Project Summary

Texas Department of Transportation

0-5973: Emerging Trade Corridors and Texas Transportation Planning

Background

Texas is currently the leading U.S. state for exports and its economy also generates substantial import volumes. For these reasons, multimodal corridors are an integral part of state transportation planning. In addition, the strategic location of Texas means that regional and national corridors lie within or across its borders. A trade corridor can utilize a variety of modes to facilitate international flows, and changes in both demand and costs can cause shippers to move business between competing corridors.

The rapid increase in oil prices in 2007, followed by the global recession has severely impacted the global trading system and pushed planners to fundamentally re-examine how to match state transportation investment needs with future demand. A central planning question shifted from one of how to accommodate constant positive growth in demand, to a question of whether growth would occur at all and what this meant for investment in corridor infrastructure. Once the economic recession began, Southern Californian freight hubs, which had enjoyed quasi-monopolistic powers over Asia-U.S. containerized freight for around a decade and whose future role seemed most secure, suffered some of the most severe volume declines. It is also important to recognize that although Asia is important, Texas trades with many nations across the world and requires a wide range of multi-modal corridors across the state and region. The slowdown in trade growth can be seen as an opportunity to rethink trade corridor development and re-emerge with a more balanced system of moving both exports and imports between global regions in long-term equilibrium.

What the Researchers Did

The study examined the current state of global shipping and described strategies companies are following to survive the current (2008/9) severe downturn in shipping demand. It includes a description of international trade flows measured in both value and weight for a range of the most critical markets and describes the characteristics of key intermodal corridors. The study then provides data on vessel and rail operating costs, which allows calculations of container cost per mile to be derived under different conditions. The marine and rail cost model can then be used to illustrate and evaluate corridor comparisons. The model is intended to translate the metrics used by ocean carriers and rail providers into a measure that can be compared with trucking costs, since this mode is of paramount concern to TxDOT planners. The rail model estimates line haul cost so that these inputs can be combined with other associated costs such as port or canal fees to determine a total cost of shipping through a particular routing option.

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The model can be used to show the tradeoffs, for example, from a routing option in which sailing distance and associated cost for a container is reduced but landside distribution costs are increased. Milestones are then developed to guide planners in better predicting and understanding significant shifts in trade corridor development.

What They Found

The ongoing changes in trade corridors serving Texas over the past decade have predominantly been the result of changes in demand and economies of scale in transportation modes. Texas export patterns, for example, are strongly impacted by global commodity prices and the strength of the U.S. dollar, while imports were substantially impacted by the drop in consumer purchasing, employment levels and bank willingness to support personal debt. The decline in imports was particularly evident in trading patterns with Asian partners. Data from the U.S. Census foreign trade division was used to demonstrate that the relative importance of trading relationships and the rate at which patterns are changing depends on how trade is measured. Such distinctions include value vs. tonnage and containerized vs. non-containerized trade.

The profile of major international trade corridors serving Texas provided an overview of nine distinct routing options that are either currently utilized or planned to be utilized. For each corridor option, factors such as key ports of entry, time in transit, landside considerations, and statewide planning considerations were reviewed.

Given the lack of severe congestion tied to the economic slowdown, it was concluded that the principal force driving corridor diversification would be transportation costs, longer term economic benefits, and market access and not, as had been suggested under high growth forecasts, the diversion of shippers from existing corridors due to capacity constraints.

What This Means

TxDOT staff should be aware of several milestones when examining the development of trade corridors. These include political milestones like trade agreements, infrastructure improvements such as the completion of new terminals, and the expansion of the Panama Canal, and economic milestones such as the resumption of global GDP growth. As shippers seek out lower cost alternatives, and more countries seek a part of the global intermodal trade industry, new corridors can and will continue to emerge. The monitoring of corridors favors state-level transportation planning because it provides reasonable time “windows” in which to evaluate the issues and decide whether further appropriate actions need to be taken.

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