PENNSYLVANIA'S INVESTMENT IN PUBLIC TRANSIT AND PASSENGER RAIL

JULY 2021

pennsylvania
DEPARTMENT OF TRANSPORTATION

Report Overview

This study quantifies the importance of investment in public transit and passenger rail service to Pennsylvania's residents, its businesses, and its economy.

The report is organized into two main sections:

1) **Impacts from Public Transit and Passenger Rail Service** defines the range of benefits this service generates for Pennsylvania's residents, businesses, and communities.

2) **The Case for Continued Investment** reviews the contributions of public transit during the COVID-19 pandemic, the role of public transit and passenger rail service in Pennsylvania's recovery, and potential economic losses from failing to maintain existing economic assets.

Pennsylvania is served by a range of public transit and passenger rail options, including fixed-route transit agencies serving urban and rural regions, community transit agencies providing shared-ride service, and Amtrak intercity rail service.

- Pennsylvania's transit agencies delivered **387 million passenger trips,** or 1.1 million trips per day, in FY 2019.
- **49 million of these trips served transit-dependent populations** such as seniors, riders accessing medical services, and riders with disabilities.
- Amtrak's Keystone Service and the Pennsylvanian carried an additional 1.8 million riders in FY 2019.

During the COVID-19 pandemic, transit agencies throughout Pennsylvania adapted their practices to ensure that service was available and played an integral role in connecting essential workers to jobs and residents to needed services. Agencies must continue to adapt as their role transitions from providing lifeline service to rebuilding ridership and supporting Pennsylvania's economic recovery.

Impacts from Transit and Rail Service

Access to Jobs and Economic Competitiveness

Public transit and passenger rail provide a **crucial link to employment** and educational opportunities and enable Pennsylvanians to better their economic circumstances.

- Reliable transit service removes access barriers and can reduce travel costs for commuters, helping employers to secure the workforce that they need.
- Long-distance commutes via Amtrak may become more frequent as hybrid in-office and remote work arrangements become more common, enabling Pennsylvanians to live in lower cost communities while accessing jobs in higher-paying metro areas.

The value of transit connections is also evident in the ways that **access to service shapes investment and population patterns,** growing Pennsylvania's employment and tax base. Statistical analysis shows that:

- Patterns of commercial investment and revitalization efforts track with transit improvements and high-quality service in communities of different types; and
- Population and employment growth trends over the past decade have been accelerated in areas of the state near Amtrak stations.

Transit providers throughout the state have developed **partnerships with employers, health providers, and social service providers to meet the needs of their local communities**. Examples are highlighted throughout this report.

Executive Summary

Quality of Life

Transit agencies across the state operate dedicated programs that **support the mobility, independence, and quality of life** of transit-dependent populations.

- More than 37 million free and discounted rides were provided to seniors in FY 2019, providing connections to amenities like groceries and medical care to help seniors maintain their independence while continuing to live at home.
- Transit also supports the independence of Pennsylvanians with disabilities, offers a critical connection to non-emergency medical services, and enables those without an alternative means of transportation to access job opportunities and amenities.

All Pennsylvanians benefit from a high-quality public transit and passenger rail network, whether or not they are riders**:**

- **Businesses** across Pennsylvania are more productive and competitive because they are able to access the workforce they need to thrive;
- **Workers** have better access to job opportunities, lower transportation costs, and improved commutes;
- **Motorists** experience less traffic congestion due to the mix of available travel modes;
- **Transit-dependent populations** like seniors and persons with disabilities can better maintain an independent lifestyle, while those without private vehicles retain access to employment and educational opportunities, services, and amenities; and
- **Pennsylvania's tax base** benefits from the economic activity and investment that is supported by transit connections, particularly in the southeast and southwest regions that generate more than half of all General Fund revenues.

Expenditure Impacts

Pennsylvania's transit and rail providers are also major economic drivers through their operating activities and capital programs.

Direct expenditures to improve transportation infrastructure and provide transit and rail service have multiplier effects within the Pennsylvania economy. This spending generates additional impacts and jobs throughout the supply chain and when employee earnings are recirculated as household spending.

- On an annual basis (pre-COVID), **economic impacts from operating and capital activity** to provide and maintain public transit and passenger rail service **total $5.41 billion** within the Pennsylvania economy.
- This activity supports nearly **39,000 jobs with $2.75 billion in employee compensation** within the state. These jobs are a combination of direct employment by transportation providers and indirect jobs supported by their spending.

Pennsylvania's Annual Economic Impact from Transit Operations and Capital Projects

Economic Impact	Total	Operations	Capital Projects
Total PA Economic Impact ($M)	**$5,411**	**$3,912**	**$1,499**
Employment Supported (jobs)	38,940	29,450	9,490
Employee Compensation ($M)	$2,752	$2,223	$529

Executive Summary

Transit During COVID-19

Pennsylvania's transit providers adapted to the conditions created by the COVID-19 pandemic to continue service and meet the critical needs of riders and communities.

While many transit systems throughout the state reduced hours or altered schedules at this time, no system completely shut down. Transit providers across Pennsylvania embraced their role in keeping communities safe, adjusting their operations while continuing to provide crucial services.

- Modifications during COVID included changes in boarding and fare procedures to reduce interactions between drivers and riders; enhanced cleaning procedures on vehicles; and adjustments to ventilation, passenger spacing, and capacity to reduce opportunities for transmissions aboard vehicles.

- PennDOT provided agencies with flexibility to make alterations to shared-ride service and ensure that capacity was available for the highest-priority users.

This approach enabled essential workers across the state continued access to their jobs, keeping vital services functioning. In addition, riders were able to access food, medical care and treatment, and other necessities through fixed-route and shared-ride service.

Community Anchors in Challenging Times

In addition to maintaining safe, reliable service, transit agencies met specific community needs during COVID through partnerships with community organizations, businesses, and governments. These efforts ensured that home-bound individuals had access to necessities and care, essential businesses could continue to operate, and residents could reach vital medical services.

Transit's Importance Going Forward

The COVID-19 pandemic has caused residents and businesses to reconsider their location and mobility choices. These shifts are creating new opportunities for communities of different types in a post-COVID future. They also create **a highly competitive environment for states and regions, as more businesses and workers are reconsidering their location options.**

As Pennsylvania seeks to accelerate its recovery and navigate these new dynamics, high-quality public transit and passenger rail service are essential to the state's businesses and workforce, to its residents, and to its economic competitiveness.

- **Pennsylvania businesses will continue to rely on transit to access the workforce they need to recover and grow.**

- Long-distance transportation connections unlock opportunities for remote and hybrid jobs by connecting residents in lower-cost areas to high-wage labor markets.

- Pennsylvania's largest economic nodes depend on transit to support the workforce needed to compete with other states for high-value activity and investment.

- Transit-dependent populations will continue to rely on service to maintain their independence and quality of life, reducing public and private costs.

- Workers without the means or desire to own a car will need a quality transit network to participate fully in Pennsylvania's economy, with disproportionate impacts for low-income and minority communities.

- A multimodal transportation network will enable Pennsylvania to achieve better environmental outcomes by reducing emissions and road congestion while improving traveler safety.

The Case for Continued Investment

Transportation infrastructure has long been a critical public resource that enables private businesses to thrive and residents to access opportunities and live independently. Changes in activity and mobility patterns are creating new opportunities and challenges in the post-COVID economy, further increasing the importance of making the infrastructure investments necessary for Pennsylvania to remain economically competitive.

Pennsylvania's Transportation Investment Dynamics

- **Adequate transportation infrastructure is a core public service that enables private commerce to thrive and supports quality of life and independence for residents** in a variety of circumstances, including the elderly and those with limited alternatives.
- Studies commissioned by government agencies and private sector groups have identified a significant backlog of transportation investments in Pennsylvania. These studies have also highlighted the need for new funding approaches and sources in order to maintain an adequate transportation network.
- The post-pandemic recovery presents a highly competitive economic environment as businesses and residents reconsider their location options. In this context, investments that improve Pennsylvania's competitiveness and attractiveness may have a higher than usual return in terms of new business activity and jobs that are attracted or retained.
- If Pennsylvania fails to adequately invest in its existing public transportation and passenger rail infrastructure, losses will be borne by residents, businesses and taxpayers who depend on transit service and the economic value it creates.

Implications of Disinvestment in Transit

Reductions in transit and rail funding come with significant consequences that affect all Pennsylvanians.

Allowing Pennsylvania's public transit and passenger rail network to degrade will **reduce Pennsylvania's long-term level of employment.** Businesses throughout the state will struggle to attract the workforce they need, and the state's largest employment nodes will lose activity to competitors in other states. This loss of activity will result in:

- Declines in Pennsylvania's tax base from reduced levels of population and economic activity, necessitating increases in taxes or reductions in public services for residents across the state;
- Reduced hybrid and long-distance work opportunities in high-wage labor markets for residents across the state; and
- Reduced downstream spending by businesses and workers, impacting suppliers and businesses that benefit from household spending and tourism activity.

Disinvestment will also **degrade the ability of residents throughout the state to maintain their quality of life** and reduced access to services and amenities. The loss of service will result in:

- Decreased independence for transit-reliant populations such as seniors and persons with disabilities, and a reduced ability for those without access to a private vehicle to participate in Pennsylvania's economy.
- Increased state costs due to the lessened ability of Pennsylvanians to access job opportunities and maintain their independence.

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STUDY OVERVIEW

Study Purpose

Pennsylvania is served by a range of public transit and passenger rail options, including transit agencies serving urban and rural regions, community transit agencies providing shared-ride service, and Amtrak intercity rail service (see Figure at right). **This study quantifies the benefits of these services to Pennsylvania's residents, businesses, and its economy and the importance of continued investment to Pennsylvania's future.**

This detailed analysis of transit's impact is particularly timely given the circumstances surrounding Pennsylvania's transportation funding picture. As documented in reports by the Pennsylvania Partnerships for Mobility, changes to public transportation funding sources are upcoming in 2022, as set out in Acts 44 and 89. In March 2021, Governor Wolf appointed a Transportation Revenue Options Commission to develop comprehensive funding recommendations for Pennsylvania's transportation infrastructure, while reiterating a commitment to phase out Pennsylvania's gas tax. This discussion comes at a time when federal attention is focused on infrastructure investments as part of a national economic recovery and competitiveness strategy.

In addition, this study identifies changing economic and mobility patterns due to the COVID-19 pandemic. As the health crisis eases and more regular activity levels return, changes in technology and locational preferences will lead residents and businesses to re-evaluate their location and mobility options**. Maximizing existing and new transportation infrastructure is crucial to meeting the needs of residents and businesses, and helping Pennsylvania compete in the post-pandemic environment.**

PennDOT provides funding and support that enables the activity of all of Pennsylvania's public transit providers and Amtrak passenger rail service within the state.

Definitions: Pennsylvania Transit Service

Fixed-Route Service is public transportation service provided in vehicles along pre-determined routes according to a fixed schedule, with specified stopping points for taking on and discharging of passengers. Primary fixed-route transit modes in Pennsylvania include bus, subway, and regional rail service.

Shared-Ride / Demand Response Service offers the community door-to-door transportation services throughout Pennsylvania and subsidizes the cost of that service for senior citizens. In general, passengers must make trip requests at least one working day in advance of the trip and must be willing to share the vehicle with other passengers.

Passenger Rail is Intercity train service operated by Amtrak as part of its national system serving passengers. Analysis in this report focuses on the Keystone and the Pennsylvanian routes.



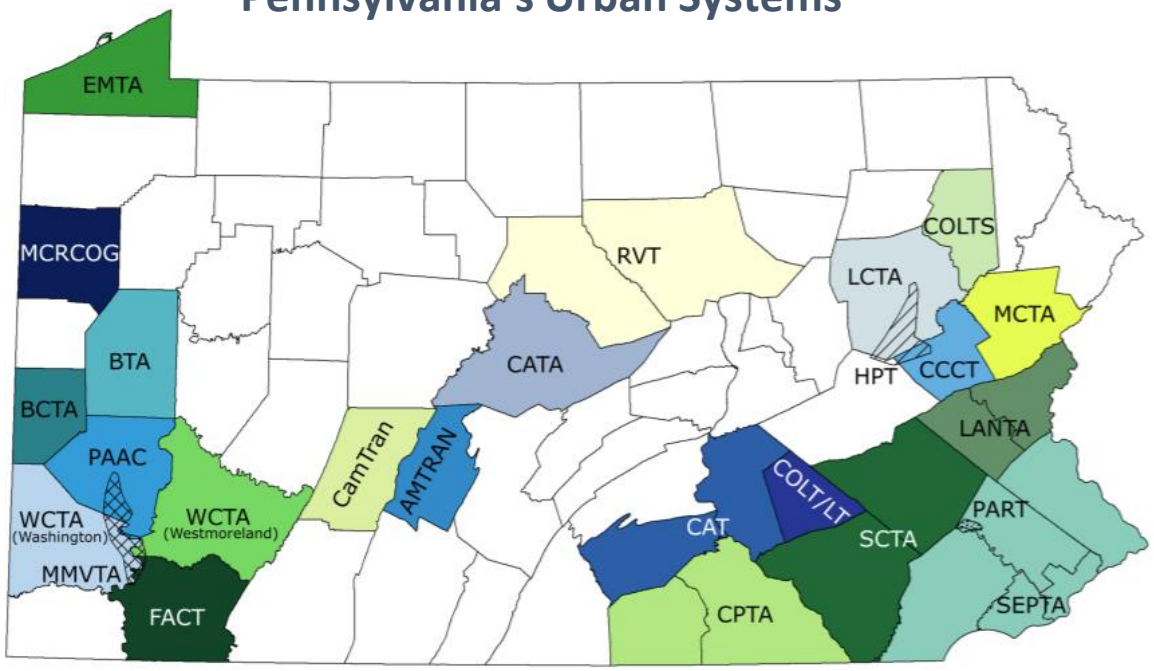
Fixed-Route Transit Service

Pennsylvania's 53 transit agencies provide riders across the state with fixed-route public transportation options.

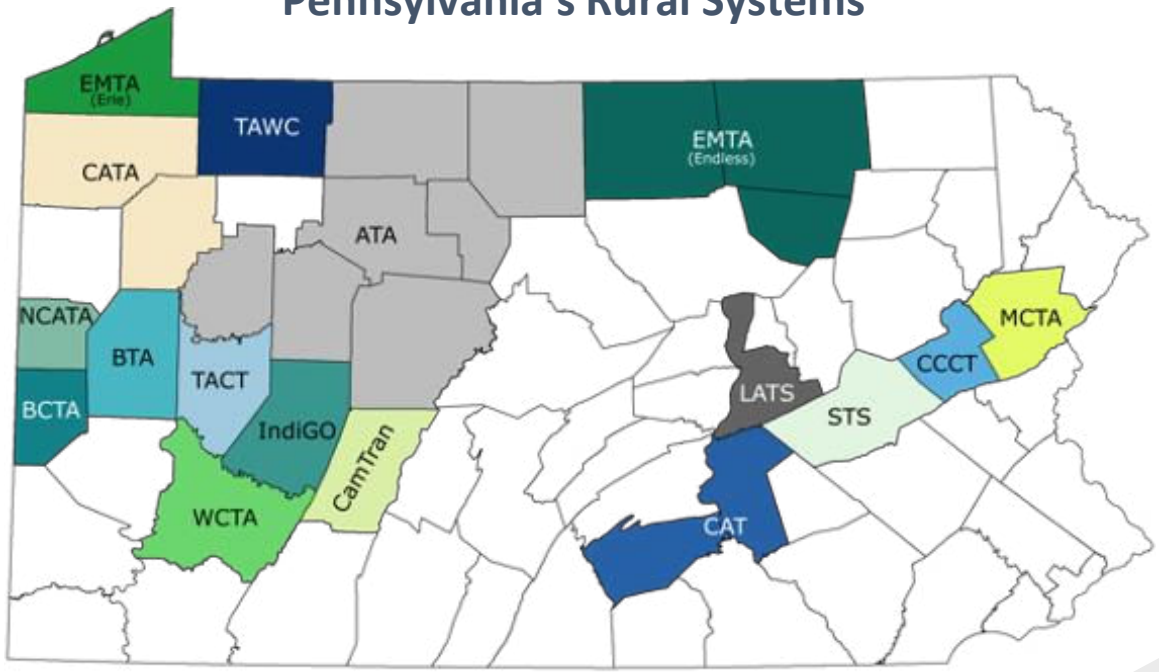
Urban Systems: Public transportation agencies identified as Urban Systems are recipients of Federal Transit Administration Urbanized Area Formula funds (Section 5307). Urban systems represent the state's largest transit agencies.

Rural Systems: Public transportation agencies identified as Rural Systems are recipients of Federal Transit Administration Federal Grants for Rural Areas funds (Section 5311). Agencies can be classified as both urban and rural systems depending on their service area.

Pennsylvania's Urban Systems



Pennsylvania's Rural Systems

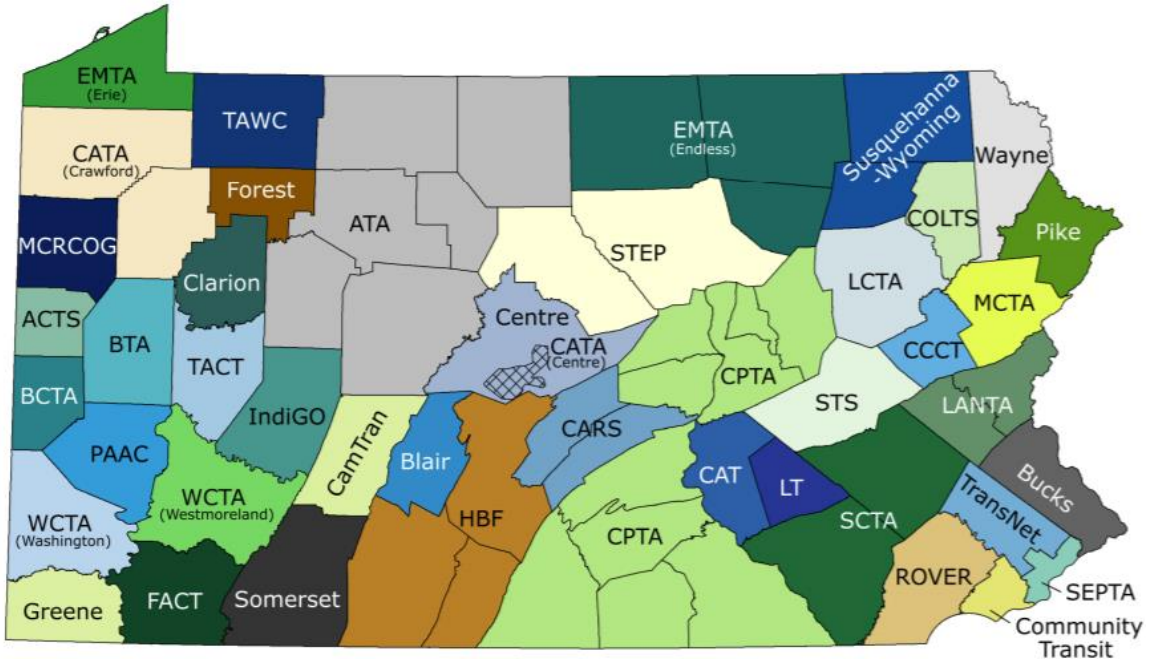


For more information on each agency, see the annual [Pennsylvania Public Transportation Performance Report]

Shared-Ride Service

Community Transportation: Community Transportation agencies coordinate shared-ride service within their counties of service. Shared-Ride service is demand-responsive, curb-to-curb or door-to-door transportation which is available to the general public, operates on a non-fixed-route basis, and charges a fare to all riders. Community transportation may or may not be coordinated through urban and rural transit agencies, depending on the county.

Community Transportation Providers

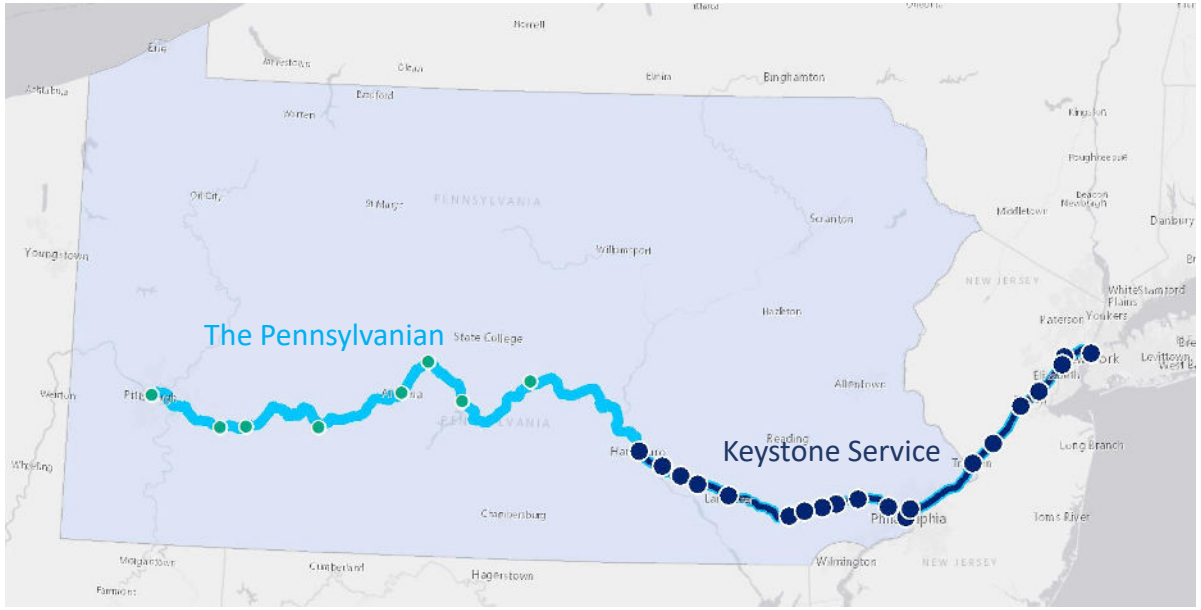


For more information on each agency, see the annual [Pennsylvania Public Transportation Performance Report]

Passenger Rail

Amtrak: The National Passenger Rail Corporation, or Amtrak*, provides intercity rail service in Pennsylvania. The Keystone Service* provides several daily trains between Harrisburg and Philadelphia, and the Pennsylvanian* provides once daily service between Pittsburgh and Philadelphia, with both routes continuing to New York's Penn Station. Additional Amtrak routes passing through Pennsylvania are not analyzed within this study.

Amtrak Keystone Service and the Pennsylvanian



**Amtrak, Keystone Service, and Pennsylvanian are registered service marks of the National Railroad Passenger Corporation*

Public Transit and Passenger Rail Funding

Public transportation and passenger rail in Pennsylvania are funded through a combination of passenger revenue, state funding, and federal and local government support. State funding for multimodal transportation in Pennsylvania, including public transit and passenger rail, is specified primarily under Act 44 (2007) and Act 89 (2013). These Acts define PennDOT's revenue sources, funds. and uses by transportation mode.

State funding for public transportation flows primarily through the Public Transportation Trust Fund and Public Transportation Assistance Fund (as well as the Multimodal Transportation Fund, which supports all transportation modes). Revenue sources for these funds include:

- Sales Tax Transfers to Dedicated Transit Funds
- PA Turnpike Commission Contributions
- Lottery Fund Payments and Transfers
- Motor Vehicle Fees and Civil Penalties/Fines
- Federal Capital/Operating Grants (Non-Urban)
- Capital Facilities Fund Bonds (General Fund)
- Treasury Investment Earnings

The annual PA Turnpike Commission contribution is scheduled to be reduced from $450 million to $50 million starting in FY 2023, to be replaced by $450 million in Motor Vehicle Sales Tax revenue currently flowing to the General Fund.

Public transportation and passenger rail funding flowing through PennDOT in FY 2020 totaled around $1.85 billion (see Figure at right). This funding is augmented by passenger fares and other agency-derived revenue sources, as well as additional support from federal and local governments.

Pennsylvania Public Transit Funding Overview: FY 19-20

Category	Funding FY 19-20	Uses
State Operating Funds	$1.106 billion	Operating expenditures
State Capital Funds*	$453 million	Capital projects
State Bonds (TAP)	$125 million	
Programs of Statewide Significance	$85 million	PwD, Amtrak, Shared Ride Capital, Tech Assistance, etc.
Federal 5311 Funds	$11.2 million	Operating and capital
Federal 5310 Funds	$16.1 million	Capital vehicle purchases
PA Lottery Funds	$53.7 million	Shared-ride

**Capital funds include both the Asset Improvement Program (Section 1514) and the Capital Improvements Program (Section 1517) under Pennsylvania Act 44 and Act 89.*

Additional funding for transit operations and capital projects comes from:

- Passenger fares
- Federal grants
- Local government contributions

Study Methodology

This study draws on a number of economic frameworks to demonstrate the magnitude of impacts that public transit and passenger rail service have on Pennsylvania's businesses, its residents, and its economy.

Data for the study is drawn from a mix of sources, including transit operators across the state, PennDOT, and Amtrak. Demographic and economic information was drawn from government sources including the US Census Bureau and Bureau of Labor Statistics. Academic, government, and industry sources on the varied impacts of transportation service were investigated as well.

Annual impacts were estimated using data on expenditures and activity levels collected prior to the COVID-19 pandemic. Multiple years of data are aggregated and averaged for some measures in order to give a representative account of typical activity levels. Results are expressed based on 2019 purchasing power ("$2019").

While pre-COVID data is used as a benchmark to reflect activity levels under typical conditions, the pandemic has provided insight into the vital role of transit in communities across Pennsylvania. In addition, changes in mobility patterns and the increased use of technology will have enduring impacts that in many ways will be crucially shaped by still unknown policy choices. The latter half of this report focuses on the continued importance and benefits of Pennsylvania's public transit and rail service in the post-pandemic environment.

Organization of Report

Impacts from Public Transit and Passenger Rail Service defines the range of benefits to Pennsylvania's residents, businesses, and communities from these transportation services (relying primarily on pre-COVID data). Three broad categories are reviewed:

- **Access to Jobs and Economic Competitiveness** reviews the role of transit in connecting workers to job opportunities and the economic importance of these connections to Pennsylvania's businesses and communities.
- **Quality of Life** describes the role of transit in enabling populations like seniors and households without vehicles to access services and maintain their independence, and broad social impacts like safety and environmental benefits.
- **Expenditure Impacts** quantifies direct and multiplier economic impacts within the Pennsylvania economy from operating and capital expenditures to provide and maintain public transit and passenger rail service.

The Case for Continued Investment identifies the contributions of public transit during the pandemic, the role of transit in the recovery, and the potential economic losses from failing to maintain existing economic assets.

- **Transit During COVID-19** details how agencies adapted and provided vital service for their communities and essential workers during the pandemic.
- **Transit's Importance Going Forward** describes the crucial role of transit as Pennsylvania seeks to rebuild its economy, compete in the new environment, and maintain options for its residents.

IMPACTS FROM PUBLIC TRANSIT AND PASSENGER RAIL SERVICE

A Range of Impacts

Public transit and passenger rail service deliver a range of benefits that differ based on the nature of communities and populations throughout the state. **The quality of the transportation network is a crucial contributor to the economic opportunities available to Pennsylvanians and to the quality of life enjoyed by its residents.**

Access to Jobs and Economic Competitiveness

- **Connection to Employment Opportunities**: Public transit and passenger rail service provide a crucial link for many residents to jobs and educational opportunities that enable them to better their economic circumstances.
- **Investment Patterns and Community Vitality**: Patterns of commercial investment, revitalization, and growth in many Pennsylvania communities track with high-quality transit service and infrastructure investments.

Quality of Life Impacts

- **Vulnerable Populations**: Transit service enables populations like seniors and those with disabilities to access their everyday needs, supporting their independence and quality of life.
- **Social Benefits:** A multimodal transportation network increases transportation options and improves safety and environmental outcomes for riders and non-riders.

Expenditure Impacts

- **Expenditures on employees and procurement** create jobs for Pennsylvania residents and opportunities for Pennsylvania businesses.

Benefits for All Pennsylvanians

All Pennsylvanians benefit from a high-quality public transit and passenger rail network, whether or not they are riders**:**

- **Businesses** across Pennsylvania are more productive and competitive because they are able to access the workforce they need to thrive;
- **Workers** have better access to job opportunities, lower transportation costs, and improved commutes;
- **Motorists** experience less traffic congestion due to the mix of available travel modes;
- **Seniors and persons with disabilities** are able to access vital services and better maintain an independent lifestyle;
- **Riders without an alternative means of transportation** retain access to employment and educational opportunities, services, and amenities; and
- **Pennsylvania's tax base** benefits from the economic activity and investment that is supported by transit connections, particularly in the southeast and southwest regions that generate more than half of all General Fund revenues.

Transit Agency Ridership

Transit agencies provide fixed-route and shared-ride service that helps Pennsylvanians across the state reach a variety of destinations, including employment, services, and amenities.

In FY 2019, the final complete year before the pandemic, Pennsylvania's fixed-route transit agencies provided 146 million revenue vehicle miles and 11.3 million revenue vehicle hours. These agencies delivered **387 million passenger trips, or 1.1 million trips per day,** through their fixed-route and paratransit service**.**

Key Metrics – Definitions

Definitions for passenger trips, revenue vehicles miles, and revenue vehicle hours are drawn from the National Transit Database.

Unlinked Passenger Trips: The number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination.

Revenue Vehicle Miles and Hours: The time during which a vehicle is available to the general public and there is an expectation of carrying passengers that either directly pay fares; are subsidized by public policy; or provide payment through a contractual agreement.

Senior Trips: Fixed-route public transportation trips taken by senior citizens (persons who are at least 65 years of age), plus discounted trips taken by senior citizens on shared-ride services. The definition for senior trips is drawn from Pennsylvania Act 44 of 2007.

Pennsylvania Transit Agency Statistics (FY 2019)*



387 million passenger trips (1.1 million per day)



37.3 million free and discounted senior trips



146 million revenue vehicle miles



11.3 million revenue vehicle hours

** Pennsylvania's fiscal year runs from July 1 to June 30, with FY 2019 representing the period from July 1, 2018 to June 30, 2019. Throughout the report, data are generally reported on a fiscal year basis, unless otherwise noted.*

Access to Jobs

The transit and passenger rail network is crucial to connecting Pennsylvania's workforce with employment centers, jobs with family-sustaining wages, and career training and educational opportunities.

A large share of the 1.1 million daily trips on public transit are taken by workers getting to and from their place of work each day. Reliable public transit service is a critical component of the public infrastructure supporting private employers. From small businesses looking to increase staffing to retailers that provide a steady paycheck to white collar employees in the state's densest downtowns, **employers rely on transit service to remove barriers to access and lower the costs of connecting workers to jobs.**

Public transit and passenger rail service are the primary modes of transportation to get to work for a substantial portion of Pennsylvania's workforce. According to data from the 2019 American Community Survey, **338,000 Pennsylvania residents use transit as their primary means to commute to work.** The share of workers commuting to work in Pennsylvania (6%) is above the national average (5%).

Bus travel is the most common mode among these commuters, accounting for about two-thirds of statewide transit commutes. While transit commute rates are highest in the Philadelphia and Pittsburgh areas served by the state's largest systems (which provide a variety of modes), fixed-route systems based around bus service in mid-sized areas across the state provide millions of rides on an annual basis.

Agencies tailor their service to the needs of their regions and local communities, and in turn investment and development patterns can be shaped by the availability of transit service to connect residents to job opportunities.

South Central PA's rabbittransit Partners with Employers

Transit agencies throughout the state play a vital role in connecting workers to jobs, through standard fixed-route and shared-ride services, and through specific partnerships with employers**. rabbittransit, a joint authority operating in south central Pennsylvania,* has used an innovative model in which service is targeted to support participating employers, who in turn contribute financially towards the operating costs.**

In February 2018, rabbittransit initiated service to connect the City of York with a warehouse in suburban Conewago Township operated by supply chain company ES3 LLC. Between April and November of 2018, rabbittransit saw a 284 percent ridership increase on the route. More recently, rabbittransit launched a partnership with FedEx to expand service along its fixed-route corridor between York and the FedEx Ground site in Fairview Township. The FedEx service began as a pilot program, and its continuation is evaluated based on route productivity and demand.

rabbittransit is actively exploring other partnerships with anchor employers to potentially subsidize other transit routes.

** The Central Pennsylvania Transportation Authority (formerly York Adams Transportation Authority), which does business as rabbittransit, is a joint authority between Adams, Cumberland, Franklin, Perry, and York counties, providing mass transit service. In addition, rabbittransit is the appointed Shared Ride Coordinator for Columbia, Montour, Northumberland, Snyder, and Union counties.*

Value of Job Connections to Residents

The economic value of transit access is reflected in the premium that homeowners are willing to pay for houses in proximity to high quality transit service. Access to high frequency service like the light rail and busways operated by the Port Authority of Allegheny County (PAAC) and the regional rail and subway / elevated service operated by the Southeastern Pennsylvania Transportation Authority (SEPTA) can reduce transportation costs and increase mobility options for residents living nearby. **This amenity value is reflected in housing markets, where homeowners demonstrate a willingness to pay more for an otherwise similar house with better access to service** (see figure at right).

In both regions, transit service is vital to delivering high volumes of workers into the state's largest employment nodes. This has allowed for dense development in high-value commercial locations, such as the Comcast Center and Comcast Technology Center, Pennsylvania's two tallest buildings, which were developed in recent years directly above SEPTA's Suburban Station in downtown Philadelphia without any dedicated parking.

The transportation network is one of the crucial factors enabling the Pittsburgh and Philadelphia regions to compete with similar regions in other states for companies, talent, investment, and research dollars that drive economic growth. Together, Allegheny County and the five-county* southeast region represent around half of Pennsylvania's economic, employment, and tax bases. This level of productivity depends on an efficient, robust multimodal transportation network.

* Comprised of Bucks, Chester, Delaware, Montgomery, and Philadelphia counties.

Housing Value Premium in Southwest and Southeast PA

ESI has conducted property value analyses to quantify the incremental housing value that access to PAAC and SEPTA services provide. These studies use hedonic regression models of housing transactions to isolate the additional premium (as reflected in market value) from transit proximity, holding all other housing and community features constant.

- In aggregate, high-frequency PAAC service generates $3.2 billion in housing value in Allegheny County, representing 4.4% of total regional housing value.
- A similar analysis found that proximity to SEPTA service generates $33 billion in housing value across the five-county southeast region, representing 11% of total regional housing value.

These value premiums represent a significant economic asset for homeowners, whether or not they are users of the transit systems.

Additional Housing Value		% of Total Housing Value
$3.2 billion in Allegheny County	=	**4.4%** in Allegheny County
$33 billion in southeastern PA		**11%** in southeastern PA

Keystone Service and the Pennsylvanian Ridership

Amtrak's Keystone Service connects the Harrisburg Transportation Center in Harrisburg, Pennsylvania to 30th Street Station in Philadelphia, Pennsylvania Station in New York, and communities in between. The Pennsylvanian extends through western Pennsylvania to Pittsburgh. Both routes run through Harrisburg, Lancaster County, suburban and central Philadelphia, and on to New Jersey and New York.

Philadelphia's 30th Street Station is the busiest station on the Keystone route, followed by Lancaster and Harrisburg. Philadelphia's 30th Street Station is also the busiest station for the Pennsylvanian route, followed by Pittsburgh and New York.

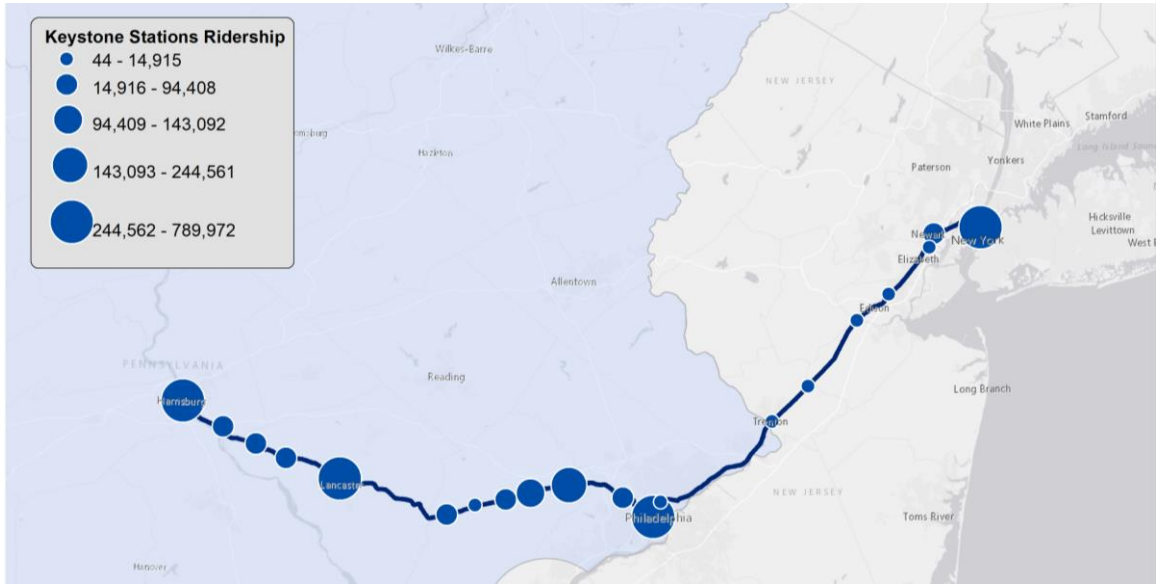
Amtrak's Keystone Service and the Pennsylvanian Ridership

Keystone Service FY 2019 Ridership: 1.57 million

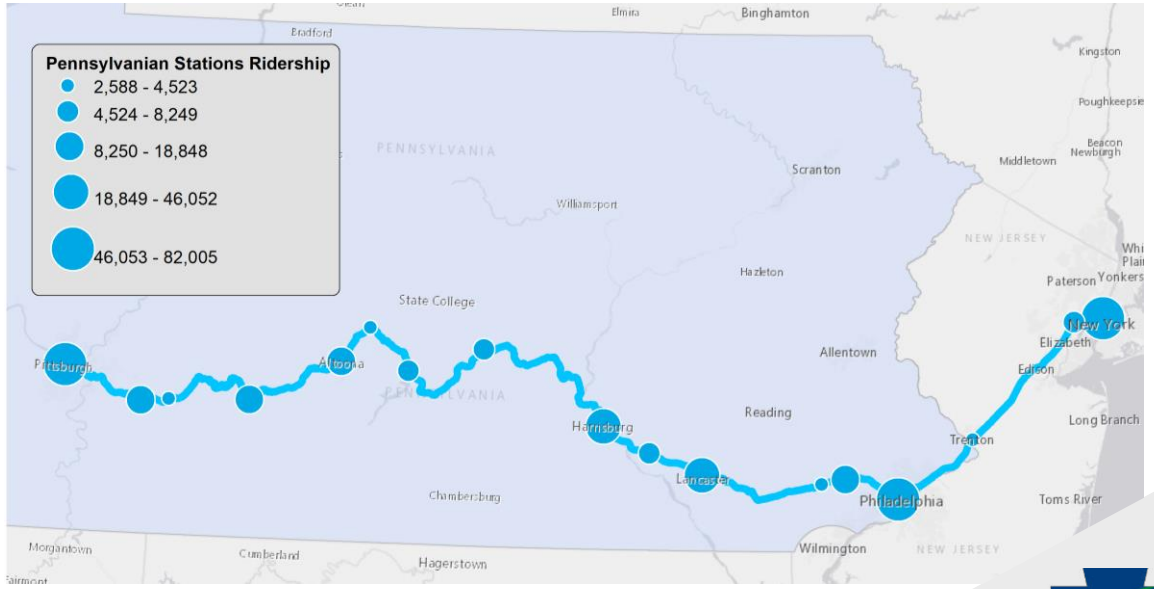
The Pennsylvanian FY 2019 Ridership: 214,000

Combined FY 2019 Ridership: 1.78 million

Keystone Service Ridership by Station



The Pennsylvanian Ridership by Station



Station ridership data for Keystone and the Pennsylvanian are based on calendar year 2019 data published by the Rail Passengers Association

Impacts from Keystone Corridor Upgrades

Amtrak, Pennsylvania Department of Transportation (PennDOT), and SEPTA partnered on the ***Keystone Corridor Improvement Project (KCIP)*** from 2002 to 2007. This project entailed a series of capital upgrades to improve the speed, reliability, and frequency of service between Philadelphia and Harrisburg. The investment of $145.5 million was shared between Amtrak and PennDOT, with $58.2 million of PennDOT's $72.75 million contribution coming from federal FTA funding.

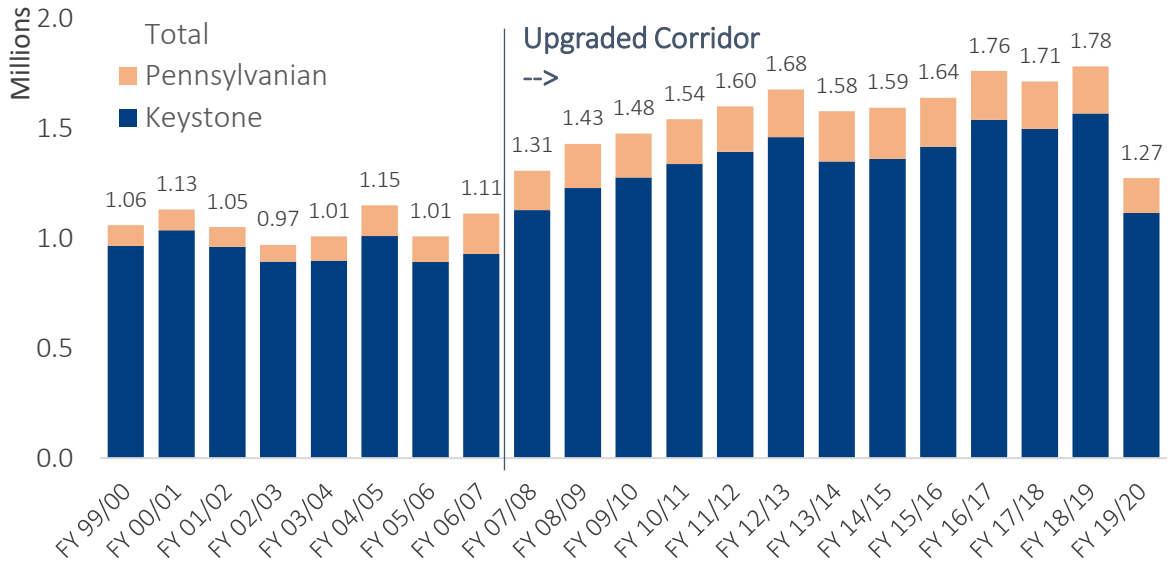
Capital activity undertaken between 2002 and 2007 included continuous welded rail, concrete ties, catenary improvements, electric substation improvements, communication improvements, and fully electrified infrastructure from Harrisburg to Philadelphia. **These improvements enhanced the quality of Pennsylvania's passenger rail** by enabling all-electric train service, increased speeds, and greater frequency, including express trains:

- Average trip times between Harrisburg and Philadelphia dropped from 120 to 105 minutes, with express trains capable of making the trip in 90 minutes; and
- Round trips increased to around 14 per weekday and seven per weekend day.

These improvements have been supplemented since 2009 with significant upgrades to stations throughout the corridor through the Plan the Keystone initiative. Other improvements include the elimination of three public highway-rail grade crossings, preliminary engineering of interlocking/signal system reconfigurations, and rebuilding of state interlocking in Harrisburg.

Improvements to the Keystone corridor have corresponded with a significant increase in ridership on the Keystone Service and the Pennsylvanian (see figure at right).

Annual Ridership: Keystone Service and the Pennsylvanian

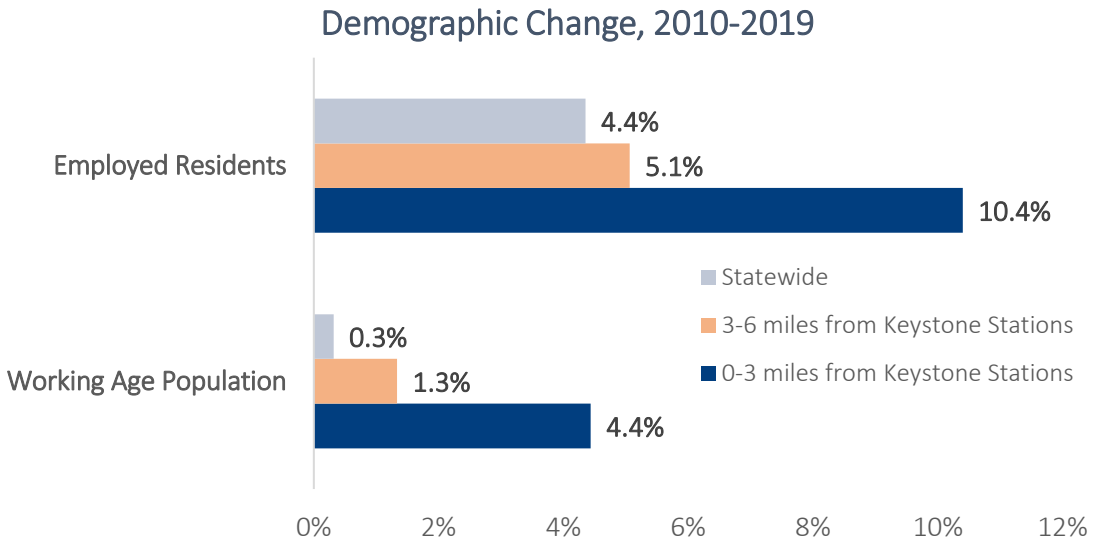


- Combined Keystone Service and the Pennsylvanian ridership was typically around 1.0 – 1.1 million in the decade prior to the improvements in service.
- Ridership experienced an immediate jump to more than 1.3 million in the first year the upgraded service was available (FY 2008), an increase of 18%.
- Ridership continued to grow to a high of nearly 1.8 million in FY 2019, representing growth of an additional 36% beyond the initial increase in FY 2008.

Shaping Population and Economic Growth Patterns

Patterns of population and economic growth in recent years also indicate the appeal of access to Amtrak service. Statistical comparisons show that **the areas immediately around Keystone Corridor stations experienced faster growth than the surrounding areas and the state as a whole** from 2010 to 2019:

- In census tracts within 3 miles of Keystone stations, growth in the number of employed residents from 2010-2019 was more than 10%, compared to 5% in tracts 3-6 miles from stations and 4% statewide; and
- Growth in the working age population within 3 miles of Keystone stations was more than 4% during this period, well above the nearby and statewide benchmarks.



Source: ACS 5-Year Estimates (2010 - 2019)

Mount Joy Station

Mount Joy, a Borough of about 7,000 residents in western Lancaster County, has seen growth centered around its Amtrak service and station improvements. Renovations to Mount Joy Station have provided enhanced accessibility, functionality, and passenger amenities. A phased approach started with improvements to station access, as well better stormwater management and additional parking. Station improvements include towers with elevators and new elevated, covered boarding platforms, all of which meet ADA accessibility standards. Renovations were completed in 2019.

Mount Joy Borough's revitalization plan includes enhanced pedestrian links between the downtown commercial corridor and Mount Joy Station. Transit-oriented, mixed-use development efforts in the Borough have received statewide and national recognition for smart and equitable growth planning with a focus on connectivity.

The area immediately surrounding Mount Joy Station saw significant growth in its residential population from 2010-2019, outpacing the surrounding area:

- Within 3 miles of the station, **the working age population grew 12% from 2010-2019**, compared to 1% growth 3-6 miles from the station.
- The number of employed residents within 3 miles of the station grew 11% from 2010-2019, outpacing growth in tracts 3-6 miles from the station of 4%.

Serving Vulnerable Populations

Pennsylvania's transit agencies and community transportation providers operate several dedicated programs that provide services to populations like the elderly, those with disabilities, and those in need of non-emergency medical care. These programs help to ensure that all Pennsylvanians have equitable access to the services and amenities that they rely on. Key programs are as follows:

Senior Free Transit and Shared Ride Discount Programs

Senior citizens (65 and older) ride free on local fixed-route service whenever the local public transit system is operating. In addition, registered senior citizens 65 and older pay only 15% of the general public fare for advance registration, shared-ride transportation service.

Medical Assistance Transportation Program (MATP)

MATP provides transportation for eligible persons enrolled in Medicaid to and from eligible medical services, including receiving treatment and purchasing prescription medication or medical equipment.

Persons With Disabilities Programs (PwD)

Individuals with disabilities ride for half-fare on fixed-route transit service during non-peak periods. In addition, persons with disabilities pay a portion (approximately 15%) of the general public fare for advance reservation, shared-ride transportation service.

ADA Complementary Paratransit Service

Fixed-route transit systems are required by the federal Americans with Disabilities Act (ADA) to make comparable transportation service available to persons with disabilities who are functionally unable to use the fixed-route service.

Programs Serving Vulnerable Populations: Annual Trips

Program	Annual Trips	Fiscal Year*
Senior Free Transit	33.8 million	FY 2019
Senior Shared Ride Discount Program	3.5 million	FY 2019
Total Senior Trips	37.3 million	FY 2019
Medical Assistance Transportation Program	9.3 million	FY 2018
Persons with Disabilities Program	373,000	FY 2019
ADA Complementary Paratransit Service	1.8 million	FY 2018
Total	**48.8 million**	



Supporting Independent Living for Seniors

Transportation services are critical to enabling seniors to stay within their homes and communities and maintain an independent lifestyle. More than one in five Americans over 65 do not drive. Public transportation connects seniors to necessities like groceries, medical care and prescriptions, and to opportunities for social connections and activities that are all crucial to their quality of life, physical and mental health, and well-being.

Mobility and Community Engagement: Without access to public transportation, seniors who cannot drive would either be unable to access necessities and services or rely on caregivers for transportation. Public transportation services allow seniors to maintain mobility and community activities while living independently. Furthermore, public transportation allows seniors to participate more in the local economy and utilize local businesses and services, rather than making purchases exclusively online.

Safety and Health: Public transportation offers seniors a safe way to maintain mobility as they age. Given that automobile safety risks are significantly higher among seniors continuing to drive later in life, public transportation offers a safe alternative to maintain their mobility as they age. Particularly among seniors who do not drive, public transportation ensures that they can access medical care and maintain their health and well-being.

Cost Savings: When seniors are able to continue living independently, both families and the state can realize significant financial savings relative to alternatives like assisted living facilities. Access to necessities like preventative care, grocery stores, and other amenities that improve health outcomes yield financial savings in addition to improved quality of life.

Supporting Mobility for Seniors in the Lehigh Valley

The Lehigh and Northampton Transportation Authority (LANTA) provides accessible fixed-route and paratransit services to seniors in the Lehigh Valley region, offering connection to key points of interest for the senior population.

LANTA's fixed-route bus system covers a significant portion of the region and provides services to a range of destinations that support seniors. The service offers connections to grocery and big-box stores like Walmart and Target, commercial corridors like the Lehigh Valley Mall, and major health care providers in the region like the Lehigh Valley Health Network and St. Luke's University Health Network. Seniors ride the fixed-route bus service for free and many live in close proximity to the fixed-route system.

The Authority's LANtaVan service provides door-to-door, shared-ride (paratransit) services to eligible seniors, offering an additional level of service for those with mobility issues and a wider reach than fixed-route service, connecting seniors to destinations across Lehigh and Northampton Counties. Senior centers are among the most frequent locations serviced by LANtaVan, with an estimated two hundred daily passengers to and from prior to COVID. Seniors also frequently use the service to access satellite healthcare offices and clinics, including dialysis centers. **Many of these individuals rely completely on public transportation to access these locations and get the care they need.**

Pennsylvania's transit agencies provided **37.3 million free and discounted senior trips** in FY 2019 through free transit and shared-ride discount programs.

Medical Transportation

Access to free or low-cost transportation to medical appointments generates a range of health and economic benefits for PA residents, which in turn generates positive fiscal impacts for the Commonwealth. Transportation availability and cost represents a key barrier to accessing health care services. When free medical transportation is not available**, trips are often foregone, meaning that medical appointments, treatments, and medicines are often missed**. A 2013 synthesis study in the Journal of Community Health found consistent evidence of transportation as a barrier to medical care.

This in turn translates to **degraded health outcomes and increased healthcare costs**, which impact both the quality of life for residents and direct health care costs to the state. These additional medical costs can significantly exceed the cost of providing transportation. A report from the National Academies of Science, Engineering and Medicine calculates the benefits of providing Non-Emergency Medical Transportation (NEMT) to individuals who would otherwise miss or delay healthcare appointments because of transportation issues, finding a net cost savings of about $700 per trip.

Researchers have also demonstrated the link between degraded health outcomes and higher rates of employee absenteeism (missing work) and presenteeism (reduced productivity at work). Reduced workplace productivity lowers employees' earning power and business profitability, both of which have implications for the state economy and the tax base.

Without readily available transit, an alternative means of reaching medical services is through transportation provided by family and friends. This carries a time value cost and has productivity implications for caregivers, friends, and family.

Geisinger Health Partnership with Transit Agencies

Seven transit systems across Pennsylvania have joined forces with healthcare provider Geisinger Health to improve access to care. Through the partnership, agencies have provided trips to thousands of residents to ensure they have access to care.

This program has reduced medical appointment no-shows, avoided unneeded visits to the emergency department, and increased regular attendance to primary care appointments. The partnership has had a positive impact on community health, ensuring access to care for some of the state's most at-risk patients. This ground-breaking public transit cooperative demonstrates the significant positive impact potential of partnerships between transit systems and community organizations.

Participating Agencies: Schuylkill Transportation System; County of Lackawanna Transit System; Luzerne County Transportation Authority; STEP (Lycoming and Clinton Counties); River Valley Transit (Lycoming County); Erie Metropolitan Transit Authority; rabbittransit (Adams, Cumberland, Franklin, Perry and York Counties, as well as Shared Ride Coordination in Columbia, Montour, Northumberland, Snyder, and Union Counties).

Transit providers in Pennsylvania delivered **9.3 million non-emergency medical trips** through the Medical Assistance Transportation Program (MATP) in FY2018.

Persons with Disabilities

Affordable and reliable transportation enables people with disabilities to access employment and education opportunities, housing, healthcare and social supports, and social community activities. Accessible transportation is a critical support for people with disabilities, supporting individuals to live independently and maintain day-to-day mobility.

Access to Opportunity: A lack of adequate transportation is one of the most frequently reported barriers to employment for people with disabilities. Accessible public transportation supports people with disabilities to live independently and expands options for their educational advancement and participation in the workforce. This has important implications both for these individuals and their families as well as the state's economy and tax base.

Health and Community Engagement: Transportation services connect people with disabilities to social and community activities and provide critical access to healthcare and support services. Particularly for those living in less dense areas, transportation services play a critical role in supporting persons with disabilities to engage with the community, access services while living independently, and participate in the local economy.

Individuals with disabilities across Pennsylvania have access to ADA compliant fixed-route transportation. For persons with disabilities who live/travel outside the fixed-route system or require service beyond ADA requirements, Pennsylvania's transit agencies offer a range of alternative transportation options, including shared-ride services, paratransit, and discount programs.

Access for People with Disabilities in Westmoreland County

The Westmoreland County Transit Authority (WCTA) offers accessible fixed-route and paratransit services to people with disabilities in Westmoreland County. WCTA's fixed-route transportation service is designed to provide access to public transit to as many areas of the county as possible and aims to **ensure access to key destinations for residents, particularly people with disabilities and those who do not have access to other means of transportation**. The fixed-route service offers connections to shopping centers, small and large employers, and medical facilities and hospitals. Some of the employers served by local fixed-route service include Giant Eagle, the Westmoreland County Blind Association, Goodwill, and Excela Health.

WCTA also provides shared-ride, paratransit service that offers access for people with disabilities who require additional assistance and/or who live outside of the fixed-route service area. **WCTA's paratransit service offers door-to-door connections, including driver assistance to and from the vehicle and the destination. Employers and key destinations serviced by paratransit rides include Keystone Foam, Lowes, Clelian Heights, FedEx, and the Westmoreland Hospital**. Prior to the onset of COVID-19, the Authority was offering about 800 paratransit trips a day, and they currently offer 500 to 550 trips a day.

Transit providers in Pennsylvania delivered **2.1 million trips through ADA complementary paratransit and the Persons with Disabilities** (PwD) programs in FY 2019.

Social Benefits of a Multimodal Transportation Network

Transit service offers significant social benefits by providing alternative transportation means to private cars, **reducing the interrelated safety, environmental, congestion, and land use issues** that they create.

A mix of transportation modes allows the state to meet the diverse needs of residents and employers. Rural transportation agencies and shared-ride programs supporting independent living for seniors and access to health care offer social service cost benefits shared by all taxpayers. The increased use of public transportation also benefits existing private vehicle and other vehicle users, as it gives options for people to use other modes of transportation rather than private vehicles. This decreases the number of vehicles on the roads, especially improving congestion during high peak usage.

Transit service is an essential component to a sustainable environmental approach for Pennsylvania. It delivers far lower emissions per passenger than private cars by increasing the volume of passengers per vehicle by several orders of magnitude. Reduced congestion also limits the emissions of the private vehicles that are currently on the road relative to a scenario without transit, where cars would experience lengthier daily delays. **These benefits impact all Pennsylvanians, whether or not their household uses transit service.**

Social Benefit Categories



Safety Benefits

Public transit modes improve safety outcomes for riders relative to private vehicles.



Environmental Benefits

Reductions in vehicle miles traveled (VMT) through transit alternatives decreases emissions and improves environmental outcomes.



Reduced Congestion for Drivers

Public transportation options benefit private vehicle users by taking cars off the road, reducing commute times, and increasing quality of life and economic competitiveness.



Transit-Dependent Riders

Transit service is vital to many Pennsylvanians without transportation alternatives, enabling them to maintain their independence and quality of life.

Safety Benefits

Pennsylvania's transit network provides greatly enhanced safety outcomes for its users relative to transportation alternatives. It increases traffic safety in several ways, including reduced crash risk to travelers who shift from automobile to transit, community-wide crash reductions due to less total vehicle travel, and safer traffic speeds.

Historic data on accidents and fatalities compiled by the American Public Transportation Association (APTA) shows that for individuals, public transportation is ten times safer per mile than traveling by private vehicles, with less than a tenth of the per-mile death rate as compared to automobile travel.

In addition, the increased use of public transportation over private vehicles results in less total vehicle travel, leading to community-wide crash reductions. The same APTA study showed that transit-oriented communities have less than a fifth of the total (pedestrian, cyclist, automobile, and transit passenger) per capita traffic fatality rates as in automobile-dependent communities. Another APTA study showed that cities with more than 40 annual public transit trips per person have half the traffic fatality rate of those with fewer than 20 trips per person.

The availability of public transportation thus provides safety benefits for riders and non-riders alike, helping to make the roads safer and less congested for those who continue to drive.

Positive Train Control

Positive Train Control (PTC) is the next generation of signal safety equipment that works to further reduce the use of human error by regulating train separation, preventing train-to-train collisions, protecting rail workers, and enforcing several safety measures when there are speed or safety restrictions imposed on the rail line. The National Transportation Safety Board (NTSB) has advocated for the implementation of PTC for decades, and estimates that many rail crashes in recent years could have been prevented if this technology were in place. A study by the Volpe Center estimated that if PTC were implemented from 1988 to 2001, it could have resulted in an accident cost savings totaling $827 million, or an average annual cost savings of $59 million.

PTC has been implemented recently by Amtrak and SEPTA across all of their service within Pennsylvania. SEPTA's PTC program was highlighted as an "Innovative Smart Transportation Infrastructure" project in the March/April 2019 issue of Engineering, Inc.'s magazine.



Environmental Benefits

Public transportation is a key facilitator of improved air quality, contributing to better environmental outcomes, and building more sustainable cities. The environmental benefits produced by the public transit network reach far beyond transit riders, reaching all residents in Pennsylvania no matter what travel mode they use.

Pennsylvania residents who commute by long-distance train or commuter rail, for example, are far more likely to rely on one or fewer private vehicles (56%) than the statewide workforce (26%).* Transit commuters achieve financial savings through a comparatively cheaper form of commuting and reduced automobile and fuel costs. The aggregate reduction in vehicle miles traveled achieved by transit commuters yields environmental benefits through reduced fuel consumption and associated carbon emissions.

On a per rider basis, **public transit has far lower greenhouse gas emissions compared to other forms of transportation**. A study conducted by the EPA estimated that in 2018, passenger vehicles emitted 778 million metric tons of GHG emissions versus 22 million metric tons for buses and 39 million metric tons for rail. Public transportation reduces carbon emissions by 37 million metric tons annually, which is equivalent to electricity used by 4.9 million households. By reducing overall vehicle emissions and the pollutants that create smog, public transportation helps metropolitan areas meet national ambient air quality standards (NAAQS).

* Based on the US Census Bureau's definition of commute to work modes in the American Community Survey. Within public transportation modes, this mode category is defined as “long-distance train or commuter rail,” distinct from other rail-related response choices “subway or elevated rail” and “light rail, streetcar, or trolley.”

Compressed Natural Gas (CNG) Fueling Stations

In 2016, PennDOT established a 20-year Public Private Partnership (P3) with Trillium CNG to design, build, and finance Compressed Natural Gas (CNG) fueling stations. **As of 2021, there are currently 363 vehicles that use CNG fuel at 24 public transit agency sites through this $84.5 million statewide project**. The number of buses that use CNG fuel is expected to increase up to nearly 700 when the project is completed.

The CNG fueling stations yield higher cost savings per gallon than conventional gas and diesel fuel, extend the life of the vehicles’ engines, and reduce emissions relative to diesel fueled vehicles. Using the P3 procurement mechanism allows PennDOT to install the fueling stations faster than if a traditional procurement mechanism was used for each site, resulting in a significant estimated capital cost savings of more than $46 million.



Reduced Congestion for Drivers

A balanced transportation network with a range of options reduces the number of cars on the road. This produces a range of public benefits, as well as benefits for drivers who remain on the road and experience reduced congestion and travel times.

Public transportation plays a critical role in reducing congestion by diverting a share of travelers that would otherwise need to use private vehicles. The Urban Mobility Report from the Texas A&M Transportation Institute estimated that without public transportation services, travelers would have encountered an additional 785 million hours of delay and consumed 640 million more gallons of fuel in the year 2010. Research using Los Angeles transit data obtained when the region's transit system shut down due to a strike showed that public transit reduced 47% of regional freeway congestion.

Reducing cars on the road and vehicle miles traveled have broad social benefits (known as "positive externalities") including less money spent on highway and bridge construction and maintenance and decreased vehicle emissions. **Benefits are also captured directly by drivers who remain on the road through reduced travel times and more pleasant commutes.**

The improvements in the overall transportation network experienced by both transit commuters and motorists have significant benefits for businesses seeking to attract workers and customers. This in turn makes a location a more attractive location to do business and raises the level of economic activity that can be supported there.

Congestion in Pennsylvania's Urban Centers

Pennsylvania's urban centers, most notably Philadelphia and Pittsburgh, are built around dense central business districts served by robust transit networks. This infrastructure allows a significant swelling of the downtown population – workers, deliveries, customers, etc. during the peak hours. These areas and the activity within them are major contributors to Pennsylvania's job and tax base.

Traffic congestion limits the financial attractiveness (for businesses, and therefore for investors and developers) of adding more activity in these high-value locations. These challenges are not purely related to capacity, but also the efficiency of the mix of travel modes. Many transit modes that serve downtowns, such as rail, subway, and Pittsburgh's busways, do not compete with private cars for road space. Greater use of these modes thus supplies additional capacity and demand into these areas, without creating additional congestion.

According to a 2019 ESI study, congestion on Philadelphia's center city street grid caused nearly 10 million hours of annual time loss for passengers, at a time value of more than $150 million. Stretches of highway in both Pittsburgh and Philadelphia that serve as key commuter arteries have been named among the ten most congested corridors in the country.

Failure to capitalize and build on the high-quality transportation infrastructure in these regions would limit their competitiveness in attracting dollars and business activity into Pennsylvania.

Transit-Dependent Riders

Public transit alternatives are especially crucial to Pennsylvanian residents who do not have access to private vehicles. This population relies heavily on public transit for the day-to-day activities that enable them to fully participate in Pennsylvania's economy and within their communities.

Transit-dependent riders include a meaningful share of those using transit while commuting to work, and a much broader share of the overall population of riders, which includes groups like seniors, persons with disabilities, students, and those who may lack the ability, means, or desire to maintain a private vehicle.

Pennsylvania's transit agencies have reported customer survey data to PennDOT in recent years that includes information on transportation alternatives. Across agencies surveyed between 2016 and 2020, **63% of fixed-route riders reported that they did not have a transportation alternative to public transit.**

Notably, all data collected in these surveys are from systems outside of Pittsburgh and Philadelphia. Although alternative travel options to public transit, such as Uber and Lyft, have emerged as competitors for transit services, studies show that ride-sharing services have been mainly concentrated in urban areas. The lack of availability of ride-sharing services in non-urban locations makes them less feasible as a reliable alternative for many Pennsylvanians.

Fixed Route Riders without Alternative Transportation

Survey Year	Agency	% Without Alternate Transportation	Survey Year	Agency	% Without Alternate Transportation
2016	CAMTRAN	70%	2018	TAWC	56%
2016	CAT	49%	2019	AMTRAN	61%
2016	COLTS	66%	2019	ATA	75%
2016	MCTA	64%	2019	Butler	66%
2017	Mid Co (TACT)	66%	2019	CPTA	66%
2018	BeST	60%	2019	ICTA	53%
2018	FACT	72%	2019	LATS	69%
2018	HPT	65%	2019	MMVTA	51%
2018	LANTA	75%	2019	STS	67%
2018	LCTA	66%	2019	Washington (Freedom)	56%
2018	LT	63%	2019	Westmoreland	38%
2018	PART	61%	2020	Crawford Venango	78%
2018	RVT	60%		**AVERAGE**	**63%**

63% of surveyed fixed-route riders across agencies do not have alternative transportation choices to public transit.

Source: Agency Survey Data Aggregated by PennDOT (2016–2020)

Economic Impacts from Expenditures

Capital and operating expenditures generate direct and "multiplier" economic impacts within the Pennsylvania economy. Economic impact modeling of the annualized level of total economic impact is undertaken using the IMPLAN framework, an industry-standard tool for modeling economic linkages between sectors. Spending that "leaks out" of Pennsylvania is excluded from the impact calculations.

This direct, indirect, and induced economic activity also supports employment and earnings. Direct employment impacts are estimated through operational data, while additional effects are modeled using IMPLAN.

Expenditure Impacts - Definitions

Direct Impact: Initial effects, or expenditures within the geography of analysis, associated with the activity being modeled.

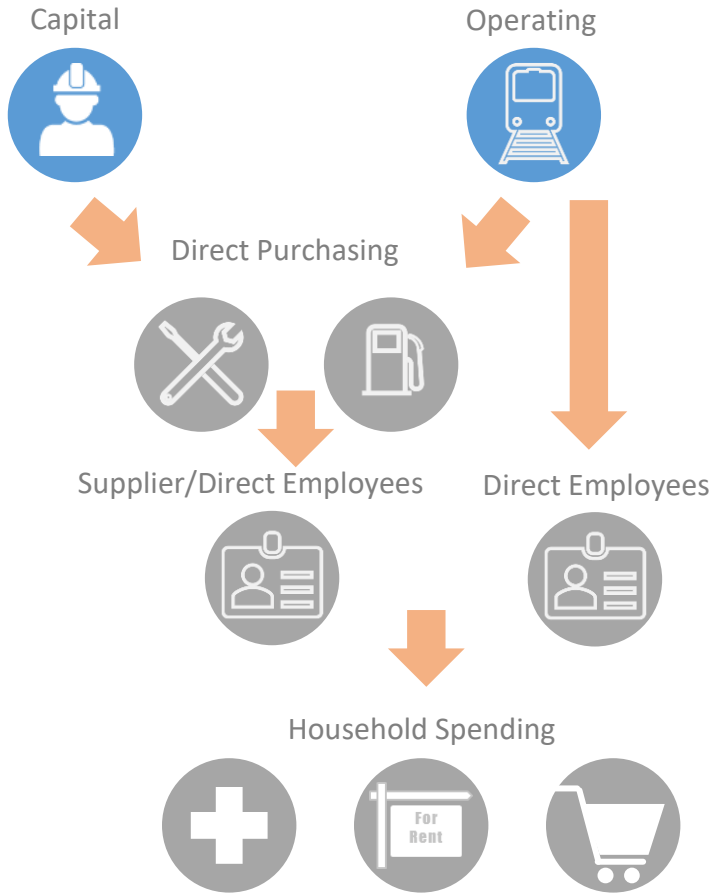
Indirect and Induced Impact: Effects generated by direct economic impact. Indirect refers to the suppliers/services that support direct economic activity. Induced refers to industries supported by goods and services spent from wages/salaries. These are also referred to as "multiplier" effects.

Economic Impacts: Total economic activity (direct, indirect, and induced) attributed to the initial direct activity.

Jobs Supported: The sum of direct, indirect, and induced employment generated. Direct jobs represent the employees of transportation providers and their direct suppliers, while indirect and induced jobs occur throughout the economy based on the increased level of overall activity.

Earning Supported: Employee compensation (wages and benefits) associated with direct, indirect, and induced employment.

Flowchart of Economic Effects



The total economic impact is the sum of the direct, indirect, and induced activity taking place within the state economy.

Operating and Capital Expenditures

Expenditure impacts originate from the annual flow of spending required to provide and maintain transit service.

Pennsylvania's transit agencies and Amtrak (with the support of PennDOT and federal and local revenue sources) have expenditures for both **operating and capital activity**. State funding represents a major driver of both operating and capital spending by Pennsylvania's transit agencies.

Federal funding primarily supports capital activity, with smaller allocations for operating support, while passenger revenue through fares typically supports operating activity. Amtrak operations are supported by passenger revenues and a subsidy from PennDOT to cover the remaining operating costs, while costs for capital improvements of the Keystone Corridor are subject to the cost methodology of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) Section 209.

Operating expenditures include employee-related costs and costs associated with goods and services that support service provision. Capital projects are needed to maintain existing infrastructure ("state of good repair") and to expand and enhance service. These projects involve both "hard" (materials, labor) and "soft" (design and engineering) construction costs, and the cost of supplies and vehicles.

Expenditure Categories



Operating Expenditures

Employee and procurement costs associated with the ongoing provision of transit services by agencies throughout Pennsylvania and Amtrak

Operating expenditures for transit agencies are typically funded through state allocations and programmatic reimbursements, federal formula-driven funds, passenger fare revenue, and local supplements.



Capital Expenditures

Capital costs associated with projects to maintain and upgrade the infrastructure needed to provide service

Capital costs for transit agencies are typically funded through state allocations and grant programs and federal allocations and funding sources, supplemented by local funds and borrowing.

Operating Expenditures: Transit Agencies

Operating expenditures support the day-to-day activities and the provision of fixed-route and shared-ride service by Pennsylvania's transit agencies. These expenditures can broadly be sorted into two categories:

- Employee costs, which include salaries, benefits, and other associated costs for the labor force that operates transit service; and
- Purchasing costs for goods and services including fuel, utilities, professional services, and other materials and supplies to support operations.

Operating costs are estimated and categorized based on multiple years of data analysis. Data is converted to common dollar terms (2019 dollars) and annualized to express typical activity levels. All data is drawn from fiscal years occurring pre-COVID.



Annualized Operating Expenditures

	Total	SEPTA	PAAC	Other Agencies
Total Operating ($M)	**$2,203**	**$1,400**	**$418**	**$385**
Est. Out of State ($M)	**($152)**	($97)	($36)	($19)
Total In-State ($M)	**$2,051**	**$1,303**	**$382**	**$366**

Operating spending by Pennsylvania's transit agencies totals about $2.2 billion on an annual basis. Based on analysis of sector level purchasing patterns, it is estimated that transit agencies spend about $152 million in goods and services outside of Pennsylvania. Accounting for this out of state purchasing, **direct in-state annual operating expenditures are estimated to total $2.05 billion.**

SEPTA and PAAC analysis based on annualized activity from FY 2015-2019
Other agencies based on annualized activity from FY 2018-2019
All values are expressed in $2019 and represent pre-COVID activity levels

Operating Expenditures: Amtrak Service

Amtrak operates more than 100 daily trains through Pennsylvania, including Northeast Corridor and national network routes that pass through 30th Street Station in Philadelphia. This analysis is focused on Amtrak's Keystone service, which operates from Harrisburg to Philadelphia before continuing on to New York, as well as the Pennsylvanian service, which crosses the state from Pittsburgh to Philadelphia.

These two routes are designated as "state-supported" services based on the Passenger Rail Investment and Improvement Act (PRIIA) of 2008. Under federal law**, Pennsylvania (through PennDOT) is responsible for an annual subsidy payment to cover Amtrak's operating losses for service within Pennsylvania.** These losses are based on Amtrak's operating costs (defined through a "cost methodology policy" based on Section 209 of the PRIIA) net of revenues associated with each route.

Operating costs are estimated and categorized based on multiple years of data analysis to estimate the economic impact from operations. Data is converted to common dollar terms (2019 dollars) and annualized to express typical activity levels. All data is drawn from fiscal years occurring pre-COVID.



Annualized Operating Expenditures

	Amtrak
Total Operating ($M)	**$54**
Est. Out of State ($M)	($11)
Total In-State ($M)	**$43**

Operating spending by Amtrak for the Keystone and the Pennsylvanian annual operating expenditures are estimated to total $54 million. Based on analysis of sector level purchasing patterns, it is estimated that about $11 million in purchasing of goods and services to support operations takes place outside of Pennsylvania. Accounting for this out of state purchasing**, direct in-state annual operating expenditures are estimated to total $43 million.**

Amtrak analysis based on annualized activity from FY 2017-2019
Amtrak's fiscal year matches the federal fiscal year, running Oct 1 – Sep 30
All values are expressed in $2019 and represent pre-COVID activity levels

Economic Impact from Operations

The direct, indirect, and induced impacts from the operations of Pennsylvania's transit agencies and Amtrak service within the State can be combined to represent the total annual economic activity from transit operating expenditures in Pennsylvania.

- **Transit operations have an annual economic impact of $3.91 billion within Pennsylvania**, comprised of $2.09 billion in direct impact and $1.82 billion in indirect and induced impact (see Figure at right).
- **This economic activity supports nearly 29,500 jobs within the Commonwealth** on an annual basis. This represents a combination of direct employment by transportation providers and their suppliers and indirect and induced jobs supported by the initial operating spending.
- **These direct and multiplier jobs support $2.22 billion in employee compensation** annually.



Annual Pennsylvania Economic Impact from Operations

	Total	SEPTA	PAAC	Other Agencies	Amtrak
Direct Impact ($M)	$2,094	$1,303	$382	$366	$43
Indirect / Induced Impact ($M)	$1,818	$1,042	$397	$338	$41
Total PA Economic Impact ($M)	**$3,912**	**$2,345**	**$779**	**$704**	**$84**
Employment Supported (jobs)	**29,450**	**19,340**	**5,120**	**4,500**	**490**
Employee Compensation ($M)	**$2,223**	**$1,441**	**$432**	**$310**	**$40**

Capital Expenditures: Transit Agency Projects

Pennsylvania's transit agencies undertake capital projects on an ongoing basis to provide and maintain the necessary infrastructure to support transit service. These projects vary in type depending on the needs of the agency and the nature of the service that it provides. Typical capital project types include:

- Maintenance and expansion of fixed-route assets such as tracks and guideways;
- Construction and renovation of facilities to serve passengers and for maintenance and operating purposes;
- Purchase of vehicles (including vans, buses, and trains) to provide service; and
- Information technology/ infrastructure upgrades to support system operations.

Capital projects are funded through a mix of sources, including allocations of state and federal funds, grant programs, local contributions, and borrowing. State and local contributions to capital projects bring new federal dollars to Pennsylvania that would otherwise be inaccessible to the state and its economy.

Since capital projects are irregular in their size, nature, and duration, annualized activity levels are estimated through analysis of multiple years of data. Expenditure levels are converted to common dollar terms (2019 dollars) and expressed as a typical annual activity level based on pre-COVID data.

Annualized Capital Project Spending

	Total	SEPTA	PAAC	Other Agencies
Total Capital ($M)	**$859**	**$570**	**$167**	**$122**
Est. Out of State ($M)	($173)	($70)	($64)	($39)
In-State Spend ($M)	**$686**	**$500**	**$103**	**$83**

Capital project spending by Pennsylvania's transit agencies totals about $859 million on an annual basis. Based on analysis of purchasing patterns, it is estimated that about $173 million in purchasing takes place outside of Pennsylvania each year, notably including a share of vehicle purchases. Accounting for this out of state purchasing, **direct in-state annual capital expenditures are estimated to total about $686 million.**

SEPTA and PAAC analysis based on annualized activity from FY 2015-2019
Other agencies based on annualized activity from FY 2018-2019
All values are expressed in $2019 and represent pre-COVID activity levels

EMTA Joint Facility Project

Transit agencies across the Commonwealth undertake significant capital projects in order to maintain and upgrade core infrastructure. These projects can improve the operating efficiency and capacity of agencies once complete. **The projects themselves can also be major economic drivers, particularly in small and mid-size communities across the state.**

Over the past several years, the Erie Metropolitan Authority (EMTA) has undertaken a $70 million joint facility project. It is the first new operations facility for the transit agency in 50 years, consolidating administrative, fueling, and maintenance operations that were once spread across two locations**. The new facility is helping to revitalize a once vacant industrial area** and complements the development efforts in the area, which include streetscape improvements, restaurants, and other redeveloped properties.

The EMTA Joint Facility includes a 147,000 square-foot bus storage facility, a two-story administration building, CNG-fueling station, and a 3.5-story parking garage with transit center and retail space. The expansion doubled the footprint relative to the agency's former location. In addition, EMTA received $1.4 million in federal funding to purchase three CNG buses to improve service.

During the multi-year and multi-phase construction process, the Joint Facility Project created a range of opportunities for suppliers and workers in the Erie region. Capital projects such as EMTA's throughout the Commonwealth create opportunities that can be of significant scale relative to typical construction projects in mid-size and smaller communities.



"It's not just about creating a beautiful facility and site in Erie's center city, it's about moving transit to all corners of Erie County–that's what EMTA would like to do in the next 10 years and this project is key."

– Mike Tann, EMTA Director

Capital Expenditures: Keystone Corridor

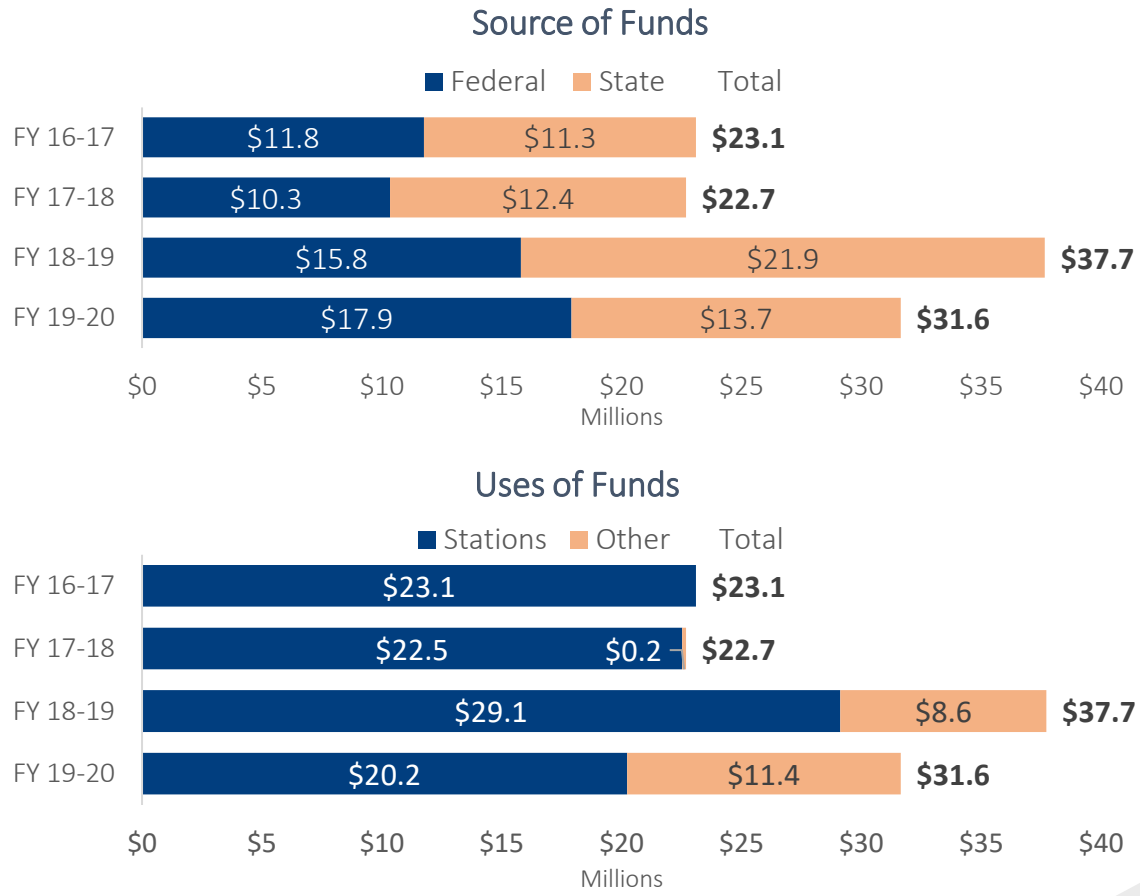
Amtrak owns and maintains most of the right-of-way and infrastructure along the Keystone Corridor from the Harrisburg Transportation Center to Philadelphia's 30th Street Station. Capital investments are regularly undertaken by Amtrak and PennDOT to improve passenger rail service and maintain a state of good repair.

From 2002 to 2007, Amtrak and PennDOT collaborated on a major Keystone Corridor Improvement Program. This program overhauled the underlying infrastructure and fully electrified the service between Harrisburg and Philadelphia, reducing travel times and increasing reliability and frequency of service (see page 19). This program involved a total investment of $145.5 million, split between Amtrak and PennDOT.

Since those upgrades, PennDOT launched the Plan the Keystone initiative focused on improving conditions for rail passengers on the Keystone Corridor. These efforts are improving the passenger experience, meeting Americans with Disabilities Act (ADA) requirements, and aligning stations with the revitalization efforts of their host communities.

These investments also lead to a continuous flow of economic activity in the state. From **FY 2017 to FY 2020, these investments totaled $115 million, or $29 million per year, with the majority going directly to station work. Funding for these efforts is nearly evenly split between state and federal sources.** Federal sources accounted for 49% of funds over this period, with state dollars leveraged to attract matching federal funds.

PennDOT Keystone Corridor Capital Expenditures



Coatesville Revitalization Plans

A new station is being constructed in Coatesville to replace the historic station building (which has been closed for more than 25 years), and non-compliant platforms and stairs. The new station will provide ADA accessibility, offer improved function and amenities, and support station-area revitalization.

The new station construction is integral to broader efforts to revitalize downtown Coatesville, which faces a range of economic challenges. The city has experienced stagnant population growth, decline and vacancy in its commercial corridor, and 2019 American Community Survey data indicates that 25% of residents live below the Federal Poverty Level. The vast majority (88%) of Coatesville's workers commute to jobs outside of city limits, making accessible and well-connected transit a critical part of the city's economic development needs.

The new station configuration will offer space for commercial and retail development surrounding the station, **with a new transit hub at the core of a redeveloped downtown corridor.** The hub will be supported by a new parking facility adjacent to the station to improve commuter access.

Amtrak offers direct service to 15 cities from the Coatesville station, with multiple Keystone trains servicing the station daily. Pre-COVID ridership at the station was close to 15,000, with Philadelphia, Lancaster, and New York as the most frequent destinations.* As of spring 2021, ridership has recovered to nearly half of its pre-COVID levels, well above average for the Keystone Service.

Coatesville Station Rendering



** Based on 2019 data published by the Rail Passengers Association*

Economic Impact from Capital Projects

The direct, indirect, and induced impacts from capital investments within the state can be combined to represent the total annual economic activity from capital projects within Pennsylvania.

- **Capital projects to support transit service have an annual economic impact of $1.50 billion within Pennsylvania**, comprised of $707 million in direct impact and $792 million in indirect and induced impact (see Figure at right).
- **This direct and multiplier economic activity supports nearly 9,500 jobs within the Commonwealth** on an annual basis.
- These direct and multiplier jobs support **$529 million in employee compensation annually**.



Annual Pennsylvania Economic Impact from Capital Projects

Impact Category	Total	SEPTA	PAAC	Other Agencies	Keystone Corridor
Direct Impact ($M)	$707	$492	$103	$83	$29
Indirect / Induced Impact ($M)	$792	$589	$98	$77	$28
Total PA Economic Impact ($M)	**$1,499**	**$1,081**	**$201**	**$160**	**$57**
Employment Supported (jobs)	**9,490**	**7,190**	**1,120**	**870**	**310**
Employee Compensation ($M)	**$529**	**$414**	**$55**	**$45**	**$15**

Annual Economic Impacts from Operating and Capital Spending

Impacts from operating and capital activity can be combined to express the annual economic impacts of expenditures to support transit service in Pennsylvania.

- **Annual economic impacts from operating and capital activity total $5.41 billion**, comprised of $3.91 billion in operating impacts and $1.50 billion in capital impacts (see Figure at right).
- **This economic activity supports nearly 39,000 direct and multiplier jobs within the Commonwealth** on an annual basis.
- **These jobs support $2.75 billion in employee compensation** annually.



Annual Pennsylvania Economic Impact from Operations and Capital Projects

Economic Impact	Total	Operations	Capital Projects
Total PA Economic Impact ($M)	$5,411	$3,912	$1,499
Employment Supported (jobs)	38,940	29,450	9,490
Employee Compensation ($M)	$2,752	$2,223	$529

THE CASE FOR CONTINUED INVESTMENT

The Need for Investment

Transportation infrastructure has long been one of the core features enabling Pennsylvania's businesses to thrive and its residents to access opportunities and live independently. The COVID-19 pandemic has impacted many facets of life, including the economic and mobility patterns that characterized people's daily routines. Going forward, successful states and regions will be those that continue to invest in public infrastructure at levels that meet the needs of the residents and businesses they are seeking to attract and retain.

Transit agencies throughout Pennsylvania adapted their practices during the pandemic to ensure that service was available. **The transit network was integral in keeping vital services functioning in Pennsylvania communities by connecting essential workers to their places of employment and transit-dependent populations to the services that they need**. Agencies must continue to adapt as their focus shifts from providing these essential services to rebuilding ridership and supporting Pennsylvania's economic recovery.

As health conditions and the economy improve, business and residents are considering anew their location choices and mobility patterns. Pennsylvania will need a recovery that spans the state and takes advantage of differing opportunities for different community types. **In the post-COVID environment, states and regions are not guaranteed to reclaim their prior share of activity – they must compete for it.**

Investment in core public infrastructure such as public transit and passenger rail is key to the state's recovery and future trajectory. Transit and rail service will help Pennsylvania businesses access the workforce they need to recover and grow, help maintain the competitiveness of the state's largest economic nodes, and help Pennsylvania's aging population to preserve its independence. **Now is not the time for disinvestment**.

The Role of Transit and Passenger Rail

Transit During COVID-19

During the COVID-19 pandemic, public transit agencies adapted to continue operations in order to meet vital needs for transit-dependent riders and help to enable access to crucial services in communities across the state.

Transit's Importance Going Forward

As Pennsylvania seeks to accelerate its economic recovery and navigate new dynamics, public transit and passenger rail are vital to the state's businesses, workforce, and economic competitiveness:

- Pennsylvania businesses will continue to rely on transit to access the workforce they need to recover and grow;
- Long-distance transportation connections unlock opportunities for remote and hybrid jobs by connecting residents in lower-cost areas to high-wage labor markets;
- Transit-dependent populations like seniors, persons with disabilities, and those without alternatives means of transportation will continue to rely on service to maintain their independence and quality of life, reducing public and private costs; and
- Pennsylvania's largest economic nodes will continue to rely on transit to support the volume and productivity needed to compete for high-value activity and investment with other states and regions.

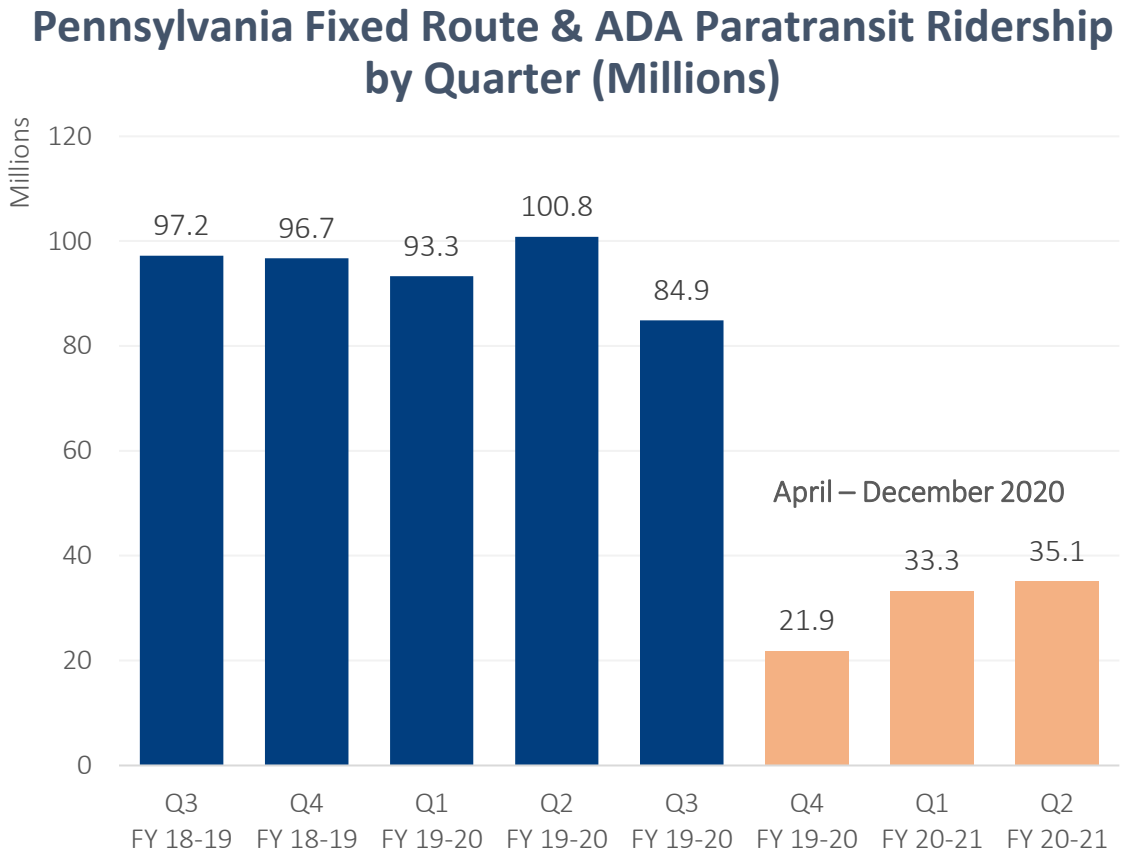
Transit Ridership During COVID-19

Transit ridership across the state and across the industry has been greatly impacted since March 2020 by the COVID-19 pandemic and the associated safety measures and restrictions. Pennsylvania initiated a shutdown on March 21, 2020 of all “non-essential” businesses. Ridership losses for the state’s transit agencies were significant during this initial period, and ridership remained well below established levels for the duration of 2020 (see Figure at right).

Importantly, while many transit systems throughout the state reduced hours or altered schedules, no system completely shut down at any time. Transit providers across Pennsylvania embraced their role in keeping communities safe, while continuing to provide lifeline services. **This provided transportation for essential workers across the state, access to food and other necessities, and access to medical care and treatment through fixed-route and shared-ride service**.

The events during this time period illustrated the importance of transit service not only to the population of riders, but also its vital role in keeping crucial industries and public services available to the general public through these connections.





Riders without Vehicle Access

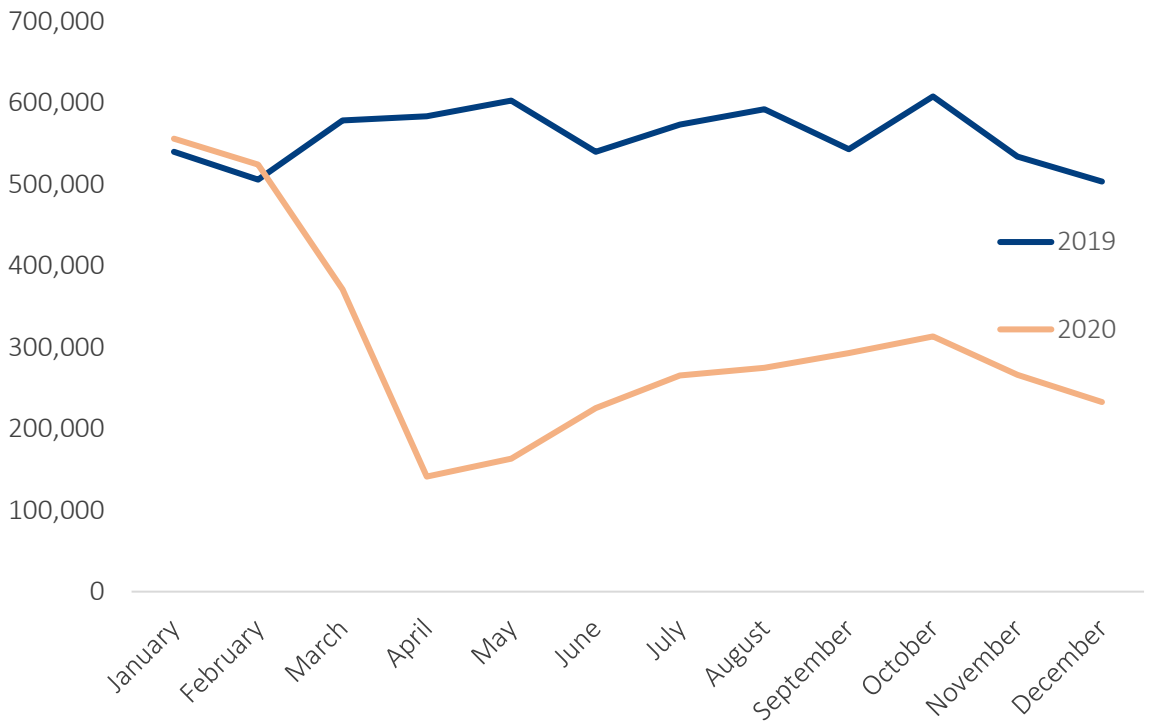
Shared-ride ridership across the state was also significantly impacted during the pandemic. Ridership dipped immediately with initial health and safety restrictions in spring 2020. Ridership recovered gradually over the course of 2020 but remained well below established levels (see Figure at right).

Modifications were made to shared-ride services to ensure the continued safety of and to meet the travel needs of transit-dependent riders, including changes in reservations and fare collections to reduce face-to-face interactions, modified service areas or service times, and the use of shared-ride vehicles for meal delivery.

Around a third of transit commuters do not have access to a vehicle in their homes. The continued provision of shared-ride service during the COVID-19 pandemic was crucial to ensuring mobility and independence for riders without vehicle access.



PA Shared-Ride Ridership by Month: 2019 to 2020



Supporting Essential Workers

Transit services provided by Pennsylvania's transit agencies are have been vital to the success of the COVID-19 public health response by transporting essential workers to their jobs and maintaining access to vital services.

While some employees worked remotely and others lost employment when stay-at-home orders were issued in March 2020, many workers were deemed "essential" by state and continued to work in-person during the pandemic. Pennsylvania's transit network transports essential personnel to and from their jobs every day, including hospital staff, grocery store workers, pharmacists, and social service providers.

Based on analysis of commute modes by profession using 2019 American Community Survey data, **an estimated 178,900 Pennsylvania workers in essential industries** (as designated by the Governor) **commute to work on transit**, **making up about 52 percent of all transit commuters.** The most common employers among this group of transit commuters were healthcare institutions such as hospitals, doctor's offices, and nursing and residential care facilities; professional, business, financial, and social service industries; grocery and convenience stores; and transportation providers. Maintaining the workforce of these sectors was crucial to the overall health and safety of communities throughout Pennsylvania during the pandemic.

These trends were even more pronounced in certain areas of the state. For example, transit agencies in South Central Pennsylvania such as Capital Area Transit (CAT), rabbittransit, Red Rose Transit (RRTA), and Lebanon Transit (LT), were notable for seeing less pronounced ridership drops than agencies elsewhere in the state and country, likely due to the concentration of essential workers that they served. The state's transit network played a critical role in maintaining the availability of vital services and providing residents with reliable access.

Essential Workers Commuting by Public Transit

Industry	Est. Number of Essential Worker Transit Commuters
Healthcare	64,200
Professional, Business, Financial, and Social Services	58,300
Grocery & Convenience Stores	14,200
Transportation	13,900
Manufacturing	9,600
Public Safety and Armed Forces	7,000
Retail and Wholesale	6,500
Restaurants and Hotels	4,000
Agricultural and Mining	1,200
Total	**178,900**

An estimated 178,900 essential workers in Pennsylvania rely on transit to commute to work.

Source: ACS 5-Year Estimates (2015-2019); IPUMS (2019)

Transit Agency Adaptation

Transit agencies across Pennsylvania faced unprecedented health and safety challenges from the pandemic. Agencies adapted their practices to ensure that they could continue to provide the service that was vital to their riders and communities, while maximizing the safety of their workforce and riders. Modifications during COVID included:

- Changes in boarding and fare procedures to reduce interactions between drivers and riders;
- Enhanced cleaning procedures on vehicles; and
- Ventilation modifications, face coverings, passenger spacing rules, and capacity limits to improve airflow and reduce opportunities for transmission aboard vehicles.

Agencies also continued to offer shared-ride service for essential trips. PennDOT provided agencies with flexibility to make alterations to pricing and service areas to ensure that service would be available for the highest priority users.

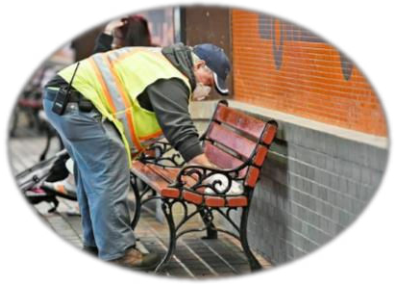
As the pandemic progressed and the scientific understanding of transmission advanced, concerns about significant spread of the virus through transit systems have largely been demonstrated to be misplaced. Nonetheless, these additional interventions were crucial to maintaining safety and the trust of riders reliant on transit for a variety of needs. Going forward, agencies must remain flexible to the evolving needs of their riders and communities to rebuild their ridership over time.

Meeting Community Needs in Southwestern PA

The Cambria County Transit Authority (CamTran) operates fixed-route, complementary paratransit, and shared-ride bus services in southwestern PA. CamTran's services help its riders, most of whom do not have access to cars, to get to work, to shop, go to the doctor, access support services, and to recreate.

CamTran has partnered with businesses and social service organizations in the region for many years. **During the pandemic, CamTran developed new partnerships to meet community needs**, including providing free rides to COVID-19 vaccine appointments, providing rides for healthcare providers to distribute vaccines to homebound individuals, and using its bus fleet to help deliver pre-boxed food from local food banks.

CamTran continued to offer consistent service levels during the lockdown so that its transit-dependent riders (nearly 70% of its usual riders) could still access life-sustaining services and essential workers could access essential jobs. As COVID-19 restrictions ease, transit agencies are a critical part of economic recovery, getting workers and customers back to businesses and students back to school.





Amtrak Ridership

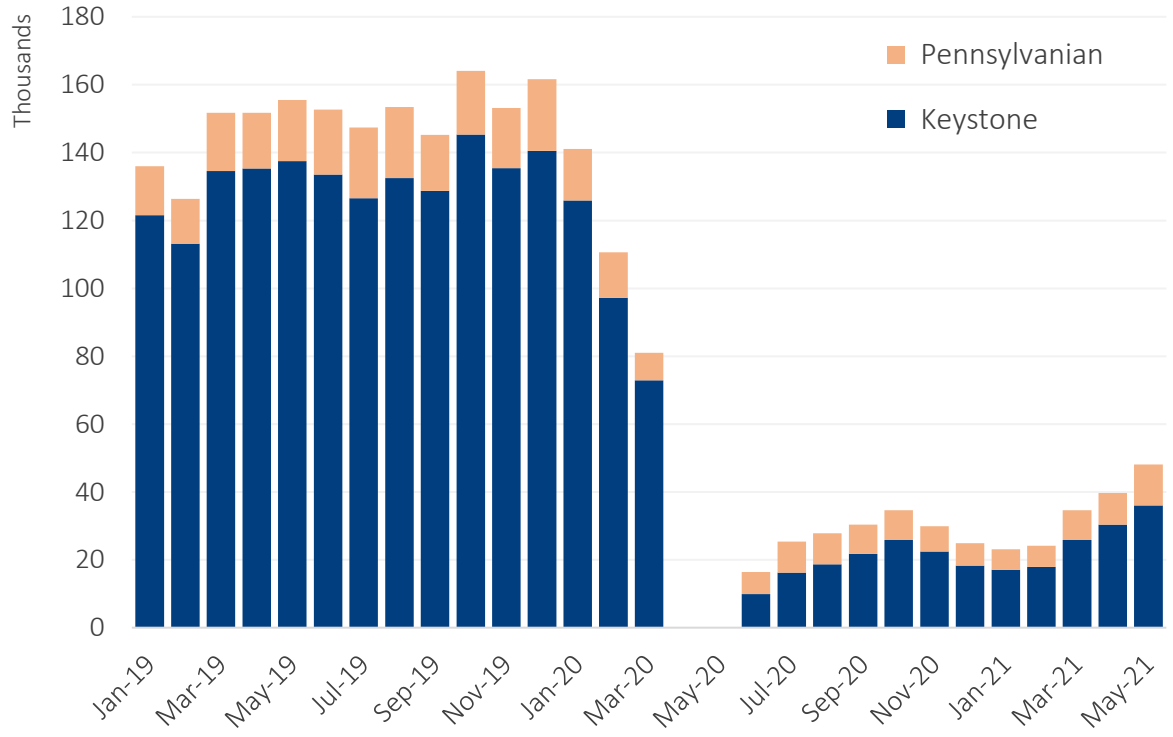
Amtrak ridership for Keystone Service and the Pennsylvanian has also been significantly affected by the COVID-19 pandemic due to the temporary suspension of services and ensuing capacity restrictions.

PennDOT coordinated with Amtrak to suspend the Keystone Service on March 18, 2020 and the Pennsylvanian service on March 19, 2020. Both passenger rail services were restored on June 1, 2020, with a limited schedule for the Keystone Service to reduce operating costs. Ridership remained below typical levels after the resumption, returning to approximately 15 percent of pre-COVID levels for the Keystone Service through the early months of 2021 (see Figure at right). For the once daily Pennsylvanian, ridership was around 45 percent of pre-COVID levels despite capacity limits of 50%, indicating a high level of continued demand.

More recent ridership data showed that the traveling demand for Amtrak has been coming back since the beginning of 2021. Ridership in May 2021 for both services was more than double the January 2021 levels. Amtrak removed capacity restrictions starting on May 24, 2021, which is likely to lead to significant ridership increases starting in mid to late 2021.

The growing levels of ridership on the Keystone Service and the Pennsylvanian are an indicator of rebounding economic conditions, the demand for this service, and the potential for the long-distance access to major markets through intercity rail to provide Pennsylvania with significant competitive benefits in the post-COVID economy.

Keystone and Pennsylvanian Monthly Ridership, 2019-2021



Source: Amtrak Monthly Performance Report (2019 – 2021)

The Role of Transportation Investment

The COVID-19 pandemic has led residents and businesses alike to reconsider their location and mobility choices. This dynamic creates new opportunities for many communities and a need for others to reinforce or build on their traditional strengths.

Across states, regions, and even countries, **the recalibration of activity means that competitive dynamics are greater than ever**. As businesses and workers re-establish habits and location choices, they have a greater degree of freedom in how they arrange their businesses, lives, and mobility choices.

Within this environment, the quality and trajectory of public infrastructure like the transportation network serve as crucial factors in the competition for businesses and residents. States and regions that make the investments to move people and goods efficiently will improve their economic competitiveness while ensuring that residents can access vital services and maintain their independence as they age. **These efforts will make these states and regions more attractive to residents and businesses, enabling them to maintain and grow their share of activity as the national economy rebounds**.

By contrast, areas that fail to invest and erode their competitive position will see residents, jobs, and activity move elsewhere. Pennsylvania's future economy, tax base, and quality of life will all suffer if the state is unable to provide competitive infrastructure for its next generation of businesses and residents.

Pennsylvania's Transportation Investment Dynamics

- Adequate transportation infrastructure is a core public service that **enables private commerce to thrive and supports quality of life and independence for residents** in a variety of circumstances, including the elderly and those with limited alternatives.
- Studies undertaken by a range of entities, including government, public private collaboratives, and private sector groups, have identified a significant backlog of transportation investments in Pennsylvania. These studies have also highlighted **the need for new funding approaches and sources** ito maintain an adequate transportation network.
- The post-pandemic recovery presents a highly competitive environment as businesses and residents reconsider their location options. In this context, **investments that improve Pennsylvania's economic competitiveness and attractiveness may have a higher than average return in terms of new business activity and jobs** that are attracted or retained.
- If Pennsylvania fails to invest in its existing public transportation and passenger rail infrastructure, **losses will be borne by residents, businesses, and taxpayers who depend on transit service and the economic value it creates.**

Pennsylvania's Transit Commuters

Transit service not only creates economic value and opportunities in Pennsylvania, but also plays a crucial role in connecting all Pennsylvanians to these opportunities. Reliable and affordable transit service is an essential component of an inclusive economy that makes opportunities available to more citizens regardless of their income level or background.

Data from the American Community Survey shows the important equity implications of the availability of transit service. Pennsylvania's transit commuters are drawn disproportionately from lower income brackets, with a median wage below the statewide average, and are more racially diverse than the state's population at large (see figure at right).

In addition, **nearly a third of transit commuters do not have access to a vehicle in their homes.** Vehicle ownership and operating costs can serve as a barrier to employment for many low wage workers. The federal Bureau of Transportation Statistics estimates that combined costs for owning and operating a car for 15,000 miles per year averaged around $9,300 in 2019, consistent with similar results published by AAA. Current car costs are likely far higher, due to a post-pandemic spike in used car prices caused by an excess of demand over supply.

These vehicle costs may be prohibitive, preventing families with modest incomes from acquiring a first vehicle or adding an additional vehicle to their household. For these households, reliable transit service can play a vital role in enabling access to jobs, educational opportunities, and activities that help them better the circumstances of their families.

Demographics of Pennsylvania Transit Commuters

	PA Transit Commuters	PA Population
Household Income		
< $10k	15%	12%
$10k - $25k	22%	18%
$25k - $35k	14%	14%
$35k - $50k	15%	17%
> $50k	34%	39%
Median Earnings for Workers	$33,180	$39,919
Below 100% of the Federal Poverty Level	12%	5%
No Vehicle Access	32%	5%
Race		
White	44%	80%
Black or African American	39%	9%
Asian	7%	4%
Other	6%	4%
Hispanic or Latino Origin (of any race)	9%	6%

Source: ACS PUMS 5-Year Estimates (2019)

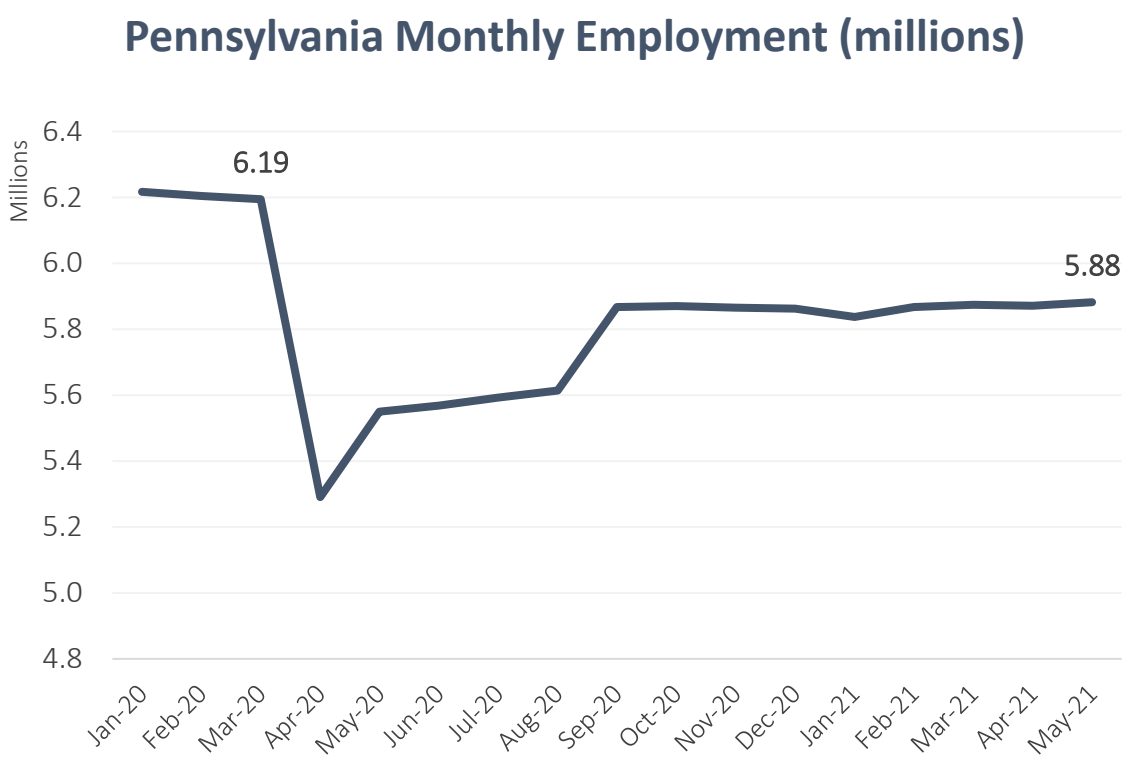
Supporting Pennsylvania's Labor Market

As businesses seek to re-open fully and re-establish their prior activity levels, they face challenges in attracting the workforce necessary to meet their needs and serve their customers. Labor shortages are most pressing for lower wage work, where potential workers may face the most acute challenges in managing obligations and costs like child care, family care, and transportation in order to return to a steady work schedule. With consumer demand and mobility returning, **workforce shortages can represent the largest factor holding back activity levels for many businesses.**

Employment data from the Bureau of Labor Statistics shows that in the first half of 2021, **Pennsylvania's economy remains more than 300,000 jobs short of pre-COVID levels**. In addition, the state's rebound has leveled off after an initial rebound, with little movement between fall 2020 and spring 2021.

Importantly, demographic trends in many areas of Pennsylvania indicate that workforce shortages are likely to be a long-term rather than short-term consideration. Many Pennsylvania counties have populations that are both decreasing and aging, shrinking the pool of prime working-age residents over time.

In this context, **public infrastructure that enables workers on the margins of the labor market to access jobs is crucial to business, workers, and the economy**. Public transit options that provide workers with reliable and affordable transportation connections can make the difference for a worker to take a job or pick up additional shifts that might otherwise be inaccessible due to cost or other obligations.



Source: Bureau of Labor Statistics Current Employment Statistics (CES)

Labor Market Access

Public transit and passenger rail service connect Pennsylvanians to a wider range of employment opportunities across the state and beyond. Rail service provides a means for residents of smaller communities in the state to access economic opportunities in dense employment nodes such as the Philadelphia and New York metro areas. This access creates an opportunity for residents in communities with a comparatively lower cost of living to access higher-wage labor markets.

- The average annual wage in Pennsylvania is approximately $54,000, compared to more than $60,000 in the Philadelphia Metro area and more than $70,000 in the New York Metro area.
- **Pennsylvanians can enjoy the economic and quality of life benefits associated with increased earning power while maintaining a relatively lower cost of living.** Smaller communities benefit from this dynamic as workers spend their earnings in the local economy and support the local tax base.

Connections between smaller communities in the state and large employment centers are already a critical component of Pennsylvania's residential and business patterns. As remote and hybrid work become more common and location preferences shift in the post-COVID economy, these connections become even more valuable.

Wages and Cost of Living Comparison

	Average Annual Wage	Regional Price Index (Cost of Living)
Pennsylvania	$53,950	97.0
Philadelphia Metro	$60,400	105.3
New York Metro	$71,050	125.7

Source: Bureau of Labor Statistics (2020); Bureau of Economic Analysis Regional Price Index (2019)

Hybrid and Remote Work Potential

Long-distance commutes can take on even greater potential importance with the acceleration of remote and hybrid work trends during and after the COVID-19 pandemic. In a context in which daily commutes were the norm, workers living in less-dense communities while working in urban areas had to factor in significant travel times. **As trips to the office for in-person work become less frequent, smaller communities become more attractive as places to live.**

While new dynamics of business and residential location are still evolving, communities with high-quality long-distance trains are well-positioned. While some professions or work functions may take place fully remotely, many companies and workers are likely to see the benefit of retaining a level of in-person accessibility, where there are benefits to be gained from collaboration and relationship building**. Rail service makes these occasional commutes feasible, enabling residents to access a much broader range of employment opportunities than those that are "remote only."**

The reshuffling of residential and business location dynamics will create opportunities for Pennsylvania communities of different types. Economic development experts have begun to envision a future in which communities compete through the quality of life they can offer workers, rather than the tax incentive package they can offer businesses. Attracting more residents can spur a positive economic cycle by generating more demand for goods and services, creating opportunities for local businesses and growing the local tax base.

Hybrid and Remote Work Potential for Lancaster

With a population of around 60,000, the City of Lancaster has sufficient density to support the kind of lifestyle amenities that many remote and hybrid workers are seeking, with a historic downtown and retail and entertainment options. It also has the cultural amenities, dining scene, and historic character that have long made it a popular visitor destination.

Even with these amenities, Lancaster boasts a cost of living below the national average and an accessible housing market. **This combination of factors has enabled Lancaster to appear on national lists of communities identified as the best suited for residents looking to work remotely.**

Lancaster was the second busiest station for the Keystone Service prior to the pandemic, with more than 500,000 riders annually. Residents are already frequent users of long-distance service, with the most popular destinations being Philadelphia (67 miles away) and New York (168 miles away).* **The value of these connections, and their contribution to Lancaster's residential attractiveness should only grow** as hybrid and remote work arrangements become more common.

** Based on 2019 data published by the Rail Passengers Association*

Supporting Independent Living for Seniors

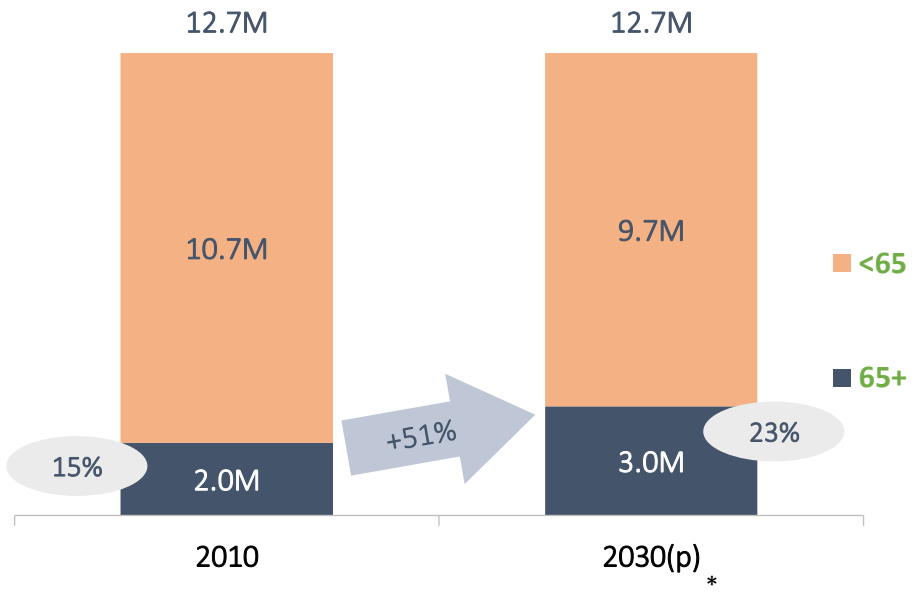
Pennsylvania is among the oldest states in the country based on median age and is in the midst of a significant population transition as the outsized baby boomer generation reaches retirement age.

- **As of 2010, the state had about two million elderly residents**, representing 15% of the state's population, a ratio of more than five non-elderly to each elderly resident.
- **By 2030, Pennsylvania's elderly cohort is projected to grow to around three million** and 23% of the total population, with a ratio closer to three non-elderly residents for each elderly resident.

These demographic changes have major implications for Pennsylvania's economy, its delivery of public services, and quality of life for its residents. Transportation services that enable independent living are consistent with Pennsylvania's transition to greater emphasis on home and community-based care for seniors. Research shows **that most seniors want to stay in their homes as long as they can**, and services that support independence are critical to enabling this preference.

In addition to quality of life benefits, **enabling seniors to live independently yields substantial cost savings for seniors and their families and for the Commonwealth**. The cost of nursing home care in Pennsylvania ranks among the highest in the nation. This means substantial private pay costs for families, and for qualifying individuals, substantial state expenditures on Medicaid institutional care. Comparatively, providing in-home services and supports is much less expensive, with costs per-senior of Medicaid in-home services approximately one third of the cost of nursing home care. Privately paid costs for families are also significantly lower. As such, services like public transportation that support seniors to age in place create the opportunity for substantial fiscal savings, particularly as the state's senior population experiences significant growth.

Projected Aging of Pennsylvania's Population, 2010-2030



*2030 estimates are projections.
Source: Pennsylvania Independent Fiscal Office (IFO)
Pennsylvania Demographic Outlook (September 2020)

COVID-19 Implications for Cities

At the outset of the COVID-19 pandemic, there was speculation that an "urban exodus" could be set off by a combination of health fears and remote work technology. The evidence to date shows that while urban areas have seen significant economic and population impacts from the pandemic, the largest effects have been in high-cost areas with far different market dynamics than Pennsylvania's urban centers.

Evidence from residential and commercial rents and population flows indicate that **while cities must adapt, as they always have, they are likely to remain long-term centers of economic activity for Pennsylvania.** Public transit service will remain crucial to enabling Pennsylvania's urban areas to thrive and compete with similar areas in other states.

Residential Rents: Analysis from ApartmentList.com shows a clear relationship between pre-COVID rent levels and changes in rents from March 2020 to June 2021. High-cost markets like San Francisco, New York, and Seattle show the largest pandemic-driven declines, while more affordable cities like Philadelphia and Pittsburgh have already recovered to averages above their pre-COVID rent levels.

Commercial Rents: Academic analysis (Rosenthal, Strange and Urrego 2021) finds that commercial rents across urban areas pre-COVID increased with employment density and near transit stops. Recent transactions show a decrease in this premium during the pandemic, but the retention of significant positive effects on the desirability of locations (reflected in rents) from employment density and transit access.

Population Patterns: A systematic analysis of 2020 population flows by the Federal Reserve Bank of Cleveland shows that net population declines experienced by many cities resulted not from an increased outflow of residents from usual levels, but from decreased levels of population inflow. These inflows are likely to return to more typical levels as economic activity and opportunities return to urban areas in 2021 and beyond.

Key Implications for Cities

Pennsylvania's urban areas felt significant impacts from the COVID-19 pandemic, but were largely spared from the levels of population and business activity losses seen in the county's highest cost urban areas.

Pennsylvania's urban centers are well-positioned to compete for jobs and activity relocating from higher-cost locations as part of the recovery and re-positioning of the state's economy. Residential demand for the amenities and lifestyle that these areas offer also remains strong, raising the possibility of a rebalancing toward more residential use of traditional downtowns.

Remote work trends present a clear challenge to central business districts that have traditionally been reliant on in-person office employment and supporting retail, hospitality, and service providers. However, these technologies also present an opportunity to cluster more business activity into centralized locations (through a hybrid approach) without the same degree of cost, physical space, and congestion constraints that would apply to fully in-person activity.

While significant adverse consequences will take time to resolve, these **negative impacts are unlikely to be permanent unless they are reinforced by policy choices.** The competitiveness and trajectory of these areas depends to a significant degree on high-quality infrastructure like public transit that underpins a business environment that is productive and attractive to employers and workers.

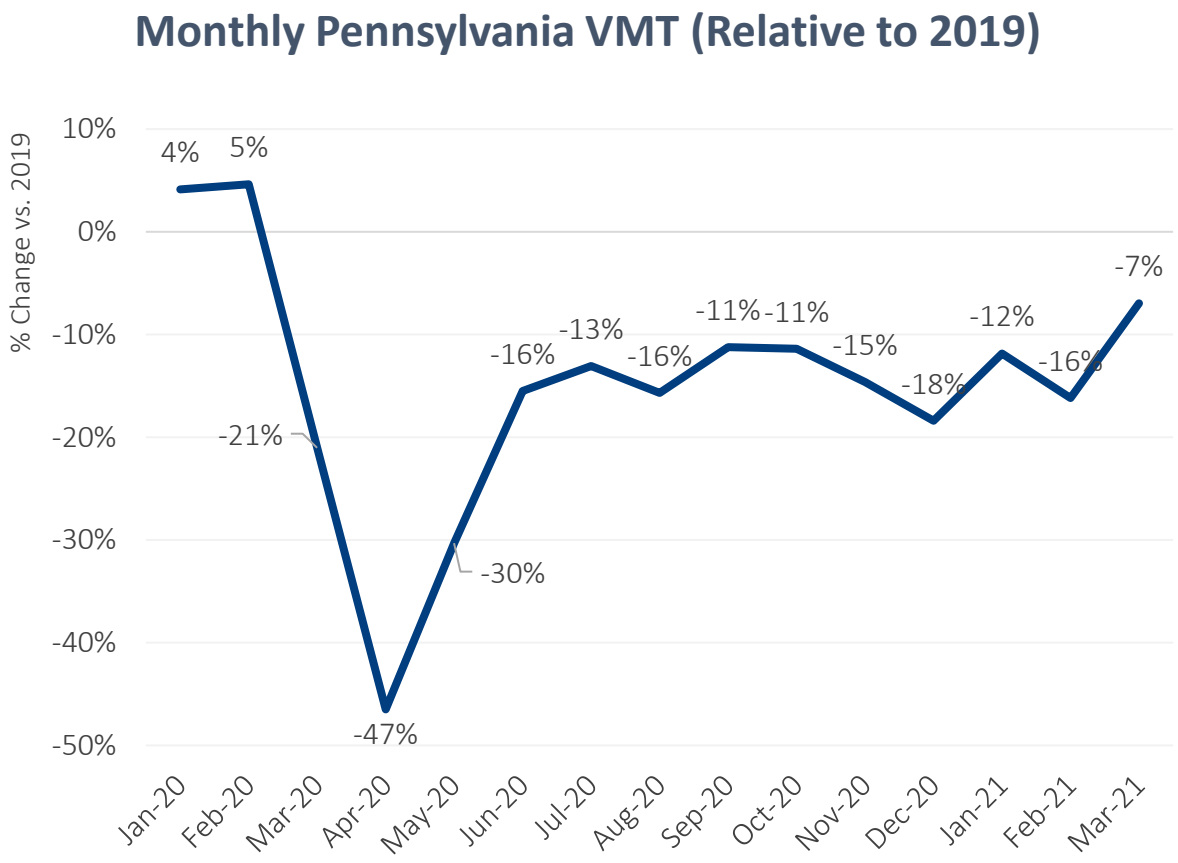
Increasing Congestion Potential

Although traffic volumes were still below pre-pandemic levels in the first half of 2021, it is anticipated that vehicle miles traveled (VMT) will continue to grow as in-person activity increases. With this return to activity comes the potential for the return of congestion. A recalibration of travel modes toward private cars and away from transit has the potential to produce increased congestion at lower levels of economic activity, choking off the economic recovery of key activity centers in Pennsylvania.

Recent evidence shows a growing recovery of vehicle activity in Pennsylvania. Compared to the 2019 baseline, Pennsylvania VMT fell by 47% at the peak of the pandemic in April 2020 before returning to reduced level of activity 11% to 18% below the 2019 baseline from June 2020 to February 2021. **In March 2021 (the most recent available month), Pennsylvania VMT jumped to just 7% below 2019 levels** (and 18% above March 2020), a trend that is likely to have continued through the roll-out of vaccinations and increased activity levels in spring 2021.

In the Philadelphia and Pittsburgh regions, real-time GPS traffic data from the TomTom Traffic Index shows levels of congestion and delays accelerating in spring 2021. While congestion levels remain below the 2019 baseline on most weekdays, traffic has worsened in particular on Fridays and weekends. Increasing in-office activity will likely increase weekday congestion over the course of the year despite lower overall employment levels in both regions.

Absent high-quality transit service and the recovery of transit ridership, congestion can serve as a significant limiter to Pennsylvania's economic recovery and job growth trajectory. **A reduction in the share of commuters that reach the downtown core through public transit implies that an equivalent level of car trips, and thus congestion, will be achieved at a lower overall level of in-person activity.**



Source: US Department of Transportation Traffic Volume Trends (2019 - 2021)

Value of Existing Infrastructure

As the economy recovers, business activity, commercial investment, and research dollars (through both private and public investments) will continue to flow to the most attractive and productive locations. Pennsylvania and its economic regions will need to compete with regions across the country to attract activity and high-quality jobs that in turn support the recirculation of income that creates job growth that is more widely distributed across the state.

Pennsylvania's transportation amenities across large and small activity centers are among the most crucial assets underlying its economic attractiveness. If vital public infrastructure like the transportation network is not adequately maintained due to disinvestment, it will erode Pennsylvania's competitive position and ultimately its level of economic activity and tax base.

Disinvestment in public transit and passenger rail infrastructure would also degrade the value of a significant stock of private and public non-transportation infrastructure that derives part of its value from a well-functioning transportation network (see Figure at right). It would also add significant cost for Pennsylvania to reconfigure core infrastructure around new activity patterns if the existing network is allowed to decay.

Although transit and passenger rail ridership is expected to remain below pre-COVID benchmarks in the short-term, demand has been recovering gradually in 2021 as economic activity and mobility increase. If declines in transit use are reinforced by policy decisions and disinvestment, they risk becoming permanent through reductions in service. This path would represent a value-destroying negative cycle for Pennsylvania, its residents, its businesses, and its economy.

Potential Value Loss from Disinvestment

Disinvestment in public transit and passenger rail infrastructure would degrade the value of privately and publicly held assets that depend on the functioning of the transportation network. Losses would be borne by residents, businesses, civic institutions, and taxpayers.

- **Economic activity would decline** in commercial centers, reducing job opportunities and incomes, and increasing economic disparities between those with the means to shift to alternative modes and those without.
- **Values would be diminished for private physical assets like houses, commercial space, and retail space**, reducing prosperity and the incentive for future investment within the state.
- **The productivity and value of a large stock of public infrastructure would be reduced**, including not only the transit system but also roads, universities, cultural institutions, protected open space, and other amenities that rely on transit and rail access.
- **Significant new infrastructure investment would be required to support large shifts in location** of economic activity to new patterns that may be less productive and less environmentally sound.

Impacts of Disinvestment for Pennsylvania

The diminishment of competitiveness and private and public value from disinvestment in Pennsylvania's public transit and passenger rail infrastructure would have negative implications for the fiscal health, economy, and quality of life across Pennsylvania.

A healthy tax base for the Commonwealth and local jurisdictions is dependent on getting Pennsylvanians back to work and retaining and expanding private sector activity and value. Reducing the ability of Pennsylvania businesses to attract the workforce they need and diminishing the attractiveness of commercial centers across the state would erode the state's tax base.

Economic activity that is attracted to or retained within Pennsylvania can also have effects throughout the state through economic interlinkages. Such activity recirculates in Pennsylvania through business supply chains and tourism spending. Pennsylvanians across the state will also increasingly be able to access work opportunities in the state's higher wage markets through hybrid and remote work opportunities.

Residents throughout the state who depend on transit for their independence and access to vital services and amenities would see their quality of life degraded. A loss of independence for Pennsylvania's seniors, persons with disabilities, and those without access to a private vehicle would also increase public and private costs.

Now is not the time for disinvestment in core infrastructure like public transit and passenger rail that enhance Pennsylvania's economic competitiveness and benefits its residents, workforce, businesses, and communities.

Statewide Implications of Disinvestment

Allowing Pennsylvania's public transit and passenger rail network to degrade will **reduce Pennsylvania's long-term level of employment.** Businesses throughout the state will struggle to attract the workforce they need, and the state's largest employment nodes will lose activity to competitors in other states. This loss of activity will result in:

- Declines in Pennsylvania's tax base from reduced levels of population and economic activity, necessitating increases in taxes or reductions in public services for residents across the state;
- Reduced hybrid and long-distance work opportunities in high-wage labor markets for residents across the state; and
- Reduced downstream spending by businesses and workers, impacting suppliers and businesses that benefit from household spending and tourism activity.

Disinvestment will also **degrade the ability of residents throughout the state to maintain their quality of life** and decrease access to services and amenities. The loss of service will result in:

- Decreased independence for transit-reliant populations, such as seniors and persons with disabilities, and a reduced ability for those without access to private vehicles to participate in Pennsylvania's economy.
- Increased state costs due to the lessened ability of Pennsylvanians to access job opportunities and maintain their independence.

PENNSYLVANIA'S INVESTMENT IN PUBLIC TRANSIT AND PASSENGER RAIL

Economic analysis in this report has been prepared by Econsult Solutions, Inc. (ESI).
ESI provides economic expertise to policymakers and businesses.
Based in Philadelphia, ESI supports clients nationwide.

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pennsylvania
DEPARTMENT OF TRANSPORTATION