFWS has expressed concern about the environmental impacts of other projects to modify the Wilmington Harbor Ship Channel. The large construction effort needed to accomplish the preferred alternative for the present project modifications has the potential to create significant direct, indirect, and cumulative adverse environmental impacts. However, the FWS states that a thorough consideration of the environment during planning can avoid many of the most severe impacts and minimize others.</p> <p>The report makes recommendations for the following areas:</p> <ul style="list-style-type: none"> • New Alignment for Ocean Entrance Channel • Backfilling Abandoned Channel • Disposal on Beaches of Brunswick and New Hanover Counties • Expansion of Dredging Methods • Elimination of Bubble Curtain 		
FOLLOW UP QUESTIONS:	None		
REFERENCES:	None		

DOCUMENT SUMMARY

REPORT:	Wilmington Harbor Initial Appraisal		
AUTHOR:		REPORT NO:	084
AGENCY:	US Army Corps of Engineers	DATE:	July 2010
CONTACT:		REVIEWER:	Griffin
DESCRIPTION:	<p>The Appraisal document was authorized by Section 216 of the Flood Control Act of 1970 (33 USC 426 et seq) as amended. The purpose of this initial Appraisal was to determine if there is a Federal interest to undertake modifications to the existing channel alignments of Wilmington Harbor. The scope of this effort will be limited to two sections of the harbor that have been specifically requested by local interests for consideration. The two areas are the "Bald Head Portion" and the "Battery Island Portion".</p> <p>A review of the problems associated with the two areas of concern will be accomplished as part of this appraisal. The Initial Appraisal report briefly reviews the adequacy of the current navigation alignments and determines the advisability of considering modifications. It is expected that modifications may lead to increased safety and improved navigability which would be expected to decrease transit times and reduce delays, thus increasing efficiency for the current ships utilizing the channel to reach the Port of Wilmington.</p> <p>The results of this Initial Appraisal will be used to determine if the development of a reconnaissance level study report is warranted. Results from a reconnaissance study would be used to assist in the determination of whether a Federal Interest exists for pursuing a cost-shared feasibility-level study effort to fully assess the need and potential alternatives for Navigation Improvements for Wilmington Harbor.</p>		
KEY INFORMATION:	<p>The Appraisal considered the potential increased safety and navigability benefits, and determined that there is sufficient reason to further investigate the feasibility of modifying the existing channel alignment to better serve the public interest. The report found that there is sufficient reason to investigate and determine if there is a Federal interest in continuing with the project with the preparation of a Reconnaissance Report. Should the determination be made that there is a Federal interest in continuing with this project, then a feasibility-level report should be initiated for analyzing alternatives to address the identified problems through possible modifications of the project.</p> <p>The Appraisal recommends further investigation of the feasibility of modifying the existing channel alignment to better serve the public interest, and to investigate and determine whether to continue with the project and the preparation of a Reconnaissance Report</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Roadway Planning		
AUTHOR:	CH2M Hill (John Moretto & Keith Rohling)	REPORT NO:	086
AGENCY:	NC State Ports Authority	DATE:	3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	<p><i>“A conceptual-level traffic analysis was conducted to evaluate existing roadway capacity and infrastructure impacts placed on the infrastructure by development of the North Carolina International Terminal.” “The study evaluated the traffic capacity requirements and estimated costs for improvement for each of the conceptualized access corridors from the proposed terminal to connect to the interstate highway system.”</i></p> <p><i>“The anticipated capacity of the North Carolina International Terminal is 3 million twenty foot equivalent units (TEUs) or containers that would be moved through the facility annually. With an assumed split of 50 percent rail and 50 percent truck movement, this would equate to approximately 882,353 trucks annually moving containers to and from the terminal. If approximately 70 percent of the trucks bring one export container in, and take one import container out, and the terminal is open 5.5 days per week, then there would be approximately 4,407 truck trips per day.”</i></p> <p><i>The “... investigation utilized existing data readily available from various sources, including NCDOT’s website, established Geographic Information System (GIS) information, wetland delineations from the North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS) national database, topographic quadrangle maps, and NCDOT’s and other states’ current calendar year (roadway) pay item summaries. Onsite reviews were conducted by infrastructure, environmental, and roadway design specialists to better evaluate existing conditions and potential impacts from each alternative. The investigation also incorporated reviews from the previous efforts of this project along with existing traffic counts, standardized typical roadway sections, the draft Comprehensive Transportation Plan (CTP), and truck traffic data forecasts.”</i></p> <p><i>The study’s capacity analysis indicates a “... LOS of C would be achieved, even with the projected traffic volumes, by constructing either of the conceptual exit routes to an improved four through-lane roadway section.”</i></p>		
KEY INFORMATION:	<p><i>The study recommends “... Exit Corridor 2 and the new conceptual alignment (Route 4), which utilize existing highway alignments in combination with new corridors, ...” as the alternative with “... the least amount of displacement due to required ROW acquisition, the least impact to established residential and commercial properties, the shortest travel distances, and a cost-effective use of roadway improvement budgets.”</i></p> <p><i>The report does <u>not</u> include the following elements, which were recommended for future studies: detailed wetland survey, preliminary conceptual design (to further define an appropriate corridor and alignment), individual property ROW appraisals, site-specific intersection and traffic volumes of the immediate area to confirm the traffic data and traffic impact analysis.</i></p>		
FOLLOW UP QUESTIONS:	Traffic analysis relies heavily on assumption that 50% of containers would be carried by train. What is the basis of this mode split?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Security and Technology		
AUTHOR:	CH2M Hill (Charlie Hopkins)	REPORT No:	087
AGENCY:	NC State Ports Authority	DATE:	3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	The report presents a conceptual security plan for the proposed North Carolina International Terminal. The security strategy provides regulatory compliance for an initial preliminary investigation. In future studies, this plan would be further developed to include "... <i>system requirements and design criteria to provide centralized monitoring and control of land-side physical access to the port and to monitor activity within the port and the waterfront.</i> "		
KEY INFORMATION:	The report identifies the following as primary security features and criteria: <ul style="list-style-type: none"> • ID validation. • Monitoring and control of vehicle and pedestrian gates. • Intrusion detection and video assessment. • Video surveillance and monitoring of port operations and the waterfront. 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Site Utilities		
AUTHOR:	Halcrow (Quentin Holland)	REPORT NO:	088
AGENCY:	NC State Ports Authority	DATE:	3/15/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	This Technical Memorandum reviews the mechanical utility requirements for the North Carolina International Terminal project. <i>“The investigation only includes the mechanical utilities required within the container yard (CY), wharf, and areas within 10 ft of buildings. Additional data and more detailed modeling studies and design work would be required for subsequent phases of the project.”</i>		
KEY INFORMATION:	<p>Brunswick County Public Utilities has jurisdiction and would provide water and sewer service. <i>“Per initial discussions with the Brunswick County Public Utilities, ample capacity is available.” “Potable water demand assumptions and preliminary calculations were based on container terminals of a size similar to the North Carolina International Terminal and the American Water Works Association (AWWA) specifications”</i> Estimated average daily water consumption would be 67,498 gpd. <i>“An estimated total of 20,400 gallons of sanitary sewer flow would be discharged daily from the site. The port would not receive sanitary discharge from the ships.” “Based on industry practice, potable water service to the ships would be provided through potable water shore-tie stations comprised of a single 2½-in. diameter water service line.”</i></p> <p>The fire fighting system for the NCIT <i>“... would be in accordance with National Fire Protection Association (NFPA) Code 307, which requires a minimum flow rate of 3,000 gpm for a duration of 4 hours for marine terminals and wharf structures.”</i></p> <p>The Technical Memorandum identifies the key electrical utility components for the NCIT project, including <i>“... determining a location and source of power for the main substation and defining the electrical distribution system required within the CY, along the wharf, and within 10 ft of buildings. Additional data and more detailed modeling studies and design work would be required for subsequent phases of the project.”</i></p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Conceptual Civil Design		
AUTHOR:	CH2M Hill (Kathryn Benson & Gary Bowles)	REPORT NO:	089
AGENCY:	NC State Ports Authority	DATE:	3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	<p>This Technical Memorandum provides a general site description, and addresses site grading, materials for terminal surface, and stormwater management.</p> <p>The report establishes conceptual paving limits for container yard operational areas:</p> <ol style="list-style-type: none"> 1. Entrance Road, Gate Area, and Parking and Maintenance Areas. 2. Container Operations Area. 3. Container Stacking Area. <p>A preliminary stormwater treatment concept is established to treat the site runoff.</p>		
KEY INFORMATION:	<p>The site covers approximately 600 acres on the Cape Fear River. The parcel is zoned as Commercial Heavy Manufacturing (CO-HM). Existing land features include pasture/clear fields, woodlands, and wetland marshes. Topography ranges in elevation, but the majority of the site is 20 ft above the National Geodetic Vertical Datum 1929 (NGVD).</p> <p><i>“Overall site design would be required to treat the runoff generated from 4.5 inches of rainfall. These assumptions indicated a water quality volume requirement of approximately 150 acre-ft or approximately 6.5 million cubic ft (ft³).”</i> In North Carolina coastal areas, all water quality BMPs are generally designed to treat the runoff from the first 1 or 1½ inches of rainfall, depending on the classification of the water to which it drains.</p> <p><i>“Three methods of treatment/storage have been assumed to store this rainfall runoff volume, and excess storage volume would be made available through design:</i></p> <ol style="list-style-type: none"> 1. <i>A stormwater retention area could be constructed in the northeast corner of the site.”</i> 2. <i>The perimeter of the site would be used for stormwater treatment as an infiltration trench in conjunction with perimeter safety clear space requirements”</i> 3. <i>Some of the piping systems would be routed to underground exfiltration chambers to provide additional storage. The overflow of this system would outfall to a piping system connected to the retention area.”</i> 		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Conceptual Dredging Study		
AUTHOR:	CH2M Hill (Chris Gibson/GBA)	REPORT NO:	090
AGENCY:	NC State Ports Authority	DATE:	3/15/2006 rev. 3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin, Mack, Sisson
DESCRIPTION:	<p>This Technical Memorandum defines a conceptual dredging plan “... to develop a cost estimate for dredging activities required to construct a channel and turning basin to accommodate the maximum design vessel calling at the proposed [NCIT] development.”</p> <p>The study includes:</p> <ul style="list-style-type: none"> • conceptual channel layout using United States Army Corps of Engineers (USACE) guidelines • summary geotechnical analysis based on existing USACE and other source data • estimate of the volume of various types of material to be dredged • dredge disposal alternatives that have the least apparent cost and greatest beneficial use • most probable method for dredging and delivery of dredged material from the various channel sections • contracting approach to break the dredging into reasonably sized segments that could be competitively bid and bonded by any of the major U.S. dredging contractors • conceptual-level cost estimate. 		
KEY INFORMATION:	<p>This study examines one conceptual alignment chosen only for the purpose of estimating cost.</p> <p>Six dredged material disposal sites were assumed and separated by material type for the purpose of estimating cost for the Pro Forma Business Plan. The six sites would be used for disposal of structural fill or beach quality materials, unconsolidated unsuitable material, and rock.</p> <p>Useful information included in the report:</p> <ol style="list-style-type: none"> 1. Tidal datum information. 2. Bathymetric data collected in December 2006. 3. USACE geotechnical reports for Wilmington Harbor Deepening Project. 4. Existing USACE channel alignments. 5. Current and velocity information in the channel. 6. Dredging cost information. 7. GIS coverages of the geotechnical cores. 		
FOLLOW UP QUESTIONS:	<p>Are channel layout, dredge and disposal assumptions, and associated costs still valid? Were academic geology departments with the State univeristy system consulted for the geotechnical analysis assumptions of this study?</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Cost Estimate		
AUTHOR:	CH2M Hill (Dennis Stoddard)	REPORT NO:	091
AGENCY:	NC State Ports Authority	DATE:	3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	<p>This Technical Memorandum provides a preliminary cost estimate developed on conceptual descriptions of terminal and navigational elements of the proposed NCIT to include the following elements:</p> <ul style="list-style-type: none"> • High-density automated container yard and supporting intermodal rail yard with capacity for a throughput of 3.0 million TEUs per year • Ability to serve vessels up to 12,000 TEU capacity through a navigation channel and branch channel dredged to 52.5 feet plus 2.0 feet of overdredge (see key information below) • 4600-foot long concrete pile supported wharf • On-site access roads <p>The cost estimate was prepared based on a preliminary concept development of less than 5 percent complete, which generally corresponds to the Association for Advancement of Cost Engineers (AACE) standards for a Class 4 Estimate.</p>		
KEY INFORMATION:	<p>The Total Project Development Cost was estimated to be \$2,283,900,000. This estimate includes on-site and waterside elements listed above.</p> <p>The following capital costs are excluded from the cost estimate:</p> <ul style="list-style-type: none"> • Roadway access from an interstate-grade roadway system (assumed to be paid by others) • Rail access from and improvements to an existing rail system (assumed to be paid by others) <p>It is assumed that 50 percent of Federal navigation channel costs, comprising new branch channel, new turning basin, and deepening of the existing Wilmington Harbor Navigation Channel, would be borne by the Federal government as represented by the US Army Corps of Engineers, with the remaining 50 percent to be paid by the State of North Carolina.</p> <p>No probability or risk analysis of costs was made.</p>		
FOLLOW UP QUESTIONS:	Are cost assumptions reasonable? What are associated roadway and rail access costs that are outside the \$2.3 billion capital cost estimate?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Conceptual Rail Plan		
AUTHOR:	CH2M Hill (Tom Ellert)	REPORT NO:	092
AGENCY:	NC State Ports Authority	DATE:	3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	<p>This Technical Memorandum addresses "... rail access to the North Carolina International Terminal site ... via a rail spur along the western border of the property owned by" the following entities:</p> <p>"1. The northern-most rail line is the CSX industrial track that connects the CSX main line with the south-leading rail spur at the CSX Davis Yard and Leland Exchange.</p> <p>2. The U.S. Department of Defense (Army) delivers railcars over its 17 miles of track between Davis Yard and Sunny Point Junction to the U.S. Military Ocean Terminal, Sunny Point (MOTSU).</p> <p>3. The Army also interchanges railcars for private entities south of its facility—Progress Energy, Primary Energy, and Archer Daniels Midland Company (ADM)."</p>		
KEY INFORMATION:	<p>"Rail access to the North Carolina International Terminal site would most likely be via CSX, MOTSU, Primary Energy, and ADM rights-of-way (ROWs). The rail distance between the CSX Davis Yard and the North Carolina International Terminal site is approximately 23 miles."</p> <p>Rail capacity requirements are based on the following assumptions:</p> <ul style="list-style-type: none"> • Annual Marine Terminal Throughput: 3 million TEU. • Intermodal Rail Volume: 50% (1.5 million TEU or 882,353 annual rail lifts). • Considering the annual throughput of 882,353 containers and the rail line operating 364 days per year, the expected daily rail throughput is 2,424 containers. A 10,000-ft train contains 262 containers, which equates to 9.4 trains per day. Since trains are not all 10,000 ft long, it was assumed the train traffic would be approximately 10 to 15 trains per day. <p>Rail operational goals for the NCIT identified for further study include:</p> <ul style="list-style-type: none"> • Planning for rail loading and unloading and berth and CY operations should avoid operational dependency between modes. • Provide operational separation between rail lift operations and track-side delivery and take-away operations. • Use of a back-to-back rubber-tired gantry (RTG) operation between pairs of tracks to increase IY yard density. Terminal traffic patterns may need to be established to control movements within the IY. • IY layout to support the independent loading of multiple rail destinations or blocks within each pair of tracks. Alternative rail lift configurations may compromise this operational flexibility and should be modeled to determine rail production limitations and dependencies. 		
FOLLOW UP QUESTIONS:	<p>Is railyard layout reasonable and operationally efficient? Can proposed capacity be reasonably achieved with defined layout? What railroad shared use agreements would be required? Are off-site rail improvements fully defined?</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Port Planning and Terminal Concept		
AUTHOR:	CH2M Hill (Bert Sanford) & Halcrow (Quentin Holland)	REPORT No:	093
AGENCY:	NC State Ports Authority	DATE:	3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	<p>This Technical Memorandum identifies equipment needed to support proposed NCIT operations.</p> <p><i>“For purposes of this study, the assumed berth has up to 4,600 ft available for use. This would provide enough berthing frontage for up to four Super-Post-Panamax container ships with a capacity of 8,000 TEU assuming an average berth length of 1,100 ft.” “It is assumed the container yard (CY) would be serviced by the use of ARMGs. Therefore, the container stacks would be sized to accommodate ARMGs. The gross stack dimensions are 10 containers wide and up to 5 containers high in 400-TEU ground slot segments.”</i></p> <p><i>“The land-side operation of the ARMG stacks is assumed as a dual-purpose operation, ... moving boxes from the land-side end of ARMG stacks to the IY ... to be by a land-side fleet of AGVs or shuttle carriers to transfer boxes back and forth from the ARMG stacks to the IY.”</i></p> <p><i>“It was assumed approximately 15 in-gates and 15 out-gates would probably be sufficient for handling approximately 1.5 million TEU of truck traffic. The truck gate operation would need extensive planning and thorough modeling in subsequent phases.”</i></p>		
KEY INFORMATION:	<p>Summary of Container Terminal Equipment</p> <ul style="list-style-type: none"> • 16 Super-Post-Panamax Wharf Gantry Cranes • 64 ARMGs (at 2 ARMGs per stack) • 40 Shuttle carries or AGVs (water-side operation) • 20 Shuttle carriers or AGVs (land-side operation to serve rail IY) • 5 Cranes for rail IY <p>IY = intermodal yard ARMG = Automatic Rail-Mounted Gantry (crane) AGV = Automatic Guided Vehicle</p>		
FOLLOW UP QUESTIONS:	<p>Are input assumptions consistent with similar proposed facilities and forecast capacity? Is the 8,000 TEU vessel assumed in this report consistent with other NCIT conceptual planning reports? Is use of dual-purpose automated RMGs consistent with proposed independent operation defined in conceptual rail plan? Is proposed equipment reasonable?</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Conceptual Wharf Design		
AUTHOR:	CH2M Hill (Max Mozo)	REPORT NO:	094
AGENCY:	NC State Ports Authority	DATE:	3/18/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin
DESCRIPTION:	A conceptual design of the wharf structure for the NCIT was performed for development of conceptual-level cost estimation. <i>“The wharf drawings were the result of this conceptual design.”</i> The report provides a <i>“summary of the design criteria used to perform the conceptual-level design of the wharf structure at the North Carolina International Terminal.”</i>		
KEY INFORMATION:	<p><i>“Drawing No. 7, Wharf Conceptual Cross Section, shows a pile-supported wharf structure, with a sloping bottom from the berthing line up to a vertical bulkhead behind the land-side crane rail beam.”</i></p> <p><i>“The wharf is ... configured to have a travel or service lane outboard of the waterside crane rail beam.” “The foundation of the wharf is assumed to be an open pile system consisting of 24-inch-square pre-stressed concrete piles.” The substructure of the wharf is assumed to be cast-in-place concrete.” “The superstructure is assumed to be simply supported concrete slabs supported by the cast-in-place crane rail beams.”</i></p> <p><i>“The wharf deck (between rails) is assumed to carry a 1,000-psf minimum uniform live load distributed to produce maximum stress. Piles are assumed to be designed for 80 percent of uniform live load.”</i></p> <p><i>“For purposes of this study, the following gantry crane characteristics have been assumed: 22 wide, 80 LT (tandem lift), 135-ft under-spreader, 100-ft gage, 60 miles per hour (mph) operating wind, 130 mph non-operating wind.”</i></p>		
FOLLOW UP QUESTIONS:	Is wharf design consistent with NCIT capacity and operational objectives? Are costs defined in the conceptual cost estimate generally consistent with the design presented in this report?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal, Planning Assumptions		
AUTHOR:	CH2M Hill	REPORT NO:	095
AGENCY:	NC State Ports Authority	DATE:	3/15/2008
CONTACT:	Thomas J. Eagar 910.343.6232	REVIEWER:	Griffin, Sisson
DESCRIPTION:	<p>This document identifies the assumptions adopted to provide a conceptual framework needed for a business feasibility evaluation of a high-density, automated container terminal based on the following:</p> <ul style="list-style-type: none"> • Capacity of 3.0 million twenty-foot equivalent units (TEUs) per annum. • Vessels up to 12,000-TEU capacity. • Planned to initiate operation and generate revenue at the earliest possible date. • Terminal financing subject to private investment (Public-Private Partnership [PPP]). • Supporting access infrastructure funded by parties other than the Authority. <p>Assumptions were made to illustrate the size and location of facilities and to define the interfaces between the ship and berth, the berth and storage yard, and domestic trucking and trains.</p>		
KEY INFORMATION:	<p>The report defines assumptions used as the basis for following conceptual analyses:</p> <ul style="list-style-type: none"> • Pro Forma Business Plan (market, economic, and growth forecasts) • Site location • Vessel characteristics • Dredging (channel layout, depth, material, volume, disposal) • Wharf (configuration, foundation, superstructure, loads) • Buildings and facilities • Civil (paving, grading, stormwater management) • Utilities (water, sewer, fire, electrical) • Operations system (equipment, layout, gate) • Berth capacity • Container yard capacity • Rail and intermodal rail • Traffic (routing, capacity) • Cost and schedule <p>Assumes various Compound Annual Growth Rates (CAGR) for container traffic depending on the forecast case assumed. Assumes 6000 TEU/net acre and 80% net to gross ratio. Assumes 50% of containers handled by rail, much higher than achieved by any East Coast port.</p>		
FOLLOW UP QUESTIONS:	Are assumptions consistent with industry practices and stated capacity and operational goals for NCIT? Given the economic downturn, are the annual growth rate projections for container cargo still reasonable?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Pro Forma Business Plan		
AUTHOR:	CH2M Hill	REPORT NO:	096
AGENCY:	NC State Ports Authority	DATE:	3/15/2008
CONTACT:	Bill Bennett, P.E. 910.251.7071	REVIEWER:	Griffin, Sisson
DESCRIPTION:	<p>The Pro Forma Business Plan presents the study, analysis, and findings of the economic viability of the NCIT. Appendix A conveys the information in a concise PowerPoint format. <i>"The Pro Forma Business Plan is organized into five key elements:</i></p> <p>Opportunity Assessment – <i>Identifies and quantifies the future market for waterborne container traffic which may be captured by the port, and determines the market need for additional system capacity to meet the needs of the addressable market.</i></p> <p>Competitive Position Assessment – <i>Provides an understanding of the competitive environment within which the port must market, provides a marketing strategy to create a sustainable competitive advantage, and provides a future container demand projection.</i></p> <p>Revenue Projection – <i>Identifies and evaluates the key revenue opportunities.</i></p> <p>Operating and Maintenance Cost Projection – <i>Identifies and quantifies representative operating and maintenance cost parameters for U.S. East Coast container terminals, and describes a conceptual operating model for the North Carolina International Terminal.</i></p> <p>Pro Forma Economic Model – <i>Provides a computational assessment of the economic viability of the NCIT enterprise, identifies major gaps or economic barriers to project success, and determines those elements which would most improve the economic fundamentals of the project."</i></p>		
KEY INFORMATION:	<p>The report concludes that the US East Coast and Gulf Coast ports will have a capacity shortfall between 2014 and 2019 due to increased container demand and limited available container terminal capacity supply. This capacity shortfall would allow NCIT to immediately capture market share of over 0.9M TEUs of the market and grow to meet an estimated capacity of 3M TEUs within 10 years.</p> <p>Based on estimated future market share, the report forecasts robust revenue growth potential and presents an estimated cash flow that would return value to the private developer/operator and to the NCSPA. To achieve this result, the business plan assumes project development costs (excluding off-site road and rail connections and the USACE share of dredging costs) of \$1.7B to \$2.3B and 11.3% CAGR for container cargo, with container volumes growing from approximately 20 million TEUs (2005) to between 54 and 94 million TEUs by the year 2030.</p> <p>The report compares per-box port handling rates for various US East Coast ports.</p> <p>No risk analysis performed.</p>		
FOLLOW UP QUESTIONS:	<p>Is the forecasted size and growth of the container market supported by the available data? Does the analysis support the conclusion that the US East Coast container capacity will be at a shortfall by 2019? Is PPP assessment reasonable? What are downside risks?</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal Infrastructure Report		
AUTHOR:	CH2M HILL	REPORT NO:	097
AGENCY:	North Carolina State Ports Authority	DATE:	9/2008
CONTACT:		REVIEWER:	Demers, Vandenberg
DESCRIPTION:	<p>The purpose of the report is to present a concept-level plan for NCIT that is then used for a cost estimate of the project infrastructure (included as an appendix) and a pro forma business plan (a separate report).</p> <p>The plan is based on a series of initial assumptions/constraints for the size and operation of the facility, including:</p> <ul style="list-style-type: none"> • Year 2017 buildout in three phases • Maximum container throughput of 3M TEUs/year • Semi-automatic operation able to handle three 12,000 TEU or four 8,000 TEU vessels at one time • Maximum of 16 gantry shore cranes • Capable of storing and sorting 47,680 TEUs of containers at any time • Capable of handling 400 trucks at a time (over 1,550/day loaded/unloaded) • 6 miles on-terminal rail lines with an intermodal yard on-terminal and a goal of servicing 50% of container volumes by rail • Channel depth of 52.5 feet 		
KEY INFORMATION:	<p>In chapter 2, each major piece of equipment (for example, automated rail mounted gantry cranes) on the port is briefly discussed with mention of quantity and operations.</p> <p>In chapter 3, the infrastructure components are categorized into structures, utilities (including security), stormwater management facilities, and wharf. Geotechnical information and recommendations are given.</p> <p>In chapter 4, port access issues are discussed from the waterside and landside. Landside access is via road and rail with an on-site intermodal rail yard.</p> <p>The Class IV cost estimate is in chapter 5 and is based on a 5% design deliverable. It is approximately \$2.5B in 2008 dollars and accurate to +50% to -30%. The estimate was based on May 27, 2008 pricing.</p> <p>The Alternative Maritime Power Supply (shore-side electrical power for ships) should help to counteract air pollution concerns. Refer to the cold stack article (doc# 011).</p> <p>The appendices were not part of this electronic file; however, the cost estimate is document #091 and the planning assumptions are document #095.</p>		
FOLLOW UP QUESTIONS:	<p>We should obtain the following three appendices so we can reference their calculations and state whether results are reasonable. Appendix D: Automated Terminal Operations TM, Appendix E: Port Capacity Calculations, Appendix F: Yard Capacity Calculations.</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Strategic Seaports: North Carolina as a Critical National Asset		
AUTHOR:	None provided	REPORT NO:	098
AGENCY:	NC State Ports Authority	DATE:	5/2008
CONTACT:		REVIEWER:	Horst
DESCRIPTION:	Two-page document summarizing connection between NC ports and DoD initiatives.		
KEY INFORMATION:	<p>There are fifteen Strategic Seaports nationwide, capable of simultaneously handling commercial and military requirements. Both the Port of Wilmington and the Port of Morehead City are on this list.</p> <p>Major emphasis of article is on North Carolina International Terminal development and the synergies with the state's large military community.</p> <p>The North Carolina International Terminal is located strategically adjacent to the All American Defense Corridor.</p>		
FOLLOW UP QUESTIONS:	The paper indicates that each Strategic Seaport is "unique in its capabilities and provides the Department of Defense with operational flexibility/redundancy and port facilities and services that are critical in meeting a wide range of national security missions and timelines." What are the unique capabilities of the Port of Morehead City? Where is the All American Defense Corridor and are there special freight needs here beyond the port?		
REFERENCES:	<i>Article references The Department of Defense Report to Congress on Projected Requirements for Military Throughput at Strategic Seaports (April 2007) by the Under Secretary of Defense for Acquisition, Technology and Logistics. Contains data on current and projected port infrastructure constraints at the Strategic Seaports, their commercial growth projections, and their planned infrastructure improvements and enhancements over the next five to ten years as they relate to Defense initiatives and the potential commercial spillover benefits.</i>		

DOCUMENT SUMMARY

REPORT:	North Carolina International Terminal - Review of Planning Concepts and Privatization Options		
AUTHOR:	PF Richardson Associates	REPORT No:	099
AGENCY:	NC State Ports Authority	DATE:	6/2010
CONTACT:		REVIEWER:	Sisson
Description:	<p>Summary (Value Engineering Exercise on Design)</p> <p>“As the Authority is exploring options for obtaining private funds for terminal development, this study was to identify cost saving options that might make the development of the NCIT more attractive to private investors.”</p>		
KEY INFORMATION:	<p>Recommendations included:</p> <ul style="list-style-type: none"> □ Adjusting the terminal site footprint to reduce costly grading and site preparation requirements; □ Developing a terminal operating plan and equipment plan that more efficiently met planned cargo throughputs and productivity requirements; □ Developing a Container Yard Plan based on this revised equipment plan; and □ Revising the layout and sizing of the proposed on-dock ICTF” <p>Recommends RTGs based on capital cost but did no life cycle cost analysis.</p> <p>“The market analysis and justification appears well researched with top-down and bottom-up approaches, although some of the assumptions and the conclusions on volume forecast appear optimistic for this location, given nearby competitor ports and a green field terminal.”</p> <p>“The planning concept relies on significant rail transport to maintain a high velocity of containers through the terminal, which appears quite a challenging assumption given the current state of rail connections between this location and major rail hubs in, say, Charlotte NC for example.”</p> <p>“If the terminal footprint can be relocated, there are several alternative locations that appear feasible and at least one of those (Alternate 6) appears superior to the current plan.”</p>		
FOLLOW UP QUESTIONS:			
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	NCSPA Facility Analysis of Pfizer Property for Development of North Carolina International Port		
AUTHOR:	Moffat & Nichol	REPORT No:	100
AGENCY:	NC State Ports Authority	DATE:	11/2005
CONTACT:	Thomas J. Eagar 910.343.6232	REVIEWER:	Griffin
DESCRIPTION:	<p>This report provides information on the proposed Pfizer site, which comprises 620 acres, approximately 4,000 linear feet of river front access for ship berths directly in front of the property with another 4,000 linear feet of riverfront access along property extending to the south. The undeveloped farmland is bordered by the Sunny Point Marine Ocean Terminal (MOTSU), the Brunswick Nuclear Facility, and the Archer Daniels Midland property.</p> <p>The Pfizer site is evaluated for its ability to meet the following needs:</p> <ul style="list-style-type: none"> • Port location with access to high consumer consumption or industrial area • Ability to accommodate large container ships which have • Capacity of 12,500 containers (TEUs) • 50 to 52 ft. Draft • 1,250 to 1,300 ft. Length • Terminal and gate area of at least 75 acres per vessel position • Mainline Rail access and Intermodal Yard • High capacity highway access • Site that can be permitted and approved 		
KEY INFORMATION:	<p>The report estimates the annual throughput for a new Port constructed on the 600 acre site would be on the order of 1.5 million TEUs per year, with the potential for expansion to approximately 2.2 million TEUs if additional land can be acquired for container storage. The preliminary investment requirements show the proposed port could cost on the order of \$900 million, including dredging, waterfront structures, and backland development.</p> <p>The report states that the NCSPA is under pressure to improve the container terminal at the Port of Wilmington, with an expectation of growth to 560,000 TEUs by 2012. Since the southern terminal would not be on line until 2015 or later, the continued improvement of the Port of Wilmington is critical to the statewide container development strategy. The report concludes that the Pfizer site represents one of a few locations that can meet the demands of the container and Value Added industries on the east coast of the United States.</p> <p>The Pfizer site has access to US 17 via NC 87 and has CSX rail access.</p>		
FOLLOW UP QUESTIONS:	Is report data still relevant in light of subsequent studies by CH2M Hill?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Assessment of the Marine Transportation System (MTS) Challenges Summary Report		
AUTHOR:	The Volpe Center	REPORT NO:	101
AGENCY:	Institute for Water Resources, United States Army Corps of Engineers	DATE:	December 23, 2009
CONTACT:	Dr. Bahar Barami	REVIEWER:	Vandenberg
DESCRIPTION:	<p>This report is an assessment of the Maritime Transportation System (MTS) functions and its condition, threats, and vulnerabilities. The study also evaluates means by which the MTS risk factors are mitigated and identifies technology and policy solutions to enhance MTS sustainability and resiliency. The report is the seventh task report performed for USACE by Volpe and provides a summary of the previous six tasks. The 555-page appendix comprises the previous task reports plus a report on short sea shipping.</p>		
KEY INFORMATION:	<p>MTS strategic goals include:</p> <ul style="list-style-type: none"> • Supporting continuity of operations and sustained international commerce by ensuring adequate capacity; • Ensuring national security and vessel/passenger safety; • Contributing to environmental stewardship; • Ensuring adequate financing mechanisms, training and data, and institutional structures in support of MTS operations; • Ensuring system resiliency and operational reliability. <p>Deficient intermodal connectors, structurally defective bridges, and bottlenecks at port access links threaten the viability of MTS terminal operations</p> <p>Container transloading (transferring the contents of import containers into 48-foot and 53-foot domestic containers) causes congestion, capacity bottlenecks, and excessive operating costs to reposition empty containers as non-revenue moves. Ports are faced with a buildup of empty containers with longer average dwell times of empties. Truck dispatching systems can help truckers locate empty containers near export pickup sites rather than on-port.</p> <p>The Maritime Transportation and Security Act (MTSA) and the Security and Accountability for Every Port (SAFE Port) Act require ports to prepare and implement vulnerability assessments and security plans covering operations in port and at sea.</p> <p>The Harbor Maintenance Trust Fund continues to be underused and will have a surplus balance of \$8 billion in 2011. This, while lack of adequate dredging causes access to key Federal navigation channels to be constrained 65 percent of the time.</p> <p>Loss of excess capacity at the largest US container ports is potentially disruptive to MTS. MTS redundancy should be promoted through policies and tax incentives that enhance the use of short sea shipping and efficient utilization of smaller ports and inland port networks.</p> <p>The US Bureau of Economic Analysis (BEA) 2007 estimate of the marine transportation sector gross annual economic output was \$36.1 billion.</p>		
FOLLOW UP QUESTIONS:	<p>What information and technology systems (e.g. truck appointments and scheduling) could be employed in NC to enhance port efficiency?</p> <p>How can NC ports serve to provide resiliency to regional container and cargo movements?</p> <p>What are NC opportunities and prospects for self-propelled feeder vessels (medium-speed small ships) to support short sea shipping and feeder service within the region?</p>		
REFERENCES:	<p>Numerous references to published reports and journal articles are included on page 48-51.</p>		

DOCUMENT SUMMARY

REPORT:	Container Yards Improvement Report		
AUTHOR:	Moffatt & Nichol	REPORT NO:	102
AGENCY:	NC State Ports Authority	DATE:	5/9/2006
CONTACT:		REVIEWER:	Sisson
DESCRIPTION:	The report evaluates interim upgrades for the Port of Wilmington. Operations are based on the use of front-loaders for container handling.		
KEY INFORMATION:	<p>The following interim container handling improvements were recommended for the Wilmington terminal:</p> <ul style="list-style-type: none"> • Purchase of 3 or 4 100-ft. gage container cranes • Purchase of reach stackers for container handling • Upgrades to Berth 9 including new fender elements and crane rails • Demolition and replacement of Berth 8 (required due to Delayed Ettringite Formation in the piles) • Demolition of the S&R Packing facility and paving of unpaved areas within the terminal south of Seventh Street (paving costs by others) • Relocating and adding additional spaces for refrigeration containers • Installing new highmast lighting • Install new hydrants at highmast poles • Adding additional lanes to the current gate facility and extending the canopy • Demolition of existing and construction of new mooring dolphin south of Berth 9 		
FOLLOW UP QUESTIONS:	What, if any, of these improvements have been implemented? Is this a reasonable short-term solution to enhance operational effectiveness and capacity at Wilmington?		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Request for Letters of Interest – Development of Radio Island		
AUTHOR:	Moffatt & Nichol	REPORT NO:	103
AGENCY:	NC State Ports Authority	DATE:	4/2007
CONTACT:	Thomas J. Eagar Chief Executive Officer	REVIEWER:	Werner
DESCRIPTION:	<p>The document contains a draft Letter of Interest (LOI) of the North Carolina State Ports Authority soliciting firms to develop property on Radio Island, located between the Port of Morehead City and the town of Beaufort.</p> <p>The Authority will consider alternative development opportunities for other uses on the entire 150+ acre footprint, such as a container or bulk operation. development. The city also seeks to identify strategies for implementing green infrastructure approaches in flood-prone areas.</p> <p>The LOI also has attachments which consist of detailed descriptions of existing Morehead City Port facilities, existing and planned rail and highway facilities, and maps.</p> <p>The document also contains a copy of <i>Radio Island Phase I Executive Report</i>, November 2006. This report is an update of the 2001 Radio Island State EIS. Attachments to this report are Site maps, and Opinions of Probable Development Costs.</p>		
KEY INFORMATION:	<p>The Radio Island greenfield site has the following characteristics:</p> <ul style="list-style-type: none"> • An available footprint of 150+/- acres • Zoned for port industrial use • Existing road and rail access • Existing utility service • Adjacent to a 45 foot deep channel maintained by the U.S. Corps of Engineers with a turning basin that is 1,350 feet wide (capable of accommodating 1,000 foot vessels) • Four miles from the Beaufort Inlet sea buoy, providing direct access to the Atlantic Ocean <p>The Radio Island site has an existing State-approved Environmental Impact Study (EIS) for development of a breakbulk terminal on the southwest corner that includes construction of 2,000 feet of quay wall, approximately 80 acres of backland development, 300,000 square feet of inside storage and dredging of a 45-foot deep access to the berths from the Federally maintained channel.</p>		
FOLLOW UP QUESTIONS:	Was the LOI distributed/advertised? And if so, is there any documentation of the firms submitting letters of interest? This information could be useful to NC Maritime financing recommendations.		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	The Projected Economic Impacts of the North Carolina International Terminal		
AUTHOR:	Martin Associates	REPORT No:	104
AGENCY:		DATE:	3/18/2008
CONTACT:		REVIEWER:	Sisson, Horst
DESCRIPTION:	<p>The report presents potential economic benefits of NCIT. Based on defined TEU throughput, the analysis determines direct, induced and indirect jobs that would be created.</p> <p>Report applies the same model used in the The Local and Regional Economic Impact of the North Carolina State Ports Authority to the projected start up and operation of the NCIT. Aside from the construction impacts associated with the construction of the terminal that use RIMS II multipliers, the model is not described. The projections on which the results are developed are not described either except to state what they are.</p>		
KEY INFORMATION:	<p>Direct jobs were calculated at 2057 per 916,418 TEU. Or about 225 direct jobs per 100k TEU.</p> <p>MA calculated sales tax at \$40 per TEU.</p>		
FOLLOW UP QUESTIONS:	<p>Is economic information still relevant in light of more recent analyses prepared by NC State and Moffat & Nichol? What is source and basis of TEU throughput numbers?</p> <p>The absence of any description of methodology or description of how the freight projections were derived limits the usefulness of this report in terms of suggesting an approach.</p>		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Statewide Logistics Plan for North Carolina: Appendices		
AUTHOR:	George F. List, Ph.D, P.E etal	REPORT No:	105
AGENCY:	North Carolina Office of State Budget and Management	DATE:	May 2008
CONTACT:	George F. List 919.515.8767	REVIEWER:	Horst
DESCRIPTION:	The Logistics Plan appendices include a SWOT analysis of each of the ports and a set of recommendations for each.		
KEY INFORMATION:	<p>Port of Wilmington Strengths: Bulk freight; four post-Panamax cranes (18-container reach); 82% of European trade; low volume of ships relative to port capacity facilitates a quick turnaround for ships; low volume of ships calling at this port minimizes congestion in the ocean channel; the eastern section of I-73 allows trucks to bypass the Raleigh-Durham area on their westbound or eastbound routes and consequently reduce trip time to and from the port. Weaknesses: 26 miles from the Atlantic ocean; low historic utilization; low volume of ships makes it difficult to attract new capital or justify public investments; Inadequate rail access; limited road access to the port via US Hwy 17; Inadequate container storage space. Threats: Competition from other ports Recommendations:</p> <ul style="list-style-type: none"> • Evaluate and invest in expanded container handling capacity • Invest in container handling software technology • Improve truck access: US-17 bypass, Cape Fear Skyway, I-40 ext., US-74 upgrade • Improve rail access: intermodal service, Pembroke connector, Castle Hayne to Wallace • North Carolina International Terminal and associated road and rail connections <p>Port of Morehead City: Strengths: located near the center of the Southeast market making it accessible to a major consumer base; availability of developable land on Radio Island; unused berth capacity; fast turnaround by ships; barge traffic; ability to handle RORO traffic; absence of congestion in ship channel; access to Class 1 railroad; warehouse capacity; competitive advantage in South American trade and strength in India and Far Eastern trade . Weaknesses: difficulty in attracting business due to proximity to Norfolk VA; shallow water depth (especially the West turning basin depth of 35 feet); Inadequate rail access; inadequate road access; absence of container traffic. Opportunities: Proximity to Global Transpark; Nearness to military bases Threats: growth threatened by three nearby ports: Norfolk, Wilmington and Charleston. Recommendations</p> <ul style="list-style-type: none"> • Maintain focus on bulk shipment • Deepen the water inside harbor • Link rail and highway systems to port, including west lead track, , rail on Radio Island, upgrade US-70, upgrade Market Street, replace Newport River bascule bridge. • Develop Radio Island 		
FOLLOW UP QUESTIONS:	None.		
REFERENCES:			

DOCUMENT SUMMARY

REPORT:	Freight Movement in a Global Economy		
AUTHOR:	Harry Caldwell Chief, Freight Policy, FHWA	REPORT NO:	106
AGENCY:	FHWA	DATE:	May 23, 2003
CONTACT:	Harry.caldwell@fhwa.dot.gov 202.366.9215	REVIEWER:	Camacho
DESCRIPTION:	<p>The report includes summaries of state, national and international freight data and trends using mostly graphs and charts. The report addresses:</p> <ul style="list-style-type: none"> • Freight trends for North America and North Carolina • North Carolina strategies to address freight • Globalization and public policy 		
KEY INFORMATION:	<p>The report makes the following conclusions and recommendations:</p> <ul style="list-style-type: none"> • As a major manufacturing and distribution center, NC geographically links the Nation's northeast and southeast, major centers of population and manufacturing, and the emerging center for future growth and economic development • Latin American trade growth and shifts in routing of Asian trade may affect North Carolina • North Carolina's robust intermodal freight system may be stressed by global security challenges under DoD deployment plans <p>The following trends are identified:</p> <ul style="list-style-type: none"> • Increasing domestic, NAFTA, and global trade, including outsourcing for comparative economic advantage in production • Emergence of global trade blocs and city-state trade areas with far-flung intermodal supply chains and related demand for global trade infra-and info-structure • Increasing freight traffic and congestion along trade corridors and at ports, airports, and border crossings • Changes in the location of high-volume lanes and economies of scale for freight carriers <p>Recommendations include:</p> <ul style="list-style-type: none"> • Active partnership between NC government and industry, including carriers, shippers, logisticians, economic development officials, and security interests to continuously define the emerging issues and trends, translate these into actionable items, prioritize items into a multiyear statewide freight business plan, implement those items, and provide accountability • Develop high level freight efficiency and security metrics • Examine building/zoning codes, urban freight mobility strategies to bridge freight efficiency/community liveability issues • Coordinate investment strategies with neighboring states 		
FOLLOW UP QUESTIONS:	Evaluate/assess the policy proposed in report on Oregon's bridge task force report that shifts bridge replacements from worst-first to corridor priority; in order to keep freight routes open.		
REFERENCES:	Oregon's Bridge Strategy, Submitted by ODOT Bridge Strategy Task Force, June 20, 2002		

DOCUMENT SUMMARY

REPORT:	North Carolina Waybill Analysis		
AUTHOR:	NCDOT, with assistance from PBS&J and Wilbur Smith Associates	REPORT NO:	107
AGENCY:	NCDOT Rail Division	DATE:	November 2006
CONTACT:	http://www.bytrain.org/	REVIEWER:	Camacho
DESCRIPTION:	<p>The report includes information on rail freight traffic flow and commodity movements to, from, and within North Carolina. Fifteen of the state's rail corridors, main and branch lines were selected for analysis of freight rail traffic activity by station. All of the corridors were either CSXT or NS lines, and totaled 1,763 miles of the two railroads' 2,579 route miles in the state. The analysis focused on traffic originating or terminating at stations located on each corridor.</p>		
KEY INFORMATION:	<p>Two railroad companies – CSX and Norfolk Southern (NS) – operate 77 percent of the state's rail system; short lines operate the remaining. The major rail lines in the state with the greatest amount of traffic, run in a north-south direction making North Carolina a bridge between the Northeast and Southeast portions of the country.</p> <p>During the study period (1999-2003) more rail traffic was shipped into North Carolina than out of it (annual average of 56.9 mm terminating tons vs. 10.3 mm originating tons). In 2003 one-half of the inbound traffic was shipped from the coal-producing states of West Virginia and Kentucky. NS handled more of the state's combined originating and terminating traffic over the study period than CSX, although the gap narrowed over the last couple of years of the study. CSX originated more traffic than NS, but NS terminated more. More overhead traffic was moved through the state by CSX.</p> <p>Ten STCC commodity groups accounted for 95 percent of North Carolina rail tonnage and 88 percent of NC rail carloads during the study period: coal; farm products; nonmetallic minerals; food products; lumber or wood products; pulp and paper products; chemicals; clay, concrete, glass and stone products; intermodal; and hazardous materials.</p> <p>Nearly 70 percent of rail traffic came from five states – West Virginia, Kentucky, Virginia, Indiana, and Illinois. Coal, farm products, and food products were the predominant commodities. Including traffic from Ohio and neighboring states of South Carolina and Tennessee increases the statewide inbound totals to over 80 percent.</p> <p>Four NC counties received the largest volumes of rail traffic, driven power generation (coal). Mecklenburg County, the fifth largest volume receiver, had more varied commodity base. The five counties accounted for 46.5 percent of all inbound rail shipments in 2003.</p> <p>Forty-one percent of originating traffic was concentrated in four counties. Volumes in three of the four were based on mineral and chemical/hazardous material production, while Mecklenburg County was driven by intermodal traffic.</p> <p>Corridor 12 (Charlotte to Winston-Salem) and Corridor 13 (Winston-Salem to Greensboro) both connect Corridor 1 (Charlotte to Morehead City) with 17 Winston- Salem from Charlotte and Greensboro, respectively, but have little online traffic. The study found that these corridors appear to have the potential to be developed into alternate mainline routes, if needed, for system capacity.</p>		
FOLLOW UP QUESTIONS:	Has follow up data been collected or analyzed as recommended in this study?		
REFERENCES:	STB Carload Waybill sample data from 1999 through 2003		

DOCUMENT SUMMARY

REPORT:	Wilmington Harbor, North Carolina, Supplement to the Final Fish and Wildlife Coordination Act Report		
AUTHOR:	Tracy M. Rice and Howard F. Hall	REPORT No:	108
AGENCY:	U. S. Fish and Wildlife Service, Raleigh Field Office	DATE:	July 2010
CONTACT:		REVIEWER:	Griffin
DESCRIPTION:	This report reviews supplemental modifications to the Wilmington Harbor Project proposed since the Service's most recent report on the project, the Cape Fear- Northeast Cape Fear Rivers Comprehensive Study, New Hanover and Brunswick Counties, North Carolina, Final FWCA Report of May 1996.		
KEY INFORMATION:	<p>The major concerns of the FWS include the following potential adverse impacts:</p> <ul style="list-style-type: none"> • The new channel alignment may accelerate erosion on nearby beaches and result in the loss of sea turtle nesting habitat; • Sediment deposition on area beaches may diminish the habitat quality for nesting sea turtles and adversely affect populations of beach invertebrates; • Sediment deposition on area beaches may result in turbidity and siltation in nearshore areas that adverse affect important hardbottom habitat; • The increased extent of overflowing scows or barges carrying sediment may reduce water quality and adversely affect fish and other aquatic, and; • The elimination of the bubble curtain around blast areas in the river will kill some fish. <p>The report concludes that the planning process to date has adequately documented the economic justification for the proposed modifications, the range of alternatives considered, and the selection of a preferred alternative.</p> <p>The report makes recommendations for the following areas:</p> <ul style="list-style-type: none"> • New Alignment for Ocean Entrance Channel • Backfilling Abandoned Channel • Disposal on Beaches of Brunswick and New Hanover Counties • Expansion of Dredging Methods • Elimination of Bubble Curtain 		
FOLLOW UP QUESTIONS:			
REFERENCES:	Cape Fear- Northeast Cape Fear Rivers Comprehensive Study, New Hanover and Brunswick Counties, North Carolina, Final FWCA Report of May 1996		

DOCUMENT SUMMARY

REPORT:	Restoration of the Wallace to Castle Hayne Rail Corridor and Associated Port / Rail Improvements		
AUTHOR:	HDR Engineering, Inc. of the Carolinas	REPORT NO:	109
AGENCY:	North Carolina Dept. of Transportation – Rail Division & North Carolina State Ports Authority	DATE:	February 2004
CONTACT:		REVIEWER:	Heebner
DESCRIPTION:	<p>Freight to and from the Port of Wilmington, NC and the business and industry located within southeastern North Carolina coastal counties relies exclusively upon rail service provided by CSX Transportation (CSXT). The majority of rail traffic to and from Wilmington passes through Hamlet, NC, before accessing the primary CSXT north-south and east-west mainlines. In 1994, the State of North Carolina acquired and preserved approximately 27 miles of the former CSXT W&W subdivision. This rail segment was the former Atlantic Coast Line (ACL) route between Wallace and Castle Hayne and was abandoned in the mid 1980's. CSXT removed the track and most of the bridge structures at that time and the corridor has been dormant since.</p> <p>This study examined the feasibility of restoring this abandoned right-of-way to an active freight railroad as an alternative and more direct freight routing for southeastern North Carolina. This rail corridor would connect the CSXT lines serving the Port of Wilmington to Wilson, NC and points north on the CSXT system. It would form a more direct and less-congested rail route that could use the primary CSXT north-south main line along the I-95 corridor.</p>		
KEY INFORMATION:	<p>The results of the Study provided:</p> <ul style="list-style-type: none"> • Infrastructure improvements and capital costs required to reopen the Wallace to Castle Hayne rail segment for 40 MPH freight operations • Improvements and capital cost for alterations to provide modifications to existing CSXT line segments to support the reopening. • Evaluation of the existing and reopened rail operations to determine potential cost savings and benefits to rail users. • Determination of the overall economic value to private business and to the public derived from reopening the railroad segment. • Determination of the financial feasibility and the providing of justification for completing the reopening project to support freight rail operations <p>The Order of Magnitude Cost Estimate for the restorations of service was \$49.35 million in 2004 dollars. In addition, the study indicated a projected \$31.56 million of CSXT improvements needed to restore the corridor.</p> <p>The report indicates that operational benefits to the railroad do not demonstrate sufficient return in and of themselves to justify the combined \$80.91 million expenditure.</p> <p>When regional economic benefits are considered, the project becomes more promising. If operational and economic development benefits are considered together, they exceed the cost of restoration and produce a benefit cost ratio of 3/1.</p>		
FOLLOW UP QUESTIONS:	CSXT provided no input for the study. CSXT support for the restoration is essential. In addition, the study did not address any environmental issues. These should be investigated and mitigation costs identified.		
REFERENCES:	<i>The route restoration should be validated with current rail operations and current capital construction costs.</i>		