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Freight Rail Investment: Principles and Objectives
(May 16, 2004)

The freight-rail system carries 16 percent of the nation's freight by tonnage, accounting for 28 percent of total ton-miles, 40 percent of intercity ton-miles, and six percent of freight value. If all freight-rail were shifted to trucks tomorrow, it would add 92 billion truck vehicle-miles-of-travel-$64 billion for highway improvements over the next 20 years. This $64 billion is a conservative figure that does not include the costs of improvements to bridges, interchanges, local roads, new roads or system enhancements. If these were included, the estimate could double.

Relatively small additional investments in the nation's freight rail system can be leveraged to provide relatively large public benefits. These investments must be made at the network level. Public participation in rail system investments has historically addressed the bottom of the system: grade crossings, branch lines, and commuter rail services. The present need is to treat the key elements at the top of the system: nationally significant corridor choke points, intermodal terminals and connectors, and urban rail interchanges. Investments at this level hold the most promise of attracting and retaining freight-rail traffic through improvements in service performance.

Without investment from outside the railroad industry, the rail system will accommodate some of the forecast freight growth, but relieve little of the forecast congestion on the highway system. Public participation in rail investment could produce a rail industry that provides the cost-effective transport needed to serve national and global markets, relieve pressure on overburdened highways, and support local social, economic, and environmental goals.

Many states have already taken steps consistent with a public policy-driven approach, by investing directly in their rail systems, and by forming public–private partnerships to implement specific projects.

Making increased levels of investment and realizing the public benefits of a strong freight-rail system at a national level will require a new partnership among the railroads, the states, and the federal government.

This partnership must enunciate a clear national policy of improving freight system productivity; expanding state eligibility and flexibility to invest where freight-rail improvements have significant highway and public benefits; increasing loan and credit enhancement programs; and initiating innovative tax-expenditure financing programs, including accelerated depreciation, tax-exempt bond financing, and tax-credit bond financing. The partnership must extend beyond state boundaries to match the scale of the policy and investment decisions to the scale of today's freight-rail system.

Why should the public sector enter into financing partnerships with the freight rail industry?

The Importance of Freight Rail

The foundation for policy should be the recognition of the benefits of the U.S. freight rail system including the following:

Economic Development and Productivity--Freight rail provides shippers with cost-effective transportation, especially for heavy and bulky commodities, and can be a critical factor in retaining and attracting industries that are central to state, regional, and national economies. If all freight-rail were shifted to trucks tomorrow, it would cost current rail shippers an additional $69 billion this year alone — or $1.4 trillion over the next 20 years — causing significant changes in business and consumer costs.

International Trade Competitiveness--Freight rail, in partnership with the trucking industry, provides intermodal transportation connecting U.S. seaports with inland producers and consumers. Freight rail also carries 16 percent of the nation's cross-border NAFTA trade. Intermodal freight-rail service is crucial to the global competitiveness of U.S. industries.

Environmental Health and Safety--Freight rail is fuel-efficient and generates less air pollution per ton-mile than trucking. Rail also is a preferred mode for hazardous materials shipments because of its positive safety record.

Emergency Response -- Freight rail is vital to military mobilization as demonstrated most recently with the mobilization for Iraqi freedom and provides critically needed transportation system redundancy in national emergencies.

The Role of Freight Rail in the Multimodal Freight Transportation System

At issue is the capacity of the freight-rail system to grow with the economy and continue to provide these public benefits.

The U.S. economy is growing, and with it the demand for freight transportation services. With moderate growth in the economy — about three percent per year — domestic freight tonnage will increase by 57 percent by 2020 and import-export tonnage will increase by nearly 100 percent. Today trucks and the highway system carry 78 percent of domestic tonnage, the freight-rail system carries 16 percent, and barges and coastal shipping carry six percent. By 2020, the highway system must carry an additional 6,600 million tons of freight (an increase of 62 percent), and the freight rail system must carry an additional 888 million tons (an increase of 44 percent). However, the highway system is increasingly congested, and the social, economic, and environmental costs of adding new highway capacity are prohibitively high in many areas.

The Financial Capacity of the Freight Rail Industry

The freight railroad industry has been a great transportation success story since government deregulation in 1980. . The mergers and reorganization that followed restructured the industry. System mileage was cut in half, from 380,000 miles of track at its peak in 1920 to 172,000 miles today. Ownership was consolidated into seven Class I railroads that today originate 84 percent of the traffic and generate 91 percent of railroad revenue, and 551 regional and short-line railroads that operate 30,000 miles of track, originate 16 percent of traffic, and generate nine percent of railroad revenue. Freight-rail productivity was increased; ton-miles handled per railroad employee have nearly quadrupled since 1980. Rates were dropped, service was improved, and market share was stabilized at 28 percent of total domestic ton-miles and about 40 percent of intercity ton-miles.

However, the productivity gains and competitive rates have not been sufficient to rebuild market share and increase revenue. Railroad revenues have continued to drop. The industry's return on investment has improved from about four percent in 1980 to about eight percent in 2000;

however, it is still below the cost of capital at 10 percent. Most of the benefits of railroad reorganization and productivity improvements have accrued to shippers and the economy in the form of rate cuts, rather than to the railroads and their investors. This is a major problem for the railroad industry because it is extraordinarily capital-intensive. Railroads spend about five times more to maintain rail lines and equipment than the average U.S. manufacturing industry spends on plant and equipment.

Today, the rail industry is stable, productive, and competitive, with enough business and profit to operate but not to replenish its 150-year-old infrastructure quickly or grow rapidly. Market forces will continue to pressure the rail industry to streamline and downsize, to maximize revenues, and to minimize capital costs.

Investment in Freight Rail: Benefits and Cost

AASHTO's Freight Rail Bottom Line analysis described four possible futures for the nation's freight-rail ranging from one of no growth to one of aggressive investment:

With minimal Class I investments accomplished by the railroads from revenue alone and from investments in short-line improvements and safety enhancements, the freight-rail system could carry the same volume of freight in 2020 as it carries today, but little more. Freight that could not be handled by the railroads, much of it heavy commodities, would move to trucks and the highway system. This would shift almost 900 million tons of freight and 31 billion truck VMT to the highways, costing shippers $326 billion, costing highway users $492 billion (in travel time, operating, and accident costs), and adding at least $21 billion to highway costs over the 20-year period and as much as twice that.

At a level of investment that enabled the freight rail system to increase its share of freight traffic, and relieving some of the anticipated truck and congestion pressure on the nation's highway system. funding needs would be met by greater railroad investments and increased public-sector participation. This would allow freight rail to carry a larger percentage of freight tonnage in 2020 than it carries today (17 percent in 2020 compared to 16 percent today). It would shift 600 million tons of freight and 25 billion truck VMT off the highway system, save shippers $239 billion, save highway users $397 billion, improve air quality, and reduce highway costs by $17 billion. Inclusion of costs for bridges, interchanges, etc., could double this estimate.

With a higher level of investment, the freight rail system could maintain its current share of commodity-lane traffic, and accommodate its "fair share" of forecast growth in freight-rail tonnage.

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To simply keep up with freight rail's share of the forecast freight transportation demand maintenance the freight-rail system needs substantial capital investment in the following categories:

- Rail Safety Needs — $13.8 billion
- Short-Line Improvements — $11.8 billion
- Class I Infrastructure Repair and Maintenance — $4 to $5 billion annually, or $80 to $100 billion over 20 years

- Class I Infrastructure Improvements, above and beyond Repair and Maintenance $3.5 billion annually, or $70 billion over 20 years

The total cost to maintain rail's share of freight movement in the U.S. is estimated at $175 to $195 billion over 20 years, most of which will come from the railroads (up to $142 billion dollars) from revenue and borrowing, but the remainder (up to $53 billion, or $2.65 billion annually) would have to come from other sources.

This level of investment reduces by 450 million tons of freight and 15 billion truck VMT the burden on the nation's congested highways, saves shippers $162 billion, saves highway users $238 billion, and saves $10 billion in highway costs over the 20-year period. Inclusion of costs for bridges, interchanges, and other necessary improvements., could double this estimate.