Texas A&M Transportation Institute

Texas Ports and Texas Exports

Testimony of

Ginger Goodin, P.E.

Director, Transportation Policy Research Center

Jim Kruse

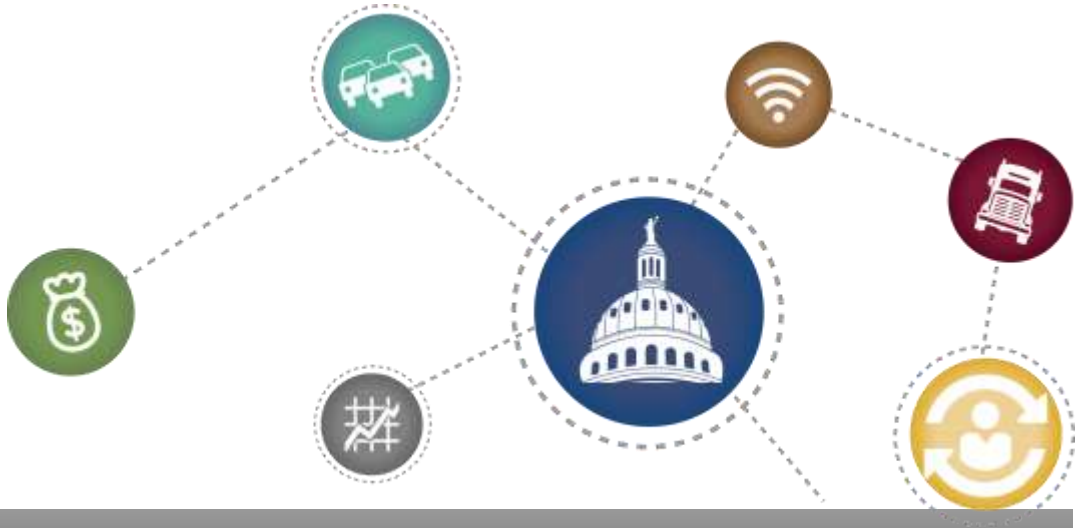
Director, Center for Ports and Waterways

Texas A&M Transportation Institute

to the

House Select Committee on Texas Ports, Innovation and Infrastructure

March 13, 2017



TRANSPORTATION
Policy Research CENTER

Introduction

Good morning. I am Ginger Goodin, Director of the Texas A&M Transportation Institute Policy Research Center, and I am joined today by Jim Kruse, Director of the TTI Center for Ports and Waterways who will present testimony shortly on state financing of coastal ports. My testimony today focuses on Texas exports, their use of Texas ports, and potential impacts of Panama Canal expansion.

Much of my testimony is drawn from a series of reports we recently completed. These reports examined the export supply chains of six commodities:

- Cotton
- Electronic Instruments
- Liquefied Natural Gas, or LNG
- Plastic Resin
- Timber, Wood, and Wood Products, and
- Vehicle Parts.

These reports are available to the general public on our website, TTI.TAMU.EDU/Policy, and have been further shared via our Twitter account, @TTI, and other social media.

Background

In 2014, Texas was the number one exporting state in the United States and had been for 13 consecutive years. That year, Texas merchandise exports amounted to $288 billion and supported an estimated 1.1 million jobs, with the top five export trading partners (in terms of value) being Mexico, Canada, Brazil, China, and South Korea. Texas' largest export commodity (in terms of value) in 2014 was petroleum and coal products, which accounted for $58.0 billion (or 28 percent of Texas' total merchandise export value) in 2014. Texas' other top four export commodities were computer and electronic products; chemicals; machinery (except electrical), and transportation equipment. Texas' strategic location in terms of trade with Mexico, Central America, and South America; major gateways; extensive multimodal surface transportation infrastructure; diverse workforce; and pro-business climate facilitate the state's competitive position in international trade.

Export commodities can be moved by multiple modes of transportation: road, rail, pipelines, water, air, and a number of intermodal options. The freight transportation system of a region or state—its infrastructure capacity and condition, modes, and supporting policies—therefore has a direct and indirect impact on international trade, specifically exports. For example, freight transportation infrastructure investments that increase system capacity could reduce travel times and costs, which can translate into increased economic productivity, enhanced labor and market access, and increased economic competitiveness that can result in increased exports. On the other hand, the mode of transportation has a direct impact on the cost, efficiency, and reliability of moving export products to overseas markets.

The type of merchandise and the destination also influence the mode(s) of transportation used. For example, for a shipper exporting perishable merchandise, speed/travel time is a major factor in choosing the mode of transportation. Seafood and flowers will thus most likely ship by truck and air. For other commodities, such as bulk cotton, rail and marine vessels will potentially be more cost efficient and profitable to reach the export destination.

Texas Exports and Modes

Mexico. 68 percent of the value of Texas' exports to Mexico moves by truck. In addition, 8 percent of the value of Texas' exports to Mexico moves by rail or truck on the domestic leg of the trip and departs on rail on the exit leg of the trip. The remaining 24 percent moves by water, air, pipeline, multiple modes, or an unknown mode. 92 percent of Texas' exports (in terms of value) by truck to Mexico exited the United States through gateways in Texas. Only 8 percent of Texas' exports by truck to Mexico exited a gateway in another state (the most notable being New Mexico). 97 percent of Texas' exports where the exit mode is rail to Mexico exited through gateways in Texas. The remaining 3 percent exited through gateways in Arizona or California.

Canada. 70 percent of the value of Texas' exports to Canada moves by truck. 20 percent of the value of Texas' exports to Canada moves by rail. The remaining 10 percent moves by water, air, multiple modes, or an unknown mode. 52 percent of Texas' exports by truck to Canada exited through gateways in Michigan, 19 percent exited through gateways in Montana, and 14 percent exited through gateways in North Dakota. All other gateways accounted for the remaining 15 percent.

The Rest of the Americas. Almost 99 percent of the value of Texas' exports to the rest of the Americas is shipped by water. A little over 1 percent of the value of Texas' exports to the rest of the Americas moves by air to the export destination. In the case of Texas exports that move by water, 33 percent are delivered by truck to the marine port, 12 percent are delivered by train, and 36 percent are delivered by pipeline. The remaining 19 percent are delivered to the marine port by marine vessel, multiple modes, or an unknown mode.

Eastern Asia. 72 percent of the value of Texas' exports to Eastern Asia is shipped by water. The remaining 28 percent moves by air to the export destination. Of those Texas exports that are trucked to a marine port for export, approximately 70 percent are trucked to a California port from where they are transported by marine vessel and 27 percent are trucked to a Texas port, from where they are exported. The remaining 3 percent exit the U.S. through other ports, such as Florida, Georgia, Louisiana, New Jersey, and Washington. The potential thus exist that some of Texas' exports that are currently shipped through a California port can be diverted to a Texas port and the expanded Panama Canal. Similarly, of those Texas exports that are railed to a marine port for export, approximately 41 percent are railed to a California port from where they are transported by marine vessel, 44 percent are railed to a Texas port, from where they are exported, and 14 percent are railed to a port in Louisiana.

Impact on Texas Exports

Cotton Export Supply Chain

Using the expanded Panama Canal will decrease the all-water distance from the Gulf Coast ports to Asia with associated decreases in ocean line costs that would potentially be passed on to exporters in the form of lower ocean freight rates. It is therefore believed that Gulf Coast ports could see an increase in cotton shipments to Asia as a result of the Panama Canal expansion. One prediction is that a 10 percent reduction in ocean freight rates would result in increased cotton exports to Asia via some Gulf and Atlantic ports through the Panama Canal. The Ports of Savannah and Houston were predicted to see large increases in cotton exports to Asia. Specifically, the Port of Houston was predicted to see a 30 percent increase in cotton exports to Asia if ocean freight rates reduce by 10 percent.

On the other hand, land crossings into Mexico such as Hidalgo to Brownsville and rail to the West Coast ports were predicted to see a reduction in cotton exports. Hidalgo to Brownsville is predicted to see a 40 percent reduction in cotton exports, and the West Coast ports -- Los Angeles and Long Beach -- are predicted to see a 40 percent reduction in cotton exports if ocean freight rates decrease by 10 percent. Cotton exports to Mexico are foreseen to cross at Laredo, with Laredo-El Paso seeing a 12 percent increase in cotton exports.

Cotton exporters will ultimately choose the least expensive and fastest route to the export destination. The ultimate route and the impacts of the Panama Canal expansion will only become clearer once the Panama Canal lock fees have been established.

Plastic Pellets Export Supply Chain

The opening of the expanded Panama Canal is expected to result in an increase in cargo handled at Gulf Coast ports, although the magnitude is unclear and will largely depend on the tolls levied by the Panama Canal Authority and the response from railroads to ensure that the rail and water option through the ports of Los Angeles and Long Beach remains competitively priced..

Some industry experts, however, believe that post-Panamax vessels – containerships that exceed the current dimensions of the Panama Canal – will not traverse the Gulf but would rather transload in the Caribbean or Cuba to smaller ships that will provide feeder services to Gulf Coast ports. Since it is unclear how this arrangement would affect freight rates, the impact of the Panama Canal on plastic resin exports through Gulf Coast ports is uncertain at this time.

Liquefied Natural Gas Export Supply Chain

LNG exports could potentially benefit more than containerized shipping from the Panama Canal expansion. Today, the Panama Canal can only serve about 8 percent of the LNG tanker fleet. The expanded Panama Canal will, however, be able to accommodate 80 percent of the world's LNG tanker fleet.

The canal's expansion could thereby reduce overall LNG shipping costs by approximately 25 percent. Texas will be well positioned to serve global demand for LNG given the two FERC-approved export LNG terminals currently under construction in Freeport and Corpus Christi and the increased competitiveness offered by the expanded Panama Canal through lower overall LNG shipping costs.

Gateway Efficiencies

Texas' marine ports, border ports of entry, and airports are critical gateways for the state's exports to global markets. In addition, a substantial amount of Texas' exports are shipped through the Ports of Los Angeles and Long Beach.

Marine Ports

Texas marine ports are at a disadvantage compared to the Ports of Los Angeles and Long Beach, which have more frequently scheduled liner services to China. For example, a lack of scheduled liner services impacts the competitiveness of the export supply chain because exporters must pay for storage at Texas ports (timber, for example), which adds time and costs. On the other hand, West Coast port labor issues and port congestion can disrupt Texas' exports to Asia that are shipped through the Ports of Los Angeles and Long Beach. Labor disputes at West Coast ports therefore add time (and thus cost) to Texas' export supply chains, such as the electronic instrument export supply chain.

Border Ports of Entry

A number of factors could result in border delays. These relate to both border infrastructure (such as design of the border facilities, inadequate crossing capacity, and inadequate road capacity serving the crossing) and operations (including inadequate staffing to process vehicles). Excessive wait times to cross the border increase the cost of transportation and therefore the cost of trade. For example, cotton exports to Mexico are often delayed due to documentation requirements, the number of agencies involved in the border-crossing process, and the available number of customs and inspection staff. Existing border-crossing facilities were also not designed for southbound commercial vehicle inspections of Mexican imports, so recent manual truck inspections on the U.S. side of the border have created congestion at ports of entry and approaching facilities.

TTI recently published a study titled "How Long is Too Long to Cross the Border?" We interviewed carriers and shippers using El Paso bridges. They reported crossing times ranging from 1.5 hours to 4 hours. Respondents said the ideal average time for a truck to cross in El Paso is 1 hour, and the average maximum crossing time is about 1.5 hours. Five out of nine of the carriers/shippers preferred a slightly longer but consistent border crossing time over a shorter but unpredictable crossing time. The study presents factors that contribute to border delays and possible efficiency metrics that could be used to inform state policy.

Oversize/Overweight Corridors

TTI also recently published a study titled "Potential Metrics for Designating and Monitoring Oversize/Overweight Corridors." This study serves as a primer on the development and statutory underpinnings of this type of permitted heavy haul corridor in Texas and offers potential metrics that can be used for designating oversize/overweight corridors and for monitoring the performance of the corridors once designated. The metrics for designation are economic impact, safety, infrastructure impacts, and local support. The metrics for monitoring are the economic, safety, and infrastructure impacts.

These studies and others are available to the public on our website. We are pleased to make them available to you as well.

Conclusion

With your permission, Jim Kruse will now address state financing of coastal ports and the status of the Panama Canal expansion, and we will then take questions. Thank you for inviting us to appear today.

Introduction

Chairman Deshotel, members of the committee, thank you for this opportunity to provide testimony regarding our ports and inland waterways. My name is Jim Kruse, and I am the Director of the Center for Ports and Waterways at the Texas A&M Transportation Institute, commonly referred to as TTI. My testimony will focus on two issues: the manner in which various states provide financial support for port infrastructure, and the effects of the Panama Canal expansion as of late last year.

Background

In 2015, the Transportation Policy Research Center sponsored a study on State Funding Practices for Coastal Port Infrastructure. I will present the highlights of that report.

The geographical coverage of the report spans Texas and 10 other states along the Gulf and East coasts. The focus is on coastal deep-draft ports. They tend to have the highest capital investment needs and the greatest impact on surrounding communities. However, since most programs do not target only coastal ports, the data presented in the report often include references to both inland and coastal ports.

All of the Gulf states are included in the analysis. Additionally, we studied Georgia, South Carolina, North Carolina, Pennsylvania, Massachusetts, and Virginia. We specifically excluded West Coast ports. Their legal structure and funding mechanisms are very different from the situation in Texas and the other Gulf states. Furthermore, West Coast ports are heavily oriented toward containerized imports from Asia and agricultural exports from the Northwest Pacific region, whereas in the study region the ports tend to have a much more diverse set of cargo types. Additionally, California ports are typically municipal departments; in Oregon and Washington, deep-draft port authorities manage operations unrelated to maritime transportation (e.g., airports and transit agencies). Given these circumstances, we felt a comparison would be an apples-to-oranges comparison.

When looking at the East Coast, we excluded the "small" states—Delaware and Rhode Island. We also excluded the Port of New York and New Jersey because it is a bi-state agency that is responsible for all modes of transportation in the area.

Ports, by nature, are very capital-intensive operations. They are required to look into the future 30 to 50 years and build costly infrastructure they believe will be of value for that length of time. This makes planning a difficult exercise and often puts ports in the position of needing financial assistance to meet changing market demands. State government may play a role in these situations.

There are three general categories of state funding: contributions to channel improvement projects, direct state funding to port authorities, and indirect funding and incentive programs designed to encourage port development.

Channel Improvement Projects

Channel projects require some explanation and background. They are a federal responsibility, but they require a non-federal sponsor to pay part of the cost of the project (usually in the 35–50 percent range). Typically, a state agency or port authority arranges for the non-federal portion, although in the case where two or more ports share a waterway, a separate non-federal sponsoring entity may be established as the coordinator (e.g., the Sabine-Neches Navigation District in Texas, which coordinates on behalf of Beaumont, Orange, and Port Arthur). Such projects are usually very costly and require a lengthy permitting process. There are 17 congressionally authorized channel projects in the 11 states, 8 of which are actually being constructed at this time. Table 1 summarizes the cost of each project, the direct state contribution to the project (apart from the port authority's contribution), and the source of the funds.

As mentioned above, channel improvement projects are high-dollar high visibility projects. Five of the 17 currently authorized channel projects are in Texas. Four of the five projects are in a holding pattern awaiting appropriations from the U.S. Congress. The Port of Houston decided to pay 100 percent of the cost of their project and is just about to complete the project. The four projects on hold are estimated to cost just under $2 billion, of which at least $800 million must be borne by non-federal interests. The projects are the Sabine-Neches Waterway, Freeport ship channel, Brownsville ship channel, and Corpus Christi ship channel. A navigation district is expected to provide the required non-federal share in each case. In addition, a feasibility study is underway on the Matagorda Ship Channel, but it is several years away from completion.

Florida has six projects. The state contributed $24 to Port Canaveral and $112 million to the Port of Miami. The other 4 require local entities to pay the non-federal share. In Georgia, the state government has committed to paying the entire non-federal share of $266 million for the Port of Savannah project. South Carolina has set aside $300 million for the Charleston project, although the General Assembly will have to authorize any expenditures from the fund. North Carolina will pay $3.7 million for a small project at Wilmington. It appears that Pennsylvania will pay all or most of the $117 million non-federal share for the deepening of the Delaware River. In Massachusetts, the state included $65 million (roughly 2/3) of the non-federal share for the Port of Boston in a $2.2 billion environmental bond bill.

To recap, 7 of the 17 projects in the study area are receiving state funding to cover all or a large portion of the non-federal share, while 10 are expected to be funded at the local level; five of the 10 are in Texas, four are in Florida, and one is in Mississippi.

Table 1. Summary of Active Ship Channel Projects.

State	Channel Improvement Project	Estimated Total Cost (Millions)	State Contribution (Millions)	Source of State Funds
Texas	Sabine-Neches Waterway	$1,114	0	N/A
	Brownsville Ship Channel	$258	0	N/A
	Corpus Christi Ship Channel	$353	0	N/A
	Freeport Ship Channel	$239	0	N/A
	Port of Houston Ship Channel	$80	0	N/A
Mississippi	Bayou Casotte Channel Widening (Pascagoula)	$40	0	N/A
Florida	Tampa Ship Channel Widening	$36	0	N/A
	Jacksonville Ship Channel	$601		N/A
	Jacksonville Mile Point	$37	0	N/A
	Port Everglades Ship Channel	$320	0	N/A
	Port Canaveral	$41	$24	Strategic Port Investment Initiative
	Port of Miami	$206	$112	Florida Department of Transportation budget
Georgia	Savannah Harbor Expansion	$706	$266	Bonds
South Carolina	Charleston Harbor Deepening	$496	$300	General revenues
North Carolina	Cape Fear River Widening and Realignment	$15	$4	
Pennsylvania	Delaware River Deepening	$353	$15	General revenues
Massachusetts	Boston Harbor Deepening	$311	$65	Environmental Bond Program

Ongoing Direct and Indirect Funding

Four states provide little or no ongoing direct support (Texas, Georgia, South Carolina, and North Carolina). Among the states that do provide direct funding, there is a wide range of funding levels. Table 2 summarizes the mechanisms the various states use. Florida has by far the most aggressive ongoing funding mechanism for ports, followed by Louisiana. We will provide details on these two states later.

Table 2. Summary of Direct Assistance Mechanisms.

State	Program	Source of Funds
Alabama	Constitutional Amendments 666 and 796	Oil and gas capital payments and state general obligation bonds
Florida	Florida Seaport Transportation and Economic Development Program	General revenues
	Strategic Port Investment Initiative	State Transportation Trust Fund
	Florida Ports Financing Commission	Revenue bonds
	Seaport Investment Program	State Transportation Trust Fund
	State Infrastructure Bank	Federal with state-matched funds; bond proceeds; general revenues
	Strategic Intermodal System Program	State Transportation Trust Fund
Georgia	None	
Louisiana	Port Construction and Development Priority Program	Appropriations to Transportation Trust Fund
	Capital Outlay Plan	State general obligation bonds
Massachusetts	Seaport Advisory Council	Environmental bond funds
	Rivers and Harbors Grant Program	General revenues
Mississippi	Port Revitalization Revolving Loan Program	State general obligation and limited obligation bonds
	Marine Transportation Capital Improvement Program Fund	General revenues
North Carolina	None	
Pennsylvania	Direct appropriations	General revenues
	Pennsylvania Intermodal Cargo Growth Incentive Program	Multimodal Transportation Fund
South Carolina	None	
Texas	None	N/A
Virginia	Commonwealth Port Fund	Transportation Trust Fund

The indirect funding mechanisms are heavily dominated by tax credit programs. Notable exceptions include Texas's Port Transportation Reinvestment Zones (TRZs) and the Texas Mobility Fund, North Carolina's Water Resources Development Project Grants and Site and Infrastructure Grant Fund, and the Port of Virginia Economic and Infrastructure Development Grant Program. Table 3 summarizes the mechanisms discussed in the report.

Table 3. Summary of Indirect Assistance Mechanisms.

State	Program	Source of Funds
Alabama	Alabama State Docks Capital Credit Project	N/A
Florida	Intermodal Logistics Center Infrastructure Support Program	State Transportation Trust Fund
Georgia	Port Tax Credit Bonus	N/A
Louisiana	Ports of Louisiana Tax Credits Program	N/A
	Louisiana Department of Transportation and Development (LaDOTD) Marine and Rail Program	LaDOTD budget
Massachusetts	Harbor Maintenance Tax Credit	N/A
	Investment Tax Credit	N/A
Mississippi	Export Port Charges Tax Credit	N/A
	Import Port Charges Tax Credit	N/A
North Carolina	Water Resources Development Project Grants	General revenues
	Port Enhancement Zones	N/A
	North Carolina Ports Tax Credits	N/A
	Site and Infrastructure Grant Fund	North Carolina Department of Commerce[1]
Pennsylvania	None	N/A
South Carolina	Port Volume Increase Credit	N/A
Texas	Port TRZ	Increase in tax base[2]
	Texas Mobility Fund	Bonds secured by future revenues[3]
Virginia	Port Volume Increase Tax Credit	N/A
	Barge and Rail Usage Tax Credit	N/A
	International Trade Facility Tax Credit	N/A
	Port of Virginia Economic and Infrastructure Development Grant Program	General revenues

[1] The program has not been funded in several years. Last activity was 10 years ago.
[2] Authorized in 2013. No projects defined yet.
[3] One navigation district has submitted an application.

Texas

What is the current state of direct funding support for port infrastructure in Texas? Currently, there is none. In 2001, the Texas Legislature amended the Transportation Code to create Chapter 55—Funding of Port Security, Projects, and Studies. The chapter created the Port Access Account Fund to provide funds for Texas ports to finance security improvements, port infrastructure projects, and related studies. However, HB 3088 abolished and consolidated fund accounts. Any fund not specifically exempted by the bill was abolished. The Port Access Account Fund was not specifically exempted and was therefore never actually created.

During the 83rd Texas Legislature, ports were made eligible to use TRZs as a funding tool in SB 971. Four port authority TRZs have been created—three in Jefferson County and one in Cameron County. They are all inactive at this time. The Transportation Commission recently authorized the use of $20 million of Rider 48 funds to ten projects "outside the port gates"—projects which connect the port to the larger infrastructure network and which can be used by the general public.

Florida

Now let's look at Florida's ongoing support programs. Florida has 15 public sea ports. Locally elected officials make up 10 of the 15 seaport governing bodies. The rest are appointed by various levels of government.

The kingpin in the financing program is the Florida Seaport Transport and Economic Development Program, which is referred to as FSTED. The program resides within the Florida Department of Transportation. It was originally set up to be an annual $8 million seaport grant program for financing port transportation projects on a 50/50 matching basis. It has now grown to $25 million annually. Additionally, the Strategic Port Investment Program (SPIP) has a $35 million annual floor for bigger port projects such as dredging, bringing the total annual amount to $60 million. In the last legislative session an additional $93 million was appropriated for specific port projects. According to press releases from the governor's office, Florida has pumped almost $800 million into port projects since 2011.

FSTED program

Projects eligible for the FSTED's $25 million dollar program must be consistent with a port's master planning documents. Port master plans must be submitted to the appropriate local government entity for incorporation into the local government's comprehensive plan, which in turn is reviewed and approved by a number of state and regional authorities. State funding is matched by the local port, usually on a 50/50 basis, but allows for 75% state funding for certain types of projects. The FSTED Council was created to review and approve projects for funding. The council consists of 17 members, including the port directors of Florida's 15 public seaports, and representatives from FDOT and the Department of Economic Opportunity.

The cost of the council is paid by all ports that receive funding from FSTED, based upon a pro rata formula measured by each recipient's share of the funds as compared to the total funds disbursed to all recipients during the year.

The FSTED Council is also responsible for preparing and continually updating a five-year Florida Seaport Mission Plan and for the Small County Dredging Program. The council is required to annually submit to the secretary of transportation and the executive director of the Department of Economic Opportunity, or his or her designee, a list of projects that have been approved by the council. FDOT and the Department of Economic Opportunity must review and approve the projects on the list before they may be funded.

Strategic Port Investment Initiative

The Strategic Port Investment Initiative—the $35 million program—was created in fiscal year 2012–2013. The initiative is managed by FDOT staff in consultation with the Florida Ports Council, which is a nonprofit corporation that serves as the professional association for Florida's fifteen public seaports and their management. Projects to be funded under the initiative must meet the state's economic development goal of becoming a hub for trade, logistics, and export-oriented activities.

Logistics Center Infrastructure Support Program

The only ongoing indirect funding mechanism used in Florida that was identified in the report is the Intermodal Logistics Center Infrastructure Support Program. It receives a $5 million annual allocation from the State Transportation Trust Fund to assist in constructing access improvements for intermodal logistics centers that are funded with private-sector funds and move freight through Florida seaports. FDOT can provide up to 50% of a project's cost.

Louisiana

Louisiana's approach is very different from Florida's. The Louisiana public ports system is comprised of 39 public authorities with wide-ranging charters. Within this group, there are six deep-draft ports handling domestic and international freight movements. There are 20 shallow-draft ports (inland and coastal) and 13 emerging ports enabled by legislation that are not developed or operational.

The 2014 Regular Session of the Louisiana Legislature established an Office of Multimodal Commerce and created a commissioner of multimodal commerce. The office will become fully effective July 1, 2016. The main focus of the newly created office, which will be under the supervision of a dedicated commissioner of multimodal commerce, is to create a better overall business, tax, and legal climate to maximize Louisiana's multimodal transportation infrastructure.

Port Construction and Development Priority Program

The main funding mechanism for direct support is the Port Construction and Development Priority Program. The purpose of the port program is to ensure that adequate landside facilities are available to meet a definite market need. The funding for the program is the Transportation Trust Fund, which was approved as a constitutional amendment in January 1990. Feasibility studies are required for proposed projects and the projects must be prioritized.

Port authorities submit applications to LaDOTD no later than the first of March, June, September, and December of each calendar year for funding or funding obligation authority in the ensuing fiscal year. Each quarter, LaDOTD furnishes the House and Senate Committees on Transportation, Highways, and Public Works a prioritized list of projects based on the applications received during that quarter. Within 30 days of receiving each quarterly recommended list of prioritized projects for inclusion in the ensuing fiscal year program, the two committees must hold public hearings to receive public testimony regarding the list. Each quarter, the department reprioritizes the list of projects to reflect the cumulative list of projects recommended by the department. Prior to the convening of each regular session, the two committees hold a hearing for the purpose of reviewing and approving the final program for the ensuing fiscal year. When the final construction program is presented to the legislature for funding, the legislature cannot add any projects to the final construction program. Any project recommended by the department and approved by the two committees but for which funds are unavailable in the fiscal year for which it was approved remains on the prioritized list of projects and is carried forward to the next fiscal year. A retained project keeps its place on the prioritized list of projects and will receive a higher priority over newly recommended projects in the next fiscal year.

Approved projects may receive up to $15 million over three years. The ports are responsible for engineering costs and 10 percent of construction costs. Additionally, projects must have a rate of return on the state's investment of at least 2.375 and a benefit-cost ratio greater than 1.0.

The level of funding being provided is not statutorily dedicated, so ports have no guarantee of funding levels from year to year. The amount of annual funding through state appropriations is not sufficient to fund all of the projects that meet the economic qualifications. To date, $544,804,467 has been allocated, which has allowed funding of 171 projects, of which 162 have been completed or have been substantially completed.

LA DOTD Capital Outlay Plan

The Capital Outlay Plan is a bond program that provides a source of funding for public improvement–type projects not eligible for funding through any of the dedicated funding programs. The funds are provided through the sale of state general obligation bonds and can be used for acquiring lands, buildings, equipment, or other properties, or for the preservation or development of permanent improvements.

The program requires that projects be submitted by the head of each budget unit (i.e., department secretary). However, local officials of political subdivisions may also make requests but only through the senator and representative in whose district the proposed project will be located. Each legislator forwards such requests to the Facility Planning and Control Section of the LaDOTD Division of Administration. Projects then compete through the legislative process, and successful ones are grouped into various funding priorities and included in the approved Capital Outlay Bill. Funding for a specific project does not become available until such time as the bonds for that project are sold or an advance cash line of credit is approved by the State Bond Commission.

Seven port projects have received funding of almost $46 million under this program.

Tax Credits

Louisiana created a Port of Louisiana Tax Credits Program in 2011, but as of 2015 no businesses had received a tax credit under the program.

Other States

Other states have direct funding programs that are not as aggressive as Florida's or Louisiana's. They include Alabama, Massachusetts, Mississippi, Pennsylvania, and Virginia. The details are provided in the Policy Center report.

Panama Canal Expansion

The Panama Canal expansion will decrease the all-water distance from the Gulf Coast ports to Asia, with associated decreases in ocean liner costs, and will be able to handle 80 percent of the world's tanker fleet (as opposed to 8 percent currently).

The new set of Panama Canal locks opened for business on June 26, 2016. There are no published official statistics on vessel transits through the new locks. In order to gain an appreciation for what has taken place, this analysis reviewed information published in trade journals and periodicals as of early November 2016. Particular attention was given to information that directly relates to shipment activity at Texas ports.

It is still too early to evaluate the economic impact on U.S. ports of the larger canal. Data for the amount of cargo processed at Gulf and East Coast ports since the canal's new locks opened are not yet publicly available in most cases.

There are two specific potential impacts that have been widely discussed both before and after the expansion:

- A shift of vessel traffic from the West Coast to the Gulf and East Coasts.
- An increase in traffic volume at Gulf and East Coast ports that may or may not be related to this shift.

There have also been two potential problem areas that have gained attention in the press:

- Safety issues.
- Draft issues.

Shift from West Coast to Gulf and East Coast

The general consensus is that there will not be a significant shift from the West Coast to the Gulf and East Coasts. Some have claimed that the vibrant economy in the Southeast may attract significant traffic to ports such as Savannah and Charleston, but this is not a widely accepted view. In fact, key international trade advisers predict that no more than 5 percent of the containerized imports currently routed through the West Coast will be diverted. For ports on the Gulf and East Coasts to experience a significant shift of West Coast trade to their ports, they would need to increase their penetration of markets in the U.S. interior—a market where West Coast ports clearly have the upper hand because of transit time advantages, established intermodal rail services, and the density of volumes already committed to those routes. It is important to keep in mind that the western railroads (key players in this equation) have pricing power and will not surrender market share without a fight. Furthermore, West Coast terminals and port communities are aggressively attacking congestion and throughput issues, spending billions of dollars in the process.

The larger Panama Canal, by itself, will not result in a significant shift of cargo from the West Coast to the East Coast. The fundamentals of supply chain economics will be a more important determinant. Cost, consistency, and capacity will determine the gateways through which Asian imports enter the United States. The game changer will have to come in serving the manufacturing and distribution clusters that extend from Chicago and the Ohio Valley down through the mid-South and to Atlanta. Even Southern California, the second-largest U.S. population center, can generate enough cargo to fill only about 40 percent of each vessel. The remainder is shipped directly to the eastern half of the country or is transloaded into 53-foot domestic containers and shipped east by rail.

According to recent trade articles, there have not yet been noticeable Panama Canal–related increases (based on port commentary). Railroads that carry that intermodal freight inland are not reporting any noticeable shifts either.

Traffic Volume

The Panama Canal Authority reported that as of early September, 165 vessels of all types that were too large to use the old canal (Neopanamax vessels) had transited the new locks. Approximately 70 percent were container vessels. Other vessel types included liquefied petroleum gas carriers, oil tankers, dry bulkers, car carriers, and liquefied natural gas carriers. (Only three bulk carriers that are larger than Panamax have gone through the expanded canal.) These 165 ships paid close to $80 million in tolls. On October 31, the authority reported that in the first three months, 238 Neopanamax vessels had used the new locks (about three per day); no breakdown of the transits was provided.

The new canal recently handled the largest car carrier ever built, the first Suez-Max tanker (the largest tanker to use the Suez Canal), and the first Cape-size bulk vessel. Oil tankers are not likely to use the Panama Canal to make deliveries but could use it in ballast position to complete around-the-world rotations to pick up their next load from the Middle East, according to Panama Canal Authority staff. Using the canal instead of rounding Cape Horn saves tankers 5,600 miles and more than 15 days of sailing time.

The most immediate and noticeable trend is that the number of vessels calling at U.S. ports is actually declining, with each vessel carrying more cargo than in the past. For example, Mediterranean Shipping Co. halved the number of vessels transiting the canal after the widening, with the average ship size increasing from 4,600 TEUs to 6,400 TEUs.[4] The number of service strings using the canal dropped from 16 to 13 during the first month. The largest container ships, which were the subject of much discussion prior to the opening, have hardly used it at all.

One market segment deserves further mention because of its importance to Texas. The promise that some oil traders and brokers saw for an expanded Panama Canal to become a new route for large tankers will take longer to realize than expected because many ships must first undergo retrofits to transit through the new locks. Many lack the minimum required mooring equipment for the expanded canal. The modifications to these bigger oil carriers—which mostly involve fittings such as chocks and bollards that secure the ship's dock and tow lines—are needed because the new locks use tug boats rather than locomotives to pull vessels. Shipping experts estimate that from half to more than three-quarters of the tankers that could use the canal in terms of dimensions would first require retrofits. The new parts only cost $1,000 to $3,000 per vessel, but additional charges associated with the work can cost $100,000 to $150,000.

A transit through the canal instead of around the tip of South America could save more than $300,000 on a voyage from the Caribbean to the U.S. West Coast, according to brokers, but it will take time for new trade routes to become established.

[4] A TEU is a twenty-foot equivalent unit, the standard measure of container activity.

Draft Issues

Even though the design allowable draft (the distance between the waterline and the bottom of the keel) in the new canal is 50 feet, a persistent lack of rainfall in Panama has forced the authority to restrict the draft of vessels using the canal. El Niño, a climate phenomenon resulting in periodic warming of the tropical Pacific Ocean, changed the rainfall pattern in Panama, triggering a drought in the canal watershed and causing water levels in Gatun and Alhajuela lakes to fall substantially below their average. The canal authority initially set the maximum draft at 39 feet in fresh water (the same as the old canal). The allowable draft has gradually been increased and as of October 20 stood at 45 feet. The water reservoirs are being refilled during the rainy season, and canal authority officials do not expect any long-term problems handling the largest vessels in the future.

Safety Issues

The International Transport Workers' Federation (ITF) has raised concerns about the safety of the Panama Canal's new locks, most recently at a press conference held in Panama City on October 21, 2016. The ITF claims that a certain amount of personnel, tugs, and other resources as well as training and operational procedures needed are lacking today. ITF further claims that the accidents that have occurred were predictable and avoidable. The authority has dismissed these claims and asserts that it has acquired the necessary equipment and invested in the training needed to make the operation safe.

Conclusion

Every state handles its port infrastructure needs differently. Florida and Louisiana seem to offer the most comprehensive and effective models for channeling state funds to ports on an ongoing basis.

Channel projects are projects that occur only once in every few decades. However, they are extremely expensive. Texas navigation districts are currently expected to pay the non-federal share without state assistance.

We have not yet seen the full import of the expansion of the Panama Canal. Thank you for allowing me to submit this testimony.

Jim Kruse
Director, Center for Ports & Waterways
Texas A&M Transportation Institute
701 N. Post Oak, Suite 430
Houston, TX 77024
713-613-9210
j-kruse@tamu.edu