The North Carolina International Terminal Project

This project … will place us at the center of global shipping in the US.

--Carl Stewart, Chairman of the Board, NC State Ports Authority

The North Carolina State Ports Authority plans a container terminal at Southport with a capacity of 3,000,000 twenty-foot equivalent units (TEU) annually. This is to handle intermodal containers–shipping containers that can move by ship, rail, and truck. A twenty-foot equivalent unit represents an intermodal container 20 feet long, the smallest size in common use. Most containers are 40 feet long; some ships can accommodate 45-foot and 48-foot containers. There are also 53-foot containers, the longest size that can be used on a highway trailer, but those are used only for truck and rail carriage.

Containers are eight feet wide and usually eight and a half feet high, although some are nine and half feet high. Most are fully-enclosed boxes, but there are also bulk containers, cylindrical tanks enclosed in a framework with the same dimensions and hardpoints as the enclosed containers, so they can be stacked with the others.

Intermodal Containers

The container terminal at Southport would be larger than any existing container terminal on the East Coast of the United States, except the terminal at Port Elizabeth, New Jersey. The existing container terminal operated by the State Ports Authority at Wilmington has a capacity of approximately 350,000 TEU. That terminal handled approximately 200,000 TEU in each of the last three years.

The Port of Wilmington

The container terminal at the Port of Wilmington occupies approximately 100 acres. The two berths in the foreground handle container ships. There four cranes for handling container cargoes with a span of 144 feet, large enough for some post-Panamax vessels ("Panamax" is a designation for the largest ships that can transit the Panama Canal today; "post-Panamax" vessels are larger, and would be able to transit the Panama Canal after the completion of expansion currently planned for completion in 2104). However, post-Panamax vessels could only reach the Port of Wilmington if loaded to less than capacity because of the limited depth of the channel in the Cape Fear River.

The North Carolina State Ports Authority is pursuing a project to increase the capacity of the container terminal at the Port of Wilmington to 500,000 TEU per year.

The site purchased by the State Ports Authority for the proposed container terminal at Southport is approximately 600 acres. That is shown in the aerial photo on the next page.

The Site of the Proposed North Carolina International Terminal

The current plans for the terminal have been prepared by CH2M Hill, Inc., consultants to the NC State Ports Authority, in preliminary form, for the purpose of estimating costs and preparing a business plan. Those plans call for a wharf 4600 feet long, which would accommodate four Panamax vessels, or three of the larger vessels that could pass through the Panama Canal after the completion of the third set of locks, planned for 2014.

Eighty-six acres of wetlands would be removed and dredged for the vessel berths. Four hundred of the remaining acres would be paved, for container storage, rail and truck loading areas, and support facilities.

The plans include sixteen cranes for unloading vessels, and a system of automated rail-mounted gantry cranes to move containers in the storage yard. Consultants to the State Ports Authority plan a high degree of automation, to an extent not practical in some existing terminals due to union resistance. The competitive position of the proposed terminal would depend on the efficiencies of such automation.

This terminal is intended to accommodate the larger, post-Panamax container ships that are expected to be used for Asia-US East Coast service after he enlargement of the Panama Canal, and other, even larger ships. The design vessel is 1263 feet long, 185 feet in beam, and draws 50 feet. Such vessels would require a new channel in the Cape Fear River to the terminal site, and extending 17 miles out to sea, to reach deep water.

For the purpose of planning, CH2M Hill, Inc. assigns half of the land-side container traffic to rail, and the other half to truck. There is no assurance that the traffic would be split in those proportions in practice.

The preliminary plans show truck access at the end of East Moore Street (the road entering at the bottom of the aerial photo above). New roads would be necessary to carry the approximately 4400 truck trips per day necessary to handle half of the 3,000,000 TEU annual design capacity. The route proposed by CH2M Hill, Inc., would involve a new connection from Leonard Street to River Road (NC87) south of the Brunswick Nuclear Plant, enlargement of River Road for several miles, and a new road to connect with US17 near Bolivia. Such plans are tentative–the North Carolina Department of Transportation would determine the actual route of new roads and the extent of improvement of existing roads,

Rail access would be over the existing trackage, a single track which passes through the property of the Primary Energy cogeneration plant serving Archer-Daniels Midland, the Progress Energy Brunswick Nuclear Plant, and the Military Ocean Terminal at Sunny Point, before crossing NC133 and passing through the City of Boiling Spring Lakes to connect with the CSX system at Leland. CH2M Hill, Inc., estimates that ten to fifteen trains a day, each 10,000 feet long, would be necessary to carry one-half of the container movements at design capacity.

References

CH2M Hill, Inc. *Pro Forma Business Plan*, 2008.
CH2M Hill, Inc. *Infrastructure Report*, 2008.