Freight Issues in Surface Transportation Reauthorization

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June 2, 2009

Congressional Research Service
7-....
www.crs.gov
R40629

CRS Report for Congress
Prepared for Members and Committees of Congress

Summary

Economic growth and global trade have led to dramatic increases in goods movement over the past few decades. Despite current economic woes, this trend is expected by many to continue over the long term. The growth in freight transportation demand, in tandem with growing demand on the passenger side, has caused congestion in many parts of the transportation system, making freight movements generally slower and, in some instances, less reliable. Many observers argue that unless there are significant and focused increases in freight infrastructure investment, the freight system will become increasingly inefficient and a drag on the U.S. economy. While most agree that more investment is necessary to accommodate current and future freight demand, there is significant disagreement about the best way to accomplish improvements in freight system infrastructure. Among the most important areas of disagreement are how to raise new funds for investment, the magnitude of the amounts required, and the role of the federal government in the planning process.

There is currently no separate federal freight transportation program, only a loose collection of freight-related programs that are embedded in a larger surface transportation program aimed at supporting both passenger and freight mobility. Most of these programs are authorized by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA), P.L. 109-59, enacted in 2005 and expiring at the end of FY2009. A large proportion of the funding authorized by SAFETEA is provided to the states through the regular highway programs, such as the Surface Transportation Program, that provide significant benefits to the freight industry. Of the total funding only relatively small amounts were specifically dedicated to freight transportation improvements, leaving most decisions about the types of infrastructure improvements to fund largely to State Departments of Transportation (SDOTs) and Metropolitan Planning Organizations (MPOs). Because of this, some in the transportation community would like to see a larger and more well-defined federal freight program that addresses needs the regular programs have not or cannot address. Efforts to define and fund a freight program may be an important element of the reauthorization debate.

Because the reauthorization of SAFETEA predominantly concerns highway funding, the focus of this report is on truck freight and that portion of the rail industry that transports truck trailers and containers. The report begins with a brief introduction to the organization of the freight transportation industry and the issue of congestion in the surface transportation system. This is followed by a discussion of how freight fits into the current federal surface transportation program. The report then considers four main overarching freight transportation infrastructure issues that Congress will likely consider in the reauthorization debate: (1) the size of funding needs; (2) options in funding and financing; (3) freight planning and project prioritization; (4) and the need for and design of a federal freight program. Other specific program issues and options are then discussed. These specific issues are federal truck size and weight limits, truck-only (toll) lanes, intermodal network connectivity issues, and motor vehicle delays at highway-rail grade crossings. This report does not discuss environmental issues associated with freight movements such as carbon emissions and climate change, air pollution emissions, and noise.

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Introduction

Economic growth and global trade have led to dramatic increases in goods movement over the past few decades. Despite current economic woes, this trend is expected by many to continue over the long term. The growth in freight transportation demand, in tandem with growing demand on the passenger side, has caused congestion in many parts of the transportation system, making freight movements, in some instances, slower and less reliable. Many observers argue that unless there are significant increases in freight infrastructure investment, particularly investment targeted to known bottlenecks, the freight system will become increasingly inefficient and a drag on the U.S. economy. While most agree that more investment is necessary to accommodate current and future freight demand, there is significant disagreement about the best way to accomplish improvements in freight system infrastructure. Among the most important areas of disagreement are how to raise new funds for investment, the magnitude of the amounts required, and the role of the federal government in the planning process. To some extent, these disagreements emerge from the diversity and complexity of the freight system itself, including its modal organization (truck, rail, water, air, and pipeline), the different levels of public and private ownership and involvement by mode, and competition among different regions of the country.

There is currently no separate federal freight transportation program, only a loose collection of freight-related programs that are embedded in a larger surface transportation program aimed at supporting both passenger and freight mobility. Most of these programs are authorized by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA), P.L. 109-59, enacted in 2005 and expiring at the end of FY2009. The highway programs were authorized at $199.5 billion from FY2005 through FY2009, with $42.0 billion authorized in FY2009. A large proportion of this funding is provided to the states through the regular highway programs, such as the Surface Transportation Program (STP), that provide significant benefits to the freight industry. Of the total funding only relatively small amounts were specifically dedicated to freight transportation improvements, leaving most decisions about the types of infrastructure improvements to fund largely to State Departments of Transportation (SDOTs) and Metropolitan Planning Organizations (MPOs). Because of this, some in the transportation community would like to see a larger and more well-defined federal freight program that addresses needs the regular programs have not or cannot address. Efforts to define and fund a freight program may be an important element of the reauthorization debate.

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associated with freight movements such as carbon emissions and climate change, air pollution emissions, and noise.[1]

The Freight Transportation System

The freight transportation system is a complex network of different types of transportation, known as modes, that carries everything from coal to small packages over distances than can be domestic shipments of less than a few miles to international shipments of thousands of miles. This report focuses on trucking and rail, those mostly directly affected by the reauthorization of the surface transportation programs. Measured in ton-miles, about one-third of freight within the United States moves by truck and another one-third moves by rail (**Table 1**). (A "ton-mile" is one ton of freight shipped one mile and thus reflects both the volume [tons] shipped and the distance [miles] shipped). These are followed in importance by pipelines and water transportation. Measured in ton-miles, air transportation is a relatively minor mode because it is expensive to ship goods in this way. For this reason, goods moving by air tend to be of higher value and low-weight. Goods moved by pipeline are mostly oil, oil-based products, and natural gas. About three-quarters of international shipments to and from the United States, measured in weight, arrive or depart by ship. Most of the rest goes by truck (10%), rail (8%), or pipeline (5%). Measured in weight, international air shipments account for less than 1% of the total, but by value they account for 37%.[2]

The freight system can be thought of in terms of agents and infrastructure. The main agents are shippers and carriers. Shippers are the cargo owners that pay carriers, such as trucking firms and railroads, to transport their goods. Another set of agents are intermediaries between the shippers and carriers, known as third-party logistics providers, that arrange for the transportation of goods from among the various options available. In trucking, a shipper may be its own carrier with a fleet of in-house trucks. A shipper in this situation is also a private carrier. Trucking firms that hire themselves out to any shipper are known as "for-hire" carriers. The for-hire trucking industry can generally be divided into three categories: truckload (TL), less-than-truckload (LTL), and parcel carriers (such as UPS or FedEx). Truckload (TL) carriers transport shipments of sufficient size to fill or nearly fill a truck trailer and do so directly from an origin to a destination. LTL carriers transport smaller shipment sizes by consolidating and deconsolidating shipments utilizing a network of warehouses. Parcel carriers also utilize a network of warehouses to consolidate and deconsolidate shipments. "Owner/operators" are smaller for-hire trucking firms that sometimes operate under the authority of a larger trucking firm, and the owner of the truck may also be the driver. Drayage carriers specialize in transferring trailers between shippers and ports and rail terminals within a metropolitan area.

[1] See, for example, CRS Report RL34548, *Air Pollution and Greenhouse Gas Emissions from Ships*, by (name red acted).

[2] U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, *Freight Facts and Figures, 2008*, p. 15.

Table 1. Freight Shipments by Selected Modes

Mode of Transport	% of Total Value	% of Total Tons	% of Total Ton-Miles	Average Miles per Shipment	Value per Ton
Truck	70%	60%	34%	187	$775
Rail	3%	10%	31%	691	$198
Air	4%	<1%	<1%	1,299	$88,618
Parcel, USPS, Courier	8%	<1%	1%	914	$37,538
Truck and Rail	1%	<1%	1%	1,053	$1,480
Pipeline	7%	18%	16%	NA	$241
Water	5%	9%	11%	330	$401

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics (BTS), *Freight in America*, January 2006, pp. 7 and 25; except for avg. miles per shipment, which is from BTS and U.S. Census Bureau, *2007 Commodity Flow Survey, Preliminary Release*, December 2008.

Notes: One ton-mile is equal to one ton of freight transported one mile (a measure of both weight and distance). Figures do not total to 100% due to shipments by other multiple modes, unknown modes, and due to rounding.

Freight trucks run over a public infrastructure system of highways and streets that extends about 4 million miles. Of the 4 million miles, approximately 209,000 miles has been designated by the federal government as the "National Truck Network," a network of highways that can accommodate large trucks. This network includes the Interstate Highway System, which is approximately 47,000 miles. Overall, freight trucks account for only about 7% of all the vehicle miles traveled on the entire network. Trucks are a larger part of the traffic stream on Interstates, however, accounting for 12% overall, and 19% on rural Interstates.

The railroad sector is dominated by seven large railroads, or Class I carriers, that generally focus on hauling long distances. The Class I railroads are complemented by more than 500 short line and regional railroads that tend to haul freight shorter distances, provide rail connections between mainline networks, or between the mainline network and ports. Unlike the situation in the trucking business, railroad infrastructure, the rail track and associated components, is owned by the carriers themselves. The U.S. railroad network consists of approximately 140,000 miles of railroad, of which approximately 94,000 miles could be considered transcontinental or mainline railroad and 46,000 miles could be considered regional or local railroad. In some places, freight trains share space with intercity and commuter passenger trains.

Although trucks and railroads compete amongst each other to carry the cargo of some of their customers, they also partner with one another to complete the freight movements for other customers. For example, importers and exporters of containerized goods often use a combination of truck and rail to move their products to and from ports if they are located farther inland. This is why, as indicated in **Table 1**, freight shipments moved by a combination of truck and rail tend to be of greater distance and of higher value than goods moved by either mode singularly. Indeed, just as an individual shipping a package is probably concerned with the price and delivery time, and not with how it is transported, shippers also make modal choices based largely on price and their product's service requirements.

Freight Growth and Congestion

U.S. freight transportation demand rose on average about 1.2% per year between 1980 and 2006, measured in ton-miles, with rail growing somewhat more quickly than trucking.[3] In the decade from 1996 to 2006, truck ton-miles increased by 21% in total, while rail ton-miles increased by 35%.[4] About 9% of the 19 billion tons of commercial freight transported in the nation is international freight. Between 1990 and 2004, the value of goods exported from and imported into the United States as a ratio of its gross domestic product (GDP) increased from 12% to 21%, in inflation-adjusted terms.[5] Based on the relatively steady increases in freight tonnage in recent years, the U.S. Department of Transportation (DOT) projects that tons transported will almost double by 2035 and that international shipments will grow somewhat faster than domestic shipments.[6] Tons transported by truck are expected to grow by 98% and rail tons are expected to grow by 88% over this period. Reassessments of long term trends in light of a recent drop in freight transportation activity from a high point in February 2008[7] are only now being considered. Consequently, DOT's long term projections predate the current economic recession.

Because of the growth in freight and passenger transportation demand, there has been an increase in truck and rail congestion. This congestion is particularly pronounced in major urban areas that contain important freight hubs such as ports, airports, border crossings, and rail yards. A study of truck bottlenecks across the country estimated that they caused 226 million hours of truck delay in 2006, of which almost 90% occurred on urban freight corridors and about 10% on intercity freight corridors.[8] The top truck bottlenecks identified by the study were the I-710/I-105 interchange in Los Angeles, CA; the I-17/I-10 interchange in Phoenix, AZ; and the I-285/I-85 interchange in Atlanta, GA.[9] According to analyses by DOT, growth in freight transportation, coupled with growing demand on the passenger side, may cause highway congestion "to spread from larger urban areas and a few intercity routes to large stretches of intercity highways in both urban and rural areas."[10] **Figure 1** depicts congestion on the heavily traveled segments of the National Highway System in 2002 and how performance may deteriorate by 2035 without new capacity or operational improvements. Similarly, with forecast growth in freight rail demand, congestion on the rail system is expected to become much worse if significant improvements are not made.

[3] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics (BTS), *Freight in America: A New National Picture*, January 2006, p. 20.

[4] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics*, Table 1-46b, U.S. Ton-Miles of Freight (BTS Special Tabulation).

[5] BTS, *Freight in America: A New National Picture*, January 2006, p. 44.

[6] U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, *Freight Facts and Figures, 2007*, Washington, DC, p. 11.

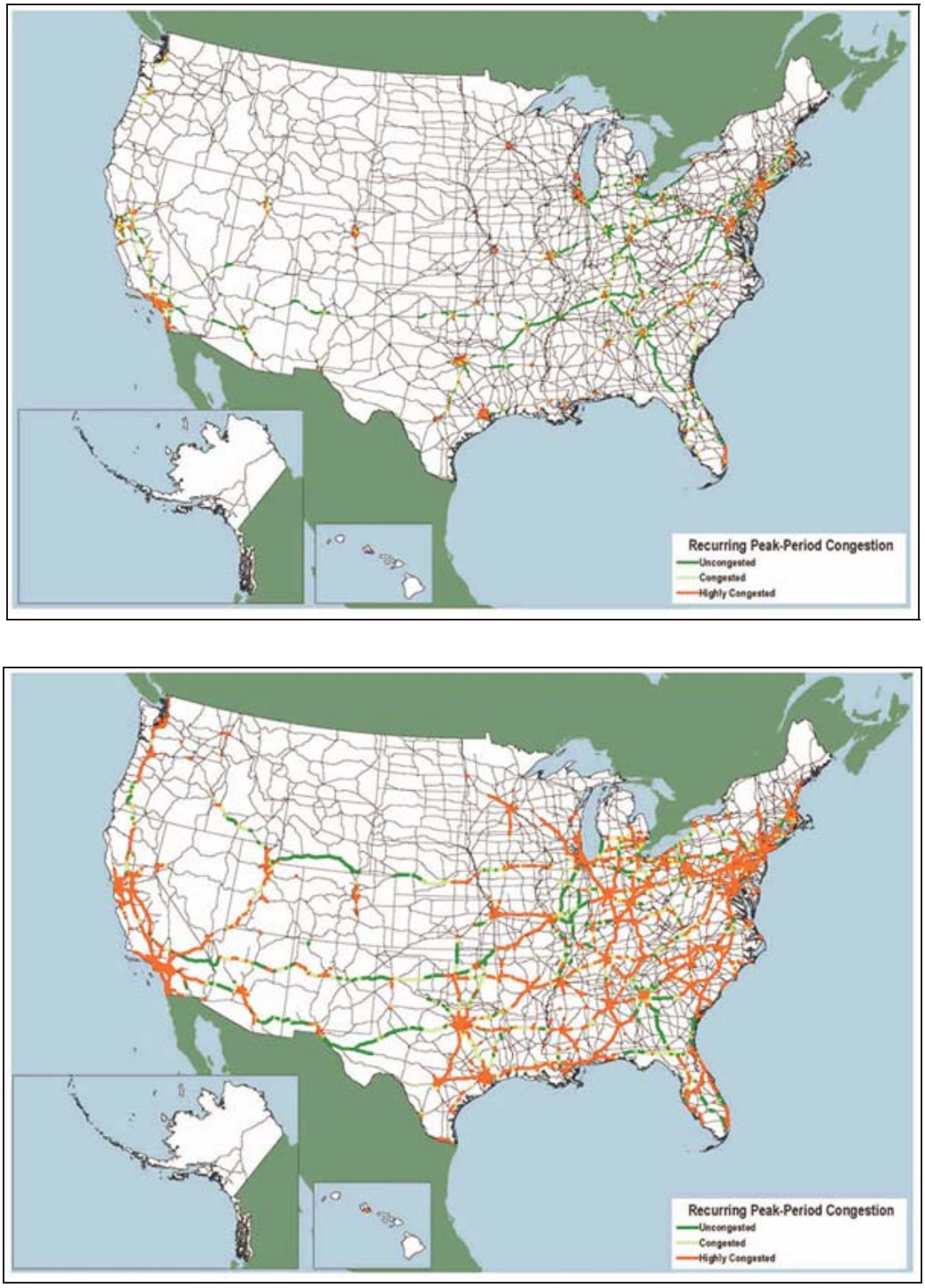
[7] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Transportation Services Index*, Washington, DC, February 11, 2009, http://www.bts.gov/xml/tsi/src/index.xml.

[8] U.S. Department of Transportation, Federal Highway Administration, *Estimated Cost of Freight Involved in Highway Bottlenecks*, Washington, DC, November 12, 2008, table ES-1, http://www.fhwa.dot.gov/policy/otps/freight.cfm.

[9] Ibid., table ES-2.

[10] U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, *Freight Story 2008*, Washington, DC, p. 16.

Figure 1. Congestion on the Heavily Traveled Segments of the National Highway System in 2002 (Top) and 2035 (Bottom) Without Improvements



Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, *Freight Story 2008*, Washington, DC, pp. 18-19, http://ops.fhwa.dot.gov/freight/freight_analysis/freight_story/index.htm.

Current Federal Freight-Related Program Elements

There is no separate federal freight transportation program, only a small set of individual freight-related programs that are part of the larger surface transportation program, which is aimed at supporting both passenger and freight mobility. The larger surface transportation program is predominantly composed of seven formula highway funding programs, also known as "core" programs, that account for roughly 80% of highway spending authorized by SAFETEA. These seven programs are: the National Highway System Program ($30.5 billion authorized FY2005 through FY2009); the Interstate Maintenance Program ($25.2 billion); the Surface Transportation Program ($32.5 billion); the Highway Bridge Program ($21.6 billion); the Highway Safety Improvement Program ($5.1 billion); the Congestion Mitigation and Air Quality Improvement Program ($8.6 billion); and the Equity Bonus Program ($40.9 billion).[11]

These core programs fund infrastructure improvements, especially of the highway system, that often benefit freight movement, and many types of freight infrastructure improvements are an eligible use of the funds. By providing money for highway infrastructure improvements that also benefit freight movement, the core highway programs are, in effect, the main federal freight programs. Because highway and bridge improvements benefit both freight and passenger mobility it is impossible to say with any certainty how much funding primarily benefits freight movement. Nonetheless, many freight stakeholders argue the current transportation infrastructure improvement process tends to favor projects that are predominantly passenger-related. For this reason, some in the freight transportation community have argued for freight-specific improvement programs. The individual freight-related programs that currently exist can be divided into three categories: special funding programs, other miscellaneous programs (such as freight planning), and financing initiatives. Altogether theses individual freight-related programs are authorized at less than $5 billion from FY2005 though FY2009 billion under SAFETEA, about $1 billion annually.

Special Funding Programs

In addition to the core highway programs, SAFETEA authorized five other infrastructure investment programs with specific relevance to freight transportation worth a total of about $4.6 billion from FY2005 through FY2009. The five programs are: the National Corridor Infrastructure Improvement (NCII) program ($1.9 billion); the Projects of National and Regional Significance (PNRS) ($1.8 billion); Coordinated Border Infrastructure ($833 million); the Freight Intermodal Distribution Pilot Grant Program ($30 million); and the Truck Parking Facilities program ($25 million). Although PNRS and Coordinated Border Infrastructure theoretically might be considered freight-related programs, neither is exclusively so, because both can fund projects that are predominantly passenger oriented. Additionally, much of the funding in the two largest programs, NCII and PNRS, was earmarked in SAFETEA for specific non-freight projects.

The NCII program, authorized at nearly $2 billion over five years, is a discretionary program intended to fund construction of highway projects in nationally important freight corridors, but all of the money in the program was earmarked in SAFETEA for specific projects. The NCII

[11] For more information on these programs see CRS Report RL33119, *Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU or SAFETEA): Selected Major Provisions*, by (name re dacted).

replaced the National Corridor Planning and Development Program authorized in the Transportation Equity Act for the 21st Century (TEA-21; P.L. 105-178). The other relatively large freight funding program, authorized for a total of $1.8 billion, is the PNRS program, which provides funding for high cost projects. PNRS projects theoretically must have a total cost of $500 million or more or be 75% of the apportionment of highway funds of the state where the project is located for the most recently completed fiscal year. As with the NCII, all of the funding in the PNRS program were earmarked in SAFETEA, to 25 projects.[12] Project eligibility includes any surface transportation improvement under Title 23 U.S.C., including freight railroad projects.

Intended to fund highway projects to improve the movement of cars and trucks at land border crossings, the Coordinated Border Infrastructure Program was authorized in SAFETEA for a total of $833 million over five years. The funds are distributed to border states by formula based on factors relating to the number of points of entry and amount of passenger and freight activity. Two smaller freight infrastructure programs, the Freight Intermodal Distribution Pilot Grant Program and the Truck Parking Facilities program, were also authorized in SAFETEA. The Freight Intermodal Distribution Pilot Grant Program was authorized at $30 million, with the funds earmarked for six projects. The purpose of the program is to fund intermodal freight facilities (including inland ports) in order to relieve congestion, facilitate international trade, and improve safety. The Truck Parking Facilities program is a discretionary pilot program designed to combat the shortage of long-term parking for commercial vehicles on the National Highway System (NHS). This program was authorized for a total of $25 million in FY2006 though FY2009.

A few other programs may also provide benefits to the freight system. These include the Railway-Highway Crossings Program which authorized $220 million for each year FY2006 through FY2009 to reduce hazards at public railway-highway crossings; and the Capital Grants for Rail Line Relocations authorized at $1.4 billion, subject to appropriation, to help with rail line relocation and improvements to improve rail safety, motor vehicle traffic flow, quality of life, and economic development. Two sections of SAFETEA that earmarked funding for specific projects, Transportation Improvements ($2.6 billion) and High Priority Projects ($14.8 billion), may also provide some funds for freight projects among many other types of eligible projects.

As a reaction to the economic recession that began in late 2007, Congress passed and the President signed into law the American Recovery and Reinvestment Act of 2009 (ARRA) (P.L. 111-5). ARRA provides additional money from the general fund of the U.S. Treasury for surface transportation infrastructure with the bulk of the money to be distributed according to existing program formulas and program eligibilities. ARRA, however, also creates a substantially new $1.5 billion discretionary program to fund a wide range of infrastructure projects, in the range of $20 million to $300 million, on a competitive basis. Eligible projects include highways, transit, passenger and freight rail, and port infrastructure investments "including projects that connect ports to other modes of transportation and improve the efficiency of freight movement" (123 Stat. 204). DOT has proposed that requests for project grants, what it is calling "TIGER discretionary grants" be submitted by September 15, 2009, with decisions for funding made by February 17, 2010.[13] By law, funds must be obligated by September 30, 2011.

[12] The reauthorization bill initially introduced in the House in the 108th Congress, H.R. 3550, proposed that the PNRS program be authorized at $2.9 to $3.0 billion *annually* and to be distributed in a competitive grant selection process.

[13] Department of Transportation, Office of the Secretary, "Interim Notice of Funding Availability for Supplemental Discretionary Grants for Capital Investments in Surface Transportation Infrastructure Under the American Recovery and Reinvestment Act and Request for Comments on Grant Criteria," 74 *Federal Register* 23226-23237, May 18, 2009, (continued...)

Other Freight-Related Programs

Other federal freight-related programs address planning, training/education, and research. As with transportation programs in general, a certain amount of surface transportation funding dedicated to these activities is spent on freight-related activities. For example, federal funds are provided for state and metropolitan transportation planning, and some of these funds are used to plan freight-related projects. Within this context, there are at least two other programs that are specifically dedicated to freight. The first is the Freight Planning and Capacity Building Program (5204(h)) which under SAFETEA provides a total of $3.5 million (FY2006 through FY2009) to fund research, training, peer-to-peer information exchange between state/local freight practitioners, data and analysis, and public-private relationship building. The second is the National Cooperative Freight Transportation Research Program, authorized at $15 million (FY2006 through FY2009), which funds a research program administered by the Transportation Research Board of the National Academy of Sciences.

Financing Initiatives

Federal funding programs are grant-based programs in which states are reimbursed with tax revenues from the Highway Trust Fund. Financing initiatives, on the other hand, are a range of tools and institutional arrangements that rely more heavily on borrowing. There are three types of financing: loans, credit enhancement, and debt financing. Loans involve a project sponsor borrowing money from federal or state government. Possibly the most important existing loan program for freight infrastructure is the Transportation Infrastructure Finance and Innovation Act or "TIFIA" financing. Initially enacted as part of TEA-21 in 1998 (P.L. 105-178) to provide loans and other credit assistance to highway, transit, passenger rail, and publicly owned intermodal surface freight facilities (except ports or airports), the program was broadened under SAFETEA. TIFIA loans are also now available for public or private freight rail facilities providing benefits to highway users, intermodal freight transfer facilities, access to freight facilities, and port terminals if it involves a surface transportation improvement to facilitate intermodal transfers or improves access into or out of the port. As of February 2009, according to FHWA, TIFIA financing had amounted to $5.8 billion over the life of the program, with assistance provided to 18 projects costing $21.8 billion.[14] Other important loan mechanisms that have been created by Congress are State Infrastructure Bank (SIBs) and Rail Rehabilitation and Improvement Financing (RRIF).

Credit enhancement provides a project sponsor with funds as a backup to primary sources, thereby reducing investor risk and lowering the interest rate on borrowed funds. TIFIA financing provides this in the form of loan guarantees and lines of credit.

Debt financing typically involves selling bonds that must be repaid over time, with repayment coming from project revenues, such as tolls, or general government revenues. The federal government allows debt-financing in a number of ways. Most importantly, the federal government allows state and local governments to issue federal tax-exempt municipal bonds. Over the years, Congress has enacted a number of other programs and changes in the tax code to

(...continued)

http://edocket.access.gpo.gov/2009/pdf/E9-11542.pdf.

[14] U.S. Department of Transportation, Transportation Infrastructure Finance and Innovation Act website, "Approved TIFIA Projects," http://tifia.fhwa.dot.gov/projects/approved.cfm.

encourage debt financing in transportation including the Grant Anticipation Revenue Vehicle or "GARVEE" Bonds, and Private Activity Bonds (PABs).[15]

Issues and Options for Congress

There are likely to be four main overarching issues in reauthorization of the federal surface transportation programs with respect to freight transportation infrastructure: (1) the size of funding needs; (2) options for funding and financing federal investments; (3) freight planning and project prioritization; and (4) the need for and design of a federal freight program. In addition, there may also be discussion of other specific issues and policy options such as federal truck size and weight limits, the development of truck-only (toll) lanes, delays at land border crossings, intermodal network connectivity issues, including financing rail improvements, and motor vehicle delays at highway-rail grade crossings.

Funding Needs in Freight Infrastructure

One of the key issues in reauthorization for surface transportation infrastructure generally, and freight infrastructure specifically, will be the amount of funding to provide for these purposes. In FY2009, the highway program was authorized at about $44 billion, including highway safety and motor carrier safety programs, and research programs. Most of this money supports highway capital expenditures. In 2006, the most recent year for which comprehensive data are available, capital spending on highways by all levels of government was about $79 billion, of which about $34 billion (or 44%) was provided by the federal government.[16]

A number of reports have attempted to estimate future infrastructure needs based on current conditions and performance of the system and future projected demands. Although estimating future infrastructure needs is fraught with difficulty,[17] these reports have concluded that the nation's surface transportation infrastructure will require substantially more funding over the next few decades to deal with physical deterioration, congestion, and demand for both passenger and freight travel.[18] Three reports are of particular note: DOT's Conditions and Performance report,[19] and reports by two congressionally mandated commissions, the National Surface Transportation Policy and Revenue Study Commission[20] (Surface Commission) and the National Surface

[15] U.S. Department of Transportation, Federal Highway Administration, *Innovative Finance Primer*, Washington, DC, April 2002, http://www.fhwa.dot.gov/innovativeFinance/ifp/ifprimer.pdf.

[16] U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2006, Washington, DC, 2008, table HF-10, http://www.fhwa.dot.gov/policy/ohim/hs06/pdf/hf10.pdf.

[17] Problems associated with estimating future infrastructure needs include defining a "need" and predicting future conditions. Consumer demand is especially hard to predict because it depends on a host of things including economic conditions and public policy choices, such as how a service is funded and priced.

[18] See, for example, Transportation Research Board, National Cooperative Highway Research Program, *Future Financing Options to Meet Highway and Transit Needs*, NCHRP Web-Only Document 102 (Washington, DC, 2006), p. 2-16, http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_w102.pdf.

[19] U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration, *2006 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance*, Washington, DC, 2007, http://www.fhwa.dot.gov/policy/2006cpr/index.htm

[20] National Surface Transportation Policy and Revenue Study Commission, *Transportation for Tomorrow*, Washington, DC, 2007, http://www.transportationfortomorrow.org/final_report/.

Transportation Infrastructure Financing Commission[21] (Finance Commission). All three reports provide estimates of annual investments needed to maintain the current physical condition and performance of the system, and the amount of investments needed to improve conditions and performance. According to the Finance Commission, the estimates from the three studies for the cost to maintain highway transportation infrastructure (in 2008 dollars) were $112 billion (DOT), $131 billion (Finance Commission), and $172 billion (Surface Commission) (annually from 2008 through 2035). The annual estimates to improve the system were $158 billion (DOT), $165 billion (Finance Commission), and $231 billion (Surface Commission). According to the Finance Commission, about $65 billion is currently generated annually for highway capital expenses by all levels of government. This suggests, therefore, that government at all levels may need to boost the money they raise and spend somewhere between by 72% to 255%.[22] Assuming a 45% federal share, the annual federal cost of these estimated needs would be between $50 billion to $77 billion to maintain the system and $71 billion to $104 billion to improve the system.

Most estimates of investment need do not include freight rail transportation as a separate component. An exception is the Surface Commission's report which includes an estimate of freight railroad investment needs based on a study commissioned by the Association of American Railroads (AAR).[23] This report suggests that with things as they currently stand the level of investment in freight rail is likely to be around $3.9 billion annually. But for freight rail to maintain its current market share from 2007 through 2035, the report suggests there would need to be an annual investment of $5.3 billion (in 2007 dollars). For freight rail to increase its market share by 20% would require $7.1 billion annually (also in 2007 dollars).[24]

Although the federal government has provided about 45% of highway capital funding in recent times as noted above, and very little for freight rail infrastructure, based in part on these needs estimates, a number of groups have proposed that the federal government spend significantly more on freight transportation infrastructure going forward. For example, in its reauthorization proposal, the American Association of State Highway and Transportation Officials (AASHTO) recommends a six-year $545 billion surface transportation program including a freight program that would be approximately $10.3 billion per year over the six years. The freight program would be composed of $7 billion a year for a national freight corridors investment program, $3 billion a year for a general freight investment program, and about $0.5 billion a year for some existing freight programs, including the Coordinated Border Infrastructure Program and the Rail-Highway Crossings program.[25] Some have also suggested some federal contribution to freight railroads through mechanisms such as a tax credit.

The view that there should be much greater government spending, particularly by the federal government, is not unanimous. An opposing viewpoint, expressed by three Surface Commission

[21] National Surface Transportation Infrastructure Financing Commission, *Paying Our Way: A New Framework for Transportation Finance*, Washington, DC, February 2009, http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Mar09FNL.pdf.

[22] Ibid., chapter 2.

[23] Association of American Railroads, *National Rail Freight Infrastructure Capacity and Investment Study*, Washington, DC, September 2007, http://www.aar.org/IndustryInformation/National_Capacity_Study/~/media/Files/National_CAP_Study_docs/natl_freight_capacity_study.ashx.

[24] Surface Commission, 2007, Volume II, pp. 4-12 to 4-19.

[25] American Association of State Highway and Transportation Officials, *AASHTO Surface Transportation Authorization Policies: Freight Authorization Policy*, Washington, DC, 2008, http://www.transportation.org/sites/policy_docs/docs/vi.pdf.

commissioners, including then U.S. Secretary of Transportation Mary Peters, suggested that there is some need for additional resources in transportation infrastructure, but not to the extent estimated in the Surface Commission's report. They argued that "a failure to properly align supply and demand, not a failure to generate sufficient tax revenues, is the essential policy failure" in transportation infrastructure provision.[26] A key ingredient of change, in their view, should be market-based reforms of highway systems allowing for much greater reliance on tolling, particularly tolling that fluctuates with demand, and private sector participation. Moreover, they argue that the Federal role ought to be reduced and refocused in order to allow innovation at the state and local level. Many shippers and freight carriers, while acknowledging that an increased level of investment may be necessary, also stress that future investments should be better targeted to freight infrastructure, especially to chokepoints in the surface transportation system that severely inhibit the movement of freight.

Funding and Financing Options

If Congress decides to increase the amount of federal funding for freight transportation infrastructure and surface transportation infrastructure in general, then an important issue will be how to generate the needed funds. The revenues flowing into the Highway Trust Fund that provide the bulk of the money for the existing highway and transit programs are insufficient to maintain the current level of spending. The main options in reauthorization to generate more funding for freight infrastructure would be to raise the federal fuels tax that flows into the Highway Trust Fund, to institute other freight-specific user fees, or to develop alternative financing mechanisms such as a National Infrastructure Bank and public-private partnerships (PPPs). Another option might be to regularly fund highway programs with general funds as occurred on an emergency basis with the infusion of $8 billion of general funds into the Highway Trust Fund in September 2008 (P.L. 110-318) and the use of general fund monies for transportation infrastructure as part of the American Recovery and Reinvestment Act (P.L. 111-5) enacted in February 2009.

Advantages of raising the federal fuels tax in the short to medium term include the relatively large sums of money it generates and its low costs to change and administer. For these reasons, among others, both the Surface Commission and Finance Commission recommended that a fuels tax increase is the preferred way of providing more funds for infrastructure investment in the near term and a way to provide time to transition to more sustainable revenue mechanisms in the long term, such as a vehicle-miles-traveled (VMT) tax. Although estimated receipts from the fuels tax are subject to a good deal of uncertainty, as they depend on projections of travel demand and fuel usage, the current rule of thumb is that a 1.0-cent-per-gallon tax increase generates approximately $1.6 billion to $2 billion in revenue for the Highway Trust Fund as a whole and $1.3 billion to $1.6 billion for the highway account in particular, assuming 80% of the increase goes to the highway account and 20% goes to the transit account. A number of interest groups, including the American Trucking Associations and the Truckload Carriers Association, have expressed a willingness to support an increase in the federal fuels tax to fund surface transportation

[26] Surface Commission, 2007, Volume I, p. 60.

infrastructure investment.[27] But opposition to raising the fuels tax is widespread, and the Obama Administration has stated it does not support raising the fuels tax at this time.[28]

In contrast to raising taxes that generate revenue for the Highway Trust Fund, another option would be to develop new sources of funding. Some have suggested that tolling or some other form of user fee could provide new monies for infrastructure. Proposals have been suggested for a shipping container fee, vehicle tolling, customs revenue, a bill of lading fee, and a weight/distance tax. All of these have a number of advantages and disadvantages, but possibly the main disadvantages of them all compared with the fuels tax is that there would likely be significant start-up costs and it would be more difficult to raise the sums generated by modest increases in the fuels tax. For example, AASHTO estimates a $1 tax on a Twenty-Foot Equivalent (TEU) container would generate about $57 million in FY2010. Thus, it would take about a $25 tax per TEU to generate the same amount as a 1 cent increase in the fuels tax, roughly about $1.4 billion annually. Taxing container movements may also run afoul of international trade agreements.

Some have suggested that new funding ought to come with the creation of a new trust fund or account in the existing trust fund.[29] This Freight Transportation Trust Fund or Freight Transportation Account would thus ensure that at least some, if not all, of the revenues generated from freight-related sources would be dedicated to freight-related improvement projects.

In addition to funding programs, freight transportation improvements may also involve some type of public or private financing such as bonds, tax credits, or private equity. The federal government already provides a number of mechanisms to encourage public and private financing including a federal tax exemption for municipal bonds and private activity bonds, loans, and credit enhancements. Two specific options that have been proposed are a National Infrastructure Bank (NIB) and a federal tax credit. Federal tax credits have been proposed as one way to support capital investment in the privately owned and operated Class I freight railroads (H.R. 1806), as is now provided in limited form for smaller, Class II and Class III (or "short line") railroads (26 USC §45G). According to some, one of the main advantages of providing a tax credit is that it supports private sector investment without directing when and where that investment should take place. Apart from the foregone revenue, an objection might be that despite public support, the private railroad would retain its control over the use of the infrastructure. Some have argued, therefore, that a tax credit should come with greater federal oversight of railroad operations.

A NIB was proposed in the 110th Congress (S. 1926) as a new way to issue bonds for major infrastructure projects, and the Obama Administration has proposed $5 billion in its FY2010 budget to capitalize such a bank. These types of special entities and new bonding mechanisms have a number of advantages and disadvantages.[30] The main advantages of these special-purpose financing entities are: they could possibly provide an immediate source of extra funds for

[27] Rip Watson, "TCA Supports Fuel Tax Increase to Fund Highway Improvements," *Transport Topics*, March 16, 2009, p. 1.

[28] Christopher Conkey, "Raising the Federal Gas Tax is a No-Go," *Wall Street Journal*, March 4, 2009, p. A2.

[29] See, for example, Testimony of Mortimer Downey, Chairman, Coalition for America's Gateways and Trade Corridors, in U.S. Congress, Senate Committee on Environment and Public Works, *Hearing on Goods Movement on Our Nation's Highways*, May 8, 2008, http://www.tradecorridors.org/images/Testimony_for_EPW_Hearing_on_Freight.5.8.08.pdf.

[30] Congressional Budget Office, *Issues and Options in Infrastructure Investment*, May 2008, http://www.cbo.gov/ftpdocs/91xx/doc9135/05-16-Infrastructure.pdf.

infrastructure projects in comparison with annual appropriations; they could possibly reduce the federal government's share of project costs; and they could, it is argued, improve economic efficiency through better project selection. The main disadvantages appear to be the somewhat limited amounts available for spending, the cost of debt issuance, and that they may expose the federal government to the risk of default.

On the question of amounts available for spending with these types of mechanisms, S. 1926 proposed a $60 billion aggregate limit of bonds issued by the NIB. Some have suggested that these types of banks can leverage their initial capitalization in the range of a 2.5 to 5 multiple.[31] The proposal for the NIB, however, does not provide for an initial capitalization, thus it might be unable to leverage its maximum allowable amount of $60 billion. This is a relatively modest amount in the context of a surface transportation program currently authorized at approximately $50 billion per year, especially given S. 1926 does not limit eligible infrastructure projects to just those having to do with transportation.

Private financing is also a major feature of many proposals to develop public-private partnerships (PPPs) in the provision of freight transportation infrastructure.[32] The former Secretary of Transportation Mary Peters repeatedly stated that there is at least $400 billion of private sector capital available for infrastructure investment.[33] Again, this private investment is not "free" money, but is usually associated with a project-related revenue stream such as a vehicle toll or container fee. While most agree that PPPs will likely attract new private capital, some argue that the scale of this capital is likely to be relatively modest when viewed in the context of transportation infrastructure spending. Moreover, the recent turmoil in global finance has led to problems in securing both public and private financing for PPPs. For example, some have suggested that the failure to lease the Pennsylvania Turnpike to a private consortium was, in part, due to problems with the economy and credit markets.[34] Other problems with PPPs are their relative complexity compared with traditionally funded projects and the lack of specialized financial skills in SDOTs that are needed to develop such financing.[35]

Freight Planning and Project Prioritization

Another issue that may be of significant concern to Congress in reauthorization is the locus of control in freight infrastructure planning and project development. At the moment, decisions about what and where to build public freight-oriented infrastructure are largely made by SDOTs, metropolitan planning organizations (MPOs), and other local entities such as port authorities. Private infrastructure decisions, such as in freight rail, are largely made by the companies themselves, although such decisions can be influenced by regulatory oversight and participation by the general public. But because freight trips often exceed the jurisdiction of a single MPO or a state, it is often argued that local and state planning institutions have difficulty providing an end-

[31] U.S. Congress, House Committee on Transportation and Infrastructure, *Testimony of Bernard Schwartz, President and CEO BLS Investments*, Financing Infrastructure Investments, 110th Cong., 2nd sess., June 10, 2008, http://transportation.house.gov/Media/File/Full%20Committee/20080610/Schwartz%20Testimony_6-10-08.pdf

[32] CRS Report RL34567, *Public-Private Partnerships in Highway and Transit Infrastructure Provision*, by (name redac ted).

[33] U.S. Department of Transportation, "Over $400 Billion Available Today for Road, Bridge and Transit Projects U.S. Secretary of Transportation Mary E. Peters Announces," Press Release, DOT 43-08, Wednesday, March 26, 2008.

[34] Ari Natter, "Privatization in a Crunch," *Traffic World*, November 3, 2008, p. 14.

[35] FHWA, *Financing Freight Improvements*, p. 5.

to-end approach in addressing freight improvements. States and MPOs also may have a disincentive to do so because, while they bear the costs of improvements, the economic benefits may accrue elsewhere. Some hub cities have a preponderance of freight that is merely passing through their community rather than serving local producers or retailers. Land border ports of entry, gateway seaports, or interchange points in the rail network, in particular, must live with the negative side effects of freight traffic that is largely serving far away locations.

Concerns about this fragmented planning approach, particularly in the face of the projected growth in freight traffic, has led to calls for stronger federal leadership and a more systematic approach to addressing freight-oriented transportation needs. Many freight stakeholders and some policymakers argue that the federal government needs to articulate a coherent national transportation plan that identifies key freight corridors and gives priority to funding these corridors. Addressing major freight bottlenecks can be difficult politically because it entails allocating large sums of federal dollars to relatively few, narrowly defined geographic areas. For example, according to the American Trucking Associations, just 5% of the U.S. road system carries 75% of the nation's truck traffic.[36] Chicago is the undisputed railroad hub of the country. Nearly three-fifths of all U.S. intermodal traffic and one-third of all rail traffic flows through Chicago.[37] While there are more than 40 container ports in the country, 90% of the volume of containerized imports and exports is handled at just ten port cities.[38] This concentration of freight activity is in contrast to the highly dispersed manner in which highway trust fund dollars are allocated to all of the 50 states.

To de-politicize the project selection process, some transportation policy experts have called for the formation of a national panel of experts to prioritize federal transportation investments. Such a panel, they suggest, could be modeled after the Base Realignment and Closure Commission (BRAC) that was formed to de-politicize military base closure decisions, or the Postal Regulatory Commission which sets postal rates. Rather than create a special panel, Congress might consider utilizing the transportation expertise at the DOT. Under the federal transit New Starts program, the DOT reviews projects and rates them as either "high," "medium-high," "medium," "medium-low," or "low." While the decision to fund a project still rests with Congress, this process is believed to create a more meritorious selection process.[39] Not surprisingly this process can be very contentious, and it takes a large amount of staff time for FTA to administer.

Not everyone agrees, however, that a stronger federal role is necessarily the best approach. Because freight issues vary dramatically from one hub or region to the next, an alternative view is that they are best addressed at the state and local level. While SDOTs and MPOs will understandably consider freight transportation improvements with their local interests in mind, this does not necessarily mean that the national interest will be neglected. The Alameda Corridor in Los Angeles, the FAST Corridor in the Seattle and Tacoma region, and the CREATE project in Chicago are examples of projects initiated locally and motivated by local needs but that nevertheless benefit the national transportation system because they are located on major national

[36] ATA, *Transport Topics*, December 8, 2008, p. 28.

[37] TRB, Rail Freight Solutions to Roadway Congestion – Final Report and Guidebook, NCHRP Report 586, 2007, p. 49.

[38] The Ports of Los Angeles and Long Beach and the Port of Seattle and Tacoma are counted as one port city. U.S. DOT, Maritime Administration, based on 2007 data.

[39] In a 2004 GAO report on Highways and Transit, GAO recommended that this process be adopted for other federal transportation funding programs.

freight corridors. The primary drivers for these projects are a combination of making their freight facilities more competitive in order to retain jobs in the area and mitigating the negative effects of freight traffic. These projects, nevertheless, have all received federal funding, support that some might say made a significant difference in whether or not they moved forward and how quickly.

Freight Program Options

With significant challenges in freight transportation infrastructure planning and funding, as discussed above, another overarching issue that Congress may need to address in reauthorization is how to design a freight program. There are at least three ways that Congress might consider in doing this: (1) to create a separate freight program, that is specific programs that are dedicated to freight-related infrastructure, with significant amounts of funding; (2) to leave the funding programs largely as they are, perhaps with greater funding, but improve the relative stature of freight-related projects in the planning process; and (3) to leave the funding programs much as they are, and to expand the financing options available for surface freight transportation infrastructure.

Among national transportation advocacy groups there appears to be a good deal of agreement that the federal government needs a larger freight infrastructure investment program, with funding separated from the regular surface transportation funding programs. The Highway Users Alliance, for instance, argues for establishing a new freight program that is funded from a new account set up in the Highway Trust Fund. As mentioned earlier, AASHTO argues that Congress should authorize a six-year freight transportation program for $10.3 billion per year. And the American Road and Transportation Builders Association (ARTBA) has developed a proposal for developing Critical Commerce Corridors, which it describes as a "25-year federal initiative focused exclusively on developing the surface transportation capacity necessary to facilitate the secure and efficient movement of freight."[40]

Congress could keep the fundamental structure of the current surface transportation program, but enhance the prospects of freight projects in the state- and MPO-administered surface transportation program. One way of doing this would be to increase federal funding for Interstate System highways, and possibly other types of major highways as well. Increased Interstate System funding would not dictate to states and MPOs that they necessarily make freight-related improvements, such as focusing on freight bottlenecks on urban Interstates. But because the Interstate System is the main publicly owned component of the freight transportation system, many different types of improvements would likely make a significant difference to freight mobility. Detractors might argue that this modally constrained approach in an increasingly intermodal world will lessen its effectiveness, and that there is no guarantee that states and localities will spend the money on Interstate projects that will provide the most benefits to trucking.

One major study of the Interstate System, completed in 2007, proposed that to accommodate increased traffic over the next 30 years 173,000 additional lane miles would be needed to complement the existing 212,000 lane miles.[41] Their estimate would require an investment of

[40] American Road and Transportation Builders Association, A New Vision and Mission for America's Federal Surface Transportation Program: ARTBA Recommendations for SAFETEA-LU Reauthorization (Washington, DC, 2007), p. 53, http://www.artba.org/pdf/SAFETEA-LU_Recommendations_1107.pdf.

[41] Transportation Research Board, *Future Options for the National System of Interstate and Defense Highways*, (continued...)

$103 billion per year over 30 years (in 2007 dollars). This compares with a current highway capital outlay by all levels of government on all types of roads of about $70 billion (in 2004 dollars). Of the total mileage and cost, about 68,600 lane miles at a cost of $27 billion per year would be to improve freight logistics (the other two components in the proposal are 73,600 lane miles at a cost of $71 billion per year for metropolitan mobility, and 30,700 miles at a cost of $4 billion per year mostly for connections to places that have emerged since the Interstate System was planned). This study suggests that tolling would probably have to play a greater part in funding such a program.

A discussed in the previous section, another possibility for enhancing the stature of freight projects is by modifying the state and MPO transportation planning process. Policy options for enhancing freight planning include funding a much larger federal Freight Planning and Capacity Building Program, providing specific funds for freight planning within the planning process, and mandating freight mobility plans at the state and MPO level. Because many freight mobility projects are large, multi-modal, and multijurisdictional, AASHTO has suggested that Congress should provide funding for multi-state corridor planning and investment organizations, such as the I-95 Corridor Coalition.[42]

A third broad option that Congress might consider is to enhance and expand new financing options, particularly those that might benefit freight transportation infrastructure. These include increasing TIFIA funding and, as AASHTO has suggested, making "technical amendments to make the program more agile and more likely to be useful for freight projects."[43] AASHTO also suggests enhancing the ability of states to enter into multi-state State Infrastructure Banks (SIBs), providing federal capitalization for multi-state SIBs, expanding the availability of private activity bonds, and expanding and improving Rail Rehabilitation and Improvement Financing (RRIF) that was created in TEA-21 to replace financial assistance authorized by the Railroad Revitalization and Regulatory Reform Act of 1976 (P.L. 94-210). RRIF was reauthorized in an amended form in SAFETEA. As noted above, proposals have also included providing tax credits for freight railroad investment and for the creation of special-financing entities such as a NIB. In addition to these changes, Congress might also consider enhancing the ability of public agencies to engage in partnerships with the private sector. These public-private partnerships have become increasingly common, but still probably account for a relatively minor share of infrastructure financing. As well as enhancing and expanding financing incentives, policy options for increasing the amount of private investment in transportation infrastructure might include permitting greater use of tolling on the highway system and greater encouragement of innovative contracting practices.[44]

(...continued)

NCHRP Project 20-24(52)-Task 10, http://onlinepubs.trb.org/onlinepubs/trbnet/acl/NCHRP_20-24_52Task10_NCHRPFinal.pdf.

[42] AASHTO, *Freight Authorization Policy*, http://www.transportation.org/sites/policy_docs/docs/vi.pdf.

[43] Ibid.

[44] CRS Report RL34567, *Public-Private Partnerships in Highway and Transit Infrastructure Provision*, by (name redac ted).

Other Major Freight Issues and Policy Options

Specific program components that Congress may consider in reauthorization include federal truck size and weight limits, the use of truck-only (toll) lanes, delays at land border crossings, intermodal network connectivity issues, including financing rail improvements, and motor vehicle delays at highway-rail grade crossings.

Truck Size and Weight Limits

Federal restrictions on the size and weight of trucks are likely to be reviewed by Congress during the reauthorization because of the industry's contention that it is a potential means of increasing truck productivity and fuel efficiency—on a per unit of cargo basis. Current federal truck weight regulations restrict the maximum gross vehicle weight to 80,000 pounds.[45] An empty "18-wheeler" (tractor and trailer) typically weighs about 35,000 pounds, limiting the maximum cargo load to about 45,000 pounds. In addition to a maximum gross vehicle weight, trucks also must comply with maximum weight restrictions on a per axle basis which sets weight limits based on the number of axles and their distance apart. These per axle weight limits, called the "bridge formula," are intended to reduce the damage to bridges by distributing weight over a longer spacing among axles. Federal truck weight regulations apply only to the Interstate Highway System (47,000 miles) and to the roads that provide reasonable access to and from the Interstate System. Truck weight limits on all other highways and roads are regulated by the states. The federal government did not begin regulating truck weight limits until 1956 when weight restrictions were imposed on trucks operating on the new Interstate Highway System. Congress believed that the large federal investment in the Interstate System required more direct control over the weights of vehicles using the system.

Federal truck size regulations apply to the "National Network," a system of approximately 209,000 miles, which includes the Interstate Highway System plus principal arterial highways designated by the states and incorporated in federal regulations (23 CFR §658). Federal regulations prescribe a width standard, a minimum length standard, but no maximum length nor height restrictions.[46] The minimum length limit is 48 feet on the length of a single trailer and 28 feet per trailer for two trailers. In other words, no state is allowed to enforce a length limit that is below these minimum length limits. The maximum and minimum width of trailers allowed on the National Network is 102 inches. The most common semitrailer lengths range from 45 feet to 53 feet in length, and are typically used by the truckload carriers and may be used by less-than-truckload (LTL) carriers on the long-haul portion of a move. Twenty-eight foot trailers (called "pups") are commonly used by LTL carriers, sometimes pulling the trailers in pairs.

"Longer combination vehicles" (LCVs) are trucks pulling two or more trailers with a gross vehicle weight exceeding 80,000 lbs. These vehicles are allowed according to some states' broad interpretation of their grandfathered permit authority (discussed further below). The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA, P.L. 102-240) "froze" the overall length and gross weight of LCVs that were then allowed in each state as of June 1, 1991. This "freeze" applies both to the size of the vehicle and where these vehicles are allowed to operate. The freeze restricted LCVs to 16 states west of the Mississippi River and five state turnpikes east of the

[45] Weight limits are promulgated at 23 U.S.C. §127.

[46] Size regulations are promulgated at 49 U.S.C. §§31111 - 31115.

Mississippi River. "Turnpike doubles," typically two 48' trailers pulled in combination, are legal in 18 states, generally on Interstates, toll roads, and turnpikes. "Triples," which are three pup trailers pulled in combination, are legal in 17 states on major highways and toll roads under normal weather conditions. "Rocky Mountain Doubles," which is a combination of a 48' trailer and a pup trailer, are legal in 20 states.

While federal rules on truck size and weight might lead one to conclude that a national standard exists, in reality, the rules are different in each state. These differences occur because when Congress enacted a specific limitation, it allowed states that had a different rule in effect at the time of enactment to continue with their own rule. In addition, special exemptions to federal weight limits have been enacted for individual states, usually applying only to the transport of a particular commodity that is important in that state. In all, 23 U.S.C. §127 contains special exemptions for 15 states. In addition to the "grandfather rights," these special exemptions are a source of the variation in weight limits among the states. If a state determines that a truck load "cannot be easily dismantled or divided" to comply with federal size or the 80,000 pound weight limit, it is what is known as a "non-divisible load," and the state can issue a permit for the overweight vehicle.[47] These permits could be issued for a single trip, multiple trips, or on an annual basis. Even if an overweight vehicle is allowed because of a state's grandfather right or some other exemption and the load is also divisible, a state is likely to require a permit. States with lower weight limits than neighboring states or that border Canada and Mexico (which have higher weight limits) may be compelled to seek an exemption from federal weight limits. States with higher weight limits on their state highways than their Interstates may seek higher Interstate limits as a means of shifting heavy truck traffic from their state highways to the Interstates.

The American Trucking Associations (ATA) seeks to increase the allowable weight of trucks to 97,000 pounds by adding a third axle to the rear pair of axles. It also seeks to repeal the 80,000 pound gross vehicle weight limit and rely on just the bridge formula to determine maximum allowable weight. Small trucking firms and independent owner/operators are opposed to increasing truck size and weight limits, as is the Teamsters Union, whose members primarily drive for LTL carriers. This is because large trucking firms would likely have an advantage over smaller trucking firms if size or weight limits were increased since they could more readily convert their equipment to take advantage of the higher limits.

TEA-21 instructed the Secretary of Transportation to ask the Transportation Research Board of the National Academies to conduct a study of federal size and weight regulations for trucks operating on the Interstate System. This report was issued in 2002 and its first conclusion provides one perspective on the development of these regulations:[48]

> Present federal standards are for the most part the outcome of a series of historical accidents instead of a clear definition of objectives and analysis of alternatives. The regulations are poorly suited to the demands of international commerce; their effectiveness is being eroded by ever-expanding numbers and types of special exemptions, generally granted without evaluation of consequences; and freight traffic is bypassing Interstate highways, the safest and most efficient roads, to use secondary roads where the costs generated by that traffic are higher. The greatest deficiency of the present environment may be that it discourages

[47] Federal regulations define non-divisible as any load that if separated into smaller loads, would compromise its intended use, destroy its value, or require more than eight hours to dismantle.

[48] Transportation Research Board, Regulation of Weights, Lengths, and Widths of Commercial Motor Vehicles, Washington, D.C. 2002, p. 2.

> private- and public-sector innovation aimed at improving highway efficiency and reducing the costs of truck traffic because vehicle regulations are inflexible, and because highway users are not accountable for all the costs they generate.

Increasing truck size and weight limits involves trade offs among the goals of infrastructure preservation, safety, productivity, and mobility. However, there are no conclusive studies that quantify these trade offs. Increasing truck size or weight limits could lower trucking costs, possibly increasing the demand for trucking, and diverting some portion of intermodal rail cargo to single mode truck moves.

Truck Only (Toll) Lanes

Congress may consider the construction of parallel "truck only" lanes as a means of accommodating heavy truck traffic on some Interstate Highway segments. To entice the trucking industry to help finance their construction, these lanes could be built to accommodate heavier and longer combination vehicles. These vehicles could increase truck productivity without raising objections from motorists over safety concerns if they were restricted to truck only lanes. The New Jersey Turnpike (I-95) is the only highway that has lanes that function like truck only lanes for a significant distance, although the Turnpike's inner lanes are reserved for cars and its outer lanes are open to all vehicles. More common are truck lanes on steeper grades to allow lighter vehicles to pass but these lanes are not separated with barriers. Other states have been evaluating this option either for short segments of highway serving particular freight terminals in metropolitan areas or along entire stretches of Interstate highway running through their and neighboring states. A Georgia DOT study of truck only lanes in the Atlanta metropolitan area and on I-16 near the Port of Savannah concluded that truck only lanes would not be cost effective, provide minimal congestion relief to motorists (because most truck traffic was already running at non-rush hour periods) and only increase peak period speeds on the highways under consideration by 10 mph.[49] Other studies indicate that truck only lanes could be feasible on highway segments where trucks account for 20-30% of the vehicle mix and where peak and non-peak vehicle density exceeds certain thresholds.[50] The states of Missouri, Illinois, Indiana, and Ohio are evaluating truck only lanes along a 750 mile stretch of I-70. These states have received $5 million in federal funds to study this option as part of the FHWA's "Corridors of the Future" program.[51]

The Interstate and Defense Highway System was built and is maintained at a significantly higher cost, in part, to accommodate the demands of heavier and larger vehicles, including the needs of the military to transport tanks and other heavy equipment. Road bed structural support, wider lanes, bridge structures, and limiting grade pitches are just some of the significant extra costs necessary to accommodate trucks; therefore, pushing trucks off these lanes would, in the view of some observers, represent wasted capital.

Estimating the benefits of constructing separate truck lanes and analysis of alternatives, such as improvements to parallel railroad tracks, requires gathering and analyzing truck data, in particular the origin and final destination, and types of commodities trucks are carrying over the highway

[49] "Truck-Only Lanes Won't Help Congestion, GA DOT Says," *Transport Topics*, March 10, 2008, p. 24.

[50] See for instance, Robert W. Poole, Jr. and Peter Samuel, "Corridors for Toll Truckways: Suggested Locations for Pilot Projects, The Reason Foundation, February 2004; and a California DOT study available at http://www.dot.ca.gov/hq/traffops/trucks/ops-guide/truck-lanes.htm.

[51] For further information on this program, see http://www.corridors.dot.gov/index.htm.

segment. This information is not freely available because it is considered proprietary by trucking firms. Given the need of SDOTs and MPOs to conduct such analysis, policymakers might consider whether current federal efforts in collecting and publishing freight data, such as the Commodity Flow Survey and the Freight Analysis Framework, are adequate for evaluating further freight infrastructure improvements.

Intermodal Network Issues

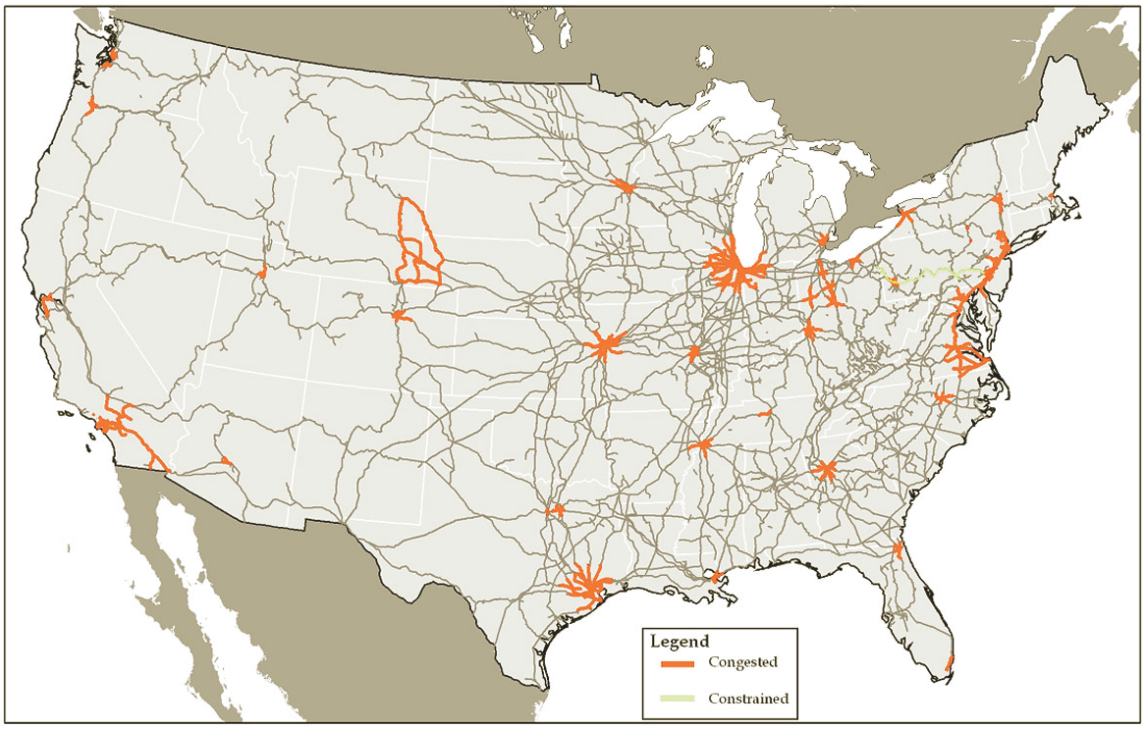
Railroad infrastructure is mostly held in private hands and much less is publicly known about the condition and performance of the railroad system compared to the highway system. Data that the railroad industry does provide publicly is aggregated so it is difficult to pinpoint locations with infrastructure constraints. One aggregate statistic that may indicate capacity constraints is freight train speed. This statistic measures the time it takes a train to travel between terminals and includes any time stopped along a siding but does not include any time spent within a terminal. Average train speed has declined from about 21 train miles per train-hour in 2000 to about 18 in 2006.[52] Track congestion could be a contributing factor affecting train speed but not the only factor. Trains carrying different commodities travel at different speeds. For instance, coal trains travel slower than intermodal trains so changes in the relative mix of cargo can also affect overall train speed.

Because the mainline rail system is a network, and the preponderance of rail cargo is moving long distances, a backup in one localized area can significantly affect fluidity on other parts of the system. This phenomenon distinguishes it from the highway network where the effects of bottlenecks are more local. AASHTO has attempted to identify freight-rail choke points and congested areas as shown in **Figure 2**.

The railroads largely rely on private financing to maintain and expand their infrastructure, but SAFETEA, as mentioned earlier, reauthorized and expanded a federal loan guarantee program for freight rail infrastructure (the RRIF program) and it provided grant funding to a particular rail route connecting the Port of Norfolk, Virginia to the Ohio Valley and beyond to Chicago (the Heartland Corridor Project). In the upcoming surface reauthorization debate, a question confronting Congress is whether the federal government could take a more active role in funding freight rail infrastructure. To the extent that railroads are able to convert long-haul truck freight to the rail mode they can offer public benefits in the form of improved highway safety, savings on highway wear and tear, reduced highway congestion, and reduced air pollution and oil consumption. To the extent that rail lowers the cost of long-haul freight movements it also expands the market reach of producers and manufacturers. These public benefits do not factor into a railroad's cost-benefit analysis of new construction but could justify public investment.

[52] AAR, Railroad Ten-Year Trends, no. 24, 1997-2006, p. 132.

Figure 2. Approximate Freight-Rail Choke Points and Congested Areas



Source: AASHTO, Freight Transportation Bottom Line Report, p. 3-11.

A relevant question is how much more truck traffic could the railroads capture if they were not limited by the resources of private capital. While the railroads are making incremental improvements to their system, some argue that government funding is needed to accelerate their pace of improvements. One study estimates that about a quarter of truck freight could be handled at a 25% lower cost if rail infrastructure existed to support it.[53] Because the study estimates an 80% reduction in social costs (congestion, safety, and pollution) could be achieved through this modal shift, it recommends public investment in rail infrastructure.

Intermodal Rail Infrastructure Gaps

The U.S. railroad network was largely built by 1925, and since then, the cargo mix carried by railroads has changed significantly. Consequently, there is often a disconnect between the design of the rail network and the market it serves.[54] Intermodal cargo is a prime example. A good deal of intermodal cargo imported from Asia must travel through Chicago on its way from West Coast ports to final destinations in the East. Rail lines were built largely to haul cargo to Chicago, however, not to haul cargo through Chicago. Because there is no rail connection between some western and eastern rail terminuses in Chicago, as much as a third of the containers passing through Chicago must be trucked "crosstown" between a western and eastern railhead in order to make the interchange.[55] These crosstown truck trips, about 4,000 per day and averaging about 25

[53] Michael F. Gorman, "Evaluating the Public Investment Mix in U.S. Freight Transportation Infrastructure," Transportation Research Part A, v. 42, 2008.

[54] TRB, Rail Freight Solutions to Roadway Congestion – Final Report and Guidebook, NCHRP Report 586, 2007, p. 6.

[55] "Chicago Intermodal Problem," *American Shipper*, January 2001, pp. 67-70.

miles each, contribute to congestion on Chicago's urban freeways and add as much as two days to a transcontinental trip that takes a week or less in total. Similar interchanges are also required in St. Louis, Kansas City, Memphis, and New Orleans.

In lieu of a transcontinental merger, the eastern and western railroads have formed alliances to better streamline their intermodal service and in some cases this involves shifting interchange points to less-used track connections. Canadian National Railroad recently acquired a local railroad with a circumferential right-of-way around the west side of Chicago in order to streamline its operations. One observer suggests that the railroads build "thruport" facilities at their major interchange points in the Midwest to dramatically improve the fluidity of transcontinental traffic.[56]

Another intermodal rail infrastructure gap occurs in port cities that have not built "on-dock" or at least "near-dock" rail facilities and thus require "bridge trucking" to transfer overland long-haul cargo between the port and rail terminus. This drayage trucking contributes to highway congestion in port cities if the rail terminal is located on the other side of the city.

Some portion of the drayage trucking occurring in Chicago and port cities may be necessary because trains need sufficient cargo to a common destination in order to operate efficiently. Nevertheless, Congress might consider whether public funding could convert some truck drayage to rail. Filling these gaps in the intermodal rail network could require land acquisitions for rights-of-way or to expand rail yards at a cost that could be beyond the reach of private capital.

Line-haul Market Share Potential

While adding capacity to the rail network would seem to be important, there are significant economic risks to doing so. The economics of the intermodal rail mode depend on a number of factors. In addition to shipment distance, another factor influencing the railroads' ability or willingness to capture truck freight is the amount of freight moving, or "freight density," in a corridor. As distance and density increases, intermodal rail is more successful in capturing business. Intermodal rail's market share may be the greatest in the Los Angeles to Chicago corridor, which purportedly is the busiest freight corridor in the country and is more than 2,000 highway miles in distance. Another busy corridor is between Chicago and New York, about 800 highway miles in distance, where the railroads have captured about 50% of the truckload business, according to one railroad executive.[57] However, this same executive estimates that railroads have captured only about 5% of the market between the Southeast and Northeast regions of the United States.[58] This corridor is more heavily comprised of domestic shipments. The Los Angeles – Chicago and Chicago – New York corridors are heavily comprised of international shipments. Compared to international traffic, domestic truckload traffic may not be as remunerative to the railroads because it generally involves shorter hauls and a lower value cargo mix. There is significant untapped domestic truck freight that the railroads could capture, but

[56] Jean-Paul Rodrigue, "The Thruport Concept: Reconciling Time and Flows in Rail Freight Distribution," *Journal of Transport Geography*, v. 16, issue 4, July 2008.

[57] Charles Moorman, CEO, Norfolk Southern Railroad, presentation at the Merrill Lynch Global Transportation Conference, New York, New York, June 19, 2008

[58] Charles Moorman, CEO, Norfolk Southern Railroad, presentation at the Merrill Lynch Global Transportation Conference, New York, New York, June 19, 2008.

capturing this freight will require investment in additional capacity because international intermodal traffic has absorbed much line-haul and terminal capacity.

In addition to distance and density, another factor that can determine the railroads' ability or willingness to capture truck cargo is customer service requirements. Domestic truckload shippers are accustomed to relatively precise delivery windows while overseas shippers are accustomed to some risk of delay due to weather, labor, and political unrest overseas, or customs issues. Rail service performance, in terms of consistency and door-to-door transit times, will have to improve to attract more domestic truck shippers. For example, UPS seeks greater use of intermodal rail but rail service shortfalls have required it to shift some shipments back to the highway mode.[59] However, there are cost-benefit trade-offs for both the railroads and their potential intermodal customers. The question is whether potential customers are willing to sacrifice some service performance for a lower freight bill and whether railroads are willing to invest in additional infrastructure necessary to provide better service.

Another factor that could limit diversion of truck traffic to the rail mode is the fact that a significant portion of truck freight is carried by private carriers and "owner/operators" that have not converted their fleets to containers and chassis as the large "for-hire" trucking firms have done.

Intermodal Connector Roads

Congress might consider the importance of roads linking airports, seaports, and rail terminals with the Interstate Highway System. Almost all air cargo begins and ends its journey in trucks as does intermodal rail and containerized seaborne cargo. As discussed above, these intermodal combinations of freight transport have been a fast growing segment of goods movement in the United States, consist of higher-value goods, and are closely tied to international trade. While these "intermodal connector" roads are relatively short segments, generally less than two miles in length, DOT studies have found that they often suffer from poor pavement condition and substandard geometrics (narrow lanes, small-radius curves) because the roads often were not originally designed for the heavy truck traffic they handle.[60] Over half of the total mileage of intermodal connector roads is under local jurisdictional control, but municipalities may not have the funds or interest in making improvements and states may not have the authority to spend funds on local roads.[61] Both the House and Senate passed versions of SAFETEA contained a specific program for funding intermodal connectors but this program was eliminated by the conference committee.[62] In some cases, Congress provided funding for particular intermodal connectors in SAFETEA through earmarks.

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[59] U.S. Congress, House Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, *Freight and Passenger Rail: Present and Future Roles, Performance, Benefits, and Needs*, Testimony of Phillip Longman, New America Foundation, 111th Cong., 1st sess., January 28, 2009, http://transportation.house.gov/Media/File/Rail/20090128/Longmann.pdf.

[60] See, U.S. Department of Transportation, *NHS Intermodal Freight Connectors, A Report to Congress*, July 2000. Available at http://ops.fhwa.dot.gov/freight/freight_analysis/nhs_connect.htm. And, U.S. Department of Transportation, Maritime Administration, *Intermodal Access to U.S. Ports - Report of Survey Findings*, August 2002. Available at http://ntl.bts.gov/lib/12000/12200/12276/Intermdlaccess_US_Ports.pdf.

[61] FHWA, Office of Freight Management and Operations, Freight News – National Highway System (NHS) Freight Connectors, May 2003.

[62] See section 1303 of H.R. 3 as passed in the House and section 1203(c) of H.R. 3 as passed in the Senate, 109th Congress.

The development of "logistics parks" by railroads – a cluster of warehouses built around a rail terminus, are essentially an effort by the railroads to re-consolidate consumer product distribution centers that have been scattered by circumferential highway building around cities. These parks can eliminate the truck move from the rail terminal to the warehouse but could lengthen the truck move from the warehouse to the retail store. An intermodal connector funding program could consider ways to finance road improvements to support these logistics parks.

Delays at Highway-Rail Grade Crossings

Congress may consider steering some funding toward projects that mitigate the negative effects of increases in freight traffic. Some cities and towns have experienced a significant increase in freight train traffic. Many freight trains are more than a mile long. Traveling at 20 mph, a mile long train will take about three minutes to clear a crossing. Crossing gates add another minute or two since they go down before the train arrives and do not rise until after the train has passed. Both highway traffic and railroad traffic has grown over the past few decades. The busiest rail corridors have over 100 trains per day, and some even more than 150 trains per day.

In terms of the duration of the delay, the larger problem is stopped trains blocking grade crossings. Most railroad mainlines are single tracked. Trains must pull off to a siding when approached by trains traveling in the opposite direction or when being overtaken by a faster train from behind. Trains may be stopped outside rail yards because there is not enough room for arriving trains in the yard or because some of the switching of rail cars between tracks requires the use of track outside the yard.

Cities are tackling road and railroad conflicts by examining the entire railroad network in their cities. One study estimated that in 1999, nationwide, at-grade highway-railroad crossings caused about 2.9 million-hours of delay on principal arterial highways; 91% of this delay occurred in urban areas.[63] A study by the Illinois Commerce Commission estimated that in Northeastern Illinois, the delay at railroad crossings costs each motorist approximately $250 per year (based on a nominal value of $30/hour.[64] Municipalities in northwest Indiana have reportedly accumulated nearly 2,000 delinquent traffic citations on railroads since 2004 for blocking grade crossings for more than half an hour.[65] These delays have led the City of Chicago to embark on the aforementioned CREATE project (the Chicago Region Environmental and Transportation Efficiency Program), a $1.5 billion plan to construct overpasses and underpasses to eliminate 25 highway railroad grade crossings and six rail-rail grade crossings (grade separating passenger track from freight track).

Other examples include the greater Houston area (Harris County) that has more than 750 at-grade crossings which it estimates is causing over 30,000 hours of vehicle delay per day. The City is considering trying to consolidate the eleven main rail lines that weave through the city into high-capacity, grade separated corridors. Laredo, Texas, which is the largest freight gateway between the United States and Mexico, has 80 plus at-grade crossings. While for decades these grade crossings experienced only one or two trains per day, now the neighborhoods surrounding these

[63] Oak Ridge National Laboratories, Temporary Losses of Highway Capacity and Impacts on Performance: Phase 2, October 2004.

[64] Illinois Commerce Commission, Motorist Delay at Public Highway-Rail Grade Crossings in Northeastern Illinois, Working Paper 2002-02, July 2002.

[65] U.S. Rail News, July 9, 2008, p. 11.

crossings endure constant engine and whistle noise, according to the director of the Laredo MPO.[66] The Texas Rail Relocation and Improvement Fund may be the only example of a state rail funding program that is specifically geared toward relocating rail lines out of urban centers. The Alameda Corridor and the Alameda Corridor-East projects in the Los Angeles area, the FAST Corridor in the Seattle and Tacoma area, and the ReTrac project in Reno are other examples of grade separation projects that addressed a series of crossings throughout a metropolitan area.

Depending on the status of the road or highway, grade separation projects can be funded under the existing National Highway System and the Surface Transportation Program. However, the high demand on these programs to fund "regular" highway construction normally leaves little available for grade separation projects.[67] As mentioned above, SAFETEA (section 1401) reauthorized a funding program specifically for improving safety at highway-railway grade crossings (aka the "section 130 program").[68] Because there are thousands of grade crossings in need of safety improvements and limited funds available, this program typically funds installation of better warning signals rather than much more costly grade separation projects. A state is eligible for a grant under the above mentioned Rail Line Relocation and Improvement Capital Grant Program (SAFETEA, section 9002) if it involves a lateral or vertical relocation of any portion of a rail line.[69] Congress did not appropriate any funds to this program until FY2008 when it appropriated $20 million, $5.3 million of which was directed to nine specific projects.

Re-examining Railroads' Share of the Cost of Grade Separation Projects

The railroads have minimal obligations to share in the cost of federally-aided grade separation projects. Railroads are responsible for paying for the cost of maintaining grade crossing warning devices, which railroads estimate amounts to more than $250 million annually.[70] State and local governments are responsible for paying for the installation of warning devices. Under current law, grade crossing separation projects are considered primarily a benefit to motorists, so the railroads are not legally required to contribute much to the costs of such projects if federal funds are involved.[71] Only at grade crossings with warning devices are railroads required to contribute 5% of the cost, since the grade separation would eliminate their cost of maintaining the warning devices. It is not uncommon for the railroads to contribute substantially more for grade separation projects in situations where they perceive an economic benefit to them in terms of improving train speed through an area. For instance, in the Chicago CREATE project, the railroads have committed to contributing an amount that equates to14% of the total estimated cost of the project.

In light of changing economic circumstances, policymakers might reevaluate the railroads' share of the cost for grade separation projects. When railroads were the dominant mode of transport in the late 1800s, the railroads covered the entire cost of grade crossing safety improvements.[72] A

[66] Written testimony of Samuel K. Selman, Director of Planning and Zoning and Director of Laredo MPO, House hearing, Transportation Planning, Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit, September 18, 2008.

[67] FRA, Impact of Blocked Highway/Rail Grade Crossings on Emergency Response Services, August 2006, p. 20.

[68] 23 U.S.C. 130.

[69] 49 U.S.C. 20154.

[70] AAR, Highway-Rail Grade Crossing Safety, Background Paper, May 2008.

[71] See 23 USC 130(b) and 23 CFR 646.210.

[72] U.S. DOT, Railroad-Highway Safety Part II: Recommendations for Resolving the Problem, Report to Congress, August 1972, p. 102.

landmark 1935 U.S. Supreme Court decision reasoned that the cost burden should shift from the railroads to motorists given the rise of road building and automobile use.[73] In the 1944 Federal Aid Highway Act (section 5(b)), Congress limited the railroads' share of the cost to a maximum of 10%. A 1972 U.S. DOT report to Congress recommended that the railroads' share of the cost be limited to 5%, and this recommendation was adopted in regulations promulgated in 1975.[74] This recommendation was partly based on the poor financial condition of the railroad industry at the time.[75] The improved financial condition of the railroads since then may stimulate a reassessment of their cost obligation. Also, if safety is the primary reason to construct grade crossing separations, then most of the benefits accrue to motorists because trains do not need protection from automobiles. However, if reducing motorist delays at crossings is the primary objective, then railroads conceivably have an economic interest in constructing grade separations at some crossings, particularly on access roads leading to rail intermodal terminals and container ports.

Conclusion

The freight transportation system is a complex network of different modes that compete with one another for business, but also, perhaps more often, complement one another to move shipments from origin to destination. Complementarity has arguably become more important in recent decades because of intermodalism, epitomized by the shipping container; the lengthening of supply chains through globalization; the trend away from modal carriers toward so-called "logistics providers"; and because of the growing occurrence of congestion, delay, and unreliability that lead shippers and carriers to seek alternatives and options in moving goods. While it may be true that the weaving together of modal networks has added a significant amount of complexity that makes public policy more difficult to craft, it is also possible that congestion, delay, and unreliability provide good signals for where government support is likely to result in large payoffs in terms of improving system efficiency.

This report discusses a number of policy options in the realm of goods movement that Congress may want to consider in reauthorization of the surface transportation programs. To begin with, Congress will likely need to decide on the overall level of federal spending for the surface transportation programs, and the source of the funds to pay for that spending. By many, though not all, accounts infrastructure investment needs in surface transportation are much greater than the amounts currently being spent. The main options for funding an increase in surface transportation spending are the federal fuels tax, other user fees, general revenues, or alternative financing mechanisms such as a NIB and public-private partnerships (PPPs). Financing mechanisms that typically rely on toll revenue are favored by some, not only because they raise funds for infrastructure investment, but because they can also be used to more directly price infrastructure use.

Another set of considerations have to do with the types of projects the federal government is willing to support and how to distribute the available funding. To some extent, this has to do with program eligibilities and other ways to favor certain types of projects, such as tax code

[73] Nashville, Chattanooga & St. Louis Railway v. Walters, 294 U.S. 405, 422-423.

[74] Federal Register, vol. 40, no. 69, p. 16060, April 9, 1975.

[75] U.S. DOT, Railroad-Highway Safety Part II: Recommendations for Resolving the Problem, Report to Congress, August 1972, p. 108.

provisions. But it also has to do with the locus of decision-making, be it a more top-down approach that might be achieved through larger discretionary programs administered by DOT or investment decisions made by a NIB, or by continuing with the current system that favors a more bottom-up approach with formula funding distributed to states and localities that initiate and define projects.

The questions of project eligibilities and decision-making have particular relevance for investment in freight-related infrastructure because, it is argued, that freight projects often lose out to passenger-related projects, freight projects tend to be more geographically concentrated than passenger projects, and because of the sometimes complicated relationship between the public and private sectors that is less of a concern in passenger projects. In this context, Congress may move to consider the option of creating a separate federal freight program in the overall federal surface transportation program. A separate freight program, that might perhaps be supported by funding from a freight account in the Highway Trust Fund, would provide a means of directing money to freight infrastructure investment. Less direct means might be to support freight planning efforts, greater Interstate construction and rehabilitation, and the funding of multi-state corridor planning and investment organizations like the I-95 Corridor Coalition.

A specific issue that Congress may want to consider in the reauthorization debate is whether to make changes to truck size and weight limits that might boost truck industry productivity, but might also have the potential to reduce highway safety. Congress may also want to consider two other options: building truck-only lanes that, while costly, might improve both productivity and highway safety; and greater focus on local roads that connect the NHS to ports, airports, and freight rail terminals. Another important set of policy questions relate to financially supporting the freight rail industry, a mostly private enterprise, but one that promises a range of social benefits including enhanced freight system efficiency, improved highway safety, and reductions in environmental damage. One option Congress may want to consider in this regard is to make it easier to use federal funds to build freight rail projects with potentially large public benefits. Another option is to support private investment in railroad infrastructure with tax credits.

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