FREIGHT RAIL

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2010 Report Card for Pennsylvania's Infrastructure

Pennsylvania has the fifth largest rail system in the U.S. and in 2007, 201.6 million tons of freight passed through the commonwealth. By 2035, that value is expected to increase to 246 million tons. Freight rail demand is growing and railroad traffic is steadily approaching WWII-era levels. While the condition of much of Pennsylvania's rail freight system is good, investment in rail infrastructure will need to increase to meet growing demands. Projects that could be undertaken to address those needs total $280 million, while just the annual state of good repair track and bridge expenditures for all railroad classes within the state are projected to be approximately $560 million. Class I and Class II railroads are in a better position to cover their own financial needs, but smaller railroads—which are crucially important to the overall rail freight system—are not and will need more assistance to remain competitive.

BACKGROUND

Since the mid-1800s, rail transportation has been the centerpiece of industrial production and energy generation, and rail continues to be central to these industries. Besides supporting the national production and energy sectors and contributing to job growth and economic development, a number of other benefits result from supporting rail freight. A good rail freight network can mitigate traffic congestion, improve air quality and increase transportation safety by curtailing truck traffic growth on highways. Railroads also remain the safest and most viable mode for transporting hazardous materials, coal, industrial raw materials and large quantities of goods. From the perspective of national security, railroads are one of the most secure systems for transporting dangerous or hazardous products. For example, in the future, the majority of spent nuclear fuel rods will likely be sent via rail to a new federal depository in the western U.S. and many of these shipments will pass through the Keystone State.

CONDITIONS

Pennsylvania is a national leader in freight assessment, planning and investment, benefiting from the legacy of the state's rich historical and industrial heritage. Most railroads are privately owned and Class I and mid-sized railroads operating within the commonwealth's borders are generally able to finance capital improvements on their own. However, short-line railroads have more difficulty making the needed infrastructure investments to remain viable and competitive and these smaller railroads are important feeders and supporting players in Pennsylvania's overall transportation network.

Pennsylvania has approximately 5,145 route-miles of freight railroad operated and 66 freight railroads, more than any other state. The state has four Class I railroads—CSX, Norfolk Southern, Canadian Pacific, and Bessemer and Lake Erie Railroad Company (owned by Canadian National); two Class II railroads—Buffalo and Pittsburgh Railroad and Wheeling and Lake Erie Railroad; 36 Class III railroads, also known as short-line or local-line-haul railroads; and 24 local switching and terminal railroads.

Commodities originating and terminating in Pennsylvania and carried by rail are dominated by coal, which comprises 61 percent of originating tons and 45 percent of terminating tons, and intermodal freight. Other important commodities include primary metal products, petroleum, chemicals and food products.

Pennsylvania's core, or strategic, rail lines carry some of the highest volume in the nation. For example, the former Pennsylvania Railroad main line—now Norfolk Southern—connects Philadelphia, Harrisburg and Pittsburgh and extends to Chicago. This line carries more than 120 million gross tons (MGT) annually. Other very high-traffic rail lines in the Keystone State include CSX's east-west line through Erie at 113 MGT; CSX's line through Connellsville, Pittsburgh and New Castle at 100 MGT; Norfolk Southern's Reading-Bethlehem-Easton-New Jersey line at 100 MGT; Norfolk Southern's Hagerstown, Md.-Harrisburg line; and CSX's line from Chester to Yardley. Another important trunk line is Amtrak's Northeast Corridor, a portion of which passes through southeast Pennsylvania, including Philadelphia. Some freight is moved on this predominantly passenger rail corridor. Notably, Pennsylvania is dominated by "through" rail traffic. More than half of all freight tons do not originate or terminate in the commonwealth.

At the other end of the spectrum, there are a number of rail lines in Pennsylvania considered "at risk" because of low traffic density. At risk means that these low traffic density lines may be abandoned because traffic revenue may not be sufficient to maintain the line. It is the lower density rail lines that are normally the object of publicly funded rail preservation efforts when the rail line is capable of growth and development and where continuation of rail service provides public benefits. With annual traffic of less than five MGT, 124 Pennsylvania rail lines are considered at some risk of abandonment. Of these 124, 96 are considered especially at risk because they carry annual traffic of less than one MGT.

Statistical forecasts indicate that freight traffic will continue to increase in Pennsylvania. The Federal Highway Administration (FHWA) estimates that increases of up to 70 percent can be expected in the Northeast between 2003 and 2013. Another forecast by the United States Department of Transportation predicts an approximate doubling of surface transportation between 2000 and 2020. This indicates an alarming increase of vehicle miles traveled at a rate of four times population growth. In 2007, 201.6 million tons of freight and 4.2 million carloads passed through the commonwealth. In 2035, that number is expected to be 246 million tons and 6.3 million, respectively. The Pennsylvania Rail Network accounts for 10 percent of all freight tonnage and 13 percent of all carloads in the United States. State rail volume is expected to grow 1.2 percent annually between 2010 and 2035. During the same time period, state through rail freight is expected to grow 1.5 percent annually and intermodal freight rail volume is expected to grow 1.8 percent annually.

Pennsylvania has funded freight rail infrastructure and double-stack clearance projects with the Rail Freight Assistance Program (RFAP) and capital budget grants. The double-stack projects were completed and funded between 1991 and 1996. RFAP was created by the commonwealth's Rail Freight Preservation and Improvement Act of 1984, which provided funds to preserve essential rail freight service and stimulate employment through generation of new or expanded rail freight service. Capital budget grants have also been funded annually to help pay for freight infrastructure improvements. RFAP grant authorization remained flat at $8.5 million in 2008 and 2009. The capital budget grant allocation for rail also decreased from $27.4 million in 2008 to $15 million in 2009. Though there were no significant funding increases, funding was still provided during difficult economic and state budgetary times.

The Pennsylvania Department of Transportation (PennDOT) also established the Pennsylvania Infrastructure Bank (PIB) for rail freight and provided $500,000 in initial seed capital to kick-start a program that provides low-interest loans to railroads and shippers for their use on railroad infrastructure projects. PennDOT periodically adds funds to this and as payments are made, they are recycled and re-loaned.

Additionally, Pennsylvania's Department of Community and Economic Development administers several economic development loan and grant programs that assist rail infrastructure expansions, including the Infrastructure and Facilities Improvement Program, the Tax Increment Financing Guarantee Program, the Business in Our Site Program and the Infrastructure Development Program.

PennDOT is beginning to utilize other funding programs to complement their RFAP and capital budget programs. These include the Congestion Mitigation Air Quality (CMAQ), Local Tax Increment Financing (TIF) and the federal Railroad Rehabilitation and Improvement Financing (RRIF) program.

As of the passing of the most recent Capital Budget Act by the Pennsylvania Legislature, statewide rail freight industry infrastructure need, as measured by projects contained in that legislation, totaled $15 million.

Indicators of the health of the commonwealth's existing rail freight infrastructure are as follows. First, there are the significant physical plant needs. Sixty percent of short-line and regional railroad physical plants are in need of extensive rehabilitation, including 170 bridges. Bridge repairs are anticipated to be more than $1 million each. There is also the question of whether the state's rail infrastructure can handle heavy loads. Excluding the Bessemer and Lake Erie and Delaware & Hudson railroads, both of which have heavy load infrastructures, the short-line and regional railroads are capable of handling the heavier 286,000 pound loads on only 70 percent of their infrastructure. In contrast, almost all new freight rail cars being manufactured today are capable of handling 286,000-pound loads, excluding cars being manufactured for use in the transport of Powder River Basin coal, many of which are the latest generation 315,000 pound capacity rail cars. Derailments have been falling over the last decade. Between 2001 and 2005, there was an annual average of 80.4 derailments in Pennsylvania. In 2005, total derailments in the state were down 30.3 percent from 2004. It is estimated that more than 540,000 carloads of hazardous materials cross Pennsylvania's rail system each year. And there are 45 rail traffic choke points throughout the state. Most notable of the locations needing capacity improvements are Norfolk Southern's Port Perry Branch and its Lemoyne Connector.

KEY FREIGHT CORRIDOR STATUS

Central Corridor

The Central Corridor is the largest corridor in the state. It is operated by Norfolk Southern (NS) and extends the length of Pennsylvania. There are four NS intermodal terminals on the corridor: Pittsburgh, Harrisburg, Bethlehem and Morrisville. This corridor is double-stack cleared and 286,000 compliant (capable of carrying 286,000 loads).

Erie Corridor

The Erie Corridor consists of parallel mainline tracks operated by NS and CSX along Lake Erie in northwest Pennsylvania for approximately 95 miles. This corridor is double-stack cleared and 286,000 compliant.

I-95 Corridor
The I-95 corridor in southeastern Pennsylvania contains the CSX mainline and parallels I-95 at Chester north through Philadelphia to the New Jersey/ Pennsylvania border at Yardley. The corridor contains the CSX intermodal terminal in South Philadelphia. While portions of the I-95 Corridor have been cleared for double-stack trains, sections of track have not, which causes the entire corridor to restrict regional transport. The main track in the corridor is 286,000 compliant, while feeder lines are not.

Southwest Corridor
This corridor, operated by CSX, crosses the southwest portion of the state. The Southwest Corridor is part of CSX's National Gateway Program to create an efficient rail route linking Mid-Atlantic ports to Midwestern markets. The corridor is 286,000 compliant but is not double-stack cleared. The corridor is also in need of additional intermodal yard capacity.

I-81 Corridor
This corridor, operated by NS, parallels I-81 in central Pennsylvania from the Pennsylvania/Maryland border to Harrisburg. The NS Rutherford intermodal terminal in Harrisburg is on the I-81 corridor and is a part of the NS Crescent Corridor initiative. This corridor is double-stack cleared and 286,000 compliant. However, the corridor is in need of additional intermodal yard capacity and track upgrades and speed improvements are needed.

Harrisburg-Binghamton Corridor
This corridor extends north from Harrisburg along the Susquehanna River to Scranton and turns north to Binghamton, N.Y. The Canadian Pacific Railway (CP) has trackage rights between Harrisburg and Sunbury over NS tracks and operates on its own tracks between Sunbury and Binghamton. This corridor is double-stack cleared and 286,000 compliant; however, track upgrades and speed improvements are needed.

National Gateway Project
CSX is in the process of realizing the goals of the National Gateway Project, an undertaking that will make the main rail lines connecting ports in Virginia and North Carolina with manufacturing centers in the Midwest more efficient and accessible. The National Gateway project is a $700 million public-private partnership that will upgrade tracks, equipment and facilities and provide double-stack intermodal clearance. CSX estimates the gateway will provide more than $650 million in public benefits to Pennsylvania by:

- Reducing carbon dioxide emissions by 250,000 tons;
- Expanding rail market access potential for the state;
- Enhancing rail transportation infrastructure, including new intermodal terminals in Chambersburg and Pittsburgh;
- Reducing the state's highway congestion by shifting freight from nearly one million trucks to the railway, saving more than $40 million in highway maintenance costs; and
- Saving $35 million in logistics costs for the state.

Crescent Corridor
Norfolk Southern is focused on developing the Crescent Corridor stretching from the Northeast to New Orleans. The Crescent Corridor will include a series of infrastructure improvements including straightening curves, adding passing tracks, improving signal systems and building

new terminals. Norfolk Southern estimates that the annual benefits to Pennsylvania from the Crescent Corridor will include:

- Diverting 700,000 long-haul trucks to rail;
- Saving 10 million gallons of fuel;
- Reducing carbon dioxide by 110,000 tons;
- Saving more than $9 million in traffic congestion;
- Avoiding an estimated $8.5 million in accident costs; and
- Creating or enhancing 26,000 jobs over the next 10 years.

As part of this project in Pennsylvania, Norfolk Southern's plans include a $95-million intermodal facility in Franklin County near Chambersburg; $52 million in improvements to its existing Harrisburg intermodal terminal; and $27 million in track and signal upgrades in Berks, Chester, Cumberland, Dauphin, Franklin, Lebanon, Lehigh, Montgomery and Northampton counties.

INVESTMENT

Numerous public-private and/or innovative funding plans have assisted maintenance and improvement of rail infrastructure.

The use of public funds to leverage private funding—a public-private participation project—is one method of funding where there are both public and private benefits. Pennsylvania's Conrail double stack project of the 1990s is a prime example, wherein the state contributed $35.8 million to the $100-million project. At the end of this section is a table showing where funding by the Rail Freight Assistance Program went during 2008-09.

Other Pennsylvania projects under consideration or completed as of 2006 include the following. In November 2009, Governor Edward G. Rendell and CSX announced a $30-million public/private initiative to improve 16 bridges in southeastern Pennsylvania to accommodate double-stack trains.

The state of Pennsylvania and Norfolk Southern announced that they will invest $11 million combined in the railroad's Philadelphia Navy Yard Intermodal Facility. The investment of $5 million by the state and $6 million by Norfolk Southern will expand track and parking, nearly doubling the size of the rail yard. The investment is part of Norfolk Southern's multistate Crescent Corridor Initiative, which is aimed at establishing a high-speed intermodal rail-freight route between the Gulf Coast and the Northeast.

The state's $5 million investment is part of a $45 million commitment made by the commonwealth in August 2009, which will be allocated over three years and will be matched with $79 million by Norfolk Southern and an anticipated $61 million in federal support. Pennsylvania partnered with Norfolk Southern and four other states in September to apply for $300 million in American Recovery and Reinvestment Act funds for the Crescent Corridor.

Aliquippa and Ohio Railroad will use a $357,000 grant to rehabilitate the seven-mile railroad on the former LTV Steel site outside Aliquippa to provide service to existing and new customers who are experiencing increased cargo volume. One of these new customers is Wolfpac Technologies, a manufacturer of extruded plastic products, which is receiving a grant of $82,527 to rehabilitate a rail siding to service its new facility.

New Enterprise Stone and Lime will receive $537,000 to reinstate rail service and expand rail infrastructure to increase aggregate shipments from its Union Furnace Quarry.

Another grant recipient is Kinder Morgan, the operator of the port at the Keystone Industrial Port Complex along the Delaware River in Bucks County, whose $700,000 grant will be used to replace and repair existing track and for the relocation and new construction of an outbound train loading yard. The upgrades will ease the movement of cargo from ships to freight rail car.

Rail Freight Assistance Benefits 2008-2009

Fiscal Year	Grant Type	State Investment	Total Project Cost	Number of Projects Funded	Jobs Created	Trucks Off Highway
2008	RFAP	$8,500,000	$11,800,000	40	1,408	166,799
2008	Capital Budget	$27,361,877	$55,730,078	21	1,062	197,552
Total 2008		**$35,861,877**	**$67,530,078**	**61**	**2,470**	**364,351**
2009	RFAP	$8,500,000	$13,245,729	28	421	117,965
2009	Capital Budget	$15,000,000	$22,699,643	13	1,108	195,240
Total 2009		**$23,500,000**	**$35,945,372**	**41**	**531**	**313,205**
Grand Total:		**$59,361,877**	**$103,475,450**	**102**	**3,001**	**677,556**

Key: **RFAP** = PA State Rail Freight Assistance Program
Capital Budget – Portion specifically for Rail Freight

A recent survey of Pennsylvania's Metropolitan Planning Organizations (MPOs) and public rail authorities found that there is widespread appreciation of Pennsylvania's funding of rail freight programs and that more RFAP and capital budget funding is required.

POLICY OPTIONS

Solutions that would ease the increasing demands on Pennsylvania's heavy rail transportation system and improve freight conditions, capacity and safety are multi-faceted.

The Pennsylvania sections of ASCE urge the legislature to take the following measures. First, the state should continue its model of excellence, increasing transportation investment at all levels of government and making use of the latest technology. Second, the state should support multi-modal transportation. Cities and communities should not be short-sighted concerning

freight planning and should also look at statewide planning and connectivity to maximize their own intermodal options. Freight planning in the commonwealth should include consideration of all transportation modes and should be developed as an outgrowth of the new mobility plan.

The commonwealth's freight planning effort should also dovetail with both the new National Freight Plan and the freight plans of Pennsylvania's neighboring states. Finally, the state should recognize the connection between railroads and highways. There needs to be an awareness at the national and state levels that diverting freight movement from our highways can best be accomplished by expanding the rail infrastructure and by mitigating or eliminating existing choke points. Government entities must be able to accept that allocating more public funds will help reduce this pressure on the highways.

RECOMMENDATIONS

The Pennsylvania sections of ASCE encourage the state of Pennsylvania to:

- Provide additional state and national rail funding, above current levels. This includes being able to fund larger projects that can be supported over multiple contract years
- Upgrade small railroads to 286,000-pound railcar capability where merited
- Promote more double-stack intermodal clearance projects, where required
- Support other projects facilitating intermodal growth, including transfer facilities
- Mitigate existing congested areas to improve capacity
- Support innovative, public-private financing agreements for freight projects
- Help to preserve rights-of-way wherever possible and not allow rail property to be sold for non-commerce use
- Inventory and aggressively market freight connections in land packages to prospective business owners
- Facilitate the use of freight trackage to support passenger rail use where practical
- Continue to advance the efforts to promote freight planning at the local/MPO level and thereby continue to improve coordination between local levels and the state planning agency and add to the noteworthy inroads that have already been made in freight planning
- Seek new, innovative sources of federal and state funding for rail freight investment to specifically reduce highway congestion and improve the overall level of transportation safety

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- ASCE Policy Statement 149: Intermodal Transportation Systems (PS 149)
- ASCE Policy Statement 496: Innovative Financing for Transportation Projects (PS 496)
- ASCE Policy Statement 521: Rail Infrastructure Investment (PS 521)