



PENNSYLVANIA INTERCITY
**passenger
& freight**
RAIL PLAN

Appendix 4

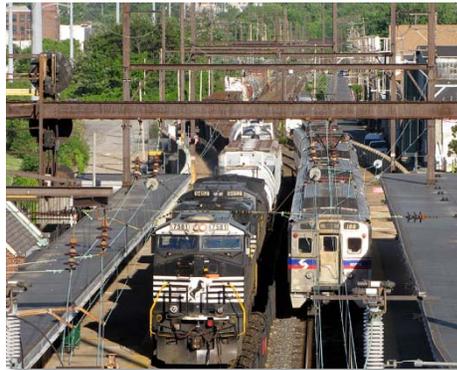
Commuter Rail System

Appendix 4

Commuter Rail System

Introduction

The commuter rail system in Pennsylvania is important to providing public transit service in the state and primarily operates in areas with more dense population. The purpose of Appendix 4 is to provide an overview of current commuter rail service in Pennsylvania. Information and relevant operating data on existing commuter rail systems are provided in addition to a description of commuter rail service system performance.



System Overview

Commuter rail is a form of passenger rail service that is intended primarily to accommodate the commutation needs of the residents who travel to work on a daily basis within a metropolitan area. Increasingly, commuter rail is being used for a variety of non-commutation purposes during the off-peak periods and on weekends. Typical commuter rail

lines are anywhere from 5 to 50 miles long and provide service on a non-reservation basis primarily for shorter-distance travel between a central business district and adjacent suburbs. In extreme cases, some commuter rail services in large cities on the east and west coasts can serve commuters who live as much as 100 miles or two hours from the central city station location. Commuter rail systems range in scale from those that have only one line operating at peak hours on weekdays, to complex systems with multiple lines operating throughout the day, as well as during the evening hours and on weekends.

Commuter Rail in Pennsylvania

Currently, the only commuter rail operations in Pennsylvania are SEPTA and NJ Transit services focused on the Philadelphia region. SEPTA operates 13 lines that link Center City Philadelphia with its Pennsylvania suburbs, as well as trains to Wilmington and Newark in Delaware and to Trenton and Ewing (West Trenton) in New Jersey. NJ Transit operates the Atlantic City Rail Line from Philadelphia's 30th Street Station to Atlantic City; and its Northeast Corridor service connects with SEPTA's R7 service in Trenton, New Jersey.



SEPTA

SEPTA's commuter rail network is known as "Regional Rail." This name was deliberately chosen to reflect the special nature of Philadelphia's metropolitan rail network. With 13 lines, all of which serve Center City and 30th Street Station via the Center City Commuter Tunnel, SEPTA's Regional Rail is one of the most versatile rail systems in the country. It is possible to travel to many destinations within the region by rail, and reverse-commute ridership is a fast-growing market segment. The variety of destinations and frequent service throughout the week allows passengers to use the system for leisure, shopping, recreation, and other purposes in addition to commuting. Newly expanded late-night service is helping to support Center City cultural events and nightlife. Figure 4-1 depicts the SEPTA commuter rail system.

Operations

Every weekday, SEPTA operates 707 trains on 13 lines over 280 route miles.¹ The majority of route miles (151) are over SEPTA right-of-way. Other right-of-way ownership includes Amtrak (108 miles), CSX (15 miles), and the City of Philadelphia (six miles). Annually, SEPTA operates 17,341,258 train miles. SEPTA dispatches trains on track that it owns, but Amtrak dispatches services on Amtrak's Northeast Corridor and Keystone Corridor. The system operates frequent peak-hour service. During off-peak periods, including weekends, the majority of routes operate at least every hour. This allows for a high degree of regional connectivity.

Ridership

SEPTA's Regional Rail ridership reached its highest level in 30 years

when 35,450,000 passengers used the service in Fiscal Year 2008. This represents a 37 percent increase in ridership over 1999 when Regional Rail carried 25,900,000 passengers. Average weekday trips totaled 123,700 trips, which was an increase of 34 percent from 92,000 weekday trips in 1999. The slightly larger increase in total ridership versus weekday trips could be an indication that passengers are now taking more non-commute trips than a decade ago. The average trip distance per passenger in 2008 was 14.6 miles and SEPTA provided 517,570,000 total miles. Figure 4-2 shows SEPTA ridership by line in FY 2008. Figure 4-3 illustrates SEPTA daily boardings at rail stations.

On-Time Performance

SEPTA has set an annual goal of 91 percent on-time performance (OTP) for its Regional Rail system. A train is considered "on time" if it arrives at its terminal within six minutes of its scheduled arrival time. The terminals include the outer ends of the branches, as well as Suburban Station as the central time point.

Compared to other commuter railroads, SEPTA faces special operating challenges. SEPTA operates a network that runs through a four-track tunnel under Center City Philadelphia with trains continuing through to the other side of the network as outbound trains. Many other commuter agencies have "stub" terminals in central cities, which allows for more resiliency in on-time performance. In a stub station, a schedule can be padded (allotted extra time) because the trains can layover at the station for a flexible amount of time. In contrast, very few SEPTA trains terminate on stub tracks and then layover. The vast majority continue through the system, so there is no padding in SEPTA layover times in Center City Philadelphia. A late inbound train becomes a late outbound train.

¹ SEPTA 2008 Annual Report:
http://www.septa.com/inside/reports/annual_report_FY2008.pdf



Figure 4-1: SEPTA Commuter Rail System Map



Source: http://www.septa.org/maps/click_map.html



Figure 4-2: SEPTA Ridership by Line



SEPTA Regional Rail
Weekday Ridership by Route

Source: SEPTA 2009 Annual Service Plan

Source: SEPTA 2009 Annual Service Plan



On-time performance is affected by factors such as weather, construction programs, equipment failures, incidents, and railroad dispatching conflicts. Generally, OTP is at its lowest in the fall, which is known as “Slippery Rail Season.” Autumn leaves cling to the rails and are crushed by passing trains, leaving a very slick residue (pectin) that causes train wheels to slip. In recent years, SEPTA has conducted public outreach campaigns to inform riders about slippery rail. The authority has also increased brush cutting and used innovative mechanized rail-cleaning equipment designed by SEPTA to reduce the impact of “Slippery Rail Season.”

In July 2009, the latest month for which data are available, SEPTA achieved a 94 percent overall on-time performance, with no line operating below 91 percent and one line operating with 100 percent OTP. Recently, the R3 Media/Elwyn line has had recurring OTP issues due to signal problems. The R5 Paoli/Thorndale endured occasionally-poor OTP during the Keystone Corridor Improvement Project, but schedule adherence has recently improved.

Fleet

SEPTA has 349 rail vehicles. Almost all of these vehicles are Electric Multiple Units (EMU), which are self-propelled cars that do not require a locomotive. SEPTA calls these cars “Silverliners.” These vehicles have been in service for 33 to 46 years. SEPTA also operates a small fleet of push-pull, locomotive-hauled coaches with equipment varying in age, but generally newer than the EMU fleet. The push-pull trains normally operate as peak-period relievers and express trains, due to the fact that their acceleration is slower than that of EMUs.

Seating on most SEPTA trains is 3-2, meaning the train has five seats across, three on one side of the aisle and two seats on the other side and are typical of commuter rail systems in the eastern United States. This high-density seating pattern can yield more than 100 seats per car. Most western commuter rail systems use the more typical 2-2 seating, with only four seats per row. Modern amenities such as electrical outlets for personal electronics are not available. None of SEPTA’s rail vehicles have restrooms.

In light of record ridership and an aging fleet, SEPTA has ordered 120 new EMU vehicles to reduce crowding and replace its aging fleet. Delivery of the new cars, dubbed “Silverliner V” because they are the fifth version of the EMU that SEPTA will operate, is expected to commence in mid-2010. These vehicles will replace aging Silverliner I’s and II’s, and expand the total fleet. The new vehicles will have many passenger-friendly features including larger windows, wider aisles, electronic destination signs, and 2-by-2 seating arrangements for a section of the car. Wide, automatic doors will speed the boarding process.





Integration with Amtrak

SEPTA Regional Rail lines serve several Amtrak stations including 30th Street Station in Center City Philadelphia. An Amtrak ticket is valid for travel on Regional Rail trains between 30th Street Station and Market East. Although this program is described in SEPTA timetables, very few travelers may be aware of this benefit.

SEPTA schedules are not coordinated to make connections with Amtrak schedules. Because SEPTA weekday peak-hour service frequency is so high (generally every 30 minutes or better), the wait time for passengers transferring between the two services at 30th Street Station is relatively brief during those periods. During the off-peak and weekends, passengers transferring between Amtrak and SEPTA Regional Rail could spend up to an hour waiting for a connection.

SEPTA and Amtrak share several stations in addition to 30th Street Station including:

- Wilmington, Delaware (served by the R2),
- Ardmore, Paoli, Exton, and Downingtown (served by the R5)
- Trenton, New Jersey (served by the R7).
- North Philadelphia (R7 and R8) and Cornwells Heights (R7) which have extremely limited Amtrak service.

Integration with NJ Transit

The SEPTA rail network has connections to three NJ Transit rail lines: the Atlantic City Rail Line, the Northeast Corridor service, and the RiverLINE (light rail service).

SEPTA connects to the Atlantic City Rail Line at 30th Street Station. The NJ Transit service departs from the lower level of 30th Street Station, with a diesel locomotive and push-pull coaches. SEPTA operates from the upper level of 30th Street Station. Despite relatively close physical proximity, the ease of connections could be improved. SEPTA system maps do not show the Atlantic City Rail Line, and signage at the train station is minimal. The two systems operate independently.

In general, the Atlantic City Rail Line service is not very visible in Philadelphia, because the SEPTA system map (which does not show the Atlantic City Rail Line) is the most common transit map used by tourism agencies, although SEPTA timetables do list it as a connecting service. The Atlantic City Rail Line trains pass through the North Philadelphia station without stopping, so connections to other SEPTA services are reduced. The trains do not operate into Suburban Station, which is much closer to the Central Business District of Philadelphia than 30th Street Station.

SEPTA provides cross-platform transfers to NJ Transit’s Northeast Corridor rail service at Trenton. This service does not provide a one-seat ride between Philadelphia and New York City, but it is the least expensive rail service between the cities (current one-way prices are \$20.50 for off-peak). The two commuter systems interline schedules to reduce transfer times, and connecting trains are shown in the train timetables. However, connections are not guaranteed. Late trains can lead to missed connections and long waits.

In past years, a one-seat ride commuter option was available between Philadelphia and New York via the Amtrak “Clocker” service, which had begun years before under the Pennsylvania Railroad. Clocker trains



were named after the fact that trains ran every hour on the hour. For a time, NJ Transit subsidized the service to allow its pass holders to use the Amtrak trains, thus offering a semi-express trip on more comfortable equipment. Due to the demand, the train consists became very long. Amtrak subsequently sold the time slots at Penn Station in New York to NJ Transit. The Clocker service was discontinued, and the train slots were re-assigned to NJ Transit trains. Service on those runs was truncated to Trenton, leaving fewer trains from Philadelphia to New York.

SEPTA also makes a connection to the NJ Transit RiverLINE at Trenton, which provides half-hourly service to Delaware River communities in New Jersey and the City of Camden.

SEPTA and NJ Transit are beginning to integrate their ticketing. Recently, NJ Transit has begun to sell a ticket that is honored on SEPTA, primarily for passengers traveling between Trenton and Center City Philadelphia. However, the full range of ticket options, such as a zonal ticket, is not available. SEPTA does not sell tickets for NJ Transit services.

Integration with MARC

At the present time, Maryland Area Regional Commuter (MARC) trains terminate in Perryville, Maryland, about ten miles south of Newark, Delaware, which is a SEPTA station. At a future date, MARC trains may be extended to serve Elkton, Newark, and possibly Wilmington, Delaware. This would allow for a connection between MARC and SEPTA and would create an all-commuter-rail link between Philadelphia and Washington, D.C., providing an alternative to Amtrak but with much longer travel times.

Integration with Local Transit Modes

SEPTA Regional Rail service intersects with other SEPTA bus, trolley, and heavy rail (subway/elevated) services throughout its service area. However, many of these services are not timed to meet Regional Rail trains, and all transfers between Regional Rail and other modes require the purchase of a transfer ticket unless the passenger is using certain passes. In general, there is some redundancy in service between the local transit options and the Regional Rail system, due to the legacy of separate ownership of these systems in the past. This condition is common in the transit industry, because commuter rail is often administered by a separate entity from local transit. SEPTA has made great inroads into integrating the separate systems that were absorbed from private companies, however there are still many opportunities to increase the utility of the Regional Rail network by tying in local transit routes and integrating fare structures.

Pedestrian connections are available between Regional Rail, trolleys, and subways from all Center City stations. Outside of Center City, SEPTA has identified specific locations where passengers can transfer between Regional Rail and other services. These stations, often called “Transportation Centers” include Norristown, Fern Rock, Chester, and Wissahickon Transportation Centers. Transfers from Regional Rail to the Sharon Hill 102 line are possible at Clifton-Aldan.



SEPTA’s service standards recommend that no new bus or trolley lines be introduced if they provide service that is similar to existing heavy rail



or Regional Rail lines. Instead, improvements to bus routes should be linked to trunk line rail services to take advantage of their capacity and speed. However, several opportunities to better integrate services still exist. For example, in April 2009 DVRPC published a report, *Alternatives to Buses on I-76: SEPTA Rail Feeder Bus Study Technical Memorandum*, about eight bus routes operating on the Schuylkill Expressway. Combined, these routes carry approximately 6,700 passengers on a typical weekday, but they are caught in the increasing traffic congestion. DVRPC analyzed the potential to direct these bus routes to Regional Rail stations to make transfers, thus avoiding the expressway congestion. The study concluded that the potential existed to implement increased integration, but that it may require capital investments at stations and an integrated fare system, among other changes.

In addition to SEPTA transit services, SEPTA Regional Rail makes connections to DART buses in Delaware, PATCO rapid transit at Market East (8th and Market), and the RiverLINE light rail at Trenton.

Parking and Automobile Access to SEPTA Regional Rail

SEPTA provides 19,850 parking spots in 117 lots on the Regional Rail network. An additional 4,836 spots in 22 lots are not owned by SEPTA. SEPTA has an ongoing Parking Expansion Program to provide more park-and-ride facilities throughout the system.

Expansion plans

Expansion projects for Regional Rail that are currently under consideration include extending service from Norristown to Reading (and Wyomissing) via Pottstown, extending the R3 Media/Elwyn service to Wawa, and extending the R5 Lansdale line into Bucks County and possibly to Bethlehem.

The R3 extension to Wawa will restore service to a growing portion of the Philadelphia region and provide a new park-and-ride location on US Highway 1. The project, budgeted to cost \$80 million in SEPTA's 2010 proposed budget, will include replacement of track, catenary (overhead electrical wires), signals, and two bridges, as well as the construction of a new station with high-level platforms and 500 automobile parking spaces. The design/engineering phase of this project is underway and scheduled for completion in 2010.

Extension of service to Reading has been studied for several years. In the early 2000s, SEPTA proposed the Schuylkill Valley Metro (SVM), a new service with extensive infrastructure investment estimated to cost nearly \$2.2 billion to construct. The SVM project did not meet the FTA's New Starts guidelines and was dropped from consideration. However, communities and business groups along the proposed line continued to push for rail service. In 2008, the Montgomery County Planning Commission conducted a new study to evaluate service and funding alternatives for the corridor. The *R6 Norristown Line Service Extension Study* determined that an extension of rail service to Wyomissing (west of Reading) along the existing Norfolk Southern freight line is feasible for approximately \$160 to \$300 million, depending on several factors including potential electrification and rolling stock acquisition. The study recommended the completion of an Alternatives Analysis to begin the NEPA process for the project. Financial support for the line could come from a variety of sources including potential tolling of parallel US





422, which is heavily congested.

Other Issues

Several of the stations served by Amtrak and SEPTA Regional Rail have design constraints that hinder integration of services. For example, all Amtrak and SEPTA trains stopping at Paoli need to use the outside tracks to reach the platforms. Long-distance trains such as Keystone and SEPTA express trains could maintain higher average speeds if they were able to stay on the center tracks without diverging to platforms at station stops. Instead, these services are often caught behind slow local trains on the outer tracks. Also, having trains switch between the inner and outer tracks to make station stops tends to decrease system capacity and scheduling flexibility.

Construction of island platforms at Ardmore and Paoli on the R5 would allow for Amtrak and SEPTA to make the most of the Commonwealth’s investment in upgraded tracks on the Keystone Corridor within SEPTA’s service area. If additional main line tracks are added west of Paoli, island platforms would allow express trains to platform at those stations as well. A similar strategy for stations on the Northeast Corridor could also be employed.

SEPTA has reduced service frequency on the R5 Paoli-Thorndale throughout the Keystone Corridor Improvement Project. SEPTA plans to increase R5 service frequency throughout the day upon completion of the project.

With increased service frequency and competitive ticket prices on the improved Keystone service, many passengers from outlying SEPTA stations, such as Downingtown and Exton, have begun to use Amtrak’s Keystone Corridor for commuting into Center City. This suggests that SEPTA and Keystone services should be integrated to allow for

operational efficiencies and improved customer service.

NJ Transit

NJ Transit operates one commuter rail line into Pennsylvania and also has a yard facility in Morrisville. NJ Transit also operates two rail lines (one commuter and one light rail) that connect with SEPTA services at Trenton.

NJ Transit’s Atlantic City Rail Line takes passengers directly from Philadelphia’s 30th Street Station to the casinos and beaches in Atlantic City. NJ Transit’s Northeast Corridor commuter rail service connects with SEPTA’s R7 in Trenton to provide low-cost, frequent service to northern New Jersey destinations and New York City. The River LINE light rail service links Trenton to Camden with connecting service to Philadelphia from both cities. The River LINE operates on 15- to 30-minute headways throughout the day (no service operates after 10 p.m. on weekdays).



With 14 round-trip trains each day, the Atlantic City Rail Line carried 1.3 million passengers in 2008—nearly 100,000 more than the previous year. The service connects to the PATCO Hi-Speed Line at Lindenwold, and plans are underway to build a transfer station in Pennsauken Township by constructing a new station near the Delair Bridge (which crosses the Delaware River). In the long term, the Delaware River Port Authority, the South Jersey Transportation Authority, and NJ TRANSIT are studying opportunities to increase service frequency on the Atlantic City Rail Line, create a multimodal hub at the PATCO at Woodcrest



Station, and develop a rail station on the Atlantic City Rail Line at the Atlantic City Airport.

In early 2009, NJ Transit—in cooperation with the Borgata and Harrah’s casinos in Atlantic City—began operation of the ACES (Atlantic City Express Service) rail service between New York City and Atlantic City, providing direct service between the two cities on weekends with one stop in Newark, New Jersey. The ACES train traverses Pennsylvania on the NEC from Trenton to Frankford Junction, where it reverses and travels over the Delair Bridge back to New Jersey. The train uses both an electric and a diesel locomotive—one on each end—in order to operate on the non-electrified Atlantic City Rail Line.

Proposed Commuter Rail Services

Several new or restored commuter rail services have been proposed by agencies, local governments, or advocates. Some of the proposed services include:

- Reading to Philadelphia
- Newtown to Philadelphia
- West Chester to Philadelphia
- Scranton to New York City
- the Lehigh Valley to New York City
- a new network of commuter lines serving Harrisburg
- a new network of commuter rail lines serving Pittsburgh
- Pennsylvania High-Speed Maglev Project

Reading to Philadelphia

As discussed above, Montgomery County has been organizing an effort to restore rail service to Reading and Wyomissing. This line once provided rail service from Pottsville to Philadelphia via Reading, but was discontinued during a SEPTA fiscal crisis in 1981. At that time, although PennDOT had funding to continue the service, an alternate operator could not be found. Since that time, US 422 has become congested, increasing the demand for rail service. Several studies have been conducted, with the most recent cost estimate at \$160 to \$300 million to restore service between Reading, Norristown, and Philadelphia.

Newtown to Philadelphia

SEPTA suspended service between Fox Chase and Newtown in 1982. The line had been operated as a shuttle using Rail Diesel Cars (RDC). SEPTA maintained a line item in its long-term capital budget for restoration of the line until 2009, but the agency has never acted to restore service. Recently, SEPTA entered into agreements to remove the track for a rail trail; however, interest still persists in restoring the service, despite local opposition. Alternative configurations of extending rail service may be possible, including tying the line into the R3 Warminster line via the Trenton Cutoff.

West Chester to Philadelphia

SEPTA operated electric rail service on the R3 line to West Chester until 1986, when the line was cut back to Elwyn, ostensibly because of deteriorating infrastructure. Since that time, Chester County has undergone rapid suburban development. The county and SEPTA have responded by offering increased service on the R5 line that is shared with the Amtrak Keystone service. SEPTA is currently in the process of restoring service beyond Elwyn for three miles to Wawa (at US Route 1),



but has no plans to restore service to the remaining ten miles to West Chester. West Chester is the only county seat in the SEPTA service area without rail service, although there is local interest in restoring the line to service. Currently, a short line railroad provides excursion service on the tracks for tourists.

Scranton to Hoboken/New York City

NJ Transit, the North Jersey Transportation Planning Authority (NJTPA), and the Pennsylvania Northeast Region Railroad Authority are collaborating to rebuild portions of the Lackawanna Cutoff and restore passenger rail service between Scranton, Pennsylvania, and Hoboken/New York City. The project envisions an 88-mile extension from NJ Transit's Montclair-Boonton and Morris & Essex line in Roxbury, New Jersey to Scranton. The estimated cost of the project is \$551 million and an environmental analysis was conducted in 2001. In 2008, the FTA declared a Finding of No Significant Impact (FONSI) for the first Minimum Operable Segment (MOS) from the Port Morris Yard in Roxbury, New Jersey, to Andover, New Jersey. Upon the issuance of the FONSI, the FTA directed NJ Transit to conduct a Supplemental Environmental Assessment (EA) for the remainder of the line from Andover, New Jersey, to Scranton, Pennsylvania. The Supplemental EA was completed in June 2009.

It is anticipated that NJ Transit will operate the service with several trains each day. With proposed Pennsylvania stations in Scranton, Tobyhanna, Pocono Mountain, Analomink, East Stroudsburg, and Delaware Water Gap, the commuter service would offer an alternative to traffic congestion on I-80 and other northern New Jersey highway routes. Many of these communities are among the fastest growing in Pennsylvania.

Lehigh Valley to New York City

The North Jersey Transportation Planning Authority, in cooperation with the Lehigh Valley Planning Commission (LVPC), NJ Transit, and the New Jersey Department of Transportation (NJDOT) conducted the I-78 Corridor Transit Study to examine the potential for improved transit strategies to relieve the congestion of automobile and truck traffic on the I-78 corridor between the Lehigh Valley and New York City. The results of the study led NJ Transit to conduct the *Central New Jersey/Raritan Valley Transit Study*, an extensive and detailed environmental and planning assessment that looks at a range of options to improve or add transit services, as well as preliminary cost estimates. Options include an extension of the NJ Transit Raritan Valley Line or the Morristown Line to Phillipsburg, enhanced bus service, and new or expanded park-and-ride facilities. Lehigh County, Northampton County, and the Lehigh Valley Economic Development Corporation (LVEDC) have entered into an agreement with NJ Transit to extend the scope of its ongoing study along the I-78 corridor from Phillipsburg, New Jersey, into Pennsylvania's Lehigh Valley. The extended study includes planning for Easton, Bethlehem, and Allentown, all of which are located along the I-78 and US 22 corridors. This study is expected to be completed in early 2010.



Harrisburg Commuter Rail

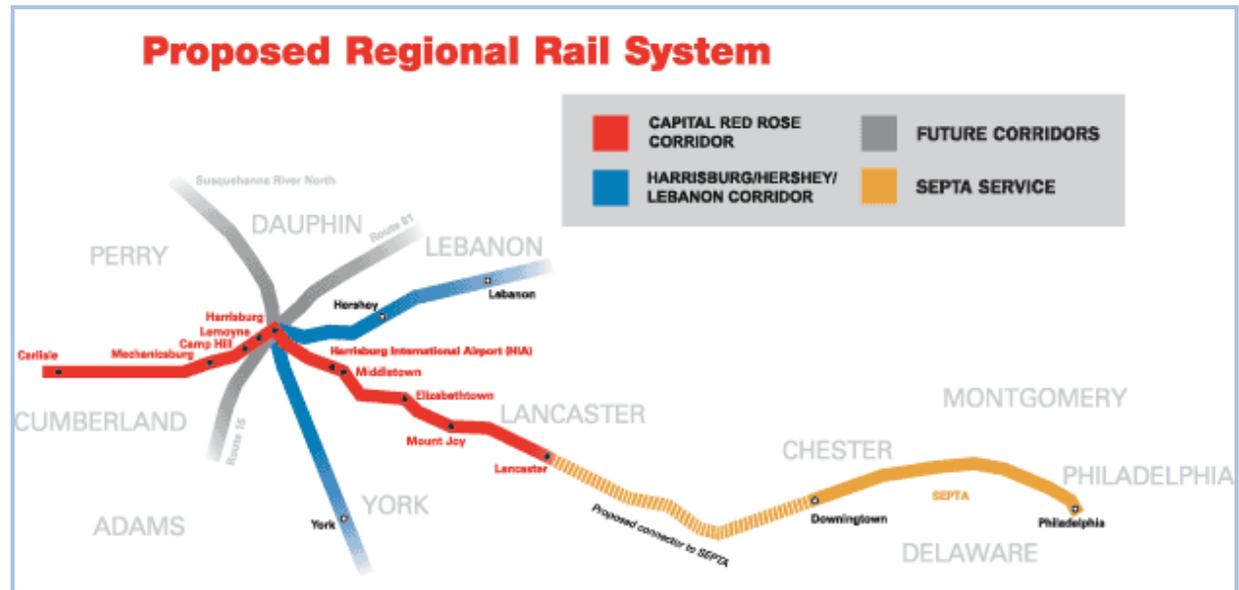
Capital Area Transit (CAT) and the Modern Transit Partnership (MTP) have been working together since 1993 to develop a commuter rail network centered on Harrisburg linking with Lancaster, Hershey, Lebanon, York, Carlisle, and Upper Susquehanna Valley communities.

The first priority (formerly called Corridor One) is for commuter rail service between Harrisburg and Lancaster on the existing Amtrak Keystone Corridor. In 2006, this specific corridor was renamed the Capital Red Rose Corridor. When the project was envisioned in the early 1990s, Amtrak was only operating eight round trips per day on this segment. With the completion of first-phase Keystone Corridor improvements in 2006, including more frequent, electric service and higher maximum speeds, service on the corridor has been significantly improved. Many passengers now use Amtrak’s Keystone service on this segment for daily commuting. Ridership between Harrisburg and Lancaster has grown from 46,418 in FY2005 to 73,402 in FY2009, an increase of 58 percent in contrast with 22 percent growth for the Keystone service as a whole. A new station has been proposed at Harrisburg International Airport.

A feasibility study is underway for “Corridor Two” between Harrisburg, Hershey, and Lebanon. Further corridors to Carlisle and York are proposed for later stages. Figure 4-4 illustrates the proposals for new commuter rail service for the region surrounding Harrisburg.

A pressing concern has been preservation of the right-of-way to Carlisle. Norfolk Southern has plans to build the Lemoine Connector to improve access to its Enola Yard. A grade separation is proposed to allow the future Carlisle commuter line to pass under the freight connection, but funding has been problematic.

Figure 4-4: Proposed Commuter Rail System – Harrisburg Area



Source: Modern Transit Partnership,
<http://www.mtptransit.org/corridorone.asp#content>



Pittsburgh Commuter Rail System

In 2006 the Southwestern Pennsylvania Commission (SPC) released *A Regional Strategic Vision for Public Transportation Serving Southwestern Pennsylvania*, which sets a framework for public transportation decision-making for Southwestern Pennsylvania. As shown in Figure 4-5 the vision plan identifies four commuter rail lines radiating from Pittsburgh to:

- Greensburg
- New Kensington
- Cranberry
- Beaver Falls

Pennsylvania High Speed Maglev Project

The Port Authority of Allegheny County (PAAC) prepared the Pennsylvania Maglev Final Environmental Impact Statement (FEIS) with PennDOT for the Federal Railroad Administration (FRA). The FRA Record of Decision on the Draft Environmental Impact (DEIS) was obtained in 2001. The Port Authority is sponsoring the project as a public-private partnership with Maglev, Inc., who has promoted the high-speed maglev effort for more than a decade. As mentioned, the FEIS has been performed, with supporting preliminary engineering completed. The next steps are to progress the FEIS to a Record of Decision (ROD), and to progress engineering to a design/build ready status to let contracts for construction.

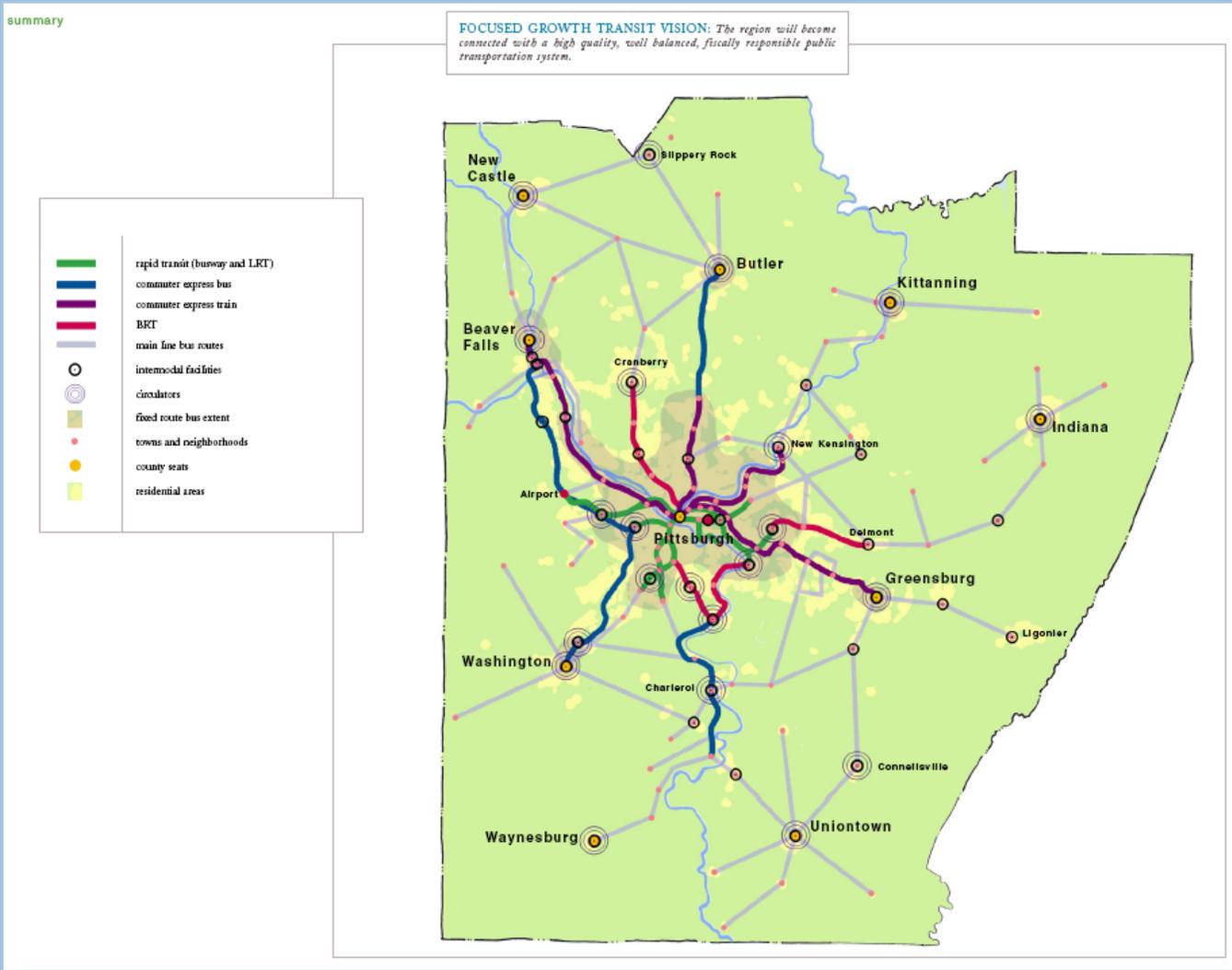
The proposed Pennsylvania High-Speed Maglev project is an approximately 54-mile maglev (magnetic levitation) line connecting Pittsburgh International Airport, Downtown Pittsburgh, Monroeville, and Greensburg with multimodal stations at these locations. The entire trip, from the Airport to Greensburg, would take approximately 35 minutes including stops. The project was estimated to cost \$5.2 billion in 2009.

The first phase of the project would connect the airport to downtown Pittsburgh. Downtown Pittsburgh to Monroeville is the second phase, and the third phase is Monroeville to Greensburg.

The Commonwealth of Pennsylvania submitted a pre-application in July 2009 for federal funding under the High-Speed Intercity Passenger Rail Program for the first phase of the project. More recently, it was announced that the Pennsylvania High-Speed Maglev Project will receive \$28 million in federal funding. The funding is in the form of a grant from the Federal Railroad Administration SAFETEA-LU Maglev Program. The grant will allow the project to complete preliminary engineering, update its financial plan, conduct an independent cost-analysis, perform studies for infrastructure placement and execute a bid for a bridge over the Monongahela River.



Figure 4-5: Proposed Commuter Rail System – Pittsburgh Area



Source: Southwestern Pennsylvania Commission – “A Regional Strategic Vision for Public Transportation Serving Southwestern Pennsylvania”

http://www.spcregion.org/transit_vision.shtml



Commuter Rail Asset Condition – SEPTA

As has been the case with other established transit systems in North America, SEPTA struggles to upgrade and maintain its rail system, including commuter rail, to a state of good repair. Although the system maintains a safe operation, the infrastructure continues to age and requires a significant investment to fund state of good repair initiatives. A recent report to Congress, *Rail Modernization Study*, dated April 2009, prepared by the Federal Transit Administration (FTA), assessed the level of capital investment required to attain and maintain a state of good repair for the nation’s seven largest rail transit operators. Agencies studied, including SEPTA, are listed in Table 4-1.

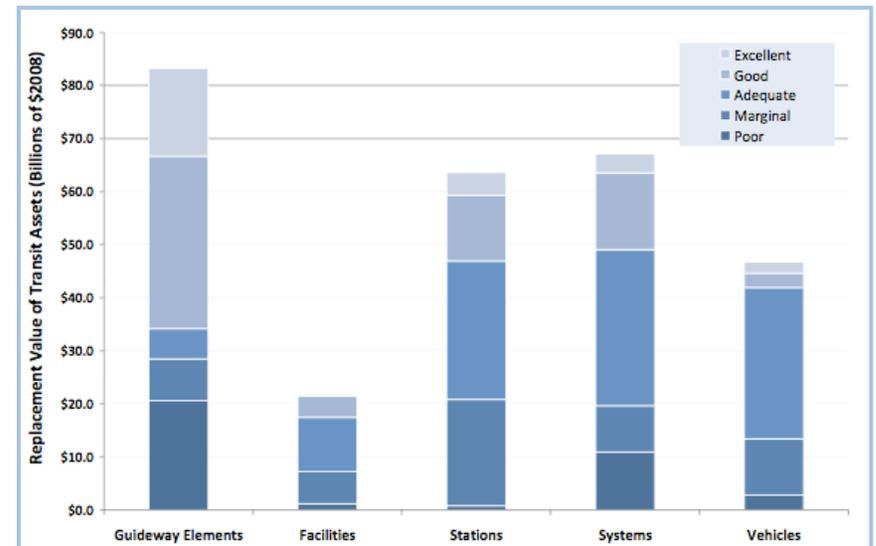
Table 4-1: Study Agencies and Rail Modes

Agency	Modes
Chicago Transit Authority (CTA)	Heavy Rail
Massachusetts Bay Transportation Authority (MBTA)	Commuter Rail, Light Rail, and Heavy Rail
Metropolitan Transportation Authority (MTA)	Commuter Rail and Heavy Rail
New Jersey Transit Corporation (NJ TRANSIT)	Commuter Rail and Light Rail
San Francisco Bay Area Rapid Transit District (BART)	Heavy Rail
Southeastern Pennsylvania Transportation Authority (SEPTA)	Commuter Rail, Light Rail, and Heavy Rail
Washington Metropolitan Area Transit Authority (WMATA)	Heavy Rail

Source: FTA Rail Modernization Study, April 2009

Though the report does not provide information by agency, it does give information about needs across modes and assets for all systems, as indicated by the following charts from the report shown in Figures 4-6 and 4-7.

Figure 4-6: Asset Conditions by Asset Type for Study Agencies



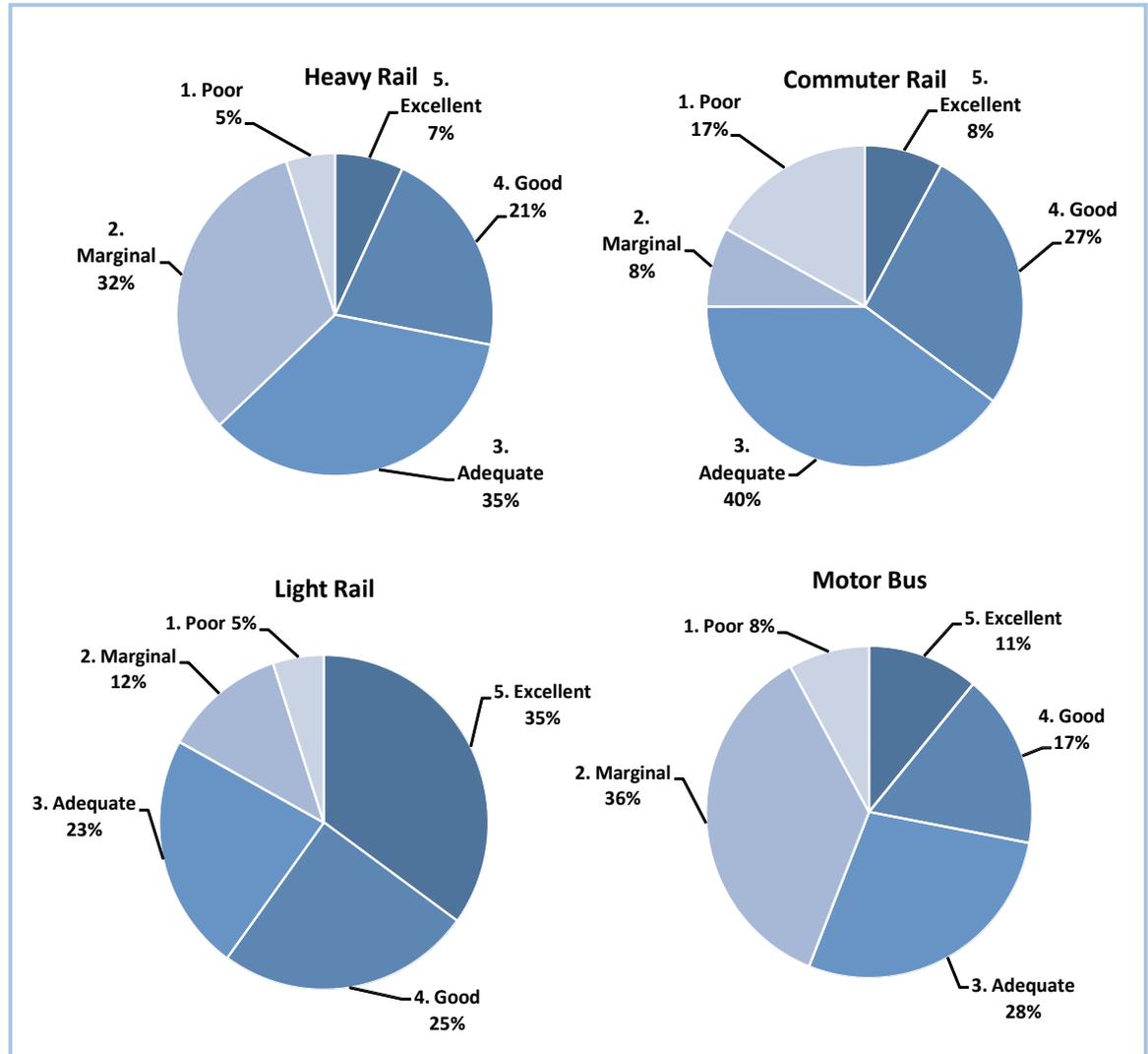
Source: FTA Rail Modernization Study, April 2009

The report found that more than one-third of agencies’ assets are either in marginal or poor condition, indicating that these assets are near or have already exceeded their expected useful life. Of significance, commuter rail had the highest “poor” rating (17 percent) for the modes studied. Assuming assets are permitted to remain in service beyond their expected useful life for a limited time, there is an estimated state of good repair backlog of roughly \$50 billion (2008 dollars) for the agencies under consideration.



The majority of needs are for heavy rail (a \$37.1 billion backlog), but the report indicates that the current fixed guideway modernization formula inappropriately overfunds the commuter rail system and newer light rail systems, to an extent that the “older rail” cities like New York or Philadelphia are being underfunded and are incapable of meeting their capital needs. In fact, the modernization program only addresses a very small percentage of overall requirements to meet a state of good repair, as documented in Table 4-2.

Figure 4-7: Asset Conditions by Mode for Study Agencies



Source: FTA Rail Modernization Study, April 2009



Table 4-2: Comparison of Recipient with FY2008 Allocation of Fixed Guide Modernization Funds

Mode	Total FY08 Funding	Average Annual Reinvestment Needs	% of Needs Addressed
Legislatively Specified Areas			
Heavy Rail	\$457,879,173	\$5,437,716,040	8%
Commuter Rail	\$533,137,287	\$2,431,909,777	22%
Light Rail	\$ 41,443,240	\$291,348,163	14%
Total	\$1,032,459,240	\$8,160,973,980	13%
Other Urbanized Areas			
Heavy Rail	\$145,273,214	\$685,338,308	21%
Commuter Rail	\$106,529,787	\$154,322,913	69%
Light Rail	\$65,912,901	\$204,558,862	32%
Total	\$317,715,902	\$1,044,220,083	30%
All Urbanized Areas			
Heavy Rail	\$603,152,319	\$6,123,054,348	10%
Commuter Rail	\$639,667,075	\$2,586,232,690	25%
Light Rail	\$107,356,141	\$ 495,907,024	22%
Total	\$1,350,175,535	\$9,205,194,062	15%

Source: FTA Rail Modernization Study, April 2009

The study also finds that, between 1991 and 2009, although the actual dollar amount of capital funding from federal sources to the seven agencies increased, their share of Fixed Guideway Modernization funds—to old rail cities in particular—actually *declined* as new fixed guideway systems, such as busways and HOV lanes, entered the program.



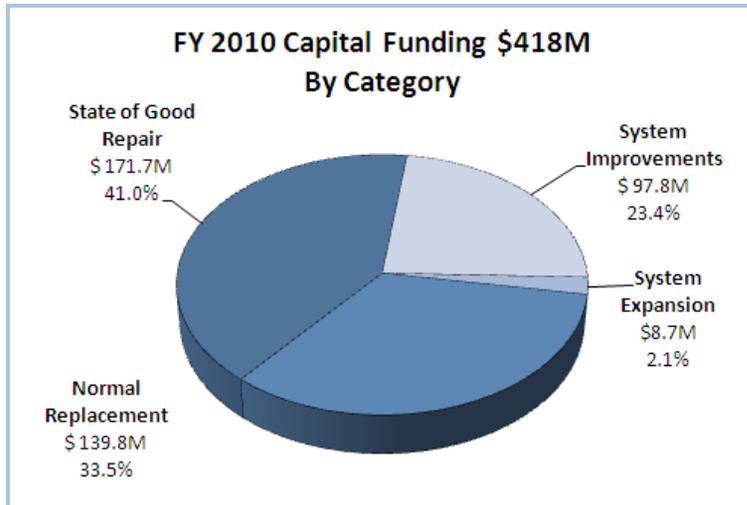
The report recommends that the federal government increase spending on funding repairs to existing fixed guideway systems, arguing that it remains necessary for these agencies to upgrade their vehicles, tracks, and stations to an adequate quality. Importantly, the study suggests that the current formula for distributing funds—based on a complex seven-tier process—is inappropriate, and that more money be distributed directly to those agencies most in need of improvements.

More importantly, though, the FTA suggests that Congress authorize an average of \$4.2 billion *more* annually over the next twelve years with a temporary state of good repair fund (alternatives also provided: \$8.3 billion annually over six years or \$2.5 billion annually over twenty). That would require the government to commit to a total average of \$10.1 billion in funds annually for the program. Thereafter, once repairs are complete, the report suggests that the program should be designed to continue funding agencies at a level of \$5.9 billion annually. The study recognizes the need for significant additional investment in rail system infrastructure in established transit systems, including SEPTA commuter rail, for state of good repair initiatives.



The SEPTA FY 2010 Capital Budget and Fiscal Years 2010-2021 Capital Program reflect the need to maintain and operate a safe system and continue efforts to bring the system to a state of good repair as noted in Figure 4-8. Funding totals \$418 million.

Figure 4-8: SEPTA Capital Funding Categories – FY 2010 – \$418 million



Source: SEPTA FY2010 Capital Budget and Fiscal Years 2010-2021 Capital Program

Each project in the Fiscal Year 2010 Capital Budget is categorized into one of the following types of capital investments:

- State of Good Repair – These projects correct past deferred maintenance, or replace capital assets that have exceeded their useful life. An asset or system is in a state of good repair when no backlog of needs exists and no component is beyond its useful life.
- Normal Replacement of Assets – These projects will replace assets at the end of their normal useful life. Normal

replacement investments are based on the age and life cycle of capital assets, and are made according to a scheduled program of replacement to keep assets in a state of good repair.

- System Improvement – These projects will expand or improve operations, or add new system capabilities or service. Applied to a pre-existing function, a system improvement represents a major advancement over current technology, with the express purpose of adding new system capabilities.
- System Expansion – These projects will expand the current system to serve new markets. This category includes new bus or rail lines, additional tracks, parking expansion, or service extensions beyond existing terminals.

Of significance is that 74.5 percent of the capital budget is dedicated to replacement of assets that have reached or exceeded their useful life and state of good repair initiatives, and only 2.1 percent of the budget is for system expansion. This reflects the less than adequate condition of the assets and the need for more capital funding.

Specific to commuter rail, the FY 2010 budget includes the following normal asset replacement and state of good repair initiatives.

- Congestion Relief and Railroad Grade Crossings
- Elwyn to Wawa Rail Service
- Infrastructure Safety and Renewal Program
- Paoli Transportation Center
- Parking Expansion Program
- Regional Rail Signal Modernization Program



- Regional Rail Substation Improvements
- State of Good Repair Initiatives
- Transit and Regional Rail Station Program
- Transit Enhancements
- Vehicle Overhaul Program

Additionally, on February 17, 2009, President Obama signed into law the American Recovery and Reinvestment Act (ARRA) of 2009. The intent of this legislation is to maintain and create jobs, build and repair infrastructure, infuse cash into underfunded state programs, and encourage the flow of money into the economy through tax cuts and other incentives for individuals and organizations. Of the total appropriation under the Act, \$8.4 billion was allocated for new capital investment in public transportation nationwide. Based on transit funding apportionment information provided by the Federal Transit Administration (FTA), SEPTA has been allocated approximately \$191 million from the Transit Stimulus Formula Funding. The federal share for these projects is 100 percent. The SEPTA commuter rail state of good repair portion of the funding was \$55.5 million.

Although a good portion of capital funding has been provided to SEPTA for state of good repair initiatives on its commuter rail system, the amount of investment is still considerably short of what is required as evidenced by the FTA study.

There are additional funding concerns that would significantly impact the SEPTA Capital Program, including commuter rail projects. State funding from the Act 44 Public Transportation Trust Fund is programmed at \$238.9 million each year for Fiscal Years 2011 through 2013. However, without I-80 tolling or another identified state funding solution, the funding levels assumed for Fiscal Year 2011 and beyond are subject to a significant reduction. Should this reduction in state funding occur, the implications would be severe and significantly impact the SEPTA Fiscal Year 2011 Capital Budget and Twelve-Year Program.

