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Freight Transportation and Economic Development: Planning for the Panama Canal Expansion

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Introduction

In 2014, the Panama Canal Authority is expected to complete an expansion that would double the capacity of the Panama Canal. The expansion of the canal to accommodate larger cargo ships will enable vessels carrying large amounts of cargo to travel from Asia to the Caribbean and eastern North and South America exclusively by water. Improvements to the canal have the potential to change global freight flows by shifting a significant percentage of trade from Asian markets to the East and Gulf Coasts and affect transportation and economic networks.

An increase in freight flows to the East and Gulf Coasts presents an economic development opportunity for job creation and economic growth related to logistics, intermodal transportation and value-added businesses, all of which would also support businesses located in the region exporting their goods. Although not all regions may benefit, regions along the coasts and connected inland areas can analyze their infrastructure and economic opportunities to look for ways to capitalize on the new cargo transportation patterns.



The Changing Nature of Freight

The Panama Canal is in need of updating in order to adjust to two innovations in the shipping trade: an explosion in the size of vessels and the standardization of shipping containers. Shipping comprises the largest type of freight trade in the world, carrying more than 90 percent of the world's freight by volume, including container shipments.¹ Intermodalism in international trade has been fueled by the use of standardized containers for more and more types of cargo, since containers can be transferred easily from ships using dockside cranes directly to trucks or railcars. Over time, the increased containerized cargo trade has led to a corresponding increase in vessel size, creating a fleet of vessels too large to fit through the canal.

The largest ships that can currently navigate the Panama Canal are referred to as "Panamax" ships, with capacities of 4,500 twenty-foot equivalent units (TEUs). Panamax ships are dwarfed by newer Post-Panamax, vessels with capacities of 12,000 TEUs and more, and even larger ships are being ordered by major shipping lines.² The number of calls made by Post-Panamax container ships to U.S. ports increased over 150 percent from 2004 to 2009. From 1995 to 2007, U.S. container traffic doubled in volume, from 22 million TEUs to 45 million TEUs. Much of that growth has been driven by trade with nations in Asia and the Pacific, especially China. Currently, West Coast ports are the largest receiver of Asian imports, and containers make it possible for imports to then be transferred and transported via rail and truck inland, or to be shipped by sea again from the East Coast to destinations in Europe. However, thousands of containers are moved up to 2,000 miles from coastal ports to inland, intermodal destinations, opening up opportunities for economic development in transportation and logistics fields.³



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Leading containerized cargo trading partners with the United States in 2010:

- China, \$270.3 billion in imported and exported cargo
- Japan, \$63.8 billion
- Germany, \$36.3 billion
- South Korea, \$29.3 billion
- Taiwan, \$23.7 billion

In 2009, China alone accounted for almost half of TEUs imported to the United States and over one-fifth of exported TEUs. From 2009 to 2010, the total value of containerized shipments from both China and India doubled.

Leading items imported to the U.S. by value in 2009:

- print machinery
- TVs
- electronics

Sources: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics (BTS), America's Container Ports: Linking Markets at Home and Abroad, January 2011; BTS, The Changing Tide of U.S.-International Container Trade: Differences Among the U.S. Atlantic, Gulf, and Pacific Coasts, December 2011

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Waterborne freight is reported using a variety of measurement units. Since so much cargo is shipped using standard containers, the volume capacity of container ships in twenty-foot equivalent units (TEUs) is a useful statistic because it provides a basis of comparison to other modes that also use containers.

To compare container shipments with those not containerized, a vessel's capacity is sometimes described in deadweight tons, which includes all weight carried by the vessel, not just the weight of the cargo, and is usually given in metric tons (1,000 kg/2200 lbs).

However, the volume of cargo passing through the Canal is often measured in Panama Canal Universal Measurement System tons, equivalent to about 100 cubic feet of cargo space. One TEU is roughly equivalent to approximately 13 PCUMS tons, according to the Panama Canal Authority.

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The expansion efforts underway at the Panama Canal include new locks, widening and deepening existing navigation channels, and a new access channel. Lower left image on cover courtesy of Virginia Port Authority.



Panama Canal Expansion: Context and Background

As a result of these evolutions in freight movement, the Panama Canal Authority (Autoridad del Canal de Panama, or ACP) was aware that the route might lose market share if shippers choose other routes—such as the Suez Canal or shipping over land from the West to the East Coast of the U.S. In order to accommodate Post-Panamax vessels and maintain the canal's competitiveness, the ACP announced an expansion plan in 2006. Estimated to cost about \$5 billion, the expansion plan includes the construction of two new sets of locks for the Pacific and Atlantic sides of the canal, widening and deepening the existing navigation channels in two locations, and completing four dry excavation projects to allow for a new 3.8 mile (6.1 kilometer) access channel.⁴ The project is expected to be completed in 2014, the canal's 100th anniversary.⁵

Upon the conclusion of the expansion, the capacity of the canal will double.⁶ The majority of the canal's predicted usage will come from cargo shipped from Asia to the U.S.'s East Coast and the Gulf of Mexico, making it likely that trade patterns will change. The expansion of the canal may reduce the costs of transporting containers between Asia and the U.S. via an all-water route by up to \$1000 per container, which might entice shippers to switch their routes.⁷ One commonly cited estimate is that up to 25 percent of current West Coast volume could shift to eastern ports and market areas.⁸ However, it is also possible that the total volume of cargo coming East may not change much, but that it will arrive on a smaller number of large capacity ships, or if vessels will call on ports in the Caribbean where cargo will be transferred from large ships to smaller ones (a process called transshipment) before being carried on to the U.S.⁹

If cargo volumes increase due to the expansion of the Panama Canal, some ports will benefit, and other regions may also see a benefit from the new freight transportation patterns. Use of short-sea shipping, inland waterways, rail and truck would allow containers to be transferred to distribution centers near other intermodal facilities. Although not every region will become a transportation and logistics hub, the large amount of containerized cargo coming through the canal may offer economic development opportunities even for some inland regions or those without deepwater access. Despite an uncertain economic climate, many states, regions and communities are already preparing for an increase in shipping volumes through infrastructure improvements to ports, railways, highways, and intermodal facilities in order to capitalize on potential economic opportunities that occur as a result of the Panama Canal expansion or simply an increase in trade.

At the Port

Ports are governed by a port authority, which are typically quasi-public, for-profit entities. The port's designation as "quasi-public" allows each port to work with local and state-level agencies as well as businesses to plan and execute infrastructure improvement projects to maintain or improve its competitiveness.

In anticipation of the improved Panama Canal, many port authorities are actively working to increase their capacity to handle shipping containers and to accommodate Post-Panamax vessels, as well as to improve intermodal connections. A port must have a terminal with at least 45 feet of draft and 45 to 50 feet of depth in a navigable channel to handle Post-Panamax ships. As of early 2011, only Norfolk, Charleston (at high tide), and New Orleans met the requirements in terms of depth, but ports across the East and Gulf Coasts are working to remain competitive.

A handful of port expansion projects planned or under way include the following:

- Port of New York/New Jersey has pledged \$1 billion to increase the clearance under the Bayonne Bridge. At its current height, the bridge would prohibit the movement of post-Panamax ships. In 2011, the channel was dredged to 50 feet, and the port is installing four Post-Panamax container cranes.
- The Port of Virginia, which includes Norfolk, Virginia, is the only East Coast port able to handle post-Panamax vessels with no improvements, although several land-side improvements are underway, a new terminal at Craney Island is planned, and the inland distribution network continues to be expanded to connect to Mid-Atlantic and Midwestern markets.
- The Port of Charleston, South Carolina is deep enough for Post-Panamax vessels only at high tide. As a result, a feasibility study for dredging is underway, a new container terminal will be completed in 2018, and other capacity expansions for non-containerized freight are planned.
- To allow for greater access to the Savannah, Georgia, the Georgia Ports Authority is planning to dredge the navigation channel to 48 feet, increase dock length and storage areas, and install new Post-Panamax cranes.

Port Authority MOUs

Collaboration among ports and between ports and transportation providers has not had much precedence in the U.S. However, in November 2009, six ports located on the West Coast and two railroad companies met in China and announced the creation of the U.S. West Coast Collaboration (USWCC) that includes the Ports of Los Angeles, Long Beach, Oakland, Portland, Seattle and Tacoma along with the Union Pacific Railroad and the Burlington Northern Santa Fe Corporation. This represents the first endeavor of this kind in United States history.

In comparison, the East Coast ports have had little official collaboration. Rather, since the announcement of the Panama Canal Expansion, the Panama Canal Authority (ACP) has signed separate Memorandums of Understanding (MOUs) with many major East and Gulf Coast ports.¹⁰ These MOUs require the ACP and the port to work together in marketing activities, data interchange, market studies, modernization and improvements, training, and technological interchanges to ensure the strength of the Panama Canal world trade routes to the East Coast.¹¹ Little is known about how much these MOUs will affect the development of the ports and the global supply chain after the Panama Canal re-opens in 2014. However, it does indicate that while West Coast ports have made an attempt to work together, East and Gulf Coast ports will compete with one another.

- The Port of Mobile added a container terminal in 2008; with its 45-foot channel, new turning basin, new terminal infrastructure, Post-Panamax cranes and inland transportation connections to five Class I railroads and waterways such as the Tombigbee River, Mobile had its first call from a Post-Panamax vessel in June 2011.
- The Port of Houston is half complete on a project to add about 50 percent more berthing space and container yard acreage to Bayport, one of two container facilities at the port, and the channel has already been dredged to 45 feet and widened to accommodate Post-Panamax ships.

Pacific ports will continue to be strategic gateways for freight from Asia, and some analysts predict that ports with the most efficient routes to interior destinations will be more important than coastal markets. To enhance capacity and efficiency, several projects are also underway along the West Coast of the U.S.:

- The Port of Los Angeles is underway on multiyear terminal construction projects, including dredging and extending berths.
- The Port of Long Beach has started construction on a new container terminal through the Middle Harbor Redevelopment Project.
- The Port of Tacoma is extending berths, while Seattle has converted a cruise terminal into a container terminal due to demand.
- Surface transportation projects such as the Alameda Corridor, a 20-mile-long rail expressway linking the Ports of L.A./Long Beach to the transcontinental rail yards near downtown Los Angeles completed in 2002, are further improving rail and truck infrastructure and eliminating at-grade crossings to reduce congestion and increase accessibility of West Coast ports.

Sources: Bureau of Transportation Statistics, port authorities, Dallas News.com, "Eastern ports scramble to prepare for new Panama Canal era" (2012).



Mid-Atlantic Connections

In Virginia, state, regional, and private entities are preparing for the possibility that the Port of Virginia will experience an increase in cargo volumes as a result of the expansion of the Panama Canal. Preparatory efforts include the development of a statewide multi-modal freight study, the revision of regional long-range transportation plans to consider freight and the development of regional corridor studies, improvements to a multi-state rail corridor and the construction of inland ports and related facilities.

Currently, the Port of Virginia, which includes facilities in Norfolk, Portsmouth and surrounding areas in the Hampton Roads region, can handle post-Panamax-sized ships without tidal restrictions, a rare characteristic among East Coast ports. Norfolk receives over 85 percent of its cargo (by value) in containers, making it the third largest container port on the Atlantic Coast in 2010.¹² With assets such as its deep draft, connections to other transportation modes, and its existing position as a leading container port, the Hampton Roads area is often a key destination for container ships passing through the Panama Canal.

To address the potential for new freight patterns and to plan strategically for future investments, the Commonwealth of Virginia's transportation agencies, through the leadership of the Office of Intermodal Planning and Investment (OIPI), completed its first comprehensive, multi-modal freight study in recent years. The initial stages of the study assessed the adequacy and performance of the state's existing freight network and planned improvements. The freight study provides the state with a guide for future

projects, as well as a strategy for partnering with the private sector to complete facility enhancements. Next steps for the agencies include, among other things, enhancing freight planning through regional partnerships and working with the state's metropolitan and rural planning organizations (MPOs and RPOs) to provide resources that help to consider freight in the regional planning process.

Because freight movement is central to the state's current transportation patterns and economy, planning for efficient and effective freight movement is in the state's and regions' interest regardless of how freight patterns shift following the Panama Canal expansion. VDOT Freight Planning Specialist Erik Johnson emphasizes the uncertainty: "Rather than being about competition among ports or states, it will really be about how the transportation system on the East Coast is ready to handle the increase that could come as a result. We don't know that just because bigger ships are going to come here, that there will be more containers—we could see bigger ships carrying the same volume of containers." The role for Virginia's transportation agencies



Images courtesy of Virginia Port Authority



Image courtesy of Virginia Port Authority

is to plan as best as possible for port development and improvements to surface transportation to accommodate potential growth, amid uncertainty over the world market, possible logistics realignment, adequate supply and pricing of transportation services and workers, and other complex variables, including some that may be unknown at this point.

Rob Case, Principal Transportation Engineer for the Hampton Roads Transportation Planning Organization (the MPO for the Hampton Roads region), thinks that Hampton Roads is well-positioned to facilitate an increase in port activity following the Panama Canal expansion. “It’s another reason to take freight seriously, which we’re already doing. For example, we have a freight technical advisory committee composed of representatives from railroads, trucking companies, shippers, and businesses like Target and Walmart. Their role is to advise our board, and they recently developed recommendations on how we should go about developing our long-range transportation plan to consider freight.” Case also notes that the MPO’s project selection process gives extra points to projects under consideration that have freight impacts, such as increasing access to port facilities and improving the movement of trucks.¹³

With possibilities such as increased container movement through the state-owned Virginia Inland Port in Front Royal, and additional traffic on Interstate 81, the Northern Shenandoah Valley Planning District Commission (NSVPDC) has taken a similar approach to the Hampton Roads region. Staffing both the MPO for the Winchester-Frederick county area and the regional rural transportation planning program for the remainder of the PDC service area, the organization considers freight as an important component of the transportation network. Special corridor studies such as the recent Route 522 Multimodal Corridor Study take consideration of the truck movements as well as passenger transportation in making recommendations for future investments in the area.¹⁴

From a multi-state perspective, Johnson points out that a recently upgraded rail corridor offers a competitive advantage by accommodating container traffic moving between the Mid-Atlantic and Midwest. Owned by Norfolk Southern and supported through a partnership with the Virginia Port Authority and the states of Virginia, West Virginia, and Ohio, the Heartland Corridor’s improvements completed in fall 2010 allow containers to be double-stacked from the Port of Virginia, through tunnels in Appalachian southern Virginia and West Virginia, to Rickenbacker Intermodal Facility in Columbus, Ohio, and on to Chicago, as a major market and destination.¹⁵



Image courtesy of Virginia Port Authority



Image courtesy of Virginia Port Authority



Image courtesy of Norfolk Southern



Images courtesy of Virginia Port Authority



The corridor will assist two-way movement of freight and relieve bottlenecks, whether containers destined for the Midwest come in through the port, or cargo originating in the middle of the United States moves to Hampton Roads for export.¹⁶ Together with other transportation assets, the Heartland Corridor project will likely make Virginia a significant location in east-west land bridge container movements (moving cargo overland between destinations rather than by water).¹⁷ “It provides us with a solid competitive advantage that has been drawing a significant amount of interest from our customers. Couple this capability with our 50-foot-deep channels and an expanded Panama Canal, and Virginia is well-positioned for the future,” says Virginia Port Authority Executive Director Jerry Bridges.¹⁸

Further inland, the state-owned Virginia Inland Port (VIP) serves as an example of how a landlocked intermodal container transfer facility can be utilized as an economic engine. Located in Front Royal, Virginia, VIP is 220 miles inland from the Port of Virginia and is one of the Northern Shenandoah Valley’s system of freight assets, being just one mile from Interstate 66 and five miles from Interstate 81, as well as situated along a Norfolk Southern north-south main line. VIP was created by the Virginia Port Authority in 1989 to “capture indigenous cargo” from the mid-Virginia region to the port.¹⁹ VIP is located on 160 acres along 17,000 feet of on-site rail served by Norfolk Southern five days a week.²⁰

Although the facility itself only employs fewer than 20 people and has a warehousing capacity of one three-door cross-dock warehouse, its strategic location has had a major impact on the surrounding region. Throughout the 1990s, port authority officials worked with local economic development officials to attract distribution and logistics

centers to the land surrounding the inland port.

The Front Royal-Warren County Economic Development Authority purchased hundreds of acres of land around VIP, zoned the area for industrial use, and fit the sites with utilities. Companies became interested in the area due to the location costs and access to VIP, its Free Trade Zone designation, and provision of customs functions. Since the 1990s, distribution centers for companies such as Home Depot, Inc., Family Dollar Stores, Inc., and Baugh Northeast Co-op (a subsidiary of Sysco Corp.) located in the area. By the mid-2000s, the industrial corridor was between 50 to 75 percent built out and processed 24,500 containers in 2009. The slow, but fruitful development of VIP created a distribution and logistics center that benefited the regional economy.

Like the Heartland Corridor, the Virginia Inland Port helps to relieve freight congestion by accommodating containers arriving from Hampton Roads by rail, and moving by truck or rail to other destinations in the Mid-Atlantic or Midwest.²¹ The Inland Port has evolved from a junction servicing regional movements (within Virginia) to a predominantly international facility that runs shipments latitudinally across the country (east-west axis) and has become a model for several other intermodal facility projects looking to replicate its significance to transportation and the regional economic success that has followed.

Putting it All Together: Positioning Appalachia for the Future

For regional development organizations, positioning the region to benefit from the Panama Canal Expansion may seem to be a daunting task. From port to hinterlands, various public, private, and quasi-public entities are working to improve infrastructure to accommodate for freight-related growth. But how can a region put all the pieces together to create a comprehensive economic development strategy? Network Appalachia, an initiative of the Appalachian Regional Commission (ARC), provides a model for a regional economic development strategy oriented towards capturing and establishing local presence in the global supply chain.

The ARC was created in 1965 through the Appalachian Regional Development Act and was tasked with improving the equity of the Appalachian region relative to the rest of the United States. A major initiative from the beginning of the commission was to connect the Appalachian region to external markets by enhancing commerce flows through the Appalachian Development Highway System (ADHS). The ADHS is a 3,090-mile network of 31 near-interstate grade highways designed to stimulate development. With the ADHS nearly complete, the ARC began to consider other ways that the 13-state area that comprises Appalachia could be positioned in the global economy.

The Appalachian mountain range running from southern New York to northeastern Mississippi is a key location between both the East and Gulf Coasts and the interior Midwest markets such as Chicago. In a comprehensive study, ARC completed analysis on demographic and consumption patterns within and adjacent to the region, including port demographic information and flows of goods, as well as an assessment of the region's transportation infrastructure. From these assessments, strategic improvements to highway, railway, and waterway systems were developed; locations for inland ports were developed. Considerations were also made for developing intermodal and multimodal rail terminals as well as inland waterway terminals. In addition, methods to engage the region in a collaborative effort were outlined through strategic and tactical opportunities.

Through ARC's *Network Appalachia* initiative, the commission visited coastal ports despite being a landlocked region. By entering into a dialogue with port authorities, ARC was able to identify and gauge the desirability of an Appalachian intermodal freight system as well as become aware of projects located closer to port locations. The resulting comprehensive strategy from outreach and detailed analysis outlines a long-term strategy to attract freight flows from the Gulf and the East Coast to develop the Appalachian region as a "gateway to global commerce."

Scott Hercik, Transportation and Trade Advisor for the Appalachian Regional Commission, advises that regions should "use access to create economic opportunity. Isolation creates economic distress, and access enables economic progress."

Hercik emphasizes: "Now is the time for regions to plan for the impacts of the Panama Canal expansion. It will change the flow of the global supply chain and the international commerce that it propels."

Source: Appalachian Regional Commission, Network Appalachia; www.arc.gov/program_areas/NetworkAppalachia.asp; Scott Hercik, personal communication

Emerging Logistics Clusters in the Southeast

Stakeholders at and near the ports at Savannah, Georgia and Charleston, South Carolina are actively preparing for increased cargo volumes due to the expansion of the Panama Canal. Being located so close together, the ports of Savannah and Charleston already vie for traffic and will likely continue to do so. However, their close proximity could lead to the greater region developing as a larger logistics and distribution hub and affect transportation patterns in the Southeast, causing state DOTs, regional planning and economic development organizations, and local jurisdictions to consider what the benefits and overall impacts of the Panama Canal expansion may be for their communities and residents. Preparations currently underway include improvements to the ports, statewide freight planning, private intermodal logistics and distribution investments, and special planning efforts such as regional freight and truck route studies.

Just over 100 miles from each other, the ports at Savannah, Georgia and Charleston, South Carolina are both hoping to position themselves for potential growth due to the Panama Canal expansion, with plans for expansion and dredging projects and neighboring regions developing new freight facilities.

In 2010, the Port of Savannah ranked fourth in the nation for the volume of foreign containerized trade.²² The Georgia Ports Authority has made plans for dredging and widening the available turning radius to ensure that larger ships can use the port, an estimated \$551 million project.²³ The study of project impacts and feasibility began in the mid-1990s, but due to extensive environmental and economic review, the project would likely be completed in 2015 at the earliest.²⁴

By comparison, the Port of Charleston ranked ninth of all U.S. container ports in 2010; among ports on the Atlantic Coast, it ranked fourth, handling over 9 million metric tons of containerized cargo (over one million TEUs).²⁵ The South Carolina State Ports Authority is constructing a new terminal at the Port of Charleston to increase the capacity to handle containerized cargo by up to 50 percent. That project may be completed in 2018, while the port seeks funds to study a dredging project in the channel leading to the port. Currently, the port can handle Post-Panamax-sized ships, but only at high tide. A proposed dredging project

would deepen the entrance to the port so that larger ships could access the port more regularly.²⁶

Doug Frate, with the Division of Intermodal and Freight Programs for the South Carolina Department of Transportation, noted that improvements to both the Port of Charleston and the Port of Savannah in Georgia had large implications for transportation planning and logistics across South Carolina and elsewhere. To respond to a rise in multimodal traffic capacity, Frate stated, “The SCDOT is moving forward with a statewide freight database and modeling efforts for development of a comprehensive statewide freight plan.”²⁷



Images courtesy of Georgia Ports Authority

Nearby communities are hoping to develop their freight networks to enhance their economic development opportunities. Orangeburg County, northwest of Charleston, has marketed its position as a Global Logistics Triangle, taking the Virginia Inland Port at Front Royal as a model and making use of such transportation assets as the nearby Port of Charleston, Interstates 26 and 95, U.S. 301, and Class I Rail service from Norfolk Southern and CSX to attract development prospects.²⁸ In 2007, the Dubai-based company Jafza announced its intention to build a logistics and distribution center with intermodal capacity on 1,300 acres in Orangeburg County. The site, known as the Jafza Magna Park-Santee, is under development, and the first building (to house Jafza's offices, warehouse space, and a job training center) was constructed in 2011 as the company was working to recruit additional tenants.²⁹ Over 20 years, the Jafza site is expected to add 7,000 direct jobs as locations within the park are filled.³⁰ In addition, other sites in the county have received interest from developers, and in 2009, the county was named one of the top 10 emerging logistics locations in the United States.³¹



To plan for the anticipated regional effects of those developments, the Lower Savannah Council of Governments (COG) is conducting a sustainability plan for the eastern end of Orangeburg County, using funds from the Department of Housing and Urban Development's Community Development Block Grant program. The study will offer the county planning and zoning tools to anticipate economic and built environment impacts relating to the Jafza development in order to handle potential future growth.³²

Lower Savannah COG serves five other counties in addition to Orangeburg, where much of the interest in logistics developments is occurring. But because the greater economic and infrastructure impacts through spin-off developments and traffic to and from Jafza and other sites are expected to reach beyond a single jurisdiction, the COG completed a freight study for the entire region in 2009. Recommendations resulting from the study include both shorter-term and longer-term projects, such as developing a Truck Route Master Plan to designate primary and secondary truck routes and identify gaps to help prioritize

road projects over the long-term; implementing design standards on the truck routes that would accommodate truck traffic; reviewing local land use policy; addressing at-grade rail crossings; capacity enhancements where needed; and environmental justice improvements.³³

Lower Savannah COG Planning Director Jennifer Tinsley says the region is moving toward implementation: "Our Transportation Advisory Committee wants recommendations they can implement and use STIP funds to complete, and they want regional projects. We've already programmed some projects on heavily traveled freight routes in the region." Lower Savannah COG also reaches out to the South Carolina DOT's safety program to leverage funds where a priority project overlaps with a roadway segment that needs safety improvements such as shoulders, paint markings, rumble strips, or repaving.³⁴

Inland and Gulf Coast Preparations

Although western Kentucky is hundreds of miles from the Atlantic and Gulf Coasts, the expansion of the Panama Canal is neither out of sight nor out of mind. The Commonwealth of Kentucky, which contains 1,600 miles of navigable inland waterways, is “the waterway link between the Great Lakes, Canada, Mexico and the deep-draft ports of New Orleans and Mobile for shipments overseas.”³⁵

Kentucky’s Purchase region, located at the confluence of the Mississippi and Ohio Rivers—the “gateway” to the lower Mississippi—is also bracing itself for the expansion of the Panama Canal. The Purchase region is already a multi-modal hub, with a large inland barge (and related industry)

presence, and highway and rail access. Preparatory efforts in the Purchase region include the convening of regional bodies to develop coordinated plans of action, improvements to ports, short line railroads and interstate highways, and applying for Foreign Trade Zone (FTZ) status. According to Brad Davis, Associate Director for Community and Economic Development for the Purchase Area Development District, “When the canal expansion is completed, we believe there will be more traffic on the rivers.”³⁶



Free Trade Zones

Ports and inland ports are often designated as free trade zones (FTZs) that provide benefits to industries within the zone. Free trade zones are designated and supervised by local U.S. Customs and Border Protection (CBP) Officials. FTZs allow companies to have delayed or reduced duty payments on foreign merchandise to promote U.S. value-added business activities. Firms that conduct business within FTZs are eligible for the following benefits: duty exemption, duty deferral, inverted tariff (finished product has lower duty rate than foreign inputs), logistical benefits (streamlined customs procedures), and other related benefits such as state and local tax exemption. There are two types of FTZs. First, general purpose zones are located within or near industrial parks, ports, and inland ports. These FTZs are required to be open to multiple users; most often these areas are used for warehousing and distribution. Second, subzones are “special purpose zones,” usually related to manufacturing. Subzones are approved to be used by one company for a specific activity that is required to exhibit a significant public benefit.



The Purchase Area Development District (PADD)—a regional planning and development organization that supports city and county governments in an eight-county region in western Kentucky—and the Paducah Chamber of Commerce have taken an active role in coordinating regional efforts to prepare for the Panama Canal expansion. In May 2011, the Paducah Chamber of Commerce convened Panama Canal Authority officials and barge, rail, and trucking industry representatives to discuss immediate and future preparations to address the expansion of the Panama Canal in the Purchase region.

As a separate initiative, PADD’s Economic Development Committee, which is responsible for developing the region’s Comprehensive Economic Development Strategy and setting priorities, has placed intermodal projects, including preparations related to the Panama Canal expansion, at the top of the region’s priority list. Davis says that the Paducah Chamber of Commerce and PADD’s Economic Development Committee bring all interested parties to the table in order to maintain working relationships, avoid competition, and ensure that different improvements projects are complementary and coordinated.

A number of infrastructure improvements are also currently underway in the Purchase region, including improvements to ports, short line railroads and interstate highways. Both the Hickman-Fulton County and the Paducah-McCracken County Riverports currently handle primarily bulk materials, such as grain and coal, but plan to expand their facilities to support container-on-barge shipments. Expansion of the region’s port facilities is strategic, due to their proximity to major highways in the region, which “places products within one day’s ground transportation

of 65 percent of the U.S. population.”³⁷ There has been some debate concerning the expansion of the ports to accommodate container-on-barge shipments, because the exact volume of additional container traffic on the rivers is unknown. Importantly, any additional container volumes on the Mississippi River will be dependent on the capacity of the Port of New Orleans. New Orleans is also preparing for the future. Over 6,000 ocean vessels move through New Orleans on the Mississippi River each year, making the Mississippi River the world’s busiest waterway.³⁸ It may become even busier.

According to Gary LaGrange, President and CEO of the Port of New Orleans, “Through investment and commitment, the Port of New Orleans is readying itself for the increased cargo an expanded Panama Canal will bring to the Gulf Coast.” In the past 10 years, the Port of New Orleans has invested over \$400 million in new wharves, terminals, marshalling yards and cranes, and including a recent \$108 million investment for containerized cargo, break bulk cargo and other projects.³⁹ Furthermore, the Port of New Orleans recently renewed a strategic alliance with the Panama Canal Authority. The partnership, which was first initiated in 2003, “aims to spur investment, increase trade and promote the “All-Water-Route” from Asia to the U.S. East and Gulf Coasts.”⁴⁰

Despite all the Port of New Orleans’ preparations, it still may not be ready when the Panama Canal expansion is complete. According to LaGrange, “*We’ll be ready, but not as ready as we could be, or should be.*”⁴¹ So, the volume of additional cargos on the Mississippi River, and consequently, at the Hickman-Fulton County and the Paducah-McCracken County Riverports in Kentucky, is



uncertain. Nonetheless, the Purchase region expects to see an increase in the volume of bulk materials at their ports, independent of any additional volumes as a result of the Panama Canal expansion.

In addition to infrastructure improvements at the ports, the Purchase region is also pursuing highway and short line rail improvements. Improvements to existing roadways, bridges, and overpasses are planned. Once improved and designated as the new Interstate 69, this system of roadways, which runs directly through the middle of the Purchase region, is expected to accommodate additional trucking volumes and connect the Hickman and Paducah Riverports with the interstate highway system. There are also a number of unutilized short line railroads in the area that tie into the Paducah & Louisville Railway, which connects with the Canadian National and CSX Railroads. The region is also exploring improvements to these short line railroads.

Finally, the Purchase region is collectively applying for Foreign Trade Zone (FTZ) designation. There are already a number of companies in the region that are foreign-owned and that import a significant volume of goods, according to Davis. In addition to benefiting companies who import goods, the region expects that FTZ status will “provide the region with another tool to encourage economic development investments” and, when combined with the expansion of the Panama Canal, attract industries which export goods as well.

The jury’s still out on the impact of the Panama Canal expansion on the Purchase region. Davis says, “No one knows what will happen—it’s better to start preparing. We have a niche [as an existing hub] and we can benefit by pursuing opportunities to improve our existing facilities, regardless of what volume increases we see.”

Throughout the eastern and central portions of the nation, communities are exploring their economic, geographic, and transportation connections between inland regions and those served by coastal ports, while West Coast ports are making efforts to remain competitive. Although not all regions will see direct benefit from the new shipping patterns opened up by Panama Canal Expansion, by creating strategic partnerships and linking freight transportation to economic development strategies to prioritize investments, those that are planning ahead will position themselves to attract and retain businesses utilizing freight transportation, creating jobs and attracting private investment, and creating economic opportunity by facilitating the movement of imports and exports.



National Export Initiative

International trade involves all scales of government jurisdiction—local, regional, state, national and international. Due to the recent economic downturn and slow recovery, President Obama issued Executive Order 13534 in 2010 to establish the National Export Initiative (NEI), with the primary goal of creating jobs through promoting U.S. exports and a target of doubling exports from 2010 to the end of 2014.⁴² In particular, the initiative includes trade advocacy to double U.S. exports resulting in the support and creation of two million domestic jobs over five years.⁴³ An Export Promotion Cabinet (EPC) was established to create information and technical assistance programs for small and medium-sized enterprises including access to credit, reduce barriers to trade, and lead trade missions among other tasks.⁴⁴ As regions connected to East and Gulf Coast ports and regions may experience and increase in import shipments as a result of the Panama Canal Expansion, export-related industries may grow up to take advantage of emerging logistics systems and transportation efficiencies.

Positioning Your Region: Steps for Regional Development Organizations

COLLECT INFORMATION

- Become familiar with your region's role in the global supply chain.
- Conduct an assessment of the regional land, water, and air transportation system including their capacity, efficiency, and how they are currently used and connected. Look for opportunities, such as underutilized roadways and other facilities, as well as potential weak links in the network.
- Assess characteristics such as demographics, land use, workforce, consumption patterns, and industry clusters of your region and adjacent regions to identify strategic markets and potential areas for growth. Consider questions such as: What are the key industries? Are there new firms that are small now but are growing and changing rapidly? How do these characteristics impact the use of the transportation system?

DEVELOP RELATIONSHIPS

- Develop a freight advisory committee or working group that includes shippers, businesses receiving shipments, transportation mode representatives (including operators and transportation facility owners), other private sector representatives, local jurisdictions, business and industry experts, economic development planners, port authority and state DOT staff, and other primary stakeholders within your region.
- Use the freight committee to analyze various private sector concerns (shipper, receiver, railroad, trucking, etc.) and how they may differ from public sector priorities, time horizons, and decisionmaking processes.
- If appropriate within your region, work with partners to pursue Free Trade Zone designation.
- Support partnerships with local educational institutions, workforce development agencies, and others to make workforce training opportunities for logistics-related industries and other growth sectors available to residents.

CONDUCT INTEGRATED TRANSPORTATION AND ECONOMIC DEVELOPMENT PLANNING

- Work with existing transportation and economic development committees, freight advisory committee, local governments, the public, and other stakeholders to create a vision for multimodal transportation and economic development.
- Ensure the region's vision is consistent with local and statewide plans, but also flexible to adjust to the changes and shifts within the global marketplace and supply chain.
- Implement that vision using short-term goals, such as identifying industrially-zoned land adjacent to rail lines that may be suitable for an inland port or other a facility.
- Seek to develop a well-connected transportation network that is attractive to businesses, and use stakeholder outreach to identify desired transportation improvements.
- Seek funding through the statewide transportation improvement program (STIP), state and local funds, private partnerships, or other funds.
- Add freight as a decision factor in identifying and ranking regional priorities, and integrate existing economic development strategies, workforce, and land use plans when developing regional transportation plans and prioritizing projects.
- Provide technical assistance to local governments looking to pursue economic growth through freight connections, such as assisting with land use analysis, special studies, and grant applications for funding projects that support the local and regional visions.
- Use your knowledge of your region as a context for how to position the area within the global supply chain to create a sustainable economic initiative. Know your region's strengths and limitations, and work with partners to plan and implement strategies accordingly.



Image courtesy of Norfolk Southern

Additional Resources

In addition to the resources cited in this report, the following documents and websites provide useful information on freight transportation for transportation planning and economic development professionals.

Federal Highway Administration Office of Freight Management and Operations

<http://www.ops.fhwa.dot.gov/freight/index.cfm>

FHWA Freight Professional Development Program

<http://www.ops.fhwa.dot.gov/freight/index.cfm>

Freight Analysis Framework, FHWA

http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm

Freight Facts and Figures 2011 – FHWA

http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/11factsfigures/index.htm

The Freight Story: A National Perspective on Enhancing Freight Transportation, FHWA

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Talking Freight: The Panama Canal Widening and Implications for Gulf and Atlantic Coast Ports, FHWA Webinar recorded October 21, 2009

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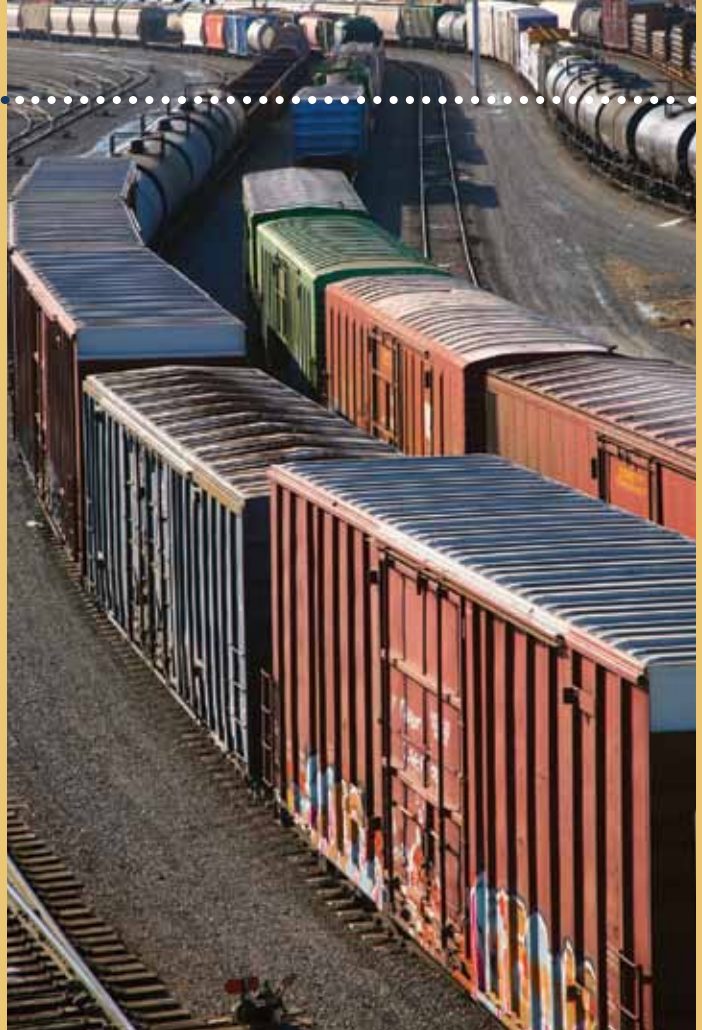
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Founded in 1988, the NADO Research Foundation is the nonprofit research affiliate of the National Association of Development Organizations (NADO). The NADO Research Foundation identifies, studies, and promotes regional solutions and approaches to improving local prosperity and services through the nationwide network of regional development organizations. The Research Foundation shares best practices and offers professional development training, analyzes the impact of federal policies and programs on regional development organizations, and examines the latest developments and trends in small metropolitan and rural America. Most importantly, the Research Foundation is helping bridge the communications gap among practitioners, researchers and policy makers.



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