

Spring 2011

## The emergence of the inland port

### Revived global trade is impacting U.S. seaport capacity

The good news: Global trade is beginning to pick up and that will have a positive impact at many U.S. Pacific and Atlantic Ocean ports. The bad news: Many of these coastal ports may soon be strained to their capacity limits. As more ships arrive with more containers, increased shipments and container volumes may once again create problems as goods seeking to reach their final destinations in America tax coastal roadways and rail systems, and ultimately create demand constraints for well-connected warehousing. Though many seaports plan major infrastructure improvements, congestion will still present challenges to timely, cost-effective distribution of inbound containerized shipments to noncoastal retailers, manufacturers and ultimately consumers.

### So what is an inland port anyway?

Increasingly, this inbound cargo will be transferred directly from an ocean vessel to railcars and then transported to an inland location, away from the more congested port itself, for further processing and distribution. These inland locations, or intermodal centers, serve as “inland ports,” with some handling as much cargo volumes as their coastal counterparts. Though the concept of inland ports is not new, these locations are becoming increasingly critical to the global supply chain and will affect logistics decisions ranging from shipping routes to warehouse locations. Many corporate distribution and real estate professionals are just now

beginning to understand the role inland ports will play as we enter the new cycle of economic and maritime recovery. Although the concept of an “inland port” is not new, the facts behind them are not always clear.

### Inland ports drive efficiency

Foremost, an inland port is a hub designed to move international shipments more efficiently and effectively from maritime ports inland for distribution throughout the U.S. heartland. Think of the logistics of inbound freight as a barbell. At one end, inbound containers flood into a seaport, spreading across local storage facilities as they are unloaded. If they aren't moved quickly enough from the port, they create a bottleneck that bogs down the entire distribution cycle as containers wait longer to get off ships, to get into warehouses, and to get back out and onto trucks and trains for final shipment.

### Inland Ports—creating a logistics “barbell”

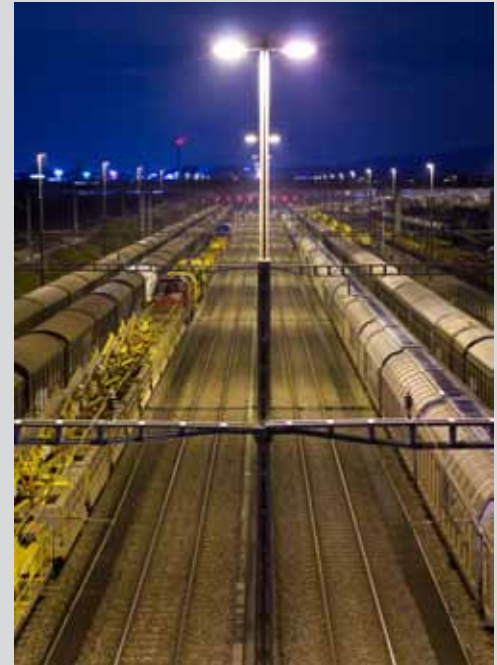
Inland ports act as an integrated component to our U.S. port systems, creating a logistics “barbell.” With port systems growing in size and capacity, the inland port provides the counterbalance, with the two ends connected by a dedicated rail line, originating on-dock at the container terminals with direct access to the inland port destination. In such fashion, the inland hub provides the means for ocean cargo to pass through the waterfront terminals more quickly and more cost effectively, literally “clearing the decks” for the arrival of the next vessel.



## Alliance, Texas: The pioneer

Beginning in the mid-1990s, a private developer, in cooperation with local and state authorities, launched the Alliance Global Logistics Hub, considered the grandfather of U.S. inland ports. It is strategically located at the juncture of the BNSF and Union Pacific rail lines, and Interstate 35, which crosses the United States from Canada to Mexico. Besides the capabilities of BNSF's Alliance Intermodal Facility, the area is served by the Fort Worth Alliance Airport—the world's first dedicated industrial aviation facility—and the FedEx Southwest Regional Sort Hub. It has ranked as the top U.S. Foreign Trade Zone (FTZ) in terms of value of foreign goods admitted for three years running<sup>1</sup> and enjoys triple Freeport inventory tax exemption, even third-party logistics and workforce recruitment services, as well.

Such features have attracted 243 companies, including 50 Fortune 500 firms, to open facilities in the Alliance area. The development wisely takes care of not just business, but the personal needs of those who work there. Its 17,000 acres include not just warehousing and distribution facilities, but almost 8,000 single-family homes and apartments. Alliance's Circle T Ranch master-planned community was ranked as the nation's most affluent by *Forbes* magazine.<sup>2</sup>



### So is every intermodal terminal an inland port?

No. Of the hundreds of intermodal locations not located on the U.S. coast, less than a dozen could be presently considered true, important inland ports.

A legitimate inland port will typically have the following characteristics:

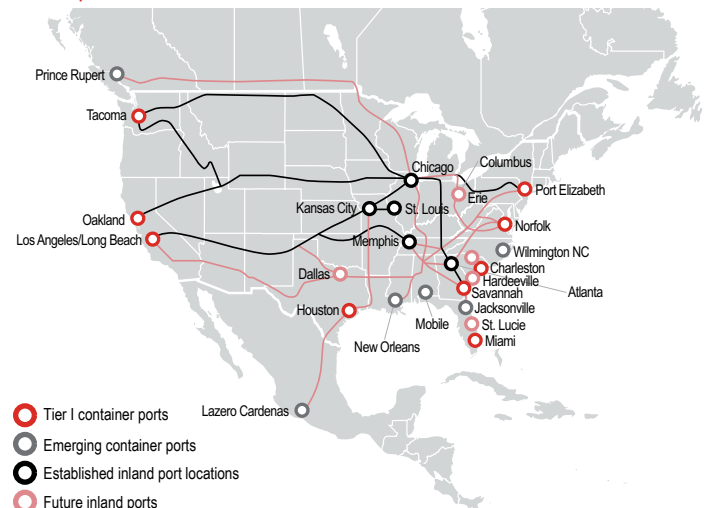
- Market proximity to at least 3 million people within 200 miles.
- A major, direct connection to an American seaport via a Class I railroad. This rail corridor forms the “stem” of the coastal port/inland port barbell, as dedicated container trains—often comprising upwards of 250 double-stack cars—run steadily between the two locations. Some inland ports primarily serve one corresponding seaport, using one Class I railroad.
- FTZ status and privileges.
- An abundance of reasonably priced commercial real estate for warehousing and distribution, relative to the East and West Coasts.
- An overall governing body, or at least a consortium of stakeholders collaborating in a cohesive management plan for the overall effectiveness of the inland port.
- A state and local government climate that is enthusiastic about inland port development, and willing to offer strong incentives to participants.

### Where are the inland ports located?

The distance between a seaport and a corresponding inland port varies. Some inland locations are over 1,000 miles from the ocean, while others are a short distance away, serving largely as a container transfer point to relieve storage and distribution congestion from seaports. An example of the latter is Front Royal, Va., set up to handle cargo from the Port of Norfolk 220 miles away.

The relatively short list of current areas widely recognized as full-fledged inland ports include Dallas/Fort Worth, Chicago, Kansas City, St. Louis, Atlanta, Memphis, Inland Empire, Columbus and Charlotte.

### Inland port connections



1. "Alliance Global Logistics Hub FTZ Finishes No. 1," *Texas Construction News*, May 1, 2010.  
2. [www.alliancetexas.com](http://www.alliancetexas.com)

## Walmart: At the hub, in the heartland

The best way to view Walmart's 3.4 million square foot import distribution facility near Chicago in Joliet, Ill., is by helicopter. This massive site is the number one tenant at CenterPoint Intermodal Center, which bills itself as the largest master-planned inland port in North America.<sup>3</sup> Imported containers are carried in unit trains of double-stack containers primarily from West Coast ports such as Los Angeles/Long Beach to a BNSF intermodal park, then trucked just a half mile to the Walmart facility, all within the CenterPoint property.

A Walmart executive noted that while the company could have leased space a couple of miles or more away from CenterPoint at a slightly lower rate, the firm saves millions a year in drayage costs due to its ultra-close proximity to the intermodal terminal.<sup>4</sup>

The message: Logistics advantages and connectivity often will more than offset real estate costs when selecting an inland port distribution site.



## New rail infrastructure and fuel prices are driving inland port growth

The aforementioned “barbell” effect can dramatically slow the throughput of containers moving off ships and out of seaports. Companies in time-sensitive industries, such as retail, face a serious threat to competitiveness the longer their goods spend in logistics limbo awaiting drayage by truck and rail.

Two trends have converged to make inland ports an increasingly viable option for import distribution:

1. The economics of long- and short-haul rail shipping are steadily improving. Railroads have made major financial commitments to infrastructure and terminal improvements, as well as service, in recent years. Trucking accounts for the vast majority, more than 70 percent, of U.S. freight shipments. However, the fastest growing mode of transportation has been intermodal. Rail and intermodal transportation will likely continue to increase in popularity as rail's economies of scale continue to improve with rising fuel costs. Union Pacific, for example, expanded its intermodal volume about 20 percent between 2009 and 2010.<sup>5</sup> Rail's biggest inroads are expected in shipments of less than 500 miles, where trucking has traditionally been considered more competitive. In addition, rail is a far more “sustainable” mode of transportation—producing 40 percent to 60 percent less the carbon emissions of trucking.
2. While the railroad industry grows, the trucking industry has been battered by the past few years of recession. Major carriers such as Schneider National, Werner Enterprises and J.B. Hunt have cut over-the-road capacity by 12 percent to 15 percent during the past few years, while several smaller companies and owner-operators have gone out of business. Besides skyrocketing diesel fuel prices, the industry is challenged by an anticipated shortage of up to 300,000 drivers who have retired or left for other jobs.<sup>6</sup>

Not only are inland ports growing in number and size, but coastal gateways are concurrently increasing their flexibility for straight-through shipping. Many are becoming classified as “agile ports,” with capacity to accommodate a variety of vessel types, as well as technology and improved business practices to decrease “dwell time” in ship scheduling, off-loading and land distribution.

Another factor for importers subject to U.S. Customs duties and other taxes is the increase of inland Free Trade Zone locations. There are now about 250 FTZ locations, many of them inland, permitting users to economically combine import and regional distribution functions at the same facility.

## Major retailers are big users of inland ports

Among the first and largest users of inland ports, not surprisingly, are major retailers and importers such as Walmart and Home Depot. Many of these logistics giants have been able to save money by consolidating multiple distribution centers into a smaller number of hubs situated at inland ports with adequate logistics capacity. For example, J.C. Penney formerly had a major distribution center on both the East and West Coast. When BNSF upgraded their intermodal yard at the Alliance Global Logistics Hub, the company decided to create one national center at Alliance's Texas site.<sup>7</sup>

3. “The Port Moves Inland,” *Journal of Commerce*, September 13, 2010.

4. Interview with Jones Lang LaSalle.

5. “Railroads Have Off-Road Ambitions,” by Bill Mongelluzzo, *Journal of Commerce*, January 10, 2011.

6. “First 2011 Truck Forecast: Tighter Capacity Coming as Equipment Shortages, Driver Restraints Worsen,” *Logistics Management*, November 16, 2010.

7. “The Identification and Classification of Inland Ports,” Center for Transportation Research, The University of Texas at Austin.

Like pilot fish gathering around a shark, “big-box” warehouse owners typically drive expanded capacity at both coastal and inland port locations to provide opportunities for smaller firms as well. When Home Depot established a 755,000 square foot distribution facility at Cedar Crossing Business Park near the Port of Houston, the “big fish” proved that an intermodal logistics model could work there. The park has developed a flexible zoned master plan that permits properties as small as two acres, attracting not only small- and medium-sized firms, but a 2 million square foot Walmart Import Center.<sup>8</sup>

As commerce grows around inland hubs, another rapidly growing category of users are third-party logistics providers such as freight forwarders and courier companies. Inland ports, with large volumes of unloaded empty containers, create perfect opportunities for exporters to load and return to seaports for shipping, creating a more efficient “closed loop” supply chain network benefiting all involved.

### When are inland ports an advantage?

Well-connected and strategically located inland ports are most advantageous for businesses to use when:

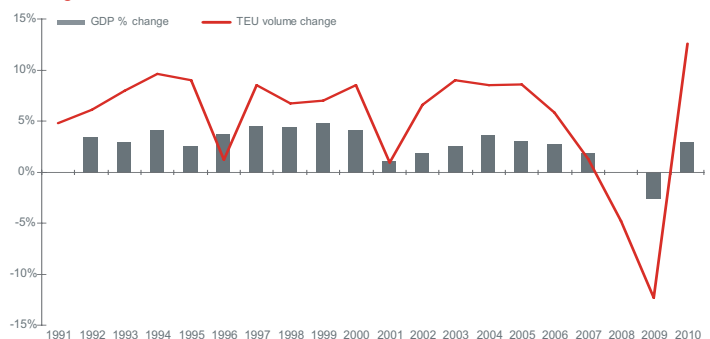
- Throughput and transportation at your major import entry points are slowed by heavy port congestion.
- The economics of rail shipping can exceed that of trucking.
- There is a need to consolidate import and distribution functions in one location.
- Space for necessary warehousing and distribution facilities, as well as labor, is cheaper than around a coastal port, or public-sector tax climates and other incentives make an inland location more desirable.

- An inland location permits you to consolidate real estate and other resources and still satisfy your logistics needs.
- You are a producer in the interior United States seeking a quick channel to coastal or export markets.
- Your company has a strong sustainability initiative that can benefit from rail shipping's lower fuel costs or terminals that operate in a “greener” fashion.

### The future of U.S. inland ports

For a good look at the future of U.S. inland—and coastal—ports, look south. The expansion of the Panama Canal, slated for completion in 2014, will be an immediate game changer. Supersized “mega ships” already plying the Atlantic and Pacific will be able to pass through the Panama Canal, carrying almost three times as many containers as was permitted previously.<sup>9</sup>

### Change in GDP vs. TEU volume



Source: Bureau of Economic Analysis, American Association of Port Authorities

8. [www.cedarcrossing.net](http://www.cedarcrossing.net)

9. “The Panama Canal’s Impact on U.S. Industrial Real Estate,” Jones Lang LaSalle, Spring 2011.

### The Greening of Logistics

About 40 miles from Chicago, bordered by a BNSF mainline on one side and Interstate 55 on the other, is possibly the nation’s most sustainable inland port. The RidgePort Logistics Center contains 14 million square feet of buildings ranging from 200,000 square feet to 2 million square feet, but equally impressive are environmental benefits such as:

- Almost one-third of the land area set aside for natural habitat.
- Wastewater filtration using four different green technologies.
- A required tenant composting program, with the end result used in site planting and landscaping projects.
- Plans to construct a limestone mine 200 feet under the property for aggregate stone used for roads and buildings. This is expected to eliminate truck trips using 540,000 gallons of fuel and prevent 10,476,000 pounds of CO<sub>2</sub> emissions.
- Best management practices to minimize stormwater impact.
- Solar and wind energy generation.
- A sustainable tree farm.



The bottom-line result is that with the fuel efficiencies and economies of scale realized by these larger vessels, shipping Asian containers through the Panama Canal to East Coast ports for eventual destinations east of the Mississippi River will often be more cost-effective than shipping to the West Coast followed by a long overland trip. There's a tradeoff: Higher fuel costs are driving a trend by carrier lines called "slow steaming" to save fuel, which means longer lead times. U.S. manufacturers and retailers may need more inventory on hand, requiring additional warehousing space. The cost of moving goods from sources to markets will have to be analyzed more holistically than ever before and weighed against the required speed to market.

Currently, only the port of Norfolk has the 50-foot draft necessary to accommodate the larger "Post-Panamax" container ships, but the ports of New York/New Jersey and Miami, along with others on the eastern seaboard, have plans or are developing plans to accommodate the Post-Panamax vessels by 2014. The further development and investment at the Port of Miami, for example, has triggered a competition to determine a new inland port location to handle the anticipated traffic increase.

East and Gulf Coast ports are currently not able to handle the mega ships such as Houston, Savannah and Charleston, and should benefit from a general shift of the percentage of container volume in their direction. New Orleans, Mobile, Jacksonville and Wilmington are expected to grow rapidly as ports of call. Corresponding inland ports should blossom as well, such as Shreveport, La., for New Orleans, and Birmingham, Ala., for Mobile. The result: The U.S. "frontier" for cost-effectively moving goods shipped through the Panama Canal is anticipated to drift about 200 miles to the west, bordered roughly by Austin, Dallas, Little Rock, St. Louis and Chicago.

Even on the West Coast, an expected uptick should add alternatives to the seaports of Los Angeles/Long Beach and Seattle/Tacoma. Oakland should join the top tier of western ports, as well as NAFTA neighbors Prince Rupert, British Columbia; and Lazaro Cardenas, on Mexico's Pacific Coast. The Union Pacific hub in Salt Lake City could emerge as an inland port for Seattle/Tacoma and Oakland, while San Antonio should grow as a U.S. transfer point for both imports flowing through Mexico, as well as production from the nation's own factories and farms.

It is revealing that the heavily-maritime oriented *Journal of Commerce* decided to break tradition and hold one of its major 2011 conferences not at a usual coastal location, but in Chicago. The subject: inland port logistics. These locations—and the real estate that accompanies them—will have an ever-increasing impact on distribution strategies in the years ahead.

#### Key takeaways

- Inland ports are helping to provide the through-put capacity needed to sustain growth at our nation's major container seaports.
- Inland ports are showcasing the growing and vital role intermodal rail plays within the U.S. supply chain.
- The contribution of private sector investment to complement that of the U.S. government and Port Authorities is essential to the creation of future U.S. logistics infrastructure.
- A successful inland port must contain three key elements: scale, rail and proximity to a large population base.
- Inland ports will continue to evolve and grow as they provide needed supply chain efficiencies.



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