



Project Summary

Texas Department of Transportation

0-5068: Planning for Container Growth Along the Houston Ship Channel and Other Texas Seaports

Background

This project assessed whether Texas transportation entities can continue to rely on traditional highway and rail planning to accommodate the projected growth of intermodal containers entering Gulf ports. Port of Houston Authority (POHA) container volumes have expanded to 1.5 million twenty foot equivalent units (TEU) in 2005. POHA will commission a new container terminal at Bayport in late 2006 which will handle more than 3 million TEU at full build-out around 2012. Some U.S. port terminals are now served by distinct corridors, most notably at Los Angeles and Long Beach where the Alameda corridor now carries around 65 container unit trains a day. Research objectives were to: forecast container growth at Texas ports, identify port container needs, evaluate highway links to those ports, and finally analyze current rail-port connections to identify intermodal transportation investment opportunities. Corridors take time to plan, fund, and implement, so a fundamental question was: does Texas need any Alameda-type railway corridors?

What the Researchers Did

During the project researchers frequently visited Texas deep water ports with an interest in container terminals. In the first year, the team concentrated on the basic plans of Beaumont, Houston, Corpus Christi, and Brownsville ports, paying attention to rail connectivity. It analyzed ways to improve rail productivity without undertaking large investments of the Alameda type. In the second year, a forecast of container growth was undertaken and reviewed by POHA staff. The rail element focused on the Houston Port Terminal Railway Association (an operating railway referred to as the PTRA) because another consultant was evaluating the Houston area-wide rail network. Researchers traveled across the PTRA network and inspected critical elements constraining the growth of port traffic. Researchers also considered the impacts of large distribution centers on POHA activities and the Houston highway corridors serving both of the POHA terminals. Finally, a survey of dray drivers and companies was undertaken to learn more about the role that dray trucks play in Houston intermodal transfers.

What They Found

First-year report 0-5068-1 evaluated rail at four major Texas ports. Beaumont port rail access should be improved and a new bridge built over the Neches River, which is heavily used by all three Class 1 railroads serving Texas. Corpus Christi management is waiting for its La Quinta terminal to be reviewed positively by an entity capable of funding, building, and operating the facility. Brownsville is directly linked to Mexico's railway traffic base with a bridge/border connection, and that traffic base could grow if NAFTA traffic becomes more containerized.

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Rail access needs for ports other than Houston are identified and can be remedied without large capital investments. However, rail access to POHA facilities and other Houston Ship Channel locations are adversely impacted by the relatively slow-moving train velocity on the rest of the Houston rail network. A separate study of that regional rail network is being made by consultants from HNTB. Independently, this research project has determined that the rail access to the Port of Houston is often unreliable on a service quality basis and thus a constraint on supporting the expected growth in added intermodal commerce. The researchers concluded that these port rail network issues should be remedied directly if the POHA wishes to serve markets in the mid-west.

Second-year report 0-5068-2 builds on the first-year activities by developing a container forecast for POHA to 2020. Mindful that all U.S. container port forecasts have encountered difficulties, it identifies key factors likely to affect container growth, including the Panama Canal, and provides projections of future volumes using both statistical and non-statistical methods. A discussion of the PTRA system is then given, including a review of its network and customer base with photographs locating key capital project improvements. The research team concludes its report with a pre-feasibility level port/railway specific capital improvement recommendation in the \$38 to 85 million cost range. This capital program recommendation to improve internal railway specific port services identifies seven of the most critical projects designed to raise PTRA railway freight efficiency while meeting adequate rates of return. The projected capital cost total is relatively small given the billions of dollars in cost estimates associated with current region-wide rail improvements for Houston.

What This Means

The researchers believe that an Alameda-type trench and elevated rail freight corridor is not needed to support commercial freight growth within the Houston Ship Channel area. Transportation planning must be changed, however, to improve rail intermodal services if shippers are to use Gulf ports to serve distant U.S. markets. Modest rail capital investments focused upon the specific port rail network within the Houston region-wide rail network should be undertaken to address rail corridor bottlenecks. The prospect of TTC-69 providing an opportunity to locate metro-bypassed rail segments is one example of longer-term solutions. Regarding highway corridors, TxDOT should accurately estimate vehicle miles of travel (VMT) associated with container flows. Monitoring new distribution centers, particularly the movement of both in-house and contract truck movements, is a key strategy for forecasting urban truck use in cities like Houston, particularly where new capacity may be tolled. Finally, planning should focus on partnering with users, modal companies like rail and barges, and MPOs.

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