TRB SPECIAL REPORT

Funding Options for Freight Transportation Projects

This article is adapted from the Summary of Special Report 297, Funding Options for Freight Transportation Projects.

During the 1990s, capacity constraints became evident in parts of the U.S. freight transportation system, the consequence of economic and population growth and changing patterns of domestic and global commerce. The constraints impaired economic productivity, but resolving them taxed the institutional and financial capacities of public- and private-sector transportation providers. The most visible problems were congestion at certain important nodes of the system—for example, at the largest seaports and at terminal operations at inland hubs like Chicago, and their surrounding areas.

Improving freight flow at congested locations is a complex undertaking, requiring cooperative action by state and local government jurisdictions, federal agencies, and private-sector firms. Typically, the projects are intended to produce a mix of benefits to private firms—such as lower costs to freight carriers and shippers—as well as to local residents and noncommercial travelers—for example, reduced congestion. The projects usually involve coordinated packages of capital and operational improvements at publicly owned facilities, such as ports and highways, and private facilities, such as railroads and terminals.

The charge to the Transportation Research Board's Committee for the Study of Funding Options for Freight Transportation Projects of National Significance involved (*a*) an analysis of the rationale for public investment in freight infrastructure and an assessment of national significance as a criterion for determining federal government responsibility; and (*b*) an evaluation of alternative finance arrangements for freight infrastructure.

Government Responsibilities

To analyze the rationale for public investment in freight transportation projects, the committee considered three questions:

1. In what circumstances is public-sector involvement in the freight transportation system needed?
2. When is federal government involvement warranted?
3. When does the public-sector responsibility require building or paying for infrastructure, as

Photo: Al Covey, Virginia DOT

Heavy traffic volume on northbound I-81 south of Salem, Virginia.

opposed to any other form of intervention—for example, regulation?

Need for Government Involvement

In practice, government roles are dictated primarily by established responsibilities that are not likely to change fundamentally in the near term. Governments provide and operate most freight infrastructure, impose fees and taxes to support these facilities, provide research and information, and impose environmental and economic regulations.

Expansion of government involvement should be limited to certain defined circumstances in which market-dictated outcomes would be far from economically efficient. These include restraining the exercise of monopoly power and dealing with the nonmarket costs of pollution, congestion, and accidents.

Government involvement and leadership are practical necessities in complex projects—for example, large projects that extend through multiple jurisdictions, involve sensitive environmental issues, and entail coordinated improvements to publicly and privately owned facilities serving passengers and freight.

Need for Federal Involvement

The federal government has important opportunities for contributing to freight system performance and infrastructure development by improving established functions: the federal-aid programs for highways and airports; the systems directly provided by the federal government, such as air traffic control, inland waterways, and marine harbor channels; customs and border security; and environmental and economic regulations.

The federal government has responsibility to intervene when state and local governments and the private sector lack the capability to carry out an economically beneficial project. The federal government needs more effective instruments to carry out these responsibilities, however, including reforms in financial aid programs.

Although the term has been used in federal laws and in transportation policy debates, national significance is not a definitive criterion for deciding which transportation projects merit federal support or involvement. Any substantial freight transportation infrastructure project is significant to the national economy. A project should merit federal assistance if it is of high economic value and would not be accomplished by state and local governments and the private sector acting alone.

Forms of Government Intervention

Once the determination is made that government involvement at the federal, state, or local level is required, the most cost-effective action should be determined, considering public investment as well as other forms of intervention. Building or paying for infrastructure seldom is the only option for fulfilling the government responsibility. Regulation, taxation, pricing, and closer public–private cooperation can mitigate problems of pollution and congestion without shifting cost burdens for commercial facilities to the public.

Freight projects often include the goal of reducing the adverse community impacts from traffic. In practice, public–private cost sharing in such projects as rail–highway grade crossing separations is determined by negotiation. Inducing or requiring shippers and carriers to pay for impact mitigation is not detrimental to efficient freight system development, as long as the cost is justified by the benefit to the community.

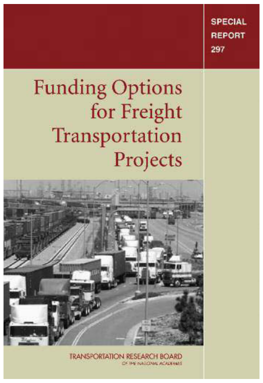
PHOTO: JOEDY CAMBRIDGE

Freight facilities at the Port of Oakland in California. Investments in port and freight infrastructure projects are often a complex undertaking involving local, state, and federal government entities, as well as private-sector firms.

Evaluating Finance Alternatives

The committee reviewed the finance arrangements in prominent projects and the forms of government involvement in project development and finance to determine if present arrangements are adequately serving the needs of industry and the public. The criterion for judging the arrangements was the impact on the performance of the freight transportation system. Satisfactory finance arrangements should promote efficient investment and operation. The committee's findings are as follows:

1. Present finance arrangements are inadequate for maintaining and improving freight transportation system performance. The future reliability of present major sources of public funding is uncertain. Of equal importance, public-sector finance



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arrangements often are not designed to provide incentives for the efficient development and operation of transportation facilities. Several problems hinder efficient operation and optimum investment:

◆ Public infrastructure providers fail to optimize performance; congestion often could be avoided by demand management through pricing or other methods.

◆ Capital spending often is directed by distributional considerations instead of targeting investments that would yield the greatest public benefits.

◆ Public policies add to costs and discourage investment—for example, through regulatory delays and subsidies that distort competition.

◆ The institutional capacity and authority to undertake complex projects at major ports and transportation hubs are lacking, particularly when the participation of several government jurisdictions is necessary.

◆ Problems arise from external, social, and economic trends: rapid changes in patterns of freight demand complicates planning; increasing population density drives up the costs of infrastructure expansion; and security requirements—especially at ports and border crossings—impose new costs and administrative bottlenecks.

2. Finance reforms should be designed to promote productivity gains. Finance arrangements are among the most powerful instruments available for improving the performance of the freight transportation system. Choices concerning funding sources and fees charged to users strongly influence investment decisions and the use of facilities.

3. Finance reform options differ in their probable impacts on freight system performance. The committee reviewed proposals for new finance arrangements that differed primarily in four characteristics: the division between public and private responsibility for providing funds and for investment decisions; the division of responsibility between the federal and state governments; the kinds of fees charged to users of facilities and the dependence of project funding on fee revenue; and the extent of subsidies that allow shippers to pay less than the cost of service.

Revenue adequacy is a primary concern in designing finance arrangements. The most prominent revenue proposals include increasing the rates of the taxes that now pay for infrastructure, creating a new national or regional freight user fee, and funding more capital spending out of general government revenue. Another option, developing facility-specific user fees that reflect the cost of providing service—such as highway tolls and charges to port users—is consistent with the goal of improving system performance in most circumstances, although creating new facility-specific fees will be a challenge.

Recommendations

Guidelines for Federal Assistance

The guidelines listed below are intended to apply to federal involvement in projects that fall outside the bounds of the established finance arrangements for federal-aid highways and facilities directly provided by the federal government, such as inland waterways, harbor channels, and air traffic control.

◆ *The federal role in financial assistance should be facilitative and incremental.* Federal assistance should be employed to stimulate action by state and local governments or by the private sector when the potential economic benefit from improved freight mobility or the potential reduction in external costs is great.

◆ *Federal assistance programs should promote the development and use of well-designed facility charges and other local and facility-specific revenue sources.* Federal policy should encourage and provide incentives for the development of local and facility-specific revenue sources to pay for the construction and operation of freight facilities. Federal law should not impede the imposition of user charges, and federal programs should not offer grants if funds could be raised through user charges or other local sources.

◆ *Federal assistance programs should be flexible and adaptable to diverse infrastructure projects.* Any federal freight infrastructure assistance program should address projects on a case-by-case basis and should be flexible to address diverse needs. Federal assistance should include a variety of grants, loans, and other kinds of credit.

◆ *Legislation establishing federal assistance programs should direct the administration of the programs by defining project evaluation criteria instead of identifying projects to receive aid.* Project earmarking that circumvents executive agency evaluation weakens the effectiveness of federal transportation assistance programs.

◆ *Federal policy to promote efficient freight infrastructure development should encompass reforms in regulatory, management, and tax policies that affect freight infrastructure performance.* The scope of federal laws and programs that affect freight system performance and infrastructure development includes grant programs; direct federal provision and operation of facilities; environmental, safety, and economic regulation; border security; and impositions of special user taxes and general taxes that influence investment. A comprehensive federal policy must coordinate all of these to achieve the common objective of improved system performance.

Federal Discretionary Assistance Program

Congress should create a new discretionary assistance program to support freight infrastructure projects. The objective should be to apply federal resources to ensure completion of freight projects that would yield large national economic benefits or large reductions in external costs and that other government and private-sector parties could not complete in a timely and cost-effective manner. The program should be established initially as a test of the need for and value of a responsive and flexible federal program of assistance to freight projects. The main features of the program should be as follows:

◆ *Limited initial scale.* The program should be funded by a multiyear congressional authorization. Funding preferably would not be taken from revenue now dedicated to other transportation purposes, but initial funding from existing user taxes or general revenue funding would be acceptable.

◆ *Assistance awarded competitively.* Project selection should be based on policy objectives and evaluation criteria.

◆ *Limited initial duration and sunset.* The program should be enacted as a 4- to 6-year trial with an independent evaluation to determine if a larger, longer-term program is warranted.

◆ *Assistance in the form of grants and credit.* Aid should be in the form of credit assistance. Grants should be considered only when a loan would not suffice for a project to proceed and only for certain purposes, including preconstruction development assistance, incentives for projects that demonstrate innovative finance arrangements and administrative structures, incentives for multistate projects, and as leverage in promoting projects that are of high economic value yet face difficult local obstacles.

◆ *Limited federal participation.* The value of federal loans and grants should be a small share of the total project cost.

◆ *Focus on capacity enhancement or environmental mitigation.* The program should be devoted to projects to construct freight capacity, or to mitigate the harmful external impacts of freight traffic, or for equipment and start-up costs associated with operational improvements.

◆ *Preference for projects with user charges.* A project's ability to generate revenue from its users is evidence of its economic benefit and helps ensure that its operation will be sustainable.

◆ *Economic justification.* Applications for aid through the program should include standardized requirements to present the economic justification of the project.

◆ *Justification for federal involvement.* Applicants should show that federal involvement would speed project completion, lower costs, or increase the likelihood of success.

◆ *Outcome evaluation.* Applicants should present an analysis plan and commit to an evaluation of the completed project, comparing actual cost and use with projections.

◆ *Integration with other assistance programs.* A single application and review process should integrate administration of the program with freight project assistance.

Federal Credit Assistance and Tax Incentives

The federal government should make credit assistance more accessible and attractive to freight projects that merit federal support. Congress should reduce the bias in tax law for public instead of private development of highways and other infrastructure.

◆ *Direct federal loans and loan guarantees.* Changes should make the provisions of the Transportation Infrastructure Finance and Innovation Act more accessible to sponsors of freight projects and should give the U.S. Department of Transportation (DOT) increased flexibility to adapt assistance to the individual projects.

◆ *Tax-exempt bond finance.* To encourage private-sector participation, the tax laws should be neutral about the private management and finance of the

Photo: Alameda Corridor Transportation Authority

A freight train passes over the Henry Ford Bridge on California's Alameda Corridor.

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kinds of facilities commonly built by the public sector. This would require adjusting or eliminating the caps in federal law on the volume of private activity bonds that may be issued for highways and other projects.

◆ *Infrastructure banks.* If new federally sponsored infrastructure banks are created—as revolving funds capitalized by the government—their operation should be consistent with the principles for federal assistance recommended above. Preference should be given to projects that generate revenue for loan repayment and that meet requirements for efficient operation and pricing.

Federal Actions to Promote Revenue Sources

The federal government should reduce barriers to the development of local and facility-specific revenue sources to pay for construction of freight transportation facilities and should provide incentives to use these revenue sources.

◆ *Remove barriers to user charges and establish federal policy to support such charges.* Congress should reduce impediments to the imposition of charges by port authorities on cargoes passing through their ports. Federal policy should support such charges to provide revenue for the construction and operation of port facilities and access routes. In addition, provisions in the federal-aid highway program that restrict the imposition of tolls should be removed, although federal oversight may be necessary.

◆ *Promote user charges with incentives.* Federal assistance to freight infrastructure projects should include incentives to encourage transportation facility operators to undertake user-charge funding and to establish organizational arrangements for setting charges and providing facilities.

◆ *Remove barriers to international investment.* Congress should reduce legal barriers to foreign ownership, operation, and investment in the U.S. transportation industry, particularly in the maritime and aviation industries, to the extent consistent with national security.

◆ *Provide information, planning, and training assistance.* The federal government can promote use of local and project-specific revenue sources through information dissemination, planning assistance, and training.

Freight System Monitoring, Planning, and Project Evaluation

The federal government should expand its capabilities for freight system planning and project evaluation and for data collection for freight system performance monitoring.

◆ *Organizational structure.* U.S. DOT should designate or create a discrete, identifiable institutional home for project evaluation, performance monitoring, and technical assistance to state and local governments. The organization should have cooperative relationships with state and local governments and with the freight industry. It should provide useful products, including the evaluation and planning techniques that define best practices.

◆ *Freight system monitoring.* The federal government should expand its freight system monitoring program by developing a continuing, comprehensive, and systematic program to monitor the performance of the national freight transportation system and to identify sources of inefficiency. Monitoring should measure performance in physical and economic terms.

◆ *Freight system planning.* The federal government should improve capabilities for short-term forecasting and for short- and long-term scenario analysis of freight transportation markets and system performance. Planning methods should incorporate the consideration of risk and uncertainty.

◆ *Project evaluation.* The federal government should undertake a program of research, demonstrations, and outreach activities to develop and promote sound project evaluation in public freight infrastructure programs. The federal government should assist state and local government agencies in developing technical capacity for project evaluation.