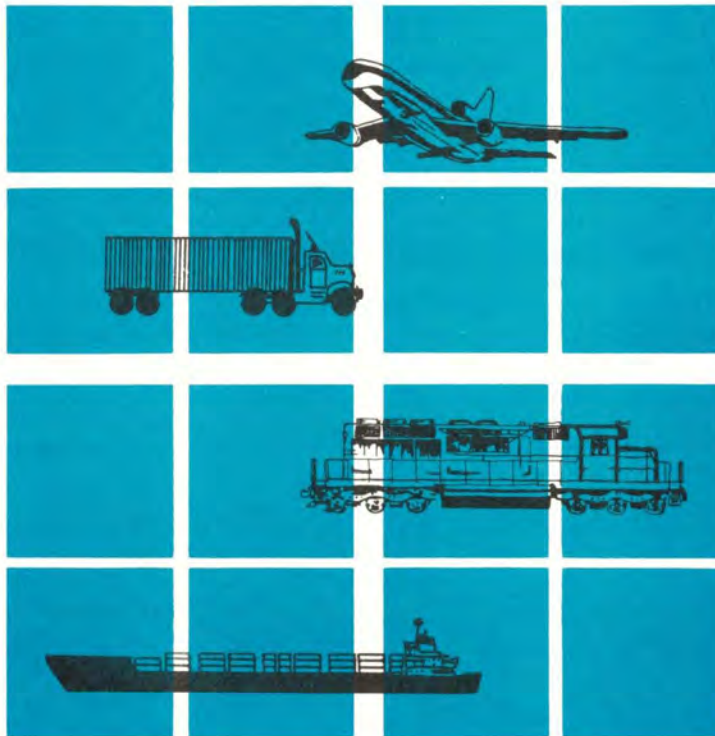


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# MISSOURI INTERMODAL FREIGHT HUB OPPORTUNITIES



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**MISSOURI INTERMODAL  
FREIGHT HUB OPPORTUNITIES**

**EXECUTIVE SUMMARY**

Prepared for:

**Missouri Highway and  
Transportation Department**

by

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November, 1993

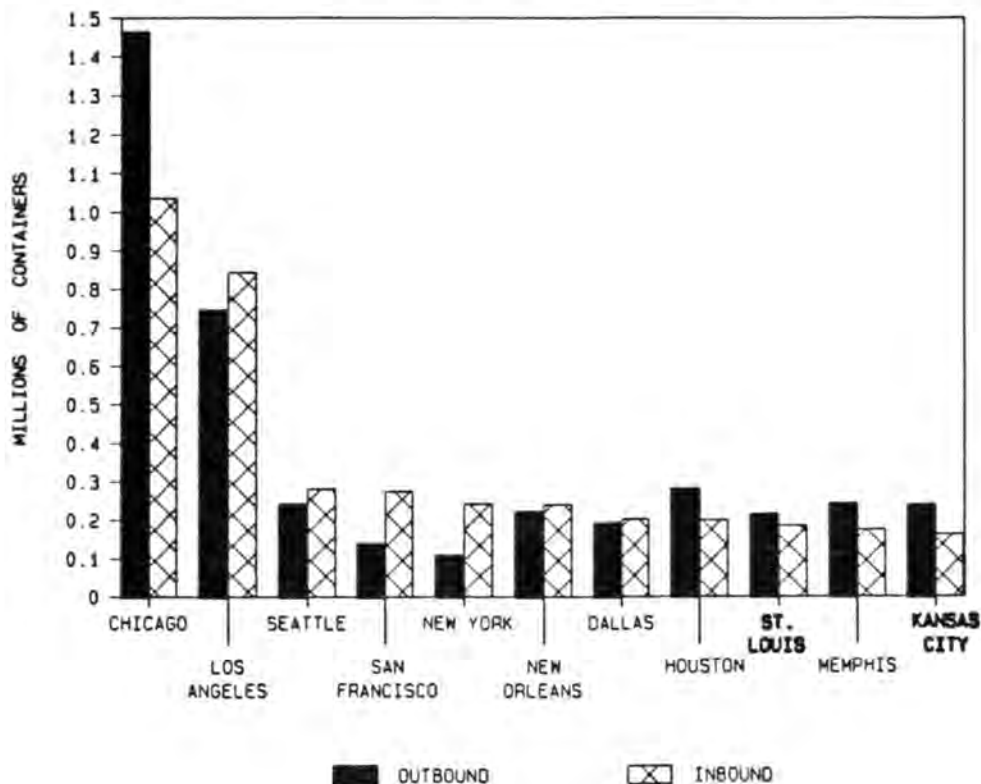
## MISSOURI INTERMODAL FREIGHT HUB OPPORTUNITIES EXECUTIVE SUMMARY

While the nation has struggled in a languishing economic climate for the past several years, rail/highway intermodal freight transportation has continued to attain a record of significant growth. With its inherent economic advantages, particularly in double-stack container trains for long-haul containerizable shipments, intermodal grew by 116% from 1980 to 1992. This represents an annual average rate of growth of 6.6% over the period. By 1992, U.S. intermodal reached a level of more than 97 million tons, or 6.7 million trailers/containers moving via this mode.

Among established centers of intermodal activity, Missouri already is heavily involved. As shown in Figure 1, two of the top dozen intermodal markets in the U.S. are St. Louis (9th) and Kansas City (11th.)

Figure 1

### TOP U.S. INTERMODAL HUBS, 1990

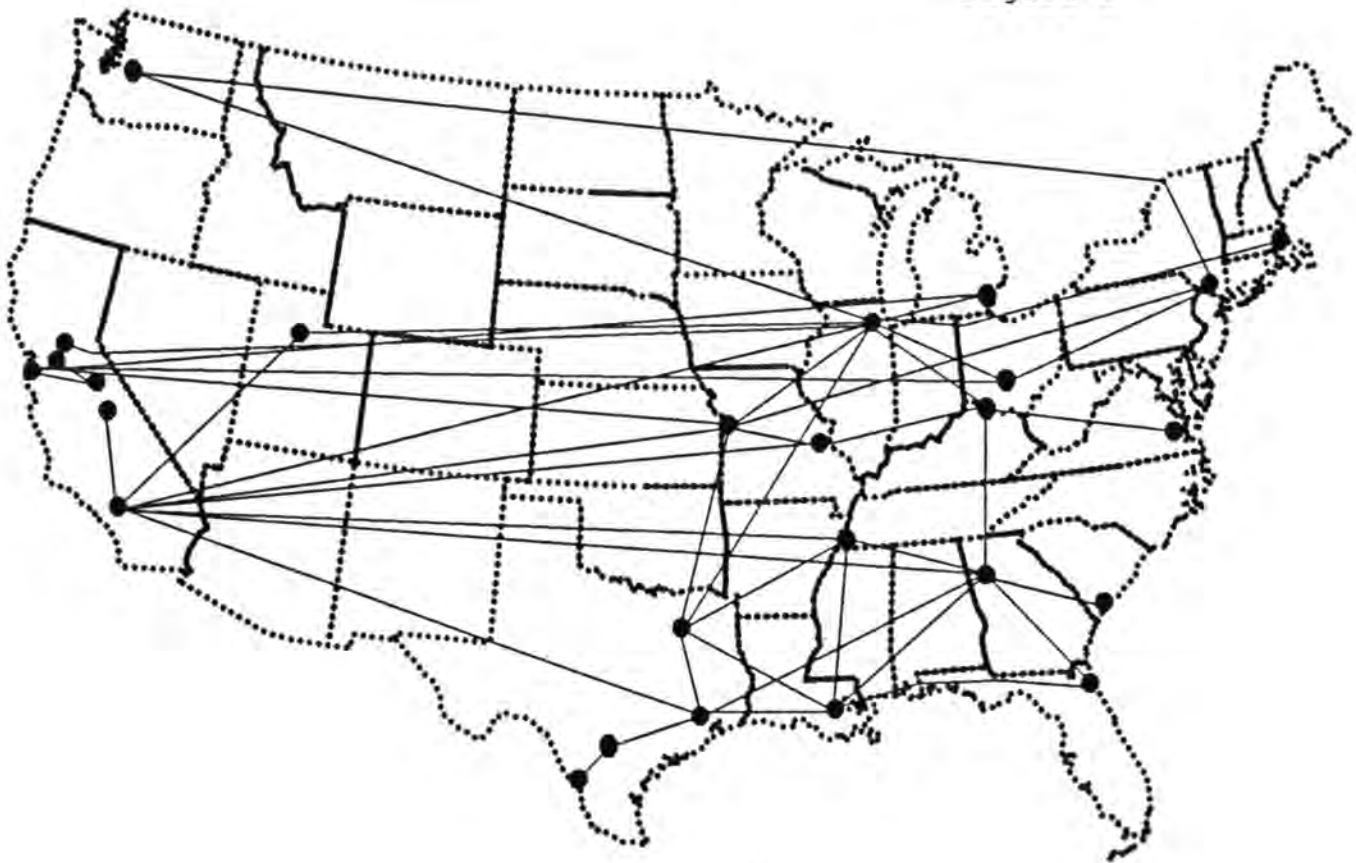


Source: TRANSEARCH, 1990

Figure 2 offers a picture of current double-stack container train routes, again demonstrating the strategic geographic position of Missouri, as well as that of competing hubs of Chicago and Memphis. While these reflect current (or recent) patterns, the impetus for change has grown stronger with the increase in intermodal traffic and the consequent strain on the capacity of existing intermodal terminal facilities and interline connections.

## CURRENT HUB CENTERS AND DOUBLE-STACK CONTAINER LANES

Figure 2



Missouri's position in the geographic center of the nation, and its established role as a transportation gateway provide the state with unique opportunities in this area. Under present intermodal operations roughly 6.0 million tons inbound and 7.5 million tons outbound are handled through the market areas of Kansas City, St. Louis and Springfield/Joplin. The Missouri Highway and Transportation Department engaged Reebie Associates to provide a preliminary evaluation of the feasibility of establishing a new regional intermodal hub in Missouri.

The results of the study show that sufficient potential exists for the establishment of a new regional intermodal hub in the State of Missouri. This is in terms of: a.) the volume of relevant types of freight traffic moving in specific origin-destination corridors, currently and forecast to year 2000; and b.) the inherent economics of moving via a Missouri hub terminal versus alternative scenarios and modal choices currently available. Our conclusion is that much more intermodal freight activity could be diverted to a new facility in Missouri -- with St. Louis as the best candidate site. This would be especially true if the interchange connections between eastern and western rail carriers at St. Louis were improved.

Further, candid interviews were conducted with intermodal operators, all major railroads serving Missouri and other interested parties. Two-thirds (12 of 18) indicated a positive interest in a potential new intermodal hub in Missouri. A number of these individuals characterized the current situation in St. Louis as inefficient and inadequate -- particularly in terms of interchange switching between eastern and western rail carriers. They also cited the problem of traffic congestion at Chicago - the nation's leading intermodal hub - as critical, growing worse and without any apparent solution.

Thus, the time appears right for change and St. Louis is looking at a window of opportunity, supported by several factors:

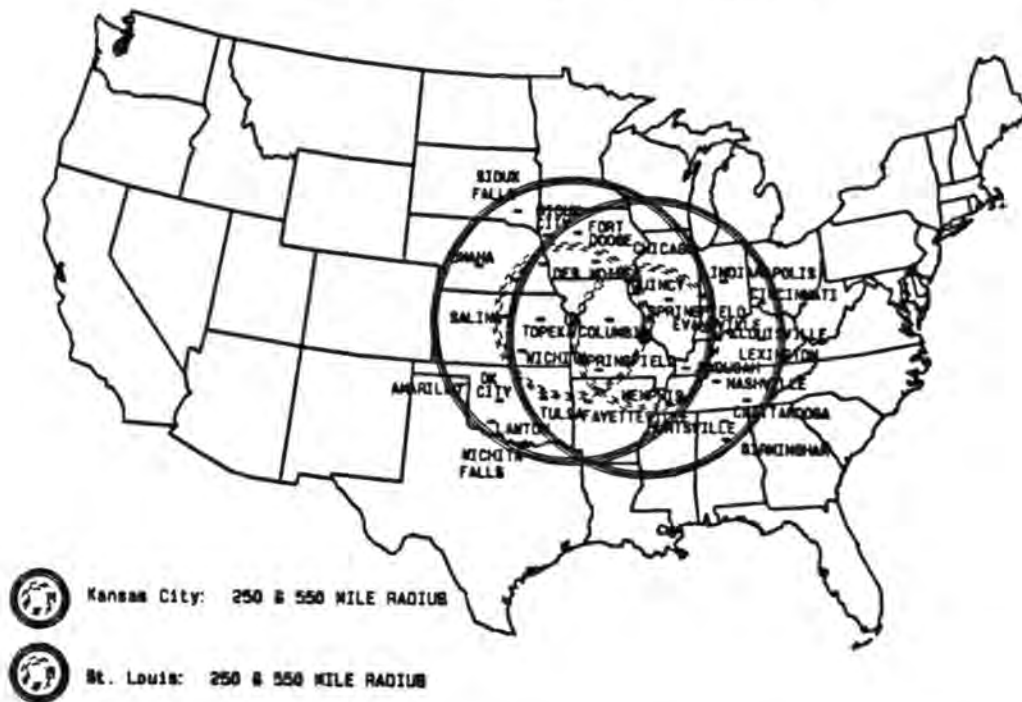
- Interstate Highway Access
- Rail Mainline Access
- Local Economic Base
- Proximity to Major Hinterland Markets

These criteria, selected early in the project by the Missouri Highway and Transportation Department staff and the study team, were used to evaluate five general areas in the state. These are: Kansas City; Columbia; St. Louis; Cape Girardeau; and Joplin/Springfield.

St. Louis and Kansas City are clearly the preferred candidates, chiefly due to their concentration of population and large industrial base; but also due to rail mainline connections, and multi-directional interstate highway access.

Neighboring or hinterland markets, too, are important considerations for locating a hub. In a radius of 550 miles (single day truck delivery) from St. Louis lies more than 30% of total U.S. population, or 76 million people (see Figure 3 on the following page).

FEASIBLE HINTERLAND AREA  
FOR OVERNIGHT OR NEXT DAY DELIVERY BY TRUCK  
KANSAS CITY and ST. LOUIS



Comparatively, Kansas City with its more western location reaches 20% or 51 million people within a 550 mile radius. In addition, St. Louis is 250 miles further from the west coast -- the most attractive intermodal markets -- and the economics become stronger for intermodal due to this greater rail distance.

The other areas are comparatively less desirable, especially in terms of their local economic base. This factor becomes very important since the cost of intermodal transportation increases with the drayage distance from the terminal or hub to the ultimate destination (or from the origin).

The economic analyses indicate that an intermodal hub in Missouri could operate to/from a hinterland up to 550 miles from the hub, itself. This would allow for maximum range of a single day pickup or delivery by truck, and also remain at least 10% less costly than an all-highway alternative to/from the key markets on the west coast.

Further, St. Louis is a traditional gateway for both rail and highway freight traffic. St. Louis, and to a lesser extent Kansas City, are where eastern and western railroads meet and connect for interchange of transcontinental traffic.

### Specific Intermodal Lanes

The traffic volume potential for double stack container service was assessed on a specific origin-destination lane basis. A customized version of the TRANSEARCH freight movement data base was constructed using only containerizable type commodities and only haul lengths of 700-miles or greater to represent realistic intermodal potential.

The analysis concluded that only in a select number of lanes is there sufficient volume to support double stack container service. Consideration was made for a reasonable market share based upon frequency of service; and seasonality and peaking factors were also applied. In approximate terms it was determined that 500,000 tons per year of relevant types of freight traffic are required to support a one-train-per-week service in any corridor. Similarly, 1,000,000 tons per year could support five trains per week; with a much greater market share attainable for a more frequent service, and so on.

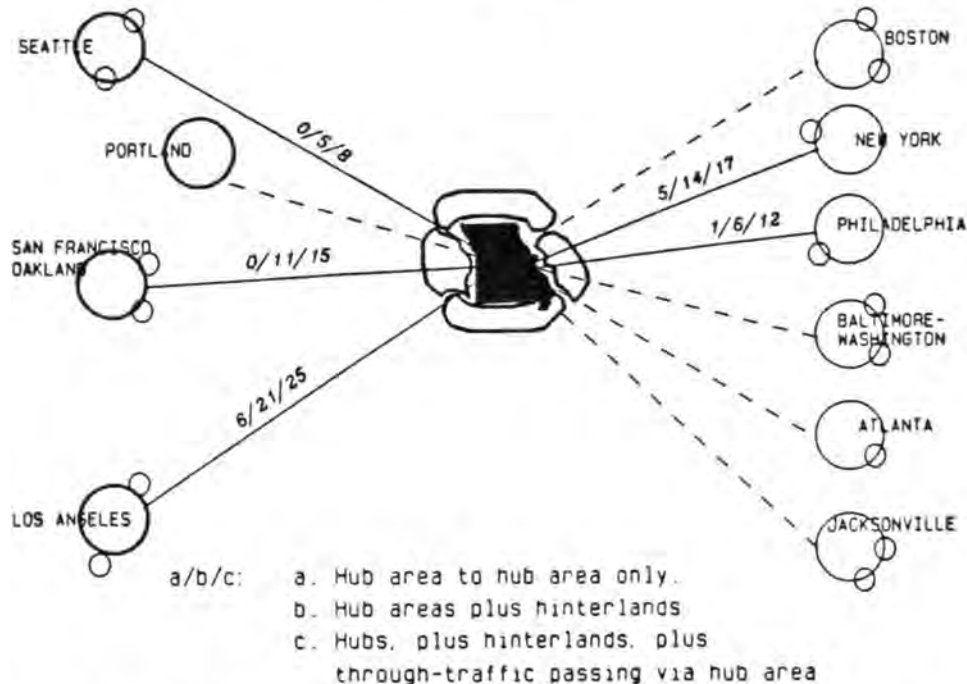
Naturally, a new intermodal service would not win all of the potential traffic -- initially, or over the long term. Estimates were applied to represent a reasonable market share of the total. The total size of the market, measured in specific lane volumes, serves to indicate whether or not a market pair (such as Philadelphia-Kansas City) is "in the ballpark."

The only market areas in the contiguous U.S.A. that currently can meet the volume requirements for double-stack container service to/from St. Louis and Kansas City are the large west coast markets of Los Angeles and San Francisco/Oakland. That is, in terms of "local" hub-to-hub shipments. When hinterland areas surrounding the hubs are added, Seattle and New York become viable market partners with St. Louis and Kansas City; and Philadelphia also qualifies, but only to/from St. Louis.

Finally, when interline "through traffic" is added (i.e., that which would pass through a Missouri hub terminal connecting from one rail carrier to another en route) the potential for these same traffic lanes becomes very attractive -- sufficient volume to support as many as 20 stack trains per week to/from Los Angeles alone. And more would be available by the year 2000, according to forecast TRANSEARCH figures (as shown in Figure 4). Moreover, comments by the rail industry contacts and others interviewed point out that this connecting traffic is not just a secondary consideration, but in fact the primary motivator in appealing for increased activity through this region.

Figure 4

**DOUBLE-STACK CONTAINER TRAINLOAD POTENTIAL  
TO / FROM ST. LOUIS  
YEAR 2000**



Total volume of relevant freight, expressed in number of trainloads per week (in each direction). A new intermodal service would attract a share, but not all of the volume.

### Size of Intermodal Hub and Operation

The study outlined a vision of two types of intermodal freight hubs. One was patterned after conventional terminals now operating or being built; and based on projected traffic levels. The other was a larger facility, termed a "super hub" with greater activity beyond the intermodal rail/highway operation and additional facilities such as a truck stop, motel and distribution centers on site.

The conservative approach, while allowing for significant expansion room, would amount to a facility of approximately 100 acres at a cost of \$60 to \$80 million to build and equip for operations. The "super hub" or expanded concept would require 196 acres in land area and cost \$115 to \$125 million to complete.



A range of financing alternatives exist for a proposed new intermodal hub facility. One initial issue here concerns the concept of a shared facility; i.e., who is the owner, and what rights, authority and responsibilities does the operator(s) have. Financing options include tax exempt financing, revenue bonds, lease-purchase arrangements, industrial development bonds, taxable financing and grants such as federal funds under the Intermodal Surface Transportation Efficiency Act. The preferred or most feasible method of financing will depend on the nature of the further development of the concept.

### Conclusion

Considering the volume prospects, underlying economics, and the expressed needs of the marketplace, St. Louis, should be the first choice for further consideration as a new rail/highway intermodal cargo hub. Kansas City, too, has significant potential in terms of amounts of intermodal type traffic which could be handled. But St. Louis is the most attractive in each analysis in terms of population and local economic base, proximity to hinterland market areas and rail mainline access leading to/from distant market areas.

As for air cargo hub potential, St. Louis offers more promise than Kansas City; but neither represents a truly strong case for general air freight. Other Missouri areas are remote possibilities. The best strategy is to seek to identify a "niche" or specialized type of operation and work with select companies or industries in its development.

For rail/highway intermodal the potential in St. Louis is more than sufficient in relevant freight traffic volume, favorable in economics, and a number of would-be participants appear to have an active, positive interest in exploring the opportunity further.

Challenges exist. Finding space has been termed impossible. Improving the interline connections may be called irreconcilable. And joint operation of a terminal by more than one entity may be deemed undesirable. Yet these imposing problems hold the key to opportunity. The ultimate success of the vision of a new Missouri intermodal cargo hub may well be, at least in part, a function of how much it is desired. The results of this study show that the potential is already there.

The intermodal traffic of the future cannot be handled under the status quo. Change will be affected somewhere, and Missouri holds several inherent advantages. If the further advantages of initiative, active support and creative planning and financing can be added then there is good and sufficient potential for making St. Louis the intermodal gateway of the 21st Century.