Elevating the Mississippi River’s Role in Global Trade

By Mary C. Lamie, P.E.

From 1854 to 1960, the St. Louis, MO, USA region was the third-busiest port in the United States behind New York and Philadelphia. More than 3,000 steamboats would arrive and depart each year from the St. Louis levee. Today, it is still one of the most competitive inland ports in the nation, and its global impact continues to expand due to a new pact between key entities in the St. Louis bi-state region and the Plaquemines Port Harbor & Terminal District in Louisiana. This article highlights the vital role collaboration and innovation are playing in developing a plan critical to creating a potential link for containerized cargo to move between the lower Mississippi River and St. Louis region.
Building Partnerships

Formed in 2014, the St. Louis Regional Freightway is an enterprise of Bi-State Development representing eight counties in Illinois and Missouri that comprise the St. Louis metropolitan area. The St. Louis Regional Freightway’s mission is to optimize the region’s freight transportation network through public and private partnerships and enhance the region’s status as a global multimodal logistics hub and distribution center.

This mission was on full display in March 2018 when the St. Louis Regional Freightway signed a Memorandum of Understanding (MOU) with the Louisiana-based Plaquemines Port Harbor & Terminal District (PPHTD) and four public ports in the St. Louis region. By engaging in this agreement, the St. Louis Regional Freightway and its partners seek to generate new business by promoting international and inland trade routes at strategic locations along the Mississippi River using an innovatively designed vessel for moving freight. For the St. Louis region, it is another key milestone following more than two years of work to help ensure the bi-state area benefits from what the U.S. Department of Transportation (USDOT) anticipates will be a 45 percent increase in freight volumes over the next three decades.

The Challenge Ahead

While the Great Recession is fading, it is apparent that deeper structural shifts are underway that will influence the pace and direction of future economic growth, and by association how freight moves, creating opportunity for strategies such as container on barge (COB) and container on vessel (COV) services to advance. The conversation begins with clear expectations established by USDOT for growth in national freight volumes, which are linked to:

- An anticipated 60 percent increase in the nation’s population by 2050; and
- Growth in global population toward 9 billion people over the same period (along with increasing urbanization and greater demand for higher quality foodstuffs), which will drive growth in global container markets from roughly 800 million twenty-foot equivalent unit (TEU) containers in 2018 to more than 1 billion by 2025.²

This growth will significantly increase the volume of containerized cargo and truck freight that must move throughout the United States, creating unique opportunities for regions such as St. Louis to benefit. With market growth as a given, opportunities for the St. Louis region are underscored by the basic premise that transportation and logistics will ultimately remain a cost of doing business. Given that, for the public sector, transportation infrastructure improvements will enhance the competitive position of a region to grow and create jobs in other sectors. For the private sector, including manufacturers and distributors, pressure to reduce costs will dictate continued pursuit of greater fuel efficiency, autonomous vehicles, larger distribution buildings, physical alignment between intermodal yards and distribution centers, and interest in overweight truck routes to directly connect these assets. Ultimately, their goal will relate to either reducing the cost of freight movement and local interchange or increasing the predictable velocity of freight movement.

With the United States lagging in needed infrastructure re-investment, the St. Louis Regional Freightway continues to pursue strategic infrastructure funding opportunities, while also evaluating strategies to consolidate freight movements from multiple carriers across various modal options to improve cost, efficiency, reliability, and flexibility for shippers. Reducing multimodal transportation results in less highway congestion and decreased emissions. Working with transportation industry leaders, container on barge (COB) and container on vessel (COV) services along the Mississippi River and its tributaries were identified as transportation alternatives that could deliver those benefits, while maximizing the inland waterway’s existing but underutilized capacity. Additionally, COB and COV were identified as options in the event of a supply chain disruption, including severe weather, fluctuations in energy and transportation costs or shifts in global government regulations or trade. Understanding the types of goods moved by each mode to consolidate freight movements and support COB and COV services could be an answer to maintaining global competitiveness for the nation’s supply chain.

It’s a Process

In 2016, the Panama Canal completed a $5.25 billion expansion project, resulting in reduced shipping time and lower ocean transportation costs when transporting cargo between the Atlantic and Pacific Oceans. While construction was nearing completion, the St. Louis Regional Freightway started working with various stakeholders to explore the feasibility of starting COB service along the Mississippi and tributary rivers throughout the Midwest. This involved evaluating the region’s infrastructure and equipment to load and unload containers stacked on a barge versus traditional bulk cargo. It quickly became apparent the region possessed these assets for a COB service: three public ports (America’s Central Port in Granite City, IL, the Port Authority of St. Louis, and Kaskaskia Regional Port District in Red Bud, IL), a handful of privately operated river terminals, and a world-class freight network comprised of six Class I railroads, the third-largest inland port, two international cargo airports and four interstate highways. Efforts then focused on identifying the commodities that could withstand the additional transit times and be moved to and from the region via COB. Efforts then focused on identifying the commodities that could withstand the additional transit times and be moved to and from the region via COB. Among those that fit were automotive
parts, fabricated steel, agriculture products, such as specialized soy beans, rice and others, tires, appliances, construction supplies, scrap metal, outdoor furniture, and animal feed.

With this MOU in place, the St. Louis Regional Freightway began working with shippers and carriers to launch a proof of concept pilot program to further test the viability of COB services in the region. However, private industry leaders were concerned with the time that would be required to create the volume of containers from multiple carriers and availability of empty containers. Partnerships with other regions along the Mississippi River would be required to develop economies of scale to help address availability of containers and demonstrate a competitive advantage. Representatives of the U.S. Department of Transportation Maritime Administration encouraged us to team with other regions, including Paducah and Louisville in Kentucky and Kansas City, Missouri, to jointly create the volume.

**Hard Work Starts to Pay-Off**
The conversations with other regions caught the attention of the PPHTD Executive Director Sandy Sanders. PPHTD had been exploring ways to create a transportation network between Plaquemines Port and upper ports along the Mississippi River, though their concept was even more pioneering than the COB service we’d been focusing on.

PPHTD had already inked an agreement with marine transportation services leader American Patriot Holdings, LLC, (APH), to develop a hub-and-spoke transportation system for container transport vessel shipments from Plaquemines, at the mouth of the Mississippi River south of New Orleans, to Midwest markets. They viewed this COV approach as a way to move a critical mass of containerized product significantly faster than COB, resulting in lower landed transportation costs. Widening of the Panama Canal opened the door for this new type of vessel to be part of a large-scale hub and spoke concept utilizing all the transportation modes. St. Louis’ world-class multimodal network helped this region fit into the developing plans.

To understand why, one needs to consider various impacts of the expanded Panama Canal for the heartland of America. First, the widened canal can accommodate larger vessels (from 5,000 TEU to 18,000 TEU). With the additional travel time to the Gulf Coast offset by congestion-related delays at the West Coast ports, shippers now have a viable alternate route. Second, that new route to access

Towboat with containers on a barge.
Containers on a vessel.

the Midwest via the Gulf Coast ports provides economies of scale which permits deeper market penetration into the U.S. from the Gulf Coast, eroding cost advantages previously associated with the East and West Coasts.4

Transportation efficiency was a key factor for Sal Litrico, CEO of American Patriot Bulk Transport, a subsidiary of APH, when his organization signed the exclusive agreement with PPHTD. Together PPHTD and APH plan to provide COV service from the planned container terminal in Plaquemines to key consolidation and de-consolidation ports in Chicago, St. Louis, Memphis, Kansas City, Little Rock, and other potential upriver ports. The unique APH vessels have patented features enabling high cargo payload and significant upriver speeds. The liner vessel will carry up to 2,500 containers at speeds of 13 miles per hour with virtually no wake, making round trips from Plaquemines to the St. Louis region possible in 10 days, significantly faster than COB. With so much cargo mass, the all marine route from Asia to the Midwest will significantly reduce shippers landed transportation cost vs. rail and truck from other gateway ports. Litrico said a recently completed economic competitiveness study that identifies the St. Louis region as a possible distribution center and consolidation, de-consolidation point indicates those savings would range from at least 30 percent for products being exported to 40 percent for imports, compared to shipping product to or from the Los Angeles-Long Beach ports to the Midwest via rail. The vessel recently completed model testing in Germany, and final engineering and design is underway.

Litrico considers the St. Louis region to be a great location with a world class multimodal freight network and the ability to expand and establish freight consolidation/de-consolidation centers. These centers would be as vertically integrated as possible to provide a complete logistics package of services from farm or shipper to the southernmost terminus transshipment facility and vice versa from the southernmost terminus to northern distribution centers or final destination. He also pointed to the exceptional leadership and commitment in the St. Louis region, and the high impact area of current freight volumes and projected growth opportunities that are within reach, as reasons why APH is considering locating a facility in the bi-state area.

The abundance of modes provides opportunities and alternatives that make it cost-effective and efficient to move product into, out of and through the bi-state area. Efficiency also has emerged as a hallmark of the region’s port system, which not only is the country’s third largest inland port system, but also the most efficient. The St. Louis region’s port system is responsible for 70 of the 855 miles of the Mississippi River, or 8 percent. But, these 70 miles carry one-third of the total freight, a direct reflection of the system’s efficiencies. The barge industry can handle 500,000 tons per mile, which is two-and-a-half times more efficient than its closest competitors.

Those strengths are even more evident along a 15-mile stretch of the Mississippi River gaining recognition as the Ag Coast of America. It is home to 15 barge-transfer facilities that, at total capacity, can handle 150 barges a day, the highest level of capacity anywhere along the Mississippi. Those advantages, paired with others throughout the region’s multimodal freight network, are fueling the St. Louis Regional Freightway’s efforts to maximize the full potential of the inland waterways by partnering with other ports and regions and entering into strategic agreements like the most recent one with the PPHTD.

Initial discussions have focused on loading operations at a centralized location in Jefferson County, MO, USA with feeder services by rail, barge, and truck throughout the bi-state region and the Mississippi River Basin. The MOU with the Port of Plaquemines signed in March 2018 by the St. Louis Regional Freightway, America’s Central Port, the Port Authority of St. Louis, Kaskaskia Regional Port District, and the Jefferson County Port Authority in Hillsboro, MO, embodies the St. Louis region’s strong support for the efforts underway by APH and the PPHTD.

While the agreement is not a formal commitment to establish operations in Jefferson County, it’s a key milestone in the process to develop a large-scale port in the St. Louis region that supports the new transportation network.

Innovative Path Forward

The next step to advance the effort is lining up the cargo for the return trips. To that end, the STC/ISA (Soy Transportation Coalition/Illinois Soy Association), which represents 13 states and 85 percent of the soy production in the U.S., just completed a third-party study. The study, conducted by Informa economics, evaluated grain exports from the Midwest utilizing the APH/PPHTD all-water route to Asia versus intermodal to the West Coast. The study also concluded the all-water routing demonstrated significant savings. The full report and its findings will be available on STC’s website within the next few weeks.

Additionally, the St. Louis Regional Freightway has begun hosting roundtable discussions with shippers and carriers to build
awareness of this new opportunity supporting the global supply chain and uniting industry leaders to collaborate and identity ways to consolidate freight throughout the bi-state region and the Mississippi River Basin.

The St. Louis region and other ports along the inland waterway system are leading a bold and innovative move to capitalize on the benefits of a new option to transport freight with an opportunity to increase commercial margins. With the United States lagging in infrastructure re-investment and threatening our global competitiveness, transportation leaders need to continue to focus their attention on both infrastructure investment and ways to integrate all modes of transportation utilizing 21st century technology.

References

Mary Lamie, P.E. is executive director of the St. Louis Regional Freightway. The St. Louis Regional Freightway is a bi-state development enterprise formed to create a regional freight district and comprehensive authority for freight operations and opportunities within eight counties in Illinois and Missouri that comprise the St. Louis metropolitan area. As executive director, Mary’s responsibilities include evaluating the freight needs of the bi-state region and the freight network’s current operational status, developing public-private partnerships, and creating the foundation for planning, marketing, and advocacy of the bi-state region as a national freight hub. Mary is a professional engineer with more than 25 years of experience in transportation, engineering, and management, including 22 years with the Illinois Department of Transportation. To learn more, visit thefreightway.com.

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