

**TESTIMONY OF
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PENNSYLVANIA STATE LEGISLATIVE DIRECTOR
UNITED TRANSPORTATION UNION
BEFORE
THE PENNSYLVANIA HOUSE OF REPRESENTATIVES
JOINT COMMITTEE ON TRANSPORTATION AND POLICY
HEARING ON
TRANSPORTATION POLICY AND FUNDING IN PENNSYLVANIA
GATEWAY HIGH SCHOOL
MONROEVILLE, PENNSYLVANIA
FRIDAY, JUNE 18, 2010**

Good afternoon. My name is Don Dunlevy and I am the Pennsylvania State Legislative Director for the United Transportation Union. I thank you for the opportunity to provide comments on Pennsylvania's current transportation infrastructure needs.

While my comments today are directed specifically toward intercity passenger rail service in Pennsylvania, be assured that the United Transportation Union fully recognizes the need for developing and maintaining a comprehensive transportation system.

A fully integrated, quality transportation system is the life-blood of commerce. The development of our economy is directly related to the complete quality of our total transportation system. It is one of the primary reasons that both families and business and industry choose to put down roots in a particular location or otherwise look elsewhere.

Whether it be for the transport and delivery of goods, to providing the mobility for the young, the old or those physically unable to transport themselves, to creating walkways and riding paths for personal health and recreation, transportation is a key element in our daily lives. These are the necessities of life and the extent to which our commonwealth adequately provides them will have a great impact on the quality of the daily lives of all Pennsylvanians.

All transportation modes must be evaluated and their individual needs established. Only then can we determine the full cost of bringing our current transportation network into a state of good repair, maintaining that complete system and developing future needs. These are the necessary elements to developing a comprehensive solution to the problem.

Many varied funding options are available for consideration after the comprehensive need has been established. It is only at that point that recommendations and decisions can be made regarding what specific funding sources are needed and to what degree they are required. Trying to determine the amount and source of funding without analyzing the overall need will assuredly result in an approach that only addresses a portion of the problem. Deferring a comprehensive resolution will only lead to greater issues in the future

while jeopardizing Pennsylvania's commerce and economy and we look to the General Assembly to address the total, comprehensive need now.

Regarding intercity passenger rail service, Pennsylvania has two extreme operations. The Keystone Service between Harrisburg and Philadelphia, owned and operated by Amtrak, currently operates 14 trains per day in each direction. The basic infrastructure was built decades ago with electrification of the line to Paoli in 1910, followed by the electrification to Harrisburg being completed in the 1930's and we are still benefiting today from the significant infrastructure investment that was made so many years ago.

In 2004, Amtrak and PennDOT partnered to invest \$145 million to improve the Keystone Corridor. Electrified service was restored, train speeds rose to 110 mph, trip times between Harrisburg and Philadelphia were cut to 1 hour and 35 minutes and Amtrak was able to get more trips out of the same equipment.

Since those improvements in 2004, annual ridership on the corridor has steadily increased from 640,000 to over 1.2 million riders in 2009. Even in a recession year when nearly all forms of transportation experienced a decline, ridership on this portion of Amtrak continued to increase by nearly 3%.

SEPTA's Regional Rail service also operates on the Keystone Corridor between Paoli and Philadelphia and last year over 6.3 million riders rode SEPTA trains on this corridor for a total of over 7.5 million riders in 2009, most of whom would otherwise be on the highways if this service was not available.

Passengers using this service come from all walks of life – from medical providers and staff to lawyers, accountants and other business people to secretaries, service workers and state and local government workers. Many students also use these trains regularly to attend the various universities located along the Keystone Corridor. It carries the handicapped, the elderly, those who cannot drive and vacationers and visitors to Pennsylvania's tourist attractions. Late evening service provides the opportunity for people along the entire corridor as far as Harrisburg to attend major sporting events, theater, dinner and other venues in Philadelphia and avoid a tiring, late night drive home.

These millions of riders have come to depend on this reliable and convenient service, and it has significantly improved their quality of life. Many of them have bought homes and relocated along this corridor just to avoid the highway congestion and take advantage of the frequent and dependable service that we provide.

The current \$9 million annual subsidy that Pennsylvania contributes to operate this service is small in comparison to the benefit received. In addition to significantly helping to reduce highway congestion, improve air quality and reducing dependence on oil, Amtrak provides a substantial economic benefit to Pennsylvania.

Amtrak procurements in Pennsylvania for the Keystone Service in 2009 totaled nearly \$110 million from over 270 Pennsylvania businesses extending to all parts of the Commonwealth.

For example, last year Amtrak spent nearly \$20 million at the General Electric locomotive facility in Erie, over \$3 million to businesses in Hazelton, over \$1.5 million in Reading, over \$2.25 million in the Pittsburgh area, over \$1 million in Lancaster and nearly \$1 million in Johnstown, PA. Amtrak also made other significant purchases in the Lehigh Valley, Harrisburg, York, Mechanicsburg, Camp Hill and other central PA communities and, of course, tens of millions of dollars in the five-county southwestern region of Pennsylvania.

Amtrak was also responsible for bringing over \$43 million in federal stimulus funds to Pennsylvania last year and the total expenditures for all service in Pennsylvania, including the Northeast Corridor, was over \$192 million. Amtrak employs over 2,700 people throughout Pennsylvania and pays them wages in excess of \$184 million annually. These earnings generate wage taxes, sales taxes and represent significant purchasing power to businesses and communities throughout the state.

Continued funding for this service is critical and reducing financial support and cutting service to a transportation resource such as this would not only result in severing one of Pennsylvania's economic generators, it would also result in adding to our ever increasing highway congestion, increase pollution and have a negative impact on the quality of life for the 7.5 million annual riders who depend on the Keystone Corridor.

On the remainder of the Keystone Corridor west of Harrisburg, rail passenger service is limited to only one train in each direction per day. Two other intercity trains still make stops in Pennsylvania as they pass through Erie and Connellsville and one of them makes a connection in Pittsburgh with the cross-state service for riders continuing on toward Chicago. None of these trains receive financial support from the Pennsylvania. For the several million Pennsylvanians who live and travel west of Harrisburg, there is no other option except the highway. Even air service has been discontinued.

West of Harrisburg the terrain is difficult as the route crosses over the Allegheny Mountains. It contains steep grades, many curves and it is the main line of one of the most heavily trafficked freight corridors in the country. The total trip time from Harrisburg to Pittsburgh is currently five and one-half hours. When this route was built over 150 years ago, such an extended travel time was acceptable; in fact it was remarkable. However, that is not the case today.

The recent adoption of our federal government's policy to support high-speed rail is long overdue and it is now creating a timely opportunity for Pennsylvania. Nearly all of the high-speed rail projects across the country are "incremental", in that they only plan to reach speeds of 110 MPH while sharing tracks with freight traffic on right-of-way owned by the freight railroads. But this approach has already received serious warnings against its long-term feasibility. The first warning was delivered over fifty years ago when the freight railroads began eliminating passenger service because it interfered with the more lucrative freight business. This was followed by the creation of Amtrak in 1970 with the freight railroads divesting themselves of all their passenger equipment.

Last year, the Association of American Railroads (AAR) submitted comments to the Federal Railroad Administration regarding their position relating to passenger train operations on the tracks which are privately owned by the freight railroads. Among their concerns was the safety factor related to intermingled passenger and freight operations and they concluded that, in general, passenger trains operating in excess of 90 MPH will not be permitted to share tracks with freight trains. Passenger service must not interfere with freight operations nor impede the freight railroad's ability to handle anticipated growing freight volumes. Freight railroads must be adequately compensated with a reasonable rate of return on their investment, including costs associated with providing information and participating in studies necessary to develop any high-speed rail proposals. This compensation also includes significantly higher maintenance costs and enhanced track infrastructure for passenger service, which is beyond the needs of freight operations. Finally, the freight railroads insist that they be protected against all liability risks associated with high-speed passenger operations. A copy of the AAR document is attached as Appendix 1.

On June 10, 2010, *Progressive Railroading* published an insightful article that questioned whether the host freight railroads were onboard with high-speed rail. The comments from the Class 1 freight railroads should be carefully considered as they expand on the AAR document and clearly lay out their policies for accepting limited passenger operations on their properties. Anyone with the slightest interest in rail passenger service should read this article carefully. Freight rail managers insist that there is little financial benefit to the freight railroads for facilitating passenger service as they only need to maintain their tracks to Class 4 standards, not Class 6 standards for 110 MPH operations. Capacity is the primary concern when it comes to mixed-operations and the higher the operating speed, the greater the capacity that is needed. It all comes down to the same issues – capacity, liability, safety, cost and compensation. Regarding one proposal in New York to operate passenger service in excess of 90 MPH, the railroad's response was "We have profound safety (and capacity) concerns with that." A copy of this article is attached as Appendix 2.

Alternatively, we should move to build true high-speed rail on dedicated passenger rights-of-way and avoid interaction with the freight railroads to every extent possible; in reality, the two are not truly compatible. In doing so, we should utilize high-speed magnetic levitation (maglev) technology.

The Pennsylvania High-Speed Maglev Project has been under development for over twenty years. It is a 54-mile long route that is the core of a planned multi-state, intercity operation that will reach from the major northeast cities to those in the Midwest. It is centered within a 500-mile radius of one-half the population of the U.S. and Canada as identified in the map of Appendix 3. This initial route is divided into three sections that connect the Pittsburgh International Airport (PIA) with downtown Pittsburgh and the eastern suburbs of Penn Hills and Monroeville at the Pennsylvania Turnpike and then to the City of Greensburg.

The Project has further national significance, as the topography and climate variations of the Pittsburgh region will verify maglev's adaptability to all regions of the U.S. In the initial section from the airport to downtown, it will climb up to a 7.5% grade (more than twice the ability of steel-wheel systems, although the technology being used is capable of climbing

10% grades). The technology has the ability of overcome the barrier created by the Allegheny Mountains and deliver true high-speed rail service at speeds up to 300 MPH where steel-wheel technology cannot.

The initial deployment will Americanize and certify the German Transrapid technology for adaptation and public use throughout the entire United States. This is the same technology that has been operating in Shanghai, China since 2004 where it routinely operates at speeds in excess of 260 MPH and maintains a 99.99% on-time performance record within one-minute of schedule.

In 2001, the Pennsylvania Project was one of the two projects down-selected by the Federal Railroad Administration (FRA) under the National Maglev Deployment Program and funded to complete the Environmental Impact Statement (EIS). In 2005 the Draft Environmental Impact Statement (DEIS) was completed and just last Friday the Project Final Environmental Impact Statement (FEIS) was released by the Federal Railroad Administration (FRA) and published in the Federal Register. This is a thorough evaluation required by the National Environmental Policy Act (NEPA) at a cost of more than \$18 million. The document can be reviewed via links on the Allegheny County Port Authority's website and the MAGLEV, Inc. website and it is available in hard copy at libraries and other public locations throughout the region. It is the only true high-speed rail project (in excess of 240 MPH) in the country that has attained this level of development.

With the federal government providing 80% of the capital cost of construction under the newly established high-speed rail policy, Pennsylvania finds itself in the position of being at the doorstep of delivering true high-speed rail operations and creating a new industry with unlimited potential. The overall cost of deploying high-speed maglev is a relative measure. High-speed maglev has a projected 80-year life-cycle with extraordinarily low annual maintenance costs. In the long term, the actual overall cost of high-speed maglev will be significantly less than that of steel-wheel operations and the benefits will be far greater.

Because of its low maintenance requirements, high-speed maglev will not need annual operating and maintenance subsidies. Steel-wheel systems require substantial annual operating and maintenance subsidies and the higher the operating speed and the more challenging the terrain, the required subsidy will be commensurately higher. A more detailed explanation of why subsidies are not required for maglev is attached as Appendix 4.

Recently enacted legislation mandates that Positive Train Control (PTC) be installed by December 30, 2015 on all Class 1 railroads and passenger railroad main lines where intercity passenger and commuter rail operates. Its purpose is to prevent train-to-train collisions, over-speed and unauthorized entry into certain areas under specific conditions. The FRA has estimated the cost could range from \$7 billion to \$24 billion and the American Public Transit Association estimates that it will cost more than \$2 billion for commuter agencies to comply with the rules. Amtrak has told the FRA that the cost of installing collision-avoidance systems in at least twelve states "may be so high as to not be undertaken and therefore result in the elimination of Amtrak service." By comparison, positive train control technology is built into the high-speed maglev system and it does not represent an

additional required cost that must be added to the cost of steel-wheel operations.

Another major cost-saving factor of the Pennsylvania Project is the computer integrated precision fabrication technology that enables timely production of over 3,000 geometrically unique sections of maglev guideway using an automated rapid reconfiguration fit-up table and robotic welding system. This system economically expedites the production of the steel guideway and integrates very high precision capability into the fabricating process at a very high standard of quality.

In addition to its application to the maglev guideway, there is national significance in the application of the manufacturing technology through an estimated 20% reduction in the cost of fabricating highway bridge components, and in reducing the cost and improving the quality of ship construction and other large scale steel products. The development of this technology can be utilized to create jobs across Pennsylvania and recapture some of the manufacturing that has been transferred to other countries, resulting in our current importing of their products.

The Pennsylvania High-Speed Maglev Project is also an economic generator that will create many thousands of jobs. The first 19-mile segment from the airport to downtown will utilize 132,000 tons of plate steel, 16,400 tons of electrical steel, 47,670 tons of rebar, 500 miles of ¾-inch diameter aluminum conducting wire, 237,000 cubic yards of concrete and other materials associated with the electrical stations and related facilities. Based on standard job projection formulas used in the transportation industry, the first segment will create nearly 57,000 overall jobs, including approximately 2,500 construction jobs for the first segment's 2½ year construction period. The entire 54-mile project will use 330,000 tons of plate steel, 41,000 tons of electrical steel, 143,000 tons of rebar, 1,250 miles of ¾-inch diameter aluminum cable and 712,000 cubic yards of concrete.

When factoring in the number of jobs created in the mining of iron ore and the mining of coal to make coke for the steelmaking process, the transportation of these materials, the steel making process itself, the transportation of the steel, the fabrication of the guideway and the installation, the magnitude of the project and its job creation cannot be understated.

Although the Pennsylvania Project is the core of an ultimate intercity network, it will have an immediate impact on alleviating highway congestion in the Pittsburgh region. The high-speed maglev train will deliver and pick up passengers in the heart of downtown Pittsburgh, a major metropolitan center that is restricted in its transportation options and being bound by its three major rivers, surrounding hills and saturated urban development. Downtown Pittsburgh and the other outlying stations will be served at 10-minute intervals from 6:00 AM until 12:00 AM on weekdays and from 7:00 AM until 1:00 AM on weekends. Shorter service intervals (headways) provide riders with the utmost flexibility and can vary from 8½ to 12 minutes during peak hours and 10 to 15 minutes during off-peak hours.

The 54-mile project, particularly in the first two segments, will reduce the ever-increasing highway congestion on the Parkway West and Parkway East and provide a frequent, safe and reliable travel alternative throughout the most extreme weather conditions of rain, snow

and ice. This will offset the need to build additional lanes of highway in a corridor that is constrained by development adjacent to the existing highway. Additionally, both the Parkway East and West are each channeled through two-lane tunnels that are the approximately one-mile long. Both tunnels are already the cause of frequent and unpredictable delays. Any highway lane expansion will necessitate the boring of additional tunnels to maintain traffic flow. The Fort Pitt Tunnel at the end of the Parkway West empties onto the Fort Pitt Bridge at the convergence of the rivers at the Point of Pittsburgh. Constructing additional tunnels would also necessitate construction of an additional bridge to span the river but with further complications relating to establishing additional traffic patterns in an already saturated dense urban center as the new bridge reaches the downtown side of the river. These costs and their limited benefit, when weighed against the cost and benefits of constructing high-speed maglev, should be carefully considered.

Ridership projections as detailed in the Final Environmental Impact Statement are based on two investment grade ridership studies, including a Federal Railroad Administration appointed peer review panel of national experts. The planned project will provide a financially self-sustaining east-west transportation artery through the City of Pittsburgh that will reduce congestion and lower existing transportation costs. It will deliver the equivalent of a ten-lane highway through downtown Pittsburgh while having only a very slight impact on the existing infrastructure.

Failure to address the increasing highway congestion is tantamount to implementing a "congestion tax" on those finding themselves mired in traffic and burning gas at near \$3 per gallon but going nowhere. As cars sit in traffic with their engines wasting fuel, it is an insidious form of transportation taxation as there is no transportation benefit being derived. Money spend on alleviating these serious congestion problems would actually accrue as a savings to those now forced to pay the "congestion tax" and it would also improve air quality and mitigate associated health care problems and costs.

These conditions are also making our cities less desirable as a place to live and work. If we fail to address this problem now, it will only be exacerbated in the future while our quality of life continues to erode and our economy suffers.

What is needed now is the following:

1. Provide \$3.5 million per year for two years to match \$28 million in federal funds that have been designated for the Pennsylvania High-Speed Maglev Project to be used primarily to complete pre-engineering work to obtain a Record of Decision (ROD) authorizing construction of the project;
2. Create a high-speed passenger rail authority to focus on moving the project to completion and overseeing the expansion of high-speed passenger rail service throughout Pennsylvania. The three states that captured approximately \$2 billion each in federal stimulus funding all made a concerted effort through such agencies that were created to move their projects forward and they were highly successful in

their effort. As the federal government continues to advocate high-speed passenger rail, Pennsylvania should aggressively pursue that funding;

3. Work at all levels of state and local government in concert with Pennsylvania's Congressional Delegation to take advantage of our existing opportunity before other states seize it from us.

Thank you for the opportunity to present our views on the future of passenger rail transportation in Pennsylvania. I encourage all members of the General Assembly, and the Transportation Committee in particular, to visit the facilities of MAGLEV, Inc. in McKeesport, PA for a demonstration of the technology developments that have been achieved and a detailed discussion of the status of the project.

I would be pleased to answer any questions you may have.



ASSOCIATION OF
AMERICAN RAILROADS

Law Department
Louis P. Warchot
Senior Vice President-Law
and General Counsel

June 5, 2009

Federal Railroad Administration
1200 New Jersey Ave, SE
Washington, DC 20590

Re: FRA-2009-0045 – Capital Assistance for High Speed Rail Corridors and Intercity
Passenger Rail Service: Public Input on Recovery Act Guidance to Applicants

Pursuant to the Notice issued by the FRA in the Federal Register of May 19, 2009,
attached please find the Comments of the Association of American Railroads for filing in the
above docket.

Respectfully submitted,

Louis P. Warchot
Counsel for the Association of
American Railroads

**BEFORE THE
FEDERAL RAILROAD ADMINISTRATION**

DOCKET NO. FRA-2009-0045

**CAPITAL ASSISTANCE FOR HIGH SPEED RAIL
CORRIDORS AND INTERCITY PASSENGER RAIL SERVICE:
PUBLIC INPUT ON RECOVERY ACT
GUIDANCE TO APPLICANTS**

**COMMENTS OF THE
ASSOCIATION OF AMERICAN RAILROADS
June 5, 2009**

Executive Summary

Improved intercity passenger rail service offers great promise to our nation in many ways, but the starting point for discussion must be a common understanding of what it requires in new or existing rail infrastructure. At lower speeds, track generally can be shared between freight and passenger lines if the following interests are responsibly and fairly addressed: safety; capacity; compensation; and liability. At higher speeds, tracks should be separated and dedicated, as they are in the overwhelming majority of high speed rail systems around the world.

Introduction

The Association of American Railroads (AAR), submits these comments on behalf of its member freight railroads in response to the Federal Railroad Administration's (FRA) Notice seeking input on the issues that should be addressed in the interim guidance and recommendations on the criteria to be used in evaluating grant applications for capital assistance for high speed rail corridors and intercity passenger rail service. AAR is a national trade association whose members include the nation's major freight railroads;¹ these railroads operate 72 percent of freight industry's line-haul mileage, produce 95 percent of its revenue and employ 92 percent of its employees.

¹ Amtrak and some commuter railroads also are members of AAR.

AAR and its member railroads applaud the leadership of President Barack Obama and Secretary Ray LaHood in recognizing the importance of rail to the future of the nation's transportation network. As the recently released *Vision for High Speed Rail in America (Vision)* recognizes, railroads confer great public benefits because they are the most fuel efficient and environmentally sound mode of transportation. Of particular importance to our nation's future is rail's ability to play a more significant role in reducing both greenhouse gas emissions and traffic congestion. These benefits result from both passenger and freight rail service.

The President's multi-billion dollar initiative provides a unique opportunity to expand intercity passenger rail service in a manner that better meets the needs of both the general public and users of rail services. In his April 2009 High-Speed Rail Strategic Plan, embodied in the *Vision*, the President calls for development of both express and regional high-speed corridors, along with upgrading the functionality and connectivity of current intercity passenger rail service. The strategic transportation goals outlined in the *Vision* – ensuring safe and efficient transportation choices, building a foundation for economic competitiveness, promoting energy efficiency and environmental quality and supporting interconnected, livable communities – can be achieved through greater investments in rail.

The *Vision* also appropriately acknowledges that reshaping the nation's transportation system with expanded rail choices will bring significant challenges. One of the key challenges flows from the fact that in many cases intercity passenger rail will share a right-of-way with freight railroads which serve a broad range of customers whose livelihoods and market competitiveness are tied to timely and efficient rail service. Layering additional or expanded intercity passenger rail service or velocity on the freight network can work in many instances if appropriate accommodations for current freight volume and future growth are made. In any case, advancing higher speed rail without compromising the vital present and future role of the freight rail industry is an issue that must be confronted. These comments are intended to help guide public policy and project guidelines so that the vision of higher speed passenger rail service can be realized.

Current Framework

Intercity passenger rail is provided by the National Railroad Passenger Corporation (Amtrak) which was formed in 1970 as a federally-sponsored corporation. Apart from the Northeast Corridor (Washington DC-New York-Boston) and a few other track segments, Amtrak moves its passengers over a 22,000 mile network of track owned by freight railroads. Pursuant to operating agreements with Amtrak, freight railroads currently provide the majority of the right of way and infrastructure necessary to accommodate more than 315 Amtrak passenger trains per day over 43 routes, carrying an average of 78,500

passengers per day. Indeed, 71 percent of the miles traveled by Amtrak trains are on tracks owned by host railroads.

This movement of rail passengers takes place over the same network that nearly every industrial, wholesale, trade, retail, agricultural and mining-based sector of the economy relies on to move its products. All told, railroads account for 43 percent of intercity freight volumes – more than any other mode of transportation. To build and maintain this infrastructure, since 1980 (when the rail industry was partially deregulated) railroads have reinvested more than \$440 billion of their own funds on locomotives, freight cars, tracks, bridges, tunnels, signal systems and other essential technology and infrastructure. As a consequence, the combination of safety, efficiency, capacity and affordability is unmatched by any other freight rail system in the world.

To make higher speed passenger rail work in this country, first and foremost will be maintaining the health of the freight railroad industry which provides the literal foundation for intercity passenger rail mobility. As the *Vision* recognizes, expansion of high speed rail must be accomplished in a way that avoids diversion “from the core operating and maintenance responsibilities” of the freight railroads.

The High Speed Rail Vision

President Obama’s *Vision* proposes a long-term strategy intended to build an efficient high speed passenger rail network. Specifically, it envisions four types of intercity passenger rail service:

- **Conventional Rail:** Traditional intercity passenger rail services of more than 100 miles with 1-12 daily frequencies; top speeds of up to 79 mph to as high as 90 mph, generally on shared track.
- **Emerging High Speed Rail:** Corridors of 100-500 miles; top speeds of up to 90-110 mph on primarily shared track, with advanced grade crossing protection or separation.
- **Regional High Speed Rail:** Frequent service between major and moderate population centers 100-500 miles apart, with some intermediate stops. Top speeds of 110-150 mph; grade separated, with some dedicated and some shared track.
- **Express High Speed Rail:** Frequent express service between major population centers 200-600 miles apart with few stops. Top speeds of at least 150 mph on completely grade-separated, dedicated rights-of-way (with possible shared track in terminal areas).

President Obama’s near-term investment strategy seeks to:

- Upgrade reliability and service on conventional intercity rail services (operating speeds up to 79-90 mph).

- Develop emerging high speed (90-110 mph) on shared track.
- Develop regional high speed (110-150 mph) on dedicated track.
- Advance new express high speed service (above 150 mph) on primarily dedicated track.

Partnering with Private Railroads to Implement the Vision

Ideally, freight railroads and intercity passenger railroads would operate in completely separate worlds. Separate corridors enable faster, safer, and more reliable passenger service, while eliminating or greatly reducing the operational, capacity, engineering, legal, and other impediments that can hinder the ability of freight railroads to successfully accommodate passenger trains on non-separated corridors. However, for passenger rail operators to acquire their own completely separate right of way would be prohibitively expensive and, for a host of reasons, an unlikely prospect. As a result, higher speed passenger rail will, in many cases, be sharing tracks, or at least rights-of-way with freight railroads. Indeed, the *Vision* contemplates that other than express high speed rail (speeds of at least 150 mph), intercity passenger rail operations will involve at least some shared track. This will necessitate a partnership between the host freight railroad and the high speed rail operator that protects the business needs and responsibilities of both parties.

Today, as the *Vision* notes, high speed rail is “constrained by the capacity of rail lines and by freight traffic.” Nonetheless, in several areas, sufficient land exists within and immediately adjacent to the freight rail right of way to accommodate the addition of more freight and passenger tracks. In other areas of the country, the volume of freight traffic may be so great that a separate high speed passenger corridor makes more sense for both parties. Clearly each high speed rail origin-destination pair is unique and governed by its own circumstances. Consequently, generalizations are difficult to make about when, where and how freight rail and high speed passenger rail can share the same right of way or infrastructure successfully over a long term without adversely affecting the interests of either party. As such, each specific project must be treated on a case-by-case basis.

Given this reality, the *Vision* properly recognizes that it is essential that grant applicants have in place, or describe clearly how they will reach, agreements with, among others, the infrastructure owners/host railroads. Agreements that grant access to the privately owned rail network must be negotiated on a voluntary, case-by-case basis and must address site specific safety, operational, compensation and legal issues. The interim guidance to be issued by FRA to grant applicants should instruct that the following principles must be taken into account in their agreements with host railroads.

(1) SAFETY: Agreements must give paramount attention to safety.

- While unique circumstances may allow passenger train speeds in excess of 90 mph on jointly used passenger and freight tracks, the expectation must be that passenger and freight train service will operate over separate tracks, perhaps in a shared right-of-way, when proposed passenger train speeds exceed 90 mph. The operating characteristics and/or volumes and frequencies of both the freight and conventional passenger traffic and freight rail availability of right-of-way on a given corridor would govern this decision.
- Agreements must include strategies for mitigating risks covering, but not limited to: highway grade crossings enhancements including sealed corridors, where necessary; placement and configuration of passenger stations; separation between existing and proposed tracks; train control systems, including positive train control, or other advanced technologies (either required by regulation or designated by host railroads); track and bridge upgrades; incremental track maintenance and component replacements; use of wayside detector devices; and intrusion prevention.

(2) ACCESS and CAPACITY: Access to freight rights-of-way cannot compromise service to present or future freight rail customers. Advancing high speed rail at the expense of freight rail's ability to handle growing freight volumes would be counterproductive public policy, as degradation of current or future freight service would exacerbate highway congestion, reduce fuel efficiencies, reduce U.S. competitiveness and increase greenhouse gas emissions if freight rail were rendered an unattractive transportation alternative to customers.

- Service to railroad freight customers must be protected and cannot be compromised by high speed passenger rail route schedules, curfews, or other restrictions that would affect the quality, capacity or reliability of freight service.
- New infrastructure construction must fully preserve both the ability to operate freight trains as needed and the opportunity to expand future freight service.
- New infrastructure design must fully protect the host railroad's ability to serve existing customers, both freight and passenger, and locate future new freight customers on and adjacent to its lines.

(3) COMPENSATION: Host railroads need to be adequately compensated.

- To the extent high speed passenger rail operations use freight railroad assets and property, they must provide the host railroad with a reasonable return on its investment, including recouping costs associated with participating and providing information and studies necessary to develop any high speed rail project proposal

- Operating high speed passenger rail trains at speeds greater than existing freight or passenger operations will require significantly higher maintenance costs and enhanced track infrastructure. The applicant should be prepared to fully compensate the host railroad for these additional and ongoing costs.

(4) **LIABILITY:** Host railroads must be protected from increased liability risks associated with high speed passenger rail service.

- Host freight railroads need to be fully protected against any and all liability that would not have resulted but for the added presence of high speed passenger rail service.
- For the freight railroads to take on any liability that arises from passenger rail operation on their lines would amount to an unwarranted subsidy of passenger rail.²

Though these can be difficult issues, they cannot be avoided if the high speed rail *Vision* is to be realized along with the equally important goal of moving the nation's growing freight volumes economically and with the least environmental impact. The freight railroads are committed to working with FRA and all high speed rail stakeholders to make the future of intercity passenger rail a win-win situation.

Respectfully submitted,



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June 5, 2009

² See *GAO Report to Congressional Requesters on Commuter Rail*, GAO-09-282, p. 7 (Feb 2009). “[B]ecause Amtrak is prohibited from cross-subsidizing commuter rail agencies and freight railroads on the Northeast Corridor (NEC), Amtrak cannot assume additional liability for these parties in its agreements for shared use of infrastructure.”

Progressive Railroading

States are delving deeper into high-speed rail planning, but are the host railroads onboard?

by [Angela Cotey](#), Associate editor

6/10/2010

Since Congress passed the American Recovery and Reinvestment Act in February 2009, U.S. high-speed rail development has gone from a pipe dream to a very real possibility. The bill included \$8 billion for high-speed and intercity passenger-rail projects, prompting states to scramble to get their share of the funds.

States that have been working on high-speed rail programs for years were anxious to show the federal government what they've done to advance their plans to date — and use it as leverage to secure more stimulus dollars. States that had been discussing whether to pursue high-speed rail put their plans on the fast track so they could cash in on the sudden availability of federal high-speed funds, as well. However, with the exception of California and Florida — which are proposing to build high-speed rail systems on dedicated right of way with trains operating at speeds between 150 mph and 220 mph — most states are planning what could be best classified as "higher" speed rail. Proposals call for upgrading existing tracks, primarily owned by freight railroads, to accommodate passenger trains at speeds between 79 mph and 110 mph. But just because the tracks already exist in many places doesn't mean that implementing higher-speed service will be easy, or even feasible — especially if a state is proposing to operate their service over capacity-strapped Class I tracks.

"I think there's probably a bit of a disconnect between all of the money that's been talked about and actually getting high-speed rail started and built in many places," says Deb Butler, executive vice president of planning and chief information officer for Norfolk Southern Corp. "This is a very long process. It involves negotiating right of way with railroads, permitting, environmental issues, and then not only deciding what kind of infrastructure improvements are necessary to accommodate passenger rail, but also decisions on how a passenger service will be subsidized on an ongoing basis."

State rail officials are learning about the various high-speed hurdles as they delve deeper into their planning efforts. Those that are dealing with Class I host railroads are, in many cases, getting a reality check on what a freight operator will and won't allow on their tracks or right of way. That's not to say Class Is aren't interested in having the discussion — freight-rail planners say they're more than willing to sit at the table with a state to see how they could work together. But each Class I also has a stringent set of rules a state must follow to ensure passenger services don't affect freight operations. Capacity, speed, safety and liability issues top the list. With freight traffic expected to grow significantly during the next several decades, Class Is won't sacrifice future business opportunities for any passenger operation.

"We are trying to find win-win opportunities working with the public sector to advance passenger-rail projects," says CSX Corp. VP of Strategic Infrastructure Initiatives Louis Renjel. "But, while the envy of the world on the passenger-rail side might be to Japan, France and China, the U.S. freight system is the

envy of the world. We have a competitive advantage and we want to make sure that as we develop policies, we don't compromise that."

To ensure the freight-rail infrastructure isn't compromised, each Class I has its own guidelines for high-speed passenger operators to follow, starting with how fast a passenger train can run on their tracks.

"Simply put, the passenger operation has to be transparent to the freight operation and we try to make the freight operation transparent to the passenger operation," says NS VP of Strategic Planning John Friedmann.

Passenger-Rail Policy

For that reason, NS' passenger-rail policy states that passenger trains cannot operate on their tracks at speeds higher than 79 mph. States seeking to operate trains at higher speeds would need to run them on separate tracks. CSX and BNSF Railway Co. will allow passenger trains at speeds up to 90 mph on their tracks; faster than that, trains will need to operate on separate track, though not necessarily on separate right of way. CSX officials take it a step further and say that any dedicated corridors built for high-speed passenger rail services should be located at least 30 feet from their freight operation.

And at Union Pacific Railroad, officials say they will consider allowing passenger operations of up to 110 mph on their tracks.

"We'll look at things on a case-by-case basis," says UP General Director of Network and Business Development Mark Bristol. "Whether or not we're willing to consider things has a lot to do with the importance of the line to us."

Ditto for BNSF, CSX and NS, all of which have similar guidelines they follow when determining if a passenger operation can co-exist on their tracks. The issues Class Is have with states operating higher-speed service over their tracks — capacity, liability, safety, cost, compensation — aren't any different than those they have with a conventional-speed passenger service.

"These are very complicated projects, but the philosophical underpinnings are pretty straightforward," says DJ Mitchell, BNSF's assistant vice president of passenger operations.

However, the faster operations do heighten Class I officials' level of concern. "It's simply a matter of the laws of physics — when you introduce more trains and trains with more stringent schedules, the risk of delay increases, and that's a risk we want to avoid in the interest of keeping commitments to our customer," says NS' Butler. "We've dedicated a lot of resources to improve the quality of service to our customers and we don't want to put that at risk in any way."

Room to Move

That's why capacity ranks at the top of the list when it comes to mixed-operation concerns. If a Class I agrees to allow passenger operations on any of its lines, the operator will need to replace any capacity it uses. The higher the speed, the more capacity needed.

"It's like a sports car climbing up on an RV on a two-way highway. Freight is slower, and you're trying to run a fast passenger train parallel to it, so there are a lot of overtakes and capacity requirements are a lot higher," says UP's Bristol.

For example, UP currently is working with the Illinois Department of Transportation, which is seeking to operate 110 mph service between Chicago and St. Louis. The state currently operates 79 mph service along the route. In order to operate faster service, Illinois DOT plans to build second and, in some areas, third track, says Bristol, adding that UP wants to protect capacity for future growth opportunities.

Railroads also want to protect their workers and potential future passengers.

"We always look first and foremost at safety — safety for our employees, both operating and maintaining the tracks, and safety for the public, both at crossings and on the trains," says CSX's Renjel.

Higher-speed passenger-rail operators will be expected to address all safety issues related to things such as positive train control, grade crossing equipment and station design, Class I officials say.

"For example, we can't have passengers crossing active freight tracks to get to a platform, so we're insisting on station designs that allow them to come from an overpass or underpass," says Bristol.

Class Is are concerned about other risks to their operations, as well — and "risk" can be defined in many ways. Railroads expect to be indemnified for any tax liability so that passenger operations aren't counted as income. General liability is an issue, as well.

"We have to be confident we haven't introduced any additional liability by allowing passenger trains onto our right of way or tracks, so we're looking for insurance or indemnification, maybe legislation from the federal government," says Bristol. "Right now, freight railroads aren't comfortable that that's been fully solved."

Class Is aren't necessarily comfortable with high-speed rail project construction risks, either — particularly when it comes to cost. Once all the engineering work and estimates for a higher-speed project are complete, project costs often increase substantially compared with original estimates, several Class I officials say, adding that passenger operators will be expected to take on that risk. All other project costs will be pinned on the passenger operator, as well, including expenses for studies, proposals and infrastructure plans. And in many cases, the host railroad will want to take on some of the work itself.

"Some states say they want to hire a consultant to do that work or that they'll do it themselves," says Bristol. "These assets are far too important to us to allow someone else to develop an infrastructure plan. We know how to do it and would insist on it."

The Class Is also will insist that high-speed operators cover their maintenance costs, which will be much higher compared with conventional-speed services, says Bristol.

"The class of track to go 110 mph is Class 6, which has much more stringent maintenance requirements than the Class 4 that we typically maintain our tracks at," he says. "The railroad needs to be maintained at the highest level, and we will demand that the passenger operator cover incremental maintenance costs. We don't need track of that standard to run our freight trains; we get no benefit there."

But will Class Is get any benefit from a high-speed operation? And if they do, should the Class Is be contributing money of their own to advance high-speed projects on their tracks? It's a subject that's been debated in recent months as states continue to plan high-speed rail projects, but Bristol says the idea that a freight railroad would benefit from a high-speed service is "a common misconception."

"We've heard people say, 'Well, aren't you going to run your freight trains at 110 mph?' That's not important to our business plan," he says. "We have some examples on projects at traditional speeds where we're willing to contribute because we're eliminating bottlenecks that help both freight and passenger rail, but on higher speeds it's hard to find those synergies."

BNSF's Mitchell Agrees. "In my opinion, there are five cost levers in operating a railroad: locomotives, fuel, crews, rail cars and right of way. Virtually none of the passenger projects change our cost structure so much as to say there's a significant railroad benefit to these projects," he says.

A Non-Profit Operation

And even though all Class I's would seek money from high-speed operators to cover any costs the freight railroad would incur and receive some sort of return on the assets or property that's involved, none would make a substantial amount of money off a passenger operation, they say.

"Typically, a passenger operation doesn't have any profit to pay us what a slot is really worth to us, and I don't see that changing in the near future," Bristol says, joking that no state has made a high-speed rail proposal to UP that would net much income for the railroad, but "we'd be really interested if they did."

There are plenty of high-speed rail proposals out there. Last fall, the Federal Railroad Administration received 259 grant applications from 37 states seeking \$57 billion in high-speed stimulus funding. Many of the projects included in the applications called for states to upgrade freight-rail corridors to accommodate faster passenger trains.

For the most part, Class I officials say they're ready and willing to work with the states to advance those plans. Bristol cited the previously mentioned work with the Illinois DOT as UP's best example.

To implement 110 mph service on a Chicago-to-St. Louis corridor owned by UP, the Illinois DOT plans to upgrade one of UP's routes by reconstructing track to meet requirements for 110 mph operations and constructing second mainline track, rehabilitating sidings, and improving or closing grade crossings.

Several factors have helped make the Chicago-to-St. Louis project a model one, says Bristol. For one, UP has other routes between the two cities, so even though it would be operating some freight trains on the high-speed passenger corridor, it has other alternatives. In addition, the flat and straight Illinois topography make it ideal for high-speed line building. And perhaps most important, Illinois has been a cooperative partner.

"Illinois has always been committed to doing the project right. We're confident we have a plan there that's going to work and will provide the reliability needed for passenger service while protecting freight service," says Bristol. "We've been working with them for a long time and they understand the issues associated with operating freight and passenger trains on a line."

Case-by-Case Basis

Meanwhile, UP is working with other states, such as Missouri and Oregon, to upgrade existing passenger-rail services so states can operate trains up to 79 mph. Both Missouri and Oregon have proposed upgrading service in the future to 110 mph, but getting there's not a given, says Bristol.

"Just because you have 79 mph passenger-rail service in your state today doesn't mean 110 will work," he says. "Some lines are more important than others and they all have different topography and engineering characteristics, so that will determine if it's a good candidate for 110 mph service."

Officials at Missouri DOT say they understand. They eventually want to operate 110 mph trains between St. Louis and Kansas City, but the corridor is a UP mainline along which 50 freight trains operate each day. Unless the state opts to build a dedicated passenger corridor, it likely won't be able to run trains above 90 mph, Missouri DOT Director of Multimodal Operations Brian Weiler said earlier this year in an interview with HSRupdates.com, Progressive Railroading's subscription-based website devoted to high-speed rail.

"We don't want to do anything on UP's corridor that reduces their freight-handling capability and their ability to grow," he said. "But UP has agreed to cooperate with us to see what else is possible on the rest of the corridor."

Officials at the Ohio DOT and Ohio Rail Development Commission (ORDC), an independent commission within the DOT, understand freight concerns, as well. The state currently is working with NS and CSX to implement its 3C "Quick Start" corridor, which would link Cleveland, Columbus, Dayton and Cincinnati. Trains would operate at speeds up to 79 mph on the corridor. CSX owns the track between Columbus and Cleveland, and NS owns the track between Columbus and Cincinnati.

"We've had very good support from both Class I's throughout this whole planning effort," says Stu Nicholson, ORDC's public information officer. "We've had the railroads at the planning table literally from Day One, and our philosophy has been, whatever we do to enable passenger rail should do no harm to the host freight railroads."

However, ODOT's long-term high-speed rail plans propose increasing speeds along the 3C corridor to 110 mph. The department currently has a memorandum of understanding with NS that states if train speeds exceed 79 mph, Ohio will need to construct separate right of way, says NS' Friedmann. ODOT has a similar MOU in place with CSX. So how will the state achieve its 110-mph goal?

"That's still off into the future; right now, the immediate goal is to get the 3C Quick Start under way," says Nicholson.

CSX also has developed good partnerships with North Carolina and Virginia, which are advancing higher-speed service plans along the Southeast High Speed Rail Corridor, says CSX's Renjel.

An Unsettled Situation

But in some cases, Class I's and state DOTs don't see eye-to-eye when it comes to high-speed rail development. For example, New York State DOT is seeking to implement 110 mph passenger-rail service between New York City and Albany, and Albany west to Buffalo and Niagara Falls. Between Albany and Buffalo, the state proposes to operate trains along CSX tracks or right of way.

"New York certainly has some challenges, specifically around the issue of the state's desire to go in excess of 90 mph on our railroad," says Renjel. "We have profound safety [and capacity] concerns with that. That's the main artery from the Port of New York to the rest of the country [and] the most heavily traveled freight corridor in our system."

Late last month, CSX and the DOT reached an agreement that establishes a framework for pursuing high-speed rail and enables the state to prepare an environmental impact statement for the 463-mile Empire Corridor from New York City to Albany, and west to Buffalo and Niagara Falls. However, the

pact doesn't resolve two key issues: allowing passenger trains to operate along CSX's corridor at more than 90 mph and narrowing the 30-foot gap between freight and high-speed tracks, according to CSX spokesman Bob Sullivan.

CSX officials believe the pact is consistent with their "commitment to work with state and federal officials to help find ways to safely and efficiently enhance passenger service in upstate New York," while DOT officials characterize the agreement as "turning the corner" on joint high-speed rail development efforts, according to separate statements issued May 28. Ultimately, the state would need to spend about \$8 billion to build a dedicated passenger-rail corridor for 110-mph service, but CSX can help "get speeds up to 90 mph and increase the average speed," says Renjel.

Meanwhile, UP officials are expressing concerns about the California High Speed Rail Authority's (CHSRA) plans to operate 220-mph trains near its right of way, specifically between the Bay Area and Central Valley. In an April 23 letter to CHSRA — which in March issued a revised draft environmental impact report (EIR) for the segment — UP General Manager-Network Infrastructure Jerry Wilmoth identified sticking points.

"Based on drawings and photographs in the revised EIR, the authority intends to locate the high-speed corridor either on UP's right of way ... or immediately adjacent thereto. This is not acceptable," Wilmoth said in the letter.

The proximity of the proposed line to UP's right of way "presents serious safety concerns and also has the potential to negatively impact service to our customers," UP spokesman Tom Lange said in an email to Progressive Railroading.

"UP first stated our position and concerns with high-speed rail on our right of way verbally in 2005. We placed such concerns in writing in a May 13, 2008, letter and reiterated our position via 10 additional letters filed on various EIRs and meeting requests with the authority over the past two years," Lange continued. "Although no negotiations are in process, we will continue to have discussions with CHSRA to reiterate our position and understand CHSRA plans."

UP's concerns were included in public comments on the revised draft EIR, so CHSRA couldn't comment on the letter itself.

"As with all comments received during the formal comment period for the Bay Area to Central Valley Revised Draft Program EIR, authority staff will thoroughly review this correspondence and respond to comments related to the revised material within the EIR," CHSRA spokesman Jeffrey Barker said in an email.

Proceeding with Caution

In some cases, Class I/state discussions about implementing higher-speed rail will continue to be contentious. Class I officials are just trying to be cautious, they say. There will be an abundance of freight-rail growth opportunities during the next 20 to 30 years, planners believe, and Class Is need to be in a position to capitalize on them.

"We see our role long-term as taking trucks off the highway ... so if you play this forward, there are a lot of lines that have capacity available now that won't down the road," says Bristol.

That said, there are instances where higher-speed operations on freight-rail tracks or right of way can work — case in point: the Illinois DOT's proposed Chicago-to-St. Louis operation. And Class I officials

continue to reiterate that they're willing to work with states to find opportunities to introduce such services. As long as states are willing to cooperate with Class I policies, high-speed development can progress. That progress just might not come as quickly or as easily as some state DOT officials hope.

"States need to have realistic expectations, and they need to respect the needs of the freight network," says Bristol. "Some states understand that, some don't, but you need to address the freight issues in order to have a successful project."

Central Location of SW Pennsylvania for High-Speed Maglev



Region Included in 500-mile Radius from Pittsburgh



No Annual Operating & Maintenance Subsidy Required for High-Speed Maglev

Regarding the amount and source of funding needed to cover annual operating and maintenance expenses, there is none. The federal High-Speed Maglev Deployment Program requires all maglev projects to be financially self-sustaining following construction.

Because of the precision fabrication component relative to the project's guideway, its construction and deployment are such that there is no routine or recurring track adjustment required (nor operationally acceptable) to maintain high-speed maglev service. Alternatively, steel-wheel-on-rail operations require intensive track maintenance to sustain proper gauge, elevation, cross level and other track standards that become more stringent with increased operating speeds. Maintaining these stringent standards is further compromised when the track is shared with heavy freight operations, a phenomenon that applies strong geometric forces to the rails and causes a shift in their alignment that necessitates constant correction. The absence of a similar maintenance requirement for high-speed maglev is based on the fact that there is no unintended shift or movement in the guideway. The end result is that no annual operations and/or maintenance subsidy would be required to support the operation of the high-speed maglev system.

Projected revenue and cost information contained herein is based on the project's completed Draft Environmental Impact Statement (DEIS) as required under the National Environmental Policy Act (NEPA). Capital cost estimates for the Environmentally Preferred Build Alternative were prepared by MAGLEV, Inc., and are based on engineering plans, profiles and other engineering details and the use of the *PENNDOT Bulletin 50-Construction Cost Catalog* and other information for unit construction cost estimates. Cost information supplied by Transrapid International (developers of the maglev system) was also used in the development of the maglev system cost elements and operating and maintenance (O&M) costs.

Since no high-speed maglev project has been implemented in the U.S., a consulting group retained by the public sponsors conducted an independent cost/risk assessment study in 2004. Based on MAGLEV, Inc.'s target seven-year construction schedule for the entire 54-mile project (including contingencies and using conventional construction techniques), the cost study results were within 10% of the presented project cost.

Two investment grade ridership studies, with a Federal Railroad Administration appointed peer review panel of national experts, form the basis of these calculations. While the fare structure has not been finalized, and further revenue optimization will be studied, a fare structure of \$5.00 between each station with 7.5-minute peak frequency of service intervals was used in the DEIS to provide an estimate of fare-based revenues.

Some passenger trips will comprise travel on more than one segment of the 54-mile route, thereby resulting in "passenger links", which represents the average number of segments traveled by each passenger in terms of route segments. Passenger link ridership differs slightly from total passenger trips, with each passenger trip averaging 1.2 to 1.3 links. Each link volume, plus special event trips, was multiplied by the \$5.00 segment fare and then by an annual multiplier of 300 days of normal usage to produce the annual revenue estimate.

The forecast for the annual farebox revenue for the initial operation from the Pittsburgh Airport to downtown is \$19,731,048. Additional non-farebox revenue accruing from advertising, extended parking, power & communications, naming rights, light freight, joint station development and other revenue sources is projected at \$10,488,581 annually, for a combined total revenue forecast of \$30,219,629 for the airport to downtown segment.

The annual O&M expenses for this initial segment are calculated to be \$16,680,000. The basis for estimating O&M costs includes input from the technology supplier, Transrapid International, and staffing plans developed by MAGLEV, Inc. The O&M costs include maintenance of right-of-way, maintenance of vehicles, equipment and all guideway related infrastructure, labor for transportation of passengers and freight services, energy and utility supply, insurance and general administration expenses.

These projections provide an annual positive operating cash flow balance of \$13,539,629 for the initial year of operations. An Operating Pro Forma Cash Flow Schedule highlighting operating revenues, costs, debt service and maintenance reserve fund balances for the entire 54-mile project over a thirty-five year operating schedule is attached. Note that the first column (year 2010) reflects only the initial airport to downtown segment as described above.

A Major Maintenance Reserve Fund is planned to be created from the surplus revenues generated by the project after O&M costs and debt service payments are covered. The reserve fund is designed to support vehicle replacements and major infrastructure reinvestment capital after twenty years of service. However, if the initial segment(s) is/are funded through the current high-speed section of the American Recovery and Reinvestment Act up to 100% federal funding, there should correspondingly be a reduced debt service component.

The financial projections prepared for this project are based on federal funding proposals that were in place at the time the DEIS was prepared. This includes federal funding limited to \$950 million with state matching funds of \$475 million plus other funding sources including \$570 million in revenue bonds, TIFIA loans, \$795 million of other equity funds and approximately \$124 million of Available Resource Elements (A.R.E.) funds to be used to pay for road improvements as identified in the Long Range Plan (2030) of the Southwest Planning Commission (SPC). The \$795 million equity source category includes a variety of funding alternatives including private investment funds, additional revenue bonds, revenues associated with zone fare and station optimization, contractor subordinated debt, tax credit bonds and additional public grants.

Funding through these mechanisms would require a debt service on behalf of the project, but it is still projected to result in an annual surplus over operating and maintenance costs as projected in the DEIS and the attached schedule. Specifically, the surplus revenues accumulated after meeting operating and maintenance costs and debt service payments for the entire 54-mile project over the first thirty-five years of operations will result in a Major Maintenance Reserve Fund balance of \$871,500,604. But once again, if the project is funded largely through the current American Recovery and Reinvestment Act up to 100% federal funding, there should correspondingly be a smaller debt service component and the positive cash flow balance would result in hundreds of millions of additional dollars that could be used to further finance expansion of the self-sustaining system.

In summary, the Pennsylvania High-Speed Maglev Project offers an unprecedented opportunity to establish long-term high-speed rail service without the need for an annual operating subsidy.

{The above financial data and following pro-forma schedule are based on information included in the Draft Environmental Impact Statement. This information will be updated prior to the issuance of a Record of Decision (ROD).}

Operating Pro Forma Cash Flow Schedule

Budget Item	2010	2015	2020	2025	2030	2035	2040	2045
Farebox Revenue	19,731,048	105,314,790	127,561,898	154,518,753	187,184,051	226,768,522	274,739,993	332,878,025
Other Revenue	10,488,581	52,556,304	67,489,269	79,738,515	94,258,394	111,478,680	131,912,108	156,170,693
Total Revenue	30,219,629	157,871,094	195,051,167	234,257,268	281,442,445	338,247,202	406,652,101	489,048,718
O&M Expenses	16,680,000	40,791,499	47,288,527	54,820,364	63,551,826	73,673,984	85,408,340	99,011,674
Operating Cash Flow	13,539,629	117,079,595	147,762,640	179,436,904	217,890,619	264,573,218	321,243,761	390,037,044
Plus: Interest Earnings	X	2,838,541	2,838,541	2,838,541	2,838,541	2,838,541	2,838,541	2,838,541
Senior Debt Service	X	58,539,797	29,667,954	58,462,740	93,420,663	132,286,609	X	195,018,522
TIFIA Debt Service	X	X	104,661,718	104,661,718	104,661,718	108,234,498	292,039,782	X
Net Operating Cash After Debt Service (Transfer to Major Maintenance Reserve)	13,539,629	61,378,339	16,271,509	19,150,987	22,646,779	26,890,652	32,042,520	197,857,063
Balance of Major Maintenance Reserve	13,539,629	291,721,643	418,699,313	580,526,344	289,758,880	309,768,999	450,984,225	871,500,604
Senior Debt Outstanding Par Amount	567,708,210	382,004,505	321,010,196	209,824,609	123,670,552	32,414,855	26,258,061	12,932,445
TIFIA Debt Outstanding	1,543,540,518	1,993,556,537	1,993,556,537	1,993,556,537	1,993,556,537	1,989,983,757	1,132,727,684	X

This table highlights operating revenues, costs, debt service and maintenance reserve fund balances over a thirty-five year period. It is based on the following assumptions:

- * Total Revenue includes ridership and non-farebox revenue;
- * Non-Farebox revenue includes naming rights, advertising, freight, extended parking, joint development and other revenue sources;
- * Ridership growth rate is based on the regional data provided by the SPC. Ridership growth beyond the SPC Long Range Planning year of 2025 (or 2030) is based on population and employment growth rate in the Long Range Planning years prior to 2025 (or 2030);
- * Only the first section from Pittsburgh International Airport to downtown Pittsburgh will be in operation by the year 2010 with the remaining sections coming on line in 2011 and 2012 respectively;
- * All costs and revenues are inflated at an annual growth rate of three percent;
- * Based on customary rating agency requirements, debt service coverage ratio on senior debt (the current interest and capital appreciation revenue bonds) must be a minimum of two times to obtain the investment grade rating requirement for TIFIA credit assistance;
- * Maximum TIFIA financing is limited to thirty-three percent of total project cost;
- * TIFIA requires minimum aggregate debt coverage of 10.1;
- * Debt service is based on current bond market rates;
- * Senior debt interest rates assume an investment grade rating in the "Triple-B" category;
- * The Maintenance Reserve Fund balance is sufficient to fund vehicle replacements and major infrastructure capital improvements starting in year twenty of operation.

The Operating Pro Forma Cash Flow Schedule was developed with the assistance of the project investment banking committee of Citigroup Global Markets, Inc. (now Morgan Stanley Smith Barney), Raymond James Associates and PNC Capital Markets. The finance plan and associated pro formas are based on reasonable assumptions that would result in a financially successful project implementation and a sustainable operating entity into the foreseeable future. In order to ensure that the revenue bonds are marketable and that the TIFIA credit assistance is available, it will be necessary to receive one or more investment grade ratings on the revenue bonds.

Following completion of the EIS process and the issuance of a ROD from the FRA, an independent review by investment bankers of the project's construction cost, schedule, projected revenues, and operating costs will be conducted in preparation of the bond ratings for the project.