



# Pennsylvania in Motion: Transportation Workforce Study

September 2025



Pennsylvania  
Transportation Advisory Committee



Pennsylvania  
Department of Transportation

Ground crew at Harrisburg International Airport  
Courtesy of Susquehanna Area  
Regional Airport Authority (SARAA)



Cover images:

Roadway construction workers, PA 153, Clearfield County  
Courtesy of North Central Pennsylvania Regional Planning and Development Commission

School bus driver  
stock.adobe.com

Transportation planner, Philadelphia  
Courtesy of Gannett Fleming

Bridge inspector, Allegheny County  
Courtesy of Larson Design Group

# Contents

Bridge inspector,  
Allegheny County  
Courtesy of  
Larson Design  
Group

Page 7

## **Methodology**

(How the study was conducted)

Page 10

## **The Transportation Workforce Shortage**

(The problem)

Page 19

## **Implications**

(Why it matters)

Page 22

## **Causes and Contributing Factors**

(How we got here)

Page 26

## **Findings**

(The bottom line)

Page 30

## **Potential Approach**

(A problem-solving strategy)

Page 34

## **Appendices**

(More detail)

- A. [Acknowledgments](#)
- B. [Best Practices](#)
- C. [Existing Workforce  
Programs and Services](#)
- D. [Data](#)
- E. [Stakeholder Outreach  
Summary](#)

Tour bus and city bus, Philadelphia  
Courtesy of Gannett  
Fleming

Paratransit van, Lycoming County  
Courtesy of STEP, Inc.

Stakeholders noted that recruiting for public transportation jobs, particularly rural paratransit, is challenging.



## Introductory Letter

**TAC's unique role as an independent advisory body to transportation leaders and policymakers provides the broad perspective needed to convene partners and comprehensively address transportation workforce challenges.**

Dear Secretary Carroll and State Transportation Commission:

There was a time when transportation employers had a large pool of qualified applicants to fill job openings. Now, many positions such as bus drivers and truck drivers remain unfilled, impacting the movement of both people and goods in Pennsylvania. Turnover is also high in many occupations, and a significant proportion of the dedicated workforce has reached or is approaching retirement age. At the same time, trends such as an increasing senior population and sustained growth in e-commerce increase the need for transportation workers to ensure that infrastructure and services can meet demand.

### Research and Outreach

TAC is statutorily charged with advising on issues and opportunities impacting transportation in the Commonwealth. The state of our transportation workforce—public and private—not only impacts transportation directly, but also affects nearly every facet of daily activity, our economy, education, and more. Through this study, TAC has evaluated a wide range of demographic, economic, and technological trends and their implications for the transportation workforce. Through three stakeholder workshops, TAC convened transportation employers (public and private, state and local) and those involved in workforce development to discuss this important subject.

### Study Results

The study findings confirm that the workforce challenges currently facing the transportation sector are serious and concerning. Stakeholders agree that if not addressed, the situation will worsen over the next five years. Many entities—public, private, and non-profit, including the Pennsylvania Department of Transportation (PennDOT)—have undertaken a range of successful initiatives to address aspects of the transportation workforce gap. Those efforts should continue. Achieving broader, more comprehensive results at the scale needed to address Pennsylvania's transportation workforce challenges will require a Commonwealth-wide effort to foster further collaboration across transportation modes, state and local government, the private sector, and other agencies, particularly those responsible for economic development and workforce.



SEPTA train crew; Delaware County  
Courtesy of Gannett Fleming

In its concluding chapter, the document offers a potential approach to addressing multifaceted, Commonwealth-wide transportation workforce challenges. The TAC sees value in forming a transportation workforce collaboration team comprised of Pennsylvania transportation employers in the public and private sectors to identify:

- Ways to maximize the use of existing workforce programs to meet transportation workforce needs.
- Strategies to strengthen collaboration among workforce development partners, businesses, and educational institutions, and the public and private sectors to benefit the transportation workforce.

The team should build upon—rather than duplicate—any existing PennDOT initiatives. However, the team would consider transportation workforce development Commonwealth-wide, not only from a PennDOT perspective.

Thank you to the study task force for their diligence and commitment to addressing this challenging topic. We also thank the many stakeholders who participated over the course of three workshops to help us gain a greater understanding of the depth and breadth of the transportation workforce challenge and potential solutions.

The Pennsylvania transportation workforce shortage is a serious problem. It is also solvable. There is cause for optimism and energized progress, largely due to uniting key partners to collaborate, to innovate, and to make Pennsylvania the keystone of transportation excellence for years to come.

Sincerely,

Jody L. Holton, AICP  
Chair, Transportation Advisory Committee  
Assistant General Manager, SEPTA

Mark Murawski  
Chair, Study Task Force  
Vice Chair, Transportation Advisory Committee



Courtesy of  
Associated  
Pennsylvania  
Constructors (APC)

Intermodal transfer at Port of Erie, Erie County  
Courtesy of Terminal Operator Carmeuse/Erie Sand and Gravel  
and Erie-Western PA Port Authority

Ports, transit, and aviation representatives participated in this study along with highway and bridge, trucking, economic development, and workforce professionals.



## Methodology

Many perspectives contributed to this study to ensure that the multifaceted challenges and potential solutions related to the transportation workforce were considered in a comprehensive and cohesive manner.

# Leadership

## Transportation Advisory Committee

This study was undertaken by the Pennsylvania Transportation Advisory Committee (TAC), an independent body that examines transportation-related issues and advises the State Transportation Commission and the Secretary of Transportation. TAC members have seen firsthand the challenges that transportation employers, including the Pennsylvania Department of Transportation (PennDOT), face in recruiting and retaining qualified, committed employees.

## Task Force

A 15-member Task Force shaped the direction of the study, participated in stakeholder outreach, validated the workforce implications of the demographic and economic trends analyzed, and reviewed study findings.

[Appendix A](#) provides background on TAC's role and lists TAC members, Task Force members, and their affiliations.

Bus mechanic  
Courtesy of Westmoreland County Transit Authority





Welding foreman aligning rail ends at Middletown Station, Dauphin County  
Courtesy of PennDOT

## Research and Outreach

### Demographic and Economic Trend Research

The study team, guided by the Task Force, identified and researched key demographic and economic trends and their implications for the transportation workforce.

### Stakeholder Workshops

Three stakeholder workshops were held in December 2024 to gather firsthand information and perspectives on the transportation workforce issue. Approximately 75 participants represented workforce organizations and transportation employers from both the public and private sectors. Their input is integrated throughout the report. Appendix E provides a detailed summary of the workshops, including a list of participants.

**Pennsylvania On Target, developed and maintained by DCED, is a one-stop location for data to inform and support economic and workforce development strategies.**

### L&I and DCED Support

TAC thanks the Pennsylvania Department of Labor and Industry (L&I) for sharing its insights and observations on Pennsylvania's existing workforce development system and its delivery, as well as workforce programs and their applicability for Pennsylvania's transportation workforce (see [Appendix C](#)).

In addition, L&I partners from Local Workforce Development Boards and PA CareerLink® participated in the stakeholder workshops.

[Pennsylvania On Target](#), the Commonwealth's Economic Dashboard, developed and maintained by the Pennsylvania Department of Community and Economic Development (DCED), is a one-stop location for data to inform and support economic and workforce development strategies. BusinessPA Research & Analytics within DCED contributed valuable supplemental data from Pennsylvania On Target, enhancing the study team's ability to quantify transportation workforce needs and trends.

Further, DCED's Director of Workforce Development Initiatives provided insights on workforce development and facilitated connections within other agencies.

Professional driver inspecting tanker truck at  
PMTA Truck Driving Championship, Monroe County  
Courtesy of Pennsylvania Motor Truck Association

There are 11,000  
unfilled truck driver jobs  
in Pennsylvania  
(DCED, Pennsylvania On  
Target, 2025 projected).



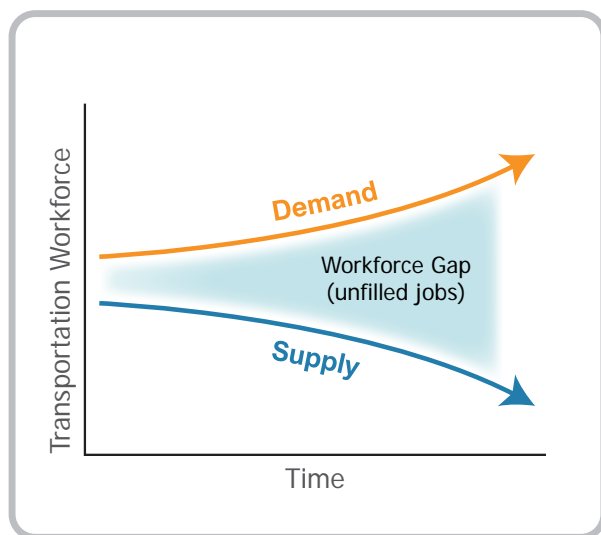
## The Transportation Workforce Shortage

**There is a substantial transportation workforce gap  
(unfilled jobs), and it is expected to worsen.**

## Overview

Pennsylvania is experiencing a substantial gap between the number of transportation jobs and the number of workers available to fill those jobs.

The diminishing supply of workers, combined with an increased demand, has led to a growing transportation workforce gap, or shortage.



### Defining the 'Transportation Workforce'

For the purposes of this study, “transportation workforce” includes the wide range of jobs in the public and private sectors necessary for moving both people and goods, and the various support jobs that keep our transportation system, services, and projects in good working order.

Employment opportunities extend across various modes and sectors, covering a wide range of job types. Some examples follow:

- Truck drivers—both tractor-trailer and local delivery
- Transit drivers and operators (bus and rail)
- School bus drivers
- Taxi and rideshare drivers
- Construction workers
- Laborers and material handlers
- Railroad conductors
- Airline pilots, flight crews, and ground support
- Maritime captains and crew
- Dock workers
- Mechanics
- Engineers
- Transportation planners
- Project managers

## Employment Data Highlights

### Pennsylvania

The need for more workers in most transportation-related industries is demonstrated by employment data maintained by DCED through the Pennsylvania On Target Dashboard, the data source for this section unless otherwise noted.

There are 485,985 jobs in Pennsylvania's Distribution, Transportation, and Logistics (DTL) sector, as defined by the North American Industry Classification System (NAICS). The DTL sector includes four separate clusters of transportation-focused industries:

- **Distribution and Electronic Commerce:** Industries focused on the distribution of goods and services, and those involved in electronic commerce. More than half of the DTL workforce (256,868 jobs) is employed in this cluster.
- **Local Logistical Services:** Industries such as local couriers, local freight

trucking, and bus and rail transit systems.

- **Water Transportation:** Industries providing water transportation services for passengers and cargo using watercraft, such as ships, barges, and boats.
- **Transportation and Logistics:** Industries providing passenger air transportation, support activities for road transportation, and the movement and storage of goods.

Collectively, these clusters employ most of the transportation workforce that is the subject of this study. It is important to note that the DTL sector is not the only sector employing workers that perform transportation functions. For example, while a tractor-trailer driver might be employed by an e-commerce company, tractor-trailer drivers are also employed by grocery store chains, which report industry data under a different NAICS sector—Personal Goods and Services.

**It is important to note that the Distribution, Transportation, and Logistics sector is not the only sector employing workers that perform transportation functions.**





Table 1 in [Appendix D](#) provides statistics on the top 20 transportation-focused occupations by employment in the DTL sector; the table below provides a snapshot of that data.

Numerous transportation-related occupations have more than 1,000 unfilled positions across all industry sectors (not only the DTL sector). Stock and material-moving workers and order-fillers are in highest demand at more than 21,000 projected job openings; these jobs likely support e-commerce businesses. Tractor-trailer drivers remain in high demand with more than 11,000 projected job openings across all sectors in Pennsylvania in 2025. There are more than 3,800 projected job vacancies for school bus drivers.

### Highlights of Unfilled Pennsylvania Transportation Jobs (2025 Projected)

Occupation	Total PA Jobs	Total PA Job Openings
<b>Laborers and Freight, Stock, and Material Movers</b>	154,271	21,202
<b>General and Operations Managers</b>	153,561	13,219
<b>Heavy and Tractor-Trailer Truck Drivers</b>	100,165	11,198
<b>Light Truck Drivers</b>	45,632	5,265
<b>Industrial Truck and Tractor Operators</b>	45,485	4,690
<b>School Bus Drivers</b>	24,155	3,863
<b>Shuttle Drivers and Chauffeurs</b>	12,678	1,856
<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	13,269	1,137

Source: Pennsylvania Department of Community and Economic Development, Pennsylvania On Target

See [Appendix D](#) for more occupations and data.



As shown on the table below, several transportation occupations have exceptionally high turnover rates. For example, the turnover rate for Laborers and Freight, Stock, and Material Movers is 100.14%, meaning that each position must be re-hired annually. Light truck drivers, who operate small trucks or vans, have a turnover rate of nearly 70%. Frequent rehiring imposes greater costs on employers and, ultimately, on consumers.

### Highlights of Pennsylvania Transportation Job Turnover Rates (2023)

Occupation	Turnover Rate
<b>Laborers and Freight, Stock, and Material Movers</b>	100.14%
<b>Light Truck Drivers</b>	69.80%
<b>Shuttle Drivers and Chauffeurs</b>	68.41%
<b>Industrial Truck and Tractor Operators</b>	61.17%
<b>Heavy and Tractor-Trailer Truck Drivers</b>	54.43%
<b>School Bus Drivers</b>	41.79%
<b>General and Operations Managers</b>	39.24%
<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	37.06%

Source: Pennsylvania Department of Community and Economic Development, Pennsylvania On Target

See [Appendix D](#) for more occupations and data.

## Upcoming Retirements

Further, 28% of workers in the DTL sector will be retiring in the next few years, higher than the statewide rate of 26.3%. This difference is significant, especially when combined with the high turnover rates.

## Forecasted Job Growth

Demand for workers in transportation jobs is expected to increase, which would increase the workforce gap over time. The Pennsylvania Occupational Employment 2023-2025 Short-Term Forecast (the most recent data available) forecasted a 1.3% increase in job openings for transportation and material moving occupations.

[Appendix D](#) provides additional employment data.

Pouring sidewalk at  
Paoli Station,  
Chester County  
Courtesy of SEPTA

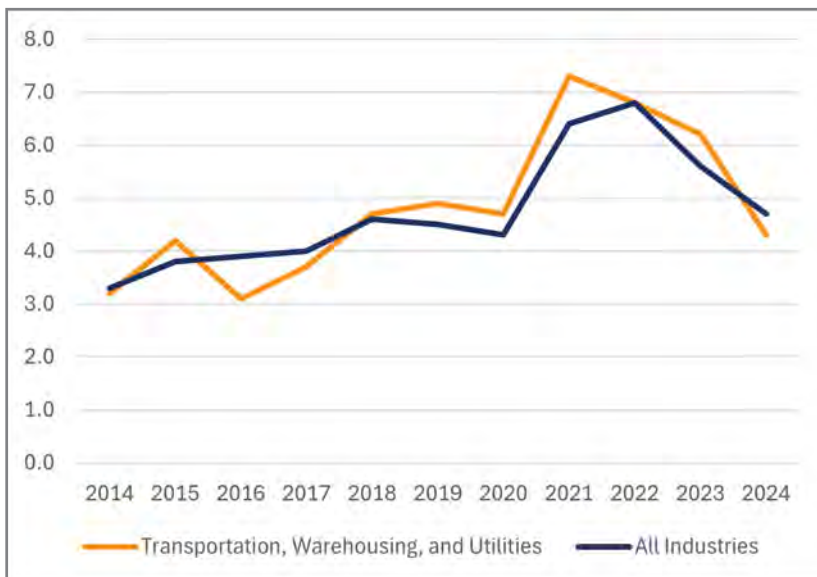


## National

U.S. data confirms that the transportation workforce shortage is a nationwide problem. The U.S. Bureau of Labor Statistics (BLS) maintains job opening data through the Job Openings and Labor Turnover Survey (JOLTS). Transportation workforce data is reported under the “Transportation, Warehousing, and Utilities” industry. As shown on the chart, the rate of job openings for Transportation, Warehousing, and Utilities is generally consistent with the rate of total job openings from all industries. Transportation job openings exceeded jobs for all industries and reached a high in 2021. This is consistent with a U.S. Department of Transportation, Bureau of Transportation Statistics report that documents that unfilled transportation jobs reached an all-time high in December 2021 (627,000 jobs), growing 114.8% from December 2020 to December 2021 during the COVID-19 pandemic. Except for the years impacted by the pandemic, between 2014 and 2024 the number of U.S. transportation and total job openings has generally been increasing.

<sup>1</sup> U.S. Bureau of Labor Statistics, [Occupational Outlook Handbook, “Transportation and Material Moving Occupations.”](#)

**Annual Rate of U.S. Job Openings: Transportation, Warehousing, and Utilities and All Industries (2014–2024)**



Source: U.S. Bureau of Labor Statistics, JOLTS  
“All Industries” is total non-farm jobs, which excludes farming, agriculture, and related activities.

## Forecasts

Employment opportunities in transportation occupations are expected to increase in the coming years. These occupations are classified as Transportation and Material Moving Occupations in the U.S. BLS Occupation Outlook Handbook. According to BLS, “Overall employment in transportation and material moving occupations is projected to grow faster than the average for all occupations from 2023 to 2033. About 1.9 million openings are projected each year, on average, in these occupations due to employment growth and the need to

replace workers who leave the occupations permanently.”<sup>1</sup> The table on the following page shows the projected average job openings per year between 2023 and 2033 for Transportation and Material Moving Occupations, along with the projected average change in employment compared to the national rate of 4%. The data shows that U.S. job openings for several transportation occupations align with the Pennsylvania unfilled jobs trends, and confirm that the transportation workforce gap is a reality nationwide.



Dump trucks at Port of Erie, Erie County  
Courtesy of Terminal Operator Carmeuse/Erie Sand and Gravel  
and Erie-Western PA Port Authority

## Projected Average U.S. Job Openings and Change in Employment: Transportation and Material-Moving Occupations (2023-2033)

Occupation	Projected Average Job Openings per Year	Projected Change in Employment, 2023-2033 (National Rate: 4%)
Hand Laborers and Material Movers	1,059,000	4%
Heavy and Tractor-Trailer Truck Drivers	240,300	5%
Delivery Truck Drivers and Driver/Sales Workers	183,800	9%
Material Moving Machine Operators	85,500	3%
Bus Drivers	79,800	2%
Taxi Drivers, Shuttle Drivers, and Chauffeurs	52,100	11%
Flight Attendants	19,500	10%
Airline and Commercial Pilots	18,500	5%
Water Transportation Workers	9,700	3%
Railroad Workers	7,300	2%
Air Traffic Controllers	2,200	3%

Source: U.S. Bureau of Labor Statistics, [Occupational Outlook Handbook](#),  
"Transportation and Material Moving Occupations," August 29, 2024.

"The Pennsylvania School Bus Association reported a 20-25% driver shortage in 2023, which decreased to 10-15% in 2024. However, the shortage is expected to worsen as more drivers retire."

"SEPTA anticipates an increase in employee retirements within the next 5 years."

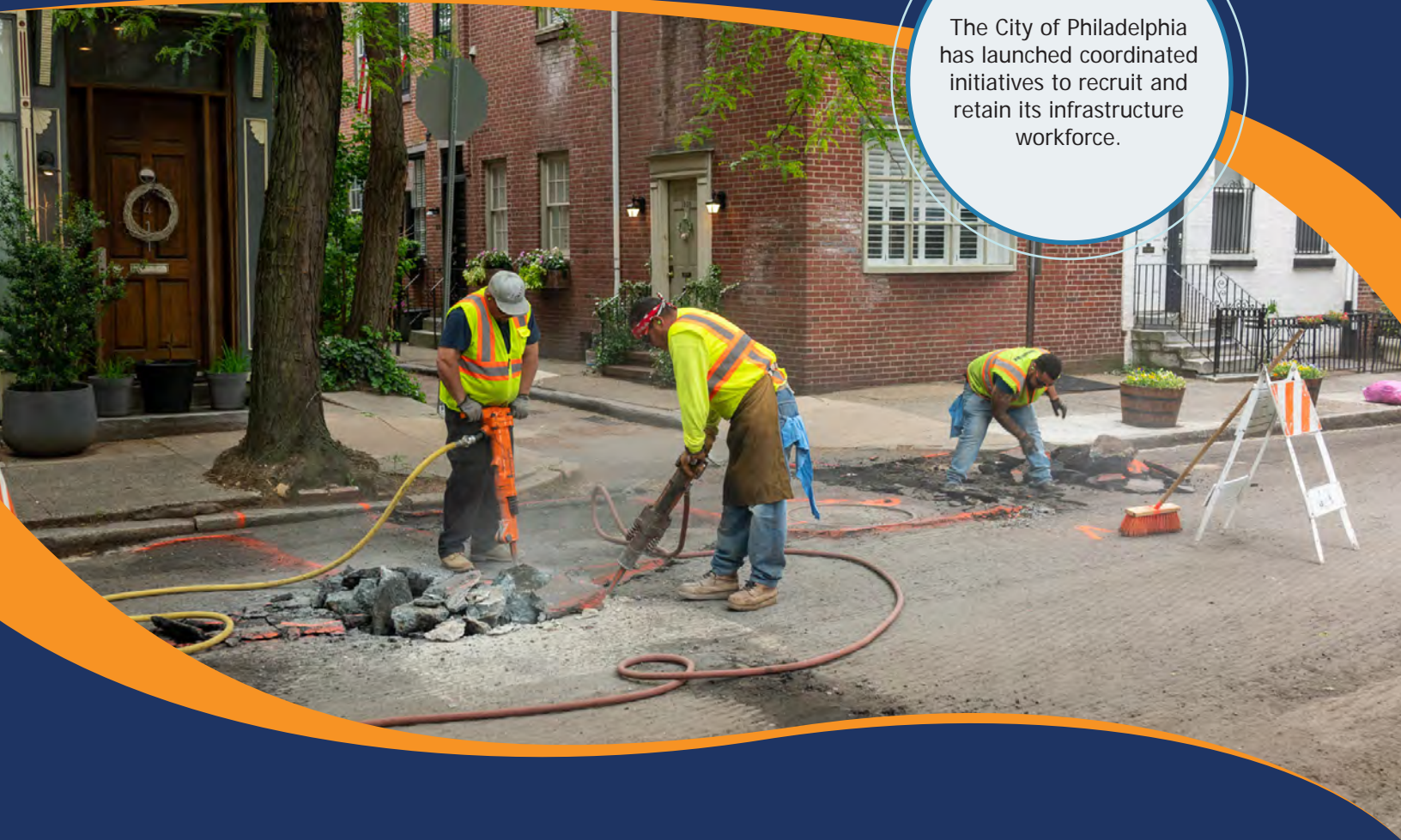
"It will be a substantial problem in five years, especially if we keep kicking this problem down the road."

## Stakeholder Observations

The observations of those on the front lines of transportation employment and hiring align with the data. When asked about the likely trends related to the transportation workforce shortage, several participants in the stakeholder workshops indicated that, if unaddressed, the problem is expected to worsen. Additional stakeholder observations are summarized in [Appendix E](#).

Crews perform roadway repairs on 13th Street in Philadelphia in preparation for resurfacing  
Courtesy of City of Philadelphia

The City of Philadelphia has launched coordinated initiatives to recruit and retain its infrastructure workforce.



## Implications

**Transportation is the “chain” in the supply chain. A weakened transportation system threatens the broader economy. Efficiently moving both people and goods is essential for our economic and social well-being.**

## **Across the United States, 96% of APTA-surveyed transit agencies reported a workforce shortage, and 84% of those said the shortage impacts their ability to provide service.**

~American Public Transportation Association (APTA),  
[2023 Transit Workforce Shortage Synthesis Report](#)

Transportation supports activities in nearly every area of life. Like many aspects of daily life, we often overlook transportation's role when everything is running smoothly.

As in any organization or industry, when transportation entities are short-staffed—especially seriously short-staffed for long periods of time—it typically leads to delays, mistakes, and a loss of morale among the remaining workforce.

When transportation infrastructure and services underperform due to workforce shortages, it leads to cascading inefficiencies in everyday life. In a worst-case scenario, safety can be compromised.

Hypothetical examples of transportation workforce shortage implications:

- A shortage of bus drivers can lead to missed runs. The commuters depending on that bus are now late for their jobs or picking up their children from daycare, creating ripple effects in other industries that are also shorthanded. Reliability is crucial for encouraging greater use of public transportation.
- Similarly, when there aren't enough mechanics, commuter trains and buses remain out of service longer for maintenance. This leads to fewer vehicles available and more delays for passengers trying to get to work or medical appointments.
- Without enough school bus drivers, districts may be forced to combine routes,

leading to delays getting to and from school and potential safety risks due to overcrowding.

- Long-haul truck drivers are on tight schedules to keep manufacturing plants operating smoothly. A shortage of drivers or mechanics can lead to assembly line shutdowns and ripple effects throughout the supply chain.
- A bridge replacement project involves workers spanning many fields—planning, project programming and finance, engineering and design, environmental and other state and federal approvals and permitting, bidding and contracts, materials suppliers, construction and inspection, traffic control, and so on. It is a multi-year process even at optimum efficiency. When workforce shortages lead to delays throughout the process, projects take much longer to complete. A bridge may be weight-restricted in the meantime, and extended construction-related congestion takes a toll on passenger traffic and freight movement. The longer it takes to complete a bridge or other transportation project, the more it costs.

Some delays may simply present inconveniences. However, the cumulative impact of our transportation system adding costs and friction to every trip levies an unnecessary toll on the economy and daily life. We should expect Pennsylvania's transportation system to operate efficiently and safely in the service of the state's residents, businesses, and visitors.



## Life Works When Transportation Works

Pennsylvania's economy, safety, and community life depend upon an efficient transportation system, properly staffed and in a state of good repair.

Everyone who commutes or travels for work, in any industry, depends upon the transportation system in some form, such as the sidewalk, roadways, public transportation, or the aviation system.



### Employment



### Education



### Products



### Medical & EMS



### Community & Recreation

Raw materials, components, and finished goods travel by ship, truck, and train. Their journey to consumers, whether via a retail store or an e-commerce fulfillment center, requires transportation. Even the farmer's market requires access for vendors and customers.

Chicken barbeque fundraisers, high school ball games, public meetings, church services, bike rides, road trips, dinner out, visits to grandparents, bus tours, train excursions... They all rely on transportation.

From pre-school to high school, students and teachers rely on the local transportation system for daily trips. College and graduate students often need intercity transportation options. Trade schools and continuing education programs where in-person training is essential need reliable transportation infrastructure and services for trainers and learners.

A 911 call only brings help if first responders can get to the scene, fast. An efficient transportation system can make all the difference in outcomes. Non-emergency medical appointments require the patient to travel for services.



Even **digital connectivity for work, learning, and leisure** relies indirectly on the transportation system. Computer and networking hardware involve raw materials, workers, and delivery. The electrical grid requires physical components and workers with access by truck to keep it functioning.

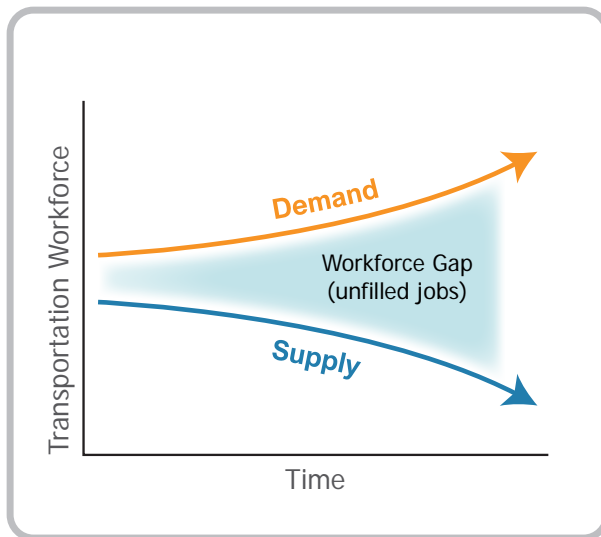
Bridge inspection, Lycoming County  
Courtesy of Larson Design Group

The impact of an aging population and a significant decline in younger residents is particularly concerning in rural Pennsylvania.



## Causes and Contributing Factors

Several national and statewide trends contribute to the transportation workforce gap. Understanding the reasons for the shortage helps formulate effective strategies.

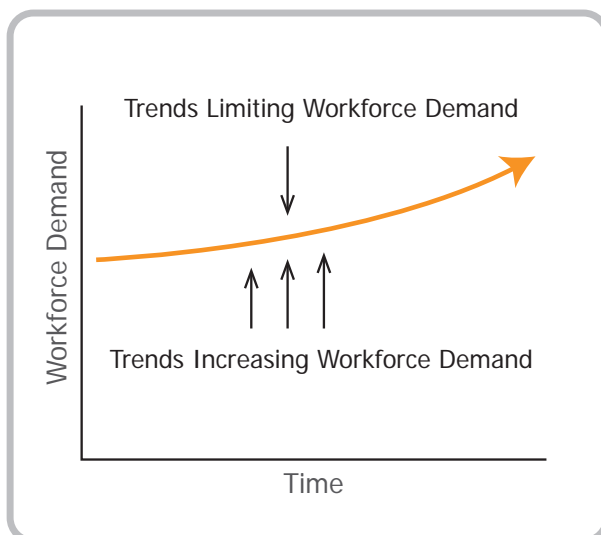


### Recap: Workforce Gap

There are more transportation jobs than workers to fill them—in other words, demand for transportation workers exceeds supply.

The resulting workforce gap is expected to widen. That is, demand for transportation workers is expected to increase over time, and the supply of transportation workers is expected to decrease over time.

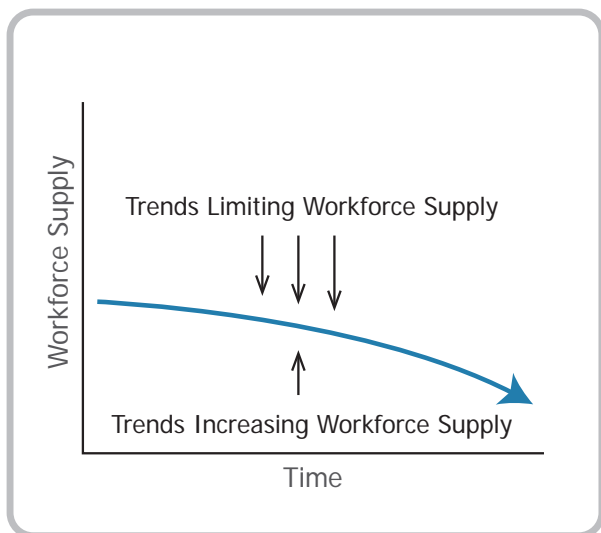
Understanding trends and other factors that contribute to these trajectories is a first step in developing effective workforce solutions—bringing supply in line with demand over time.



### Demand for Transportation Workers

Various trends affect the demand for transportation workers. Most are increasing the demand or need for workers.

The top demand-related trends are summarized on page 24, with hyperlinks to supporting data in [Appendix D](#).

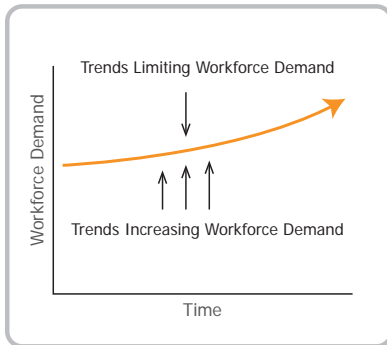


### Supply of Transportation Workers

Similarly, various trends affect the supply of transportation workers. Most are decreasing the supply or availability of qualified applicants for transportation jobs.

The top supply-related trends are summarized on page 25, with hyperlinks to supporting data in [Appendix D](#).

## Trends Increasing Demand for Transportation Workers



The senior population in Pennsylvania is increasing, pointing to a growing need for public transportation and accessible mobility options.

Driving and car ownership are less important to today's young people compared to previous generations, leading to increased demand for transit, ridesharing, and non-motorized options.

Pennsylvania's population is concentrating in urban areas, leading to more demand for transit and other transportation infrastructure and services in the state's more metropolitan counties.

Pennsylvania's ethnic diversity and foreign-born population has increased; these residents often rely more on public transit.

E-commerce is expanding, requiring more delivery drivers and shifting transportation demand.

The Commonwealth's 10-year economic development strategy targets five priority industry sectors for growth, likely expanding freight transportation and commuting.

Advanced and emerging technologies require transportation workers with specialized technical skills.



## Trend Decreasing Demand for Transportation Workers

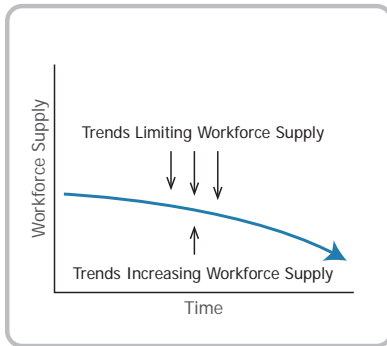
A declining birth rate combined with the aging and passing of the Baby Boomer generation will result in a smaller overall population, likely leading to a decreased need for transportation services.

**The average age in Pennsylvania is increasing, with older adults forecasted to outnumber children by 2034.**

(Aging Our Way, PA: A Plan for Lifelong Independence, Pennsylvania Department of Aging)

**“Wage issues are real in rural areas.  
For example, working at Dunkin’ Donuts pays more  
than driving for a local paratransit provider.”**  
(Stakeholder workshop participant)

### Trends Limiting the Supply of Transportation Workers



Pennsylvania’s overall workforce is shrinking, with fewer people available to fill all jobs.

Pennsylvania transportation jobs are not always competitive with other opportunities, making them less attractive for potential workers.

Barriers such as language, complex screening and licensing procedures, and changing views on work result in fewer qualified applicants and high job turnover.

Students and working-age adults may be unaware of or uninterested in transportation career opportunities.



### Trends Increasing the Supply of Transportation Workers



Pennsylvania’s foreign-born population has increased, and this demographic is more likely to work in transportation fields.

Many Pennsylvanians are working past the traditional retirement age of 65, helping to bolster the transportation workforce.

Oversize load, Erie County  
Courtesy of Terminal Operator Carmeuse/Erie Sand and Gravel  
and Erie-Western PA Port Authority

Above: Paratransit vehicle operator  
Courtesy of Westmoreland County  
Transit Authority

Bus Mechanic  
Courtesy of Westmoreland County Transit Authority

As of January 2025, there were 1,137 unfilled bus and truck mechanic jobs in Pennsylvania. (DCED, Pennsylvania On Target)



## Findings

**State and national data, along with stakeholder observations, can be distilled into a set of succinct findings to guide problem-solving.**

## Findings

### Finding 1

The transportation workforce gap in Pennsylvania and nationwide is **substantial and expected to increase.**

### Finding 2

Transportation workforce shortages and limitations **affect nearly every aspect of the economy and daily life.**

### Finding 3

The Commonwealth has an **established, multifaceted workforce development system**, offering services to both employers and employees ([Appendix C](#)). Specifically, PennDOT has numerous productive workforce initiatives underway (see following page).

### Finding 4

There is a need to better utilize and expand **existing workforce programs** for transportation employers—both public and private.

### Finding 5

Achieving broader, more comprehensive results at the scale needed to address Pennsylvania's transportation workforce challenges will require a Commonwealth-wide effort to foster further collaboration across transportation modes, state and local government, the private sector, and other agencies, particularly those responsible for economic development and workforce.

Solutions must be **comprehensive yet flexible**, and address the following:

- Outreach & Recruitment
- Education & Training
- Retention & Knowledge Transfer
- Workforce Culture & Employee Readiness

## Existing PennDOT Workforce Initiatives

[Appendix C](#) details the many existing [Commonwealth](#) workforce programs and potential opportunities to build on these resources to strengthen transportation training, recruitment, and retention.

The following lists workforce programs and initiatives led by [PennDOT](#). These programs should continue. **Any efforts to strengthen transportation workforce development should complement rather than duplicate these initiatives.**

- [PennDOT Online & In-Person Training](#) – PennDOT offers self-directed online training courses accessible 24/7, with certificates of training available upon completion.
- [PennDOT On-the-Job Training Program \(OJT\)](#) – Now available statewide, the program provides training opportunities for disadvantaged individuals to support their advancement toward journeyman status in highway construction trades.
- [PennDOT Student Opportunities](#) – PennDOT provides a variety of programs for students from elementary through post-secondary school to explore careers in transportation. These programs include college internships, the High School Intern (HSI) Program, job shadowing, group career exploration events, and tours. PennDOT has a need for students majoring in engineering disciplines such as civil, environmental, architectural, mechanical, etc., and non-engineering programs such as business administration, communications, accounting, computer science, and many other majors that are applicable to PennDOT operations.
- PennDOT works with the Pennsylvania Department of Education to provide American Association of State Highway and Transportation Officials (AASHTO) Science, Technology, Engineering, and Math (STEM) Outreach solutions. The educational program follows a train-the-trainer model where participating pre-K through 8th grade teachers throughout Pennsylvania receive lesson plans and supplies to take back to their classrooms.
- PennDOT's five deputates are all attuned to the anticipated workforce turnover due to upcoming retirements over the next five years, and all focus on recruitment, training, and retention. One tool is a centralized portal for PennDOT employees to explore internal opportunities for advancement.
- PennDOT has a strong Leadership Development program, and a mentorship program is about to launch.
- PennDOT collaborates with the Pennsylvania Turnpike, American Council of Engineering Companies of Pennsylvania (ACEC/PA), and Associated Pennsylvania Constructors (APC) on a TQI Shared Intern program that exposes participants to all facets of the transportation industry, from agencies to consultants to contractors.
- PennDOT collaborates with educational institutions, including Thaddeus Stevens, Slippery Rock, York College, and Drexel for co-op programs.
- PennDOT is addressing transportation workforce gaps including positions in the heavy highway trades, construction inspection, bridge safety inspection, materials technology/testing,

and highway/bridge design by collaborating with Career and Technical Centers (CTCs) and other educational institutions.

- PennDOT prepared a Human Capital Development Strategic Plan to address priorities and strategies on a wide range of recruiting, retention, professional development, and technical development needs.
- PennDOT's Center for Program Development and Management is implementing a Transportation Planning Training Program for regional planners, PennDOT Central Office staff, and District staff.
- PennDOT has various programs to assist small businesses in participating in transportation projects, e.g., Construction Academy for New and Small Businesses.
- PennDOT undertakes high-visibility recruitment tactics such as driving a truck in a local parade with a "Hiring" banner and participating in local events.
- PennDOT is working with the Department of Corrections as part of Governor Shapiro's Hire, Improve, Recruit, Empower (HIRE) initiative. Paroled inmates are provided listings of available PennDOT jobs and assistance with the application process.



Overpass construction, Chester County  
Courtesy of Associated Pennsylvania  
Constructors (APC)

PMTA Truck Driving Championship, Monroe County  
Courtesy of Pennsylvania Motor Truck Association

The transportation workforce challenge warrants statewide collaboration across sectors and levels of government.



## Potential Approach

**In light of Governor Shapiro's priority for workforce development and the related challenges being faced by the transportation sector, the TAC sees value in the following course of action.**



Masons constructing the Exton Train Station,  
Chester County  
Courtesy of SEPTA

## Consider Forming a Transportation Workforce Collaboration Team

The TAC sees value in the formation of a team comprised of Pennsylvania transportation employers in the public and private sectors to identify:

- Ways to maximize the use of existing workforce programs to meet transportation workforce needs ([Appendix C](#) provides a start).
- Strategies to strengthen collaboration among workforce development partners, businesses, and educational institutions, and the public and private sectors to benefit the transportation workforce.

The team should build upon rather than duplicate any existing PennDOT initiatives. However, the team would consider transportation workforce development Commonwealth-wide, not only from a PennDOT perspective.

Participants could include representatives of business, education, and government; the various transportation modes; and the future workforce (students and recent graduates). While broad representation is valuable, team size should be kept manageable to facilitate active decision-making.

The team would be encouraged to systematically consider the following aspects of the transportation workforce:

- Outreach & Recruitment
- Education & Training
- Retention & Knowledge Transfer
- Workforce Culture & Employee Readiness

## Potential Participants

With an aim of strengthening collaboration, team participants or short-term advisors could be drawn from a range of entities, including the following list.

- Pennsylvania Department of Transportation (PennDOT)
  - » Freight rail
- Pennsylvania Department of Labor & Industry (L&I)
- Pennsylvania Workforce Development Board
- Pennsylvania Department of Community and Economic Development
- Pennsylvania Department of Education (PDE)
- Pennsylvania House & Senate transportation committees
- Modal representatives from PennDOT and industry organizations, such as:
  - » Public transit (bus & passenger rail, Pennsylvania School Bus Association)
  - » Trucking (Pennsylvania Motor Truck Association)
  - » Aviation (Aviation Council of Pennsylvania, Pennsylvania Aviation Industry Group)
  - » Water ports
- Education representatives, including:
  - » K-12 career outreach
  - » Technical/vocational schools and community colleges
  - » Pennsylvania State System of Higher Education (PASSHE)
- Center for Rural Pennsylvania
- Local government organizations
- Pennsylvania Chamber of Business & Industry
- Private-sector employers and industry organizations, such as:
  - » Associated Pennsylvania Constructors (APC)
  - » American Council of Engineering Companies of Pennsylvania (ACEC/PA)
- Members of the current and future workforce (students and recent graduates), offering the perspectives of various:
  - » Age groups
  - » Trades and professions
  - » Locations across the state

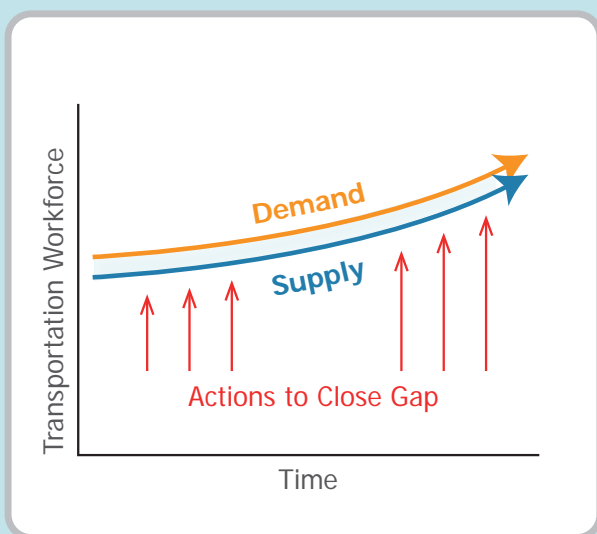
## Springboard from Stakeholder Input

The three stakeholder outreach sessions conducted for this study generated a host of input and ideas that would inform a collaboration team's efforts (see [Appendix E](#)). The following could be considered as a starting point:

- Incentives, including employee compensation and benefits, to make Pennsylvania transportation jobs more competitive (recognizing that options for public-sector employers are limited by state constraints).
- Solutions to reduce barriers to hiring transportation employees, such as language limitations or complex screening and licensing requirements faced by prospective truck, transit, and school bus drivers. Actions would be incorporated with existing recruitment strategies and in compliance with federal requirements.
- Options to expand apprenticeships, internships, and mentoring for transportation career paths.
- Pilot projects (and corresponding evaluation methods) that match employees to transportation employers.
- Best practices with potential for replication by other employers and educators ([Appendix B](#) provides a start).
- Ways to strengthen outreach for transportation careers targeting K-12 students (including Science, Technology, Engineering, and Math (STEM) activities), vocational and college students, and mid-career employees.
- Enhancements to technology or tools to support transportation workforce development (recognizing the procurement limitations of state agencies).

The overarching mission of a transportation workforce collaboration team would be to help bring the supply of qualified transportation workers in line with demand over time.

Ultimately, the goal is to sustain a strong transportation system into the future. Pennsylvania's economic development strategy rests on a few key foundations, among them transportation and the workforce that keeps Pennsylvania in motion.



PennDOT District 2 Traffic Operations Center staff, Clearfield County  
Courtesy of North Central Pennsylvania  
Regional Planning and Development Commission

PennDOT's  
Transportation  
System Management  
and Operations work relies  
on experts in traffic data  
collection and monitoring  
and regional crews  
familiar with local  
conditions.



## Appendix A: Acknowledgments

- TAC Members
- Study Task Force

# Pennsylvania Transportation Advisory Committee

The Pennsylvania Transportation Advisory Committee (TAC) was established in 1970 by Act 120 of the State Legislature, which also created the Pennsylvania Department of Transportation (PennDOT).

TAC has two primary duties. First, it “consults with and advises the State Transportation Commission and the Secretary of Transportation on behalf of all transportation modes in the Commonwealth.” In fulfilling this task, TAC assists the Commission and the Secretary “in the determination of goals and the allocation of available resources among and between the alternate modes in the planning, development, and maintenance of programs, and technologies for transportation systems.” TAC’s second duty is “to advise the several modes [about] the planning, programs, and goals of the Department and the State Transportation Commission.”

TAC undertakes in-depth studies on important issues and serves as a liaison between PennDOT and the public. TAC consists of the following members: the Secretary of Transportation; the heads (or their designees) of the Department of Agriculture, the Department of Education, the Department of Community and Economic Development, the Public Utility Commission, the Department of Environmental Protection, and the Governor’s Policy Office; two members of the State House of Representatives; two members of the State Senate; and 18 public members—six appointed by the Governor, six appointed by the President Pro Tempore of the Senate, and six appointed by the Speaker of the House of Representatives.

## TAC Members

**The Honorable Jody L. Holton, AICP,  
Chair**  
Assistant General Manager  
SEPTA

**The Honorable Mark Murawski,  
Vice Chair**  
Transportation Planner  
Lycoming County

**The Honorable Wayne Langerholc, Jr.**  
Senate of Pennsylvania  
Majority Chair of Senate  
Transportation Committee  
Alt: Nolan R. Ritchie

**The Honorable Timothy P. Kearney**  
Senate of Pennsylvania  
Transportation Committee  
Alt: Sam Arnold

**The Honorable Ed Neilson**  
Pennsylvania House of Representatives  
Majority Chair of House Transportation  
Committee  
Alt: Kyle Wagonseller

**The Honorable Kerry Benninghoff**  
Pennsylvania House of Representatives  
Minority Chair of House Transportation  
Committee  
Alt: Josiah Shelly

**The Honorable Mike Carroll**

Secretary  
Pennsylvania Department of Transportation

**The Honorable Stephen M. DeFrank**

Chair  
Pennsylvania Public Utility Commission

**The Honorable Akbar Hossain**

Secretary of Planning and Policy  
Office of the Governor

**The Honorable Angela Fitterer**

Interim Acting Secretary  
Pennsylvania Department of Education

**The Honorable Russell Redding**

Secretary  
Pennsylvania Department of Agriculture

**The Honorable Jessica Shirley**

Acting Secretary  
Pennsylvania Department of Environmental  
Protection

**The Honorable Rick Siger**

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**Mr. Elam Herr**

Pennsylvania State Association of Township  
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**Mr. Charles F. Welker, P.E.**

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Blair County

## Study Task Force

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Lycoming County Department of Planning and  
Community Development

**Mr. Matt Wise**

District Director for State Senator Gene Yaw

Snow removal  
Courtesy of Philadelphia International Airport

Snowplow operators and others supporting snow and ice removal are essential to the safe operation of all transportation modes.



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## Appendix B: Best Practices

**Many employers, educators, industry organizations, and workforce entities have undertaken noteworthy initiatives to address the transportation workforce shortage. Several are highlighted in this appendix.**

## Best Practices

- ★ **DuBois Regional Airport** – Facing the shortage of aircraft mechanics, DuBois Regional Airport facilitated an academy to raise student awareness and understanding about ground positions in aviation. The initiative includes a focus on retention by allowing students to transition into other roles as they acquire new skills.
- ★ **PennTrain & Pennsylvania College of Technology** – PennTrain, a program of the Pennsylvania Public Transportation Association (PPTA), offers training and development opportunities for public transit employees throughout Pennsylvania. PPTA is partnering with Pennsylvania College of Technology on a Bus Mechanic Apprenticeship Program to address the critical shortage of skilled bus mechanics in Pennsylvania's public transportation sector.
- ★ **Pittsburgh Workforce Development Board (WDB)** – The Pittsburgh WDB partners with local transportation departments and employers to provide customized job training and on-the-job training through Pittsburgh Regional Transit (PRT), focusing on high-priority transportation industry jobs. The industry partnerships team collaborates with local employers and connects them with employment and training providers such as PA CareerLink®, who serve job-seekers. These discussions aim to identify the needs and expectations of the employers.
- ★ **Southeastern Pennsylvania Transportation Authority** – SEPTA has established partnerships with Philadelphia-based agencies to provide career training for individuals with criminal records, hiring 79% of such applicants to fill positions and reduce recidivism. In addition, SEPTA's partnerships with military bases such as Joint Base McGuire-Dix offer a 90-day paid internship program for high school graduates to become mechanics. If applicants do not pass the mechanics test, they are offered a 90-day paid internship to learn and retest for other employment at SEPTA, finding alternative career paths to better leverage their strengths.
- ★ **Aerium** – Aerium is a non-profit organization founded by Dr. Larry Nulton (fixed-base operator for Johnstown Airport and a TAC member). Aerium provides a collaborative platform for public and private stakeholders to address workforce needs in aviation and aerospace. The effort is supported by partners St. Francis University and the Johnstown Airport.
- ★ **PA CareerLink® Transportation Tuesdays** – PA CareerLink® hosted Tuesday meetings with trucking companies, CDL training companies, and school districts. These discussion seminars included identifying issues, barriers, and strategies for worker recruitment and retention. The initiative was popular before COVID-19 but has not yet been resumed since the pandemic.
- ★ **Pennsylvania School Bus Association (PSBA)** – PSBA promotes driving opportunities for parents as side work while their children are at school and actively recruits at veterans' events, which has proven to be successful.
- ★ **Community Partnerships** – SEPTA noted that churches offer numerous outreach programs and host job fairs. They serve as one-stop shops, providing assistance with

resume writing, interview preparation, and more. The City of Philadelphia Chamber of Commerce and other city departments have also formed valuable partnerships, along with veterans' organizations.

★ **Philadelphia Works** – The city's Local Workforce Development Board received a \$22.8 million [Good Jobs Challenge grant](#) from the U.S. Economic Development Administration to implement partnerships in three sectors, including Infrastructure. Creating pathways to well-paying union jobs in highway construction is a particular focus of the infrastructure partnership.

★ **City of Philadelphia** – The City of Philadelphia's Infrastructure Solutions Team promotes economic mobility for workers and communities through strategic policies to support Philadelphia's businesses and workforce, including the transportation workforce.

In 2024, Philadelphia was one of four cities nationwide named a White House Workforce Hub, bringing together partners and funding to train and connect workers

to jobs in high-demand sectors. Partners include state agencies, labor unions, workforce industry leaders, training providers, educational institutions, employer partners, and community-based organizations. Initiatives include:

- » **Plug In Philly** – Trains pre-apprentices for in-demand careers in electric vehicle supply equipment (EVSE) to support the transition to electric transportation.
- » **Construction Career Map** – Provides a visual roadmap for users to learn more about entry points and career progression in construction (see following page).
- » **Preparing the City's Workforce** – Partners with City agencies, including the City College for Municipal Employment (CCME) and training providers to fill in-demand roles in municipal employment.
- » **Infrastructure Workforce Development Roundtable** – Convenes industry, government, and workforce partners to foster collaboration and systemic impact.



Local leaders join then-Acting Labor Secretary Julie Su and Mayor Cherelle Parker for the July 2024 White House Workforce Hub announcement. Courtesy of City of Philadelphia

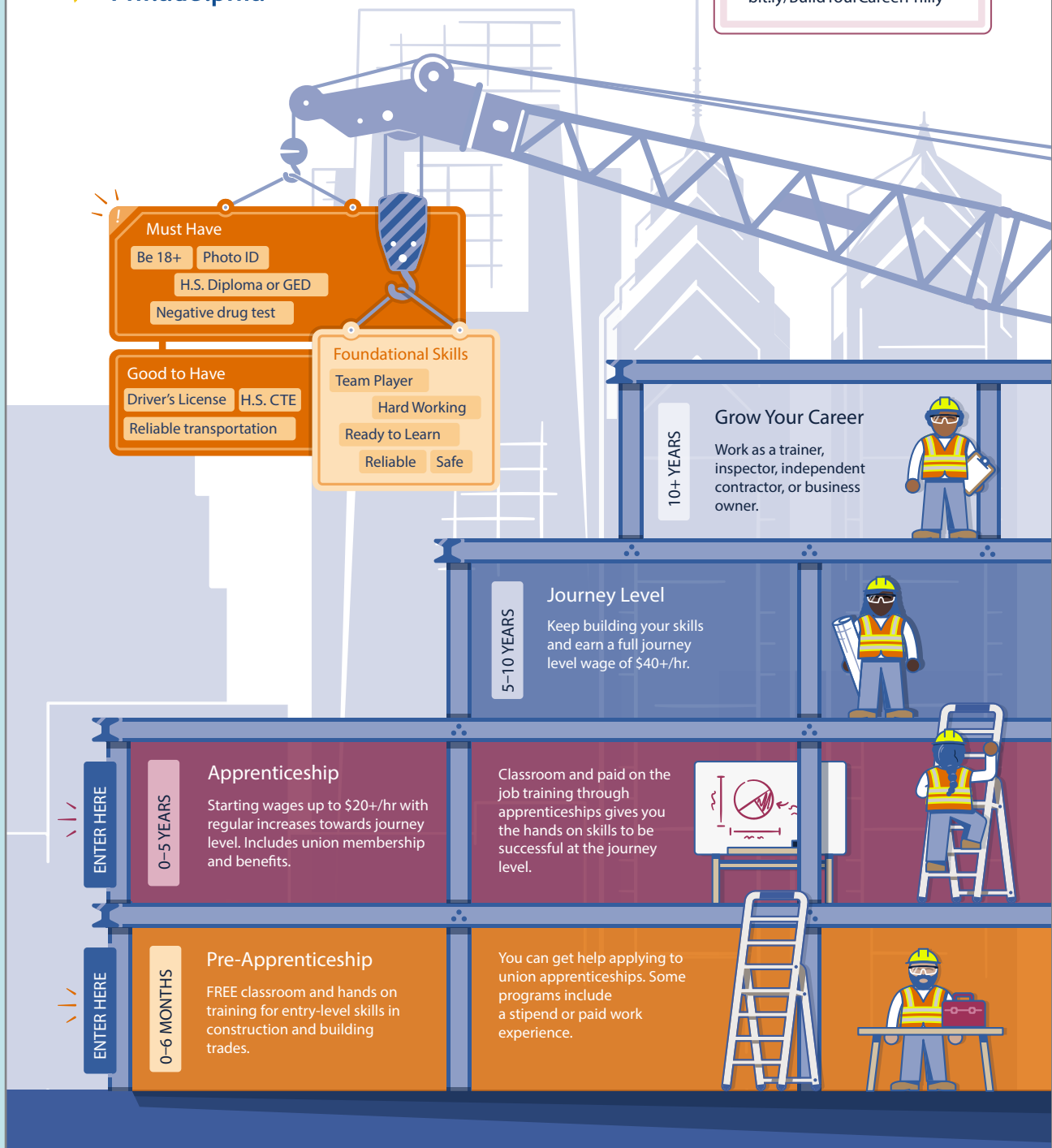
Gear up for a career in construction and earn while you learn!



Learn more:



[bit.ly/BuildYourCareerPhilly](https://bit.ly/BuildYourCareerPhilly)



Aircraft Rescue Fire Fighting Unit member  
Courtesy of Philadelphia International Airport

A wide range of job types support the aviation system—not only pilots and flight crew members.



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## Appendix C: Existing Workforce Development Programs & Services

# Pennsylvania’s Workforce Development System

Pennsylvania has a comprehensive workforce development system, offering services to both transportation employers and employees across all 67 counties through a well-established network. Key to this network is the Pennsylvania Workforce Development Board (PA WDB), which advises the Governor on workforce strategy and collaborates with the Pennsylvania Department of Labor and Industry (L&I) to coordinate service delivery. The Pennsylvania Department of Community and Economic Development (DCED), as the state agency tasked with economic development, works closely with L&I to ensure the economic and workforce needs of Pennsylvania’s employers are met. Many of these services are provided free of charge to both employees and employers.

The following table summarizes the planning, oversight, and service delivery of workforce development in Pennsylvania.

Several state agencies are represented on the Pennsylvania Workforce Development Board (PA WDB). However, PennDOT is not on the board (although a national trucking company is on the PA WDB, to provide some transportation perspective). Similarly, although various state agencies are part of the Pennsylvania Transportation Advisory Committee (TAC), L&I is not included. **Ensuring that L&I participates in the TAC and PennDOT is represented on the PA WDB would improve the workforce-transportation connection.**

## Summary of Pennsylvania Workforce Development Planning, Oversight, & Service Delivery

Program	Highlights
<u>Workforce Innovation and Opportunity Act (WIOA)</u>	<ul style="list-style-type: none"><li>• The Workforce Innovation and Opportunity Act (WIOA) is nationwide legislation, signed into law in 2014, and designed to strengthen and improve the public workforce system across the U.S.</li><li>• Each state, including Pennsylvania, is required to develop a four-year state plan outlining its workforce strategy in alignment with WIOA’s framework.</li><li>• Pennsylvania’s Combined State Plan includes six WIOA Core Programs and Optional Programs, developed with input from multiple state departments.</li><li>• The state plan integrates regional and local plans from 10 workforce planning regions and 22 Local Workforce Development Boards (LWDBs).</li></ul>

continued

Program	Highlights
<a href="#"><u>Workforce Innovation and Opportunity Act (WIOA), continued</u></a>	<ul style="list-style-type: none"> <li>• WIOA programs serve customers (businesses/employers and job seekers) through PA CareerLink® Offices across the state.</li> <li>• WIOA programs serve adults, dislocated workers and youth, providing training opportunities to customers to match them with the needs of employers in their communities.</li> </ul>
<a href="#"><u>PA CareerLink®</u></a>	<ul style="list-style-type: none"> <li>• PA CareerLink® is a one-stop shop for job-seekers and employers, offering a wide range of employment services.</li> <li>• PA CareerLink® provides job search assistance, resume building, career counseling, and access to training programs.</li> <li>• PA CareerLink® operates through a network of physical locations and an online portal where users can search for jobs, apply for unemployment benefits, and access various career resources.</li> <li>• There are 43 PA CareerLink® offices providing workforce services to employees and employers across Pennsylvania's 67 counties.</li> <li>• Many programs that can be engaged through PA CareerLink® are listed in the table beginning on page 47.</li> </ul>
<a href="#"><u>Pennsylvania Department of Labor &amp; Industry (L&amp;I) Employment and Workforce Development System</u></a>	<ul style="list-style-type: none"> <li>• The L&amp;I Employment and Workforce Development System provides state-agency coordination to strengthen employers and ensure workers have competitive skills and training.</li> <li>• The L&amp;I Employment and Workforce Development System coordinates various <a href="#"><u>workforce development services</u></a> across the Commonwealth, such as but not limited to: <a href="#"><u>PA CareerLink®</u></a>, <a href="#"><u>job training resources</u></a>, <a href="#"><u>labor market and economic information</u></a>, and the <a href="#"><u>Apprenticeship and Training Office</u></a>.</li> </ul>

continued

Program	Highlights
<a href="#"><u>Pennsylvania Department of Labor &amp; Industry (L&amp;I) Employment and Workforce Development System, continued</u></a>	<ul style="list-style-type: none"> <li>• The Center for Workforce Information &amp; Analysis (CWIA) provides 15 resources and products/tools for industry and employers. Tools can provide companies with employment and wage data for the transportation industry and related occupations; some assist employers in identifying whether their occupations qualify for wage reimbursements for new hires or existing employees going through training. All tools can be found at CWIA's website, many are available with support from CWIA staff and many lead to services employers are seeking, such as labor market information analysis.</li> </ul>
<a href="#"><u>Pennsylvania Department of Labor &amp; Industry (L&amp;I) Office of Vocational Rehabilitation (OVR)</u></a>	<ul style="list-style-type: none"> <li>• The Pennsylvania Office of Vocational Rehabilitation (OVR) helps people with disabilities find work. It offers personalized services directly or through approved partners. OVR has 21 offices with expert Vocational Rehabilitation Counselors, covering all 67 counties. The Hiram G. Andrews Center in Johnstown offers training and rehab services. These efforts aim to boost independence and job opportunities.</li> </ul>
<a href="#"><u>PA Workforce Development Board (PA WDB)</u></a>	<ul style="list-style-type: none"> <li>• The PA WDB advises the Governor on workforce strategy and aligns education and economic goals.</li> <li>• The PA WDB oversees programs across state departments and agencies, guiding policymakers and suggesting improvements.</li> <li>• To help ensure that policies are a collaborative effort, the PA WDB comprises a variety of workforce development stakeholders including business executives, labor officials, education leaders, economic development practitioners, and state and local elected officials. WIOA requires the PA WDB to work closely with local entities to ensure Pennsylvania workforce and transportation employer needs—locally, regionally, and statewide—are met.</li> </ul>

continued

Program	Highlights
<p><u>Local Workforce Development Boards (LWDBs)</u></p>	<ul style="list-style-type: none"> <li>• LWDBs comprise a network of 22 state and local providers supporting economic development and workforce education and training.</li> <li>• LWDBs connect L&amp;I's Workforce Development Program with PA CareerLink® services.</li> <li>• LWDBs develops strategic plans, sets funding priorities, and coordinates with the PA Workforce Development Board and regional stakeholders.</li> <li>• Pennsylvania has 22 LWDBs to provide tailored services to the widely varying areas of the state. Board members are leaders in business as well as education, economic development, and workforce development.</li> <li>• Local decisions are driven by data. In addition to state directives and regional experts, each LWDB uses current statistical data including labor market information (LMI). LMI is used to identify industry clusters and high-priority occupations (HPOs)—groups of industries and occupations that play an important role in each local area. LWDBs have the knowledge about LMI to share with transportation employers to assist them by providing data about the local economy to inform business decisions.</li> </ul>

# Pennsylvania's Workforce Development Programs

The table below lists existing Pennsylvania workforce programs and potential opportunities to build on these resources to strengthen transportation training, recruitment, and retention.

In addition to the formal programs included in the table, PennDOT is addressing transportation workforce needs on many other fronts, listed in the Findings chapter.

## Existing Pennsylvania Workforce Programs

Program/Service	Description	Transportation Workforce Opportunities
<a href="#"><u>PennDOT Online &amp; In-Person Training</u></a>	PennDOT offers self-directed online training courses accessible 24/7, with certificates of training available upon completion.	Transportation-specific training is made available to PennDOT employees and contractors providing transportation project planning and delivery.
<a href="#"><u>On-the-Job Training Program (OJT)</u></a>  Pursuant to 23 USC 140(a), Code 23 of the Federal Regulations Part 230, Subpart A and Executive Order 11246.	PennDOT's On-the-Job Training Program, now available statewide, provides training opportunities for disadvantaged individuals to support their advancement toward journey-person status in highway construction trades.	PennDOT's program offers transportation-specific on-the-job training for individuals.
<a href="#"><u>PennDOT Student Opportunities</u></a>	PennDOT provides a variety of programs for students from elementary through post-secondary school to explore careers in transportation. These programs include college internships, the High School Intern (HSI) Program, job shadowing, group career exploration events, and tours. PennDOT has a need for students majoring in engineering disciplines such as civil, environmental, architectural, mechanical, etc., and non-engineering programs such as business administration, communications, accounting, computer science, and many other majors that are applicable to PennDOT operations.	PennDOT is promoting transportation-focused careers for the future workers.
<b>PennTRAIN Programs</b>	The Pennsylvania Public Transportation Association (PPTA) offers workshops and training sessions for public transportation agencies. Examples of training including Customer Service & De-escalation and Front-Line Supervisor Training.	Programs are designed specifically for public transportation employees.

continued

Program/Service	Description	Transportation Workforce Opportunities
<a href="#"><u>Bus Mechanic Apprenticeship Program</u></a>	<p>Under development by Pennsylvania College of Technology through a grant by L&amp;I, this program will train bus mechanics, addressing the shortage of skilled bus service technicians. It will combine virtual instruction, hands-on application, and on-the-job training.</p> <p>Pennsylvania College of Technology is partnering on the Bus Mechanic Apprenticeship with the Pennsylvania Transportation Resource and Information Network (PennTRAIN). PennTRAIN is a collaboration of the PennDOT Bureau of Public Transportation, the Federal Transit Administration's Rural Transportation Assistance Program, and the Pennsylvania Public Transportation Association.</p>	This apprenticeship is being developed to address the statewide shortage of bus mechanics.
<a href="#"><u>L&amp;I Apprenticeship and Training</u></a>	<p>The Apprenticeship and Training Office (ATO) within L&amp;I guides and promotes the expansion and compliance of all Registered Apprenticeship (RA) and Pre-Apprenticeship (Pre-RA) programs across Pennsylvania. As the State Apprenticeship Agency (SAA), the ATO is responsible for overseeing the development and registration of all Registered Apprenticeship and Pre-Apprenticeship related programs, agreements, and policies, and ensures compliance of all registered programs with regulations and standards.</p> <p>The ATO focuses on facilitating apprenticeships within the state's workforce system and PA CareerLink® offices.</p>	Assist transportation employers in building Registered pre-Apprenticeship and Registered Apprenticeship programs, increase the coordination with Career & Technical Education in these efforts, and expand opportunities for individuals to enter into Registered Apprenticeship and Registered pre-Apprenticeship programs.

continued

Program/Service	Description	Transportation Workforce Opportunities
<a href="#"><u>L&amp;I OVR Services</u></a>	<p>OVR provides the following services:</p> <ul style="list-style-type: none"> <li>• Employer Outreach, including establishing, maintaining and assisting OVR's business customers.</li> <li>• Connects and maintains relationships with businesses to ensure optimal, consistent customer service.</li> <li>• No-cost services for business, including overview of OVR services, disability awareness training, job analysis, Americans with Disabilities Act (ADA) consultations.</li> <li>• On-the-job training opportunities for job-seekers and transportation employers, with wage reimbursements.</li> <li>• Work experiences and internships to provide career exploration to youth.</li> <li>• Organizes and participates in job fairs to support employers in interviewing, recruiting and hiring for various positions.</li> </ul>	OVR services are available to benefit transportation employers and transportation job-seekers.
<p><a href="#"><u>Work Opportunity Tax Credit (WOTC)</u></a></p> <p>The federal WOTC program has been extended to December 31, 2025.</p>	Federal tax credit for employers hiring employees from a <a href="#"><u>targeted group</u></a> facing employment barriers. For-profit employers benefit by reducing their federal income tax liability, and non-profit employers benefit by reducing their Social Security tax.	For-profit or non-profit transportation employers hiring employees belonging to a targeted group can benefit from the WOTC program.
<p><a href="#"><u>Workforce and Economic Development Network of Pennsylvania (WEDnetPA)</u></a></p> <p>Funding is dependent on annual state appropriations to the PA Department of Community and Economic Development (DCED).</p>	Pennsylvania's private-sector employer training program providing up to \$2,000 per eligible employee (up to \$100,000 per company) delivered through a network of 22 WEDnetPA partners. Eligible WEDnet PA <a href="#"><u>training topics</u></a> include but are not limited to Business Operations, Machine Operations and Maintenance, Product and Process Control, Workplace Behavior Skills, and Workplace Health and Safety.	Transportation businesses can apply to WEDnetPA for reimbursable job training expenses. A WEDnetPA training provider will advise on transportation-specific training opportunities.

continued

Program/Service	Description	Transportation Workforce Opportunities
<b>Community Services Block Grant (CSBG)</b>	Access through PA CareerLink®. A grant that provides funds to eligible non-profit community-based organizations or governmental entities to help low-income families and individuals transition to self-sufficiency through providing a holistic suite of services addressing the causes and conditions of poverty. These programs are provided through Community Action Agencies or local governments across Pennsylvania.	CSBG could support potential transportation employees and their families in transitioning to self-sufficiency.
<b>Housing and Urban Development (HUD) Employment and Training Activities</b>	Access through PA CareerLink®. Program that provides employment and training opportunities as well as supportive services to assist low-income individuals in becoming self-sufficient. The partner providers are often local housing authorities.	Training services could support potential transportation employees in transitioning to self-sufficiency.
<b>Reentry Employment Opportunities (REO)</b>	Access through PA CareerLink®. Program targets court-involved youth, young adults, and adult ex-offenders through a variety of discretionary grant awards. Organizations partner with juvenile and adult justice systems to assist in providing employment and training to this population of individuals who may find it difficult to obtain employment or training without additional assistance.	REO could benefit transportation employers by connecting job-seekers with transportation employment opportunities.
<b>Job Corps</b>	Access through PA CareerLink®. Program provides academic, career, and technical education; service-learning; and social opportunities primarily in a residential setting for low-income individuals ages 16-24.	Job Corps services can assist low-income individuals in gaining the skill sets required to fill transportation jobs.
<b>Jobs for Veterans State Grant (JVSG)</b>	Access through PA CareerLink®. This program funds Disabled Veterans' Outreach Program (DVOP) and Local Veterans' Employment Representative (LVER) staff in PA CareerLink® offices. DVOPs work with veterans with significant barriers to employment, and LVERs work with employers to showcase qualified veterans for job openings.	JVSG can connect veterans with appropriate transportation job opportunities.
<a href="#"><u>Department of Human Services (DHS) Employment &amp; Training Programs/Career Pathway</u></a>	Access through PA CareerLink®. Through DHS, employment and training programs are provided/required for recipients of <a href="#"><u>Temporary Assistance for Needy Families (TANF)</u></a> , <a href="#"><u>Supplemental Nutrition Assistance Program (SNAP)</u></a> , and the <a href="#"><u>Refugee Resettlement Program</u></a> .	Linking DHS program recipients to transportation jobs could benefit both program recipients and transportation employers.

continued

Program/Service	Description	Transportation Workforce Opportunities
<u><b>Trade Adjustment Assistance (TAA) Program</b></u>  On July 1, 2022, the termination provision under Section 285(a) of the Trade Act of 1974, as amended, took effect. Until further notice, L&I may not issue any determinations and may not accept any new petitions or requests for reconsideration.	Access through PA CareerLink®. The Trade Adjustment Assistance (TAA) Program allows workers whose jobs have been affected by foreign competition to receive a variety of benefits and reemployment services. The goal of the program is to assist dislocated workers in obtaining family-sustaining employment from a combination of re-employment services and possibly training.	Linking TAA program recipients to transportation jobs could benefit both program recipients and transportation employers.
<b>Migrant and Seasonal Farmworker Program</b>	Access through PA CareerLink®. A program of services for migrant and seasonal farm workers and their dependents. Assists farm workers and their dependents in acquiring the necessary skills to either stabilize or advance in their agricultural jobs, or obtain employment in new industries.	Connecting migrant and seasonal farm workers to transportation employment opportunities.
<b>Native American Programs</b>	Access through PA CareerLink®. This employment and training program helps qualifying American Indians, Alaska Natives, and Native Hawaiians obtain employment in occupations that provide a wage that leads to self-sufficiency.	Linking Native Americans to transportation jobs that advance self-sufficiency.
<b>Perkins Career and Technical Education Act (Perkins)</b>	Access through PA CareerLink®. This program funds career and technical education programs at the secondary and post-secondary levels. Perkins programs work with businesses to identify relevant technical standards, including national industry standards and credentialing opportunities, to ensure that program completers have the technical skills employers need. Some examples of Perkins-funded programs might be a career & technology center or community college.	Connecting transportation employees with technical and credentialing opportunities to advance their career.

continued

Program/Service	Description	Transportation Workforce Opportunities
<b>Senior Community Service Employment Program (SCSEP)</b>	SCSEP promotes part-time employment opportunities in community service activities for unemployed low-income persons who are age 55 or older. Locally these programs may be offered by your local Area Agency on Aging or the American Association of Retired Persons (AARP) Foundation.	Could offer transportation jobs for low-income seniors, ensuring they receive sustainable wages.
<b>YouthBuild</b>	Access through PA CareerLink®. A community-based pre-apprenticeship program that provides job training and educational opportunities for at-risk youth ages 16-24 who have previously dropped out of high school. Youth learn vocational skills in construction, as well as in other in-demand industries that include health care, information technology, and hospitality.	Equip at-risk youth with transportation skills to help them secure a job that offers a sustainable wage.

Construction workers hanging structural steel for the  
Paoli Station pedestrian bridge, Chester County  
Courtesy of SEPTA

According to  
FHWA, the per-  
centage of teenagers  
obtaining a driver's license  
declined from more than  
50% in 1980 to about  
40% in 2020—increasing  
demand for transit.



## Appendix D: Data

- **Transportation Workforce Gap**
- **Demographic and Economic Trends Affecting Workforce Supply and Demand**

# Pennsylvania Transportation Workforce Gap

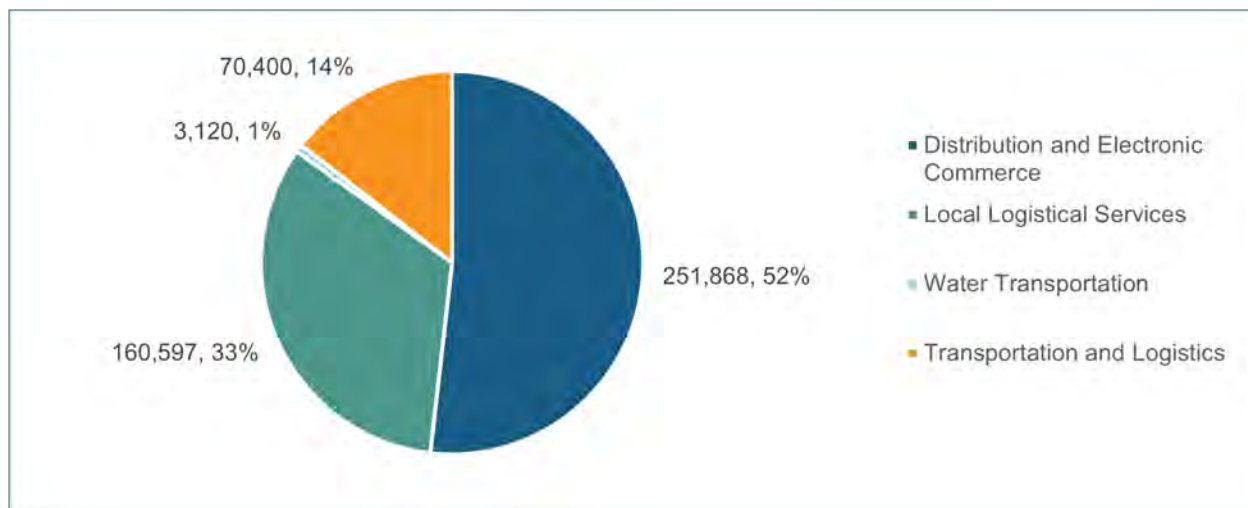
There are 485,985 jobs in Pennsylvania's Distribution, Transportation, and Logistics (DTL) sector,<sup>1</sup> as defined by the North American Industry Classification System (NAICS). Federal agencies use NAICS to classify business establishments "for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy."<sup>2</sup>

The DTL sector includes four separate clusters of transportation-focused industries:

- **Distribution and Electronic Commerce:** Industries focused on the distribution of goods and services, and those involved in electronic commerce.
- **Local Logistical Services:** Industries providing essential logistical support services at a local level.
- **Water Transportation:** Industries providing water transportation services for passengers and cargo using watercraft, such as ships, barges, and boats.
- **Transportation and Logistics:** Industries focused on passenger transportation and the movement and storage of goods.

More than half of the DTL workforce is in the Distribution and Electronic Commerce cluster, as shown in Figure 1.

**Figure 1: Distribution, Transportation, and Logistics Sector Employment by Cluster**



Source: Pennsylvania Department of Community and Economic Development, Pennsylvania On Target

<sup>1</sup> Pennsylvania Department of Community and Economic Development, Pennsylvania On Target Dashboard

<sup>2</sup> U.S. Census Bureau, [North American Industry Classification System \(NAICS\)](#). NAICS is production-oriented in that it groups establishments into industries according to similarity in the processes used to produce goods or services.

**More than 28% of workers in the Distribution, Transportation, and Logistics sector will be retiring soon—higher than the statewide rate of 26.3%.**

Collectively, these clusters employ most of the transportation workforce that is the subject of this study. **It is important to note that the DTL sector is not the only sector employing workers that provide a transportation function.** For example, while a tractor-trailer driver might be employed by an e-commerce company, tractor-trailer drivers are also employed by grocery store chains, which report industry data under a separate sector (Personal Goods and Services).

More than 28% of workers in the DTL sector will be retiring soon, higher than the statewide rate of 26.3%. This data point demonstrates that more than one quarter of the workforce will need to be replaced to maintain the sector.

Given that a large percentage of the workforce serving the DTL sector will be retiring soon, knowing what specific types of transportation occupations are in high demand is a first step toward developing targeted solutions to attract and retain workers.

Table 1 lists data points about the top 20 transportation-focused occupations by employment in the DTL sector. It includes the total statewide jobs in that occupation and the percentage of workers in each occupation that are employed in the DTL cluster. The lower the percentage, the more the occupation supports other sectors and clusters.

**Table 1: Top 20 Transportation-Related Occupations by Employment**

Occupation	DTL Jobs (2025 Projected)	Total PA Jobs (2025 Projected)	% DTL Employment	Total PA Job Openings (2025 Projected)	Total PA Turnover Rate (2023)
<b>Laborers and Freight, Stock, and Material Movers</b>	70,031	154,271	45.4%	21,202	100.14%
<b>Heavy and Tractor-Trailer Truck Drivers</b>	67,268	100,165	67.2%	11,198	54.43%
<b>Stockers and Order Fillers</b>	27,768	107,382	25.9%	18,018	87.40%
<b>Industrial Truck and Tractor Operators</b>	25,619	45,485	56.3%	4,690	61.17%
<b>Light Truck Drivers</b>	24,022	45,632	52.6%	5,265	69.80%
<b>Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products</b>	23,270	60,649	38.4%	6,102	31.54%
<b>Bus Drivers, School</b>	17,838	24,155	73.8%	3,863	41.79%
<b>General and Operations Managers</b>	12,419	153,561	8.1%	13,219	39.24%
<b>First-Line Supervisors of Transportation and Material Moving Workers</b> (except aircraft cargo handling supervisors)	11,025	25,832	42.7%	2,747	52.25%
<b>Office Clerks, General</b>	9,053	129,515	7.0%	15,737	64.08%
<b>Customer Service Representatives</b>	8,853	115,308	7.7%	16,341	66.44%
<b>Shipping, Receiving, and Inventory Clerks</b>	7,891	32,855	24.0%	3,396	56.14%

continued

Occupation	DTL Jobs (2025 Projected)	Total PA Jobs (2025 Projected)	% DTL Employment	Total PA Job Openings (2025 Projected)	Total PA Turnover Rate (2023)
<b>Packers and Packagers, Hand</b>	7,316	32,063	22.8%	4,694	109.96%
<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	5,401	13,269	40.7%	1,137	37.06%
<b>Emergency Medical Technicians</b>	5,400	8,012	67.4%	605	40.03%
<b>First-Line Supervisors of Office and Administrative Support Workers</b>	5,279	70,016	7.5%	6,942	45.61%
<b>Couriers and Messengers</b>	4,771	6,462	73.8%	924	23.32%
<b>Secretaries and Administrative Assistants, Except Legal, Medical, and Executive</b>	4,225	90,084	4.7%	10,199	59.11%
<b>Bookkeeping, Accounting, and Auditing Clerks</b>	4,218	62,536	6.7%	7,485	56.77%
<b>Shuttle Drivers and Chauffeurs</b>	4,117	12,678	32.5%	1,856	68.41%

Source: Pennsylvania Department of Community and Economic Development, Pennsylvania On Target; Michael Baker International

Many of the transportation occupations have more than 1,000 unfilled jobs. “Laborers and Freight, Stock, and Material Movers” are in highest demand with more than 21,000 projected openings, and likely support e-commerce businesses. Tractor-trailer drivers continue to be in high demand with more than 11,000 projected job openings in Pennsylvania as of 2025.

Several transportation occupations have extremely high turnover rates. For example, the turnover rate for Laborers and Freight, Stock, and Material Movers is 100.14%,<sup>3</sup> meaning that on average, employees hold the job for less than a year. Light truck drivers, who operate a light-duty vehicle such as a small truck or van, have a turnover rate of nearly 70%. Targeted strategies could help retain these workers in their positions.

<sup>3</sup> Pennsylvania Department of Community and Economic Development, Pennsylvania On Target, 2023 data.

For certain occupations, such as engineers, transportation is one of many possible fields of employment. The types of engineers most commonly supporting transportation are listed in Table 2. A small percentage are employed in transportation-focused industries of the DTL sector, which presents an opportunity to attract more engineers into the transportation workforce.

**Table 2: Engineering Occupations Supporting Transportation Employers**

Engineering Occupation	Total PA Jobs (2025 Projected)	% Employed in DTL Sector	Total PA Job Openings (2025 Projected)
Mechanical Engineers	19,692	2.03%	1,242
Civil Engineers	14,120	0.54%	915
Industrial Engineers	13,797	4.40%	953
Electrical Engineers	7,290	1.80%	2,850
Bioengineers and Biomedical Engineers	934	8.57%	60
<b>TOTAL</b>	<b>55,833</b>	<b>2.32%</b>	<b>6,020</b>

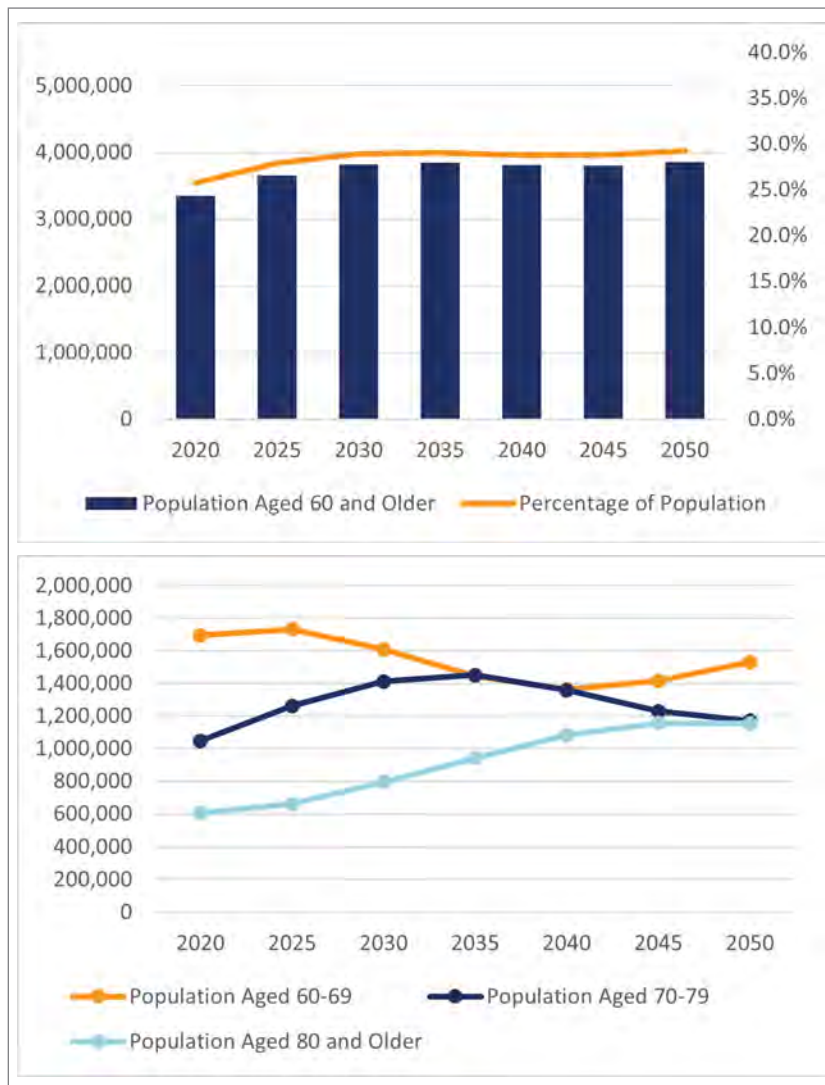
Source: Pennsylvania Department of Community and Economic Development, Pennsylvania On Target; Michael Baker International

# Demographic and Economic Trends Affecting Workforce Supply and Demand

## Trends Increasing Demand for Transportation Workers

**The senior population in Pennsylvania is increasing, pointing to a growing need for public transportation and accessible mobility options.**

**Figure 2: Population Projections,  
Pennsylvanians Aged 60 and Older, 2020-2050**



As of 2023, the average age of Pennsylvania residents was 40.9 years old. That number is increasing. Since 2019, the number of Pennsylvanians aged 60 and older has increased by 7%, while the number of Pennsylvanians aged 20 and younger has increased by only 1%. The number of residents between the ages of 70 and 74 has increased 18% over the past five years.<sup>4</sup>

The Pennsylvania Department of Aging notes that people aged 60 and older are forecasted to outnumber those under 20 by 2034.

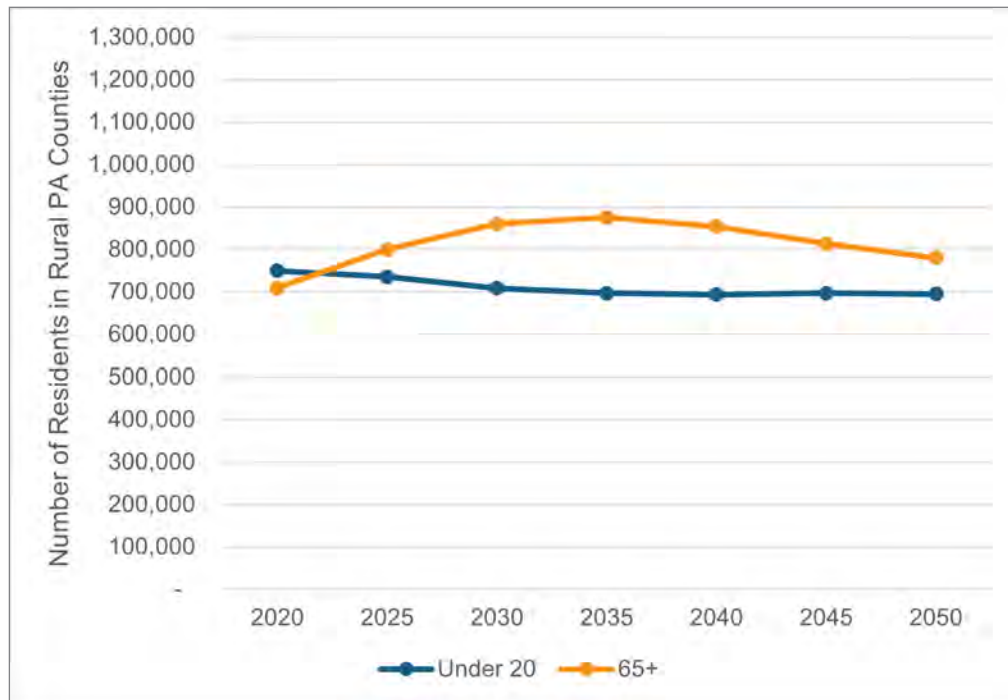
Source: Pennsylvania Department of Aging, [Aging Our Way, PA: A Plan for Lifelong Independence](#), 2024.  
(Data source: The Pennsylvania State Data Center for the Center for Rural Pennsylvania, 2023)

<sup>4</sup> U.S. Census Bureau, American Community Survey (ACS)  
5-Year Estimates

The impact of an aging population and a significant drop-off in younger age cohorts is particularly concerning in rural Pennsylvania. According to 2050 population projections conducted by the Center for Rural Pennsylvania, “The aging of the Baby Boomer generation will have significant workforce ramifications over the next decade, especially in rural counties with high senior citizen populations.”<sup>5</sup>

Figure 3 graphs the projected increase in senior citizens and the declining numbers of young people.

**Figure 3: Projected Rural PA Youth vs. Senior Population, 2020 to 2050**



Source: Center for Rural Pennsylvania,  
Pennsylvania Population Projections 2050: A First Look, October 2023.

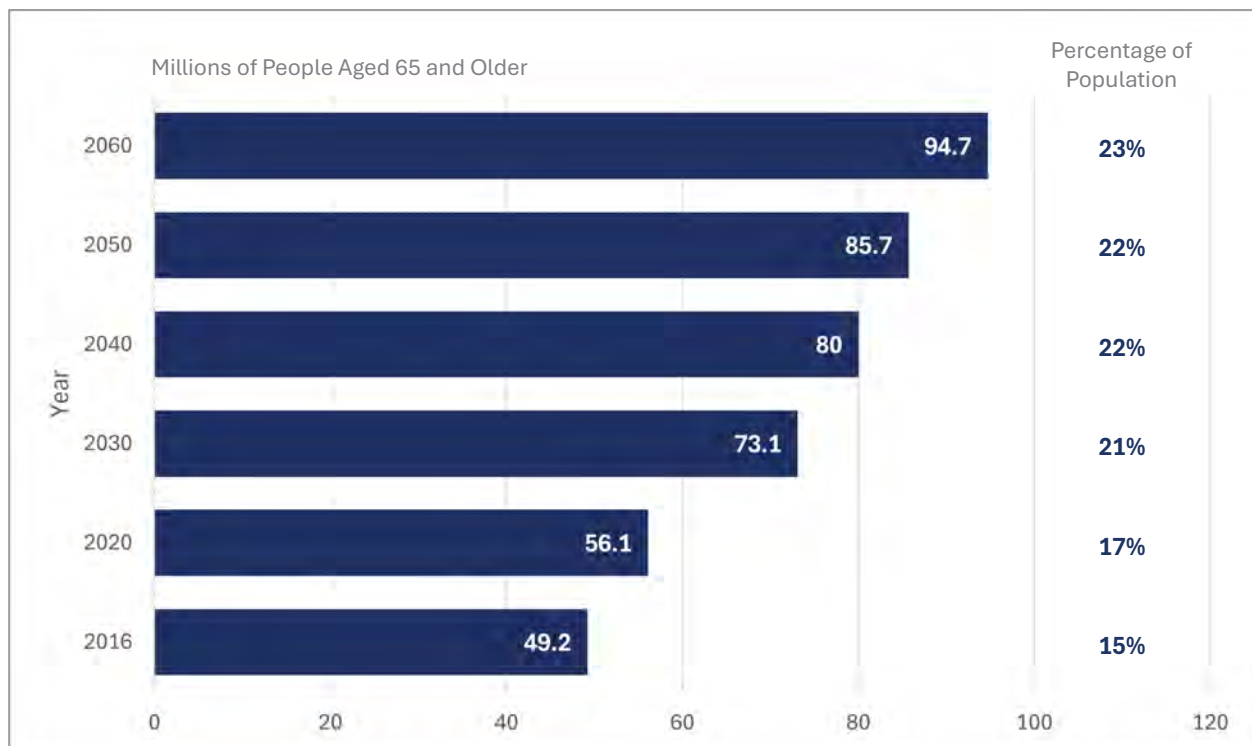
**Visit <https://rural.pa.gov/publications/fact-sheets>  
for additional information from the  
Center for Rural Pennsylvania  
based on the latest Census data.**

<sup>5</sup> Center for Rural Pennsylvania, Pennsylvania Population Projections 2050: A First Look, October 2023, p.2.

Pennsylvania's experience aligns with nationwide trends (Figure 4), which reflect a decreasing birth rate and increasing life expectancy:

- The nation's 65 and older population is projected to nearly double in coming decades, from 49 million people in 2016 to 95 million in 2060. The share of people aged 65 and older is projected to grow from 15% in 2016 to nearly a quarter of the population by 2060.
- The number of Americans 85 years and older is expected to nearly double in the coming decade, from 6.5 million in 2020 to 11.8 million by 2035.

**Figure 4: Population Projections, U.S. Residents Aged 65 and Older, 2016-2060**



Source: U.S. Census Bureau, [“Demographic turning points for the United States: Population Projections for 2020 to 2060,”](#) by Jonathan Vespa, David M. Armstrong, and Lauren Medina, February 2020.

**Driving and car ownership are less important to today's young people compared to previous generations, leading to increased demand for transit, ridesharing, and non-motorized options.**

The percentage of eligible teenagers who earn a driver's license has fluctuated over the past 40 years, according to Federal Highway Administration (FHWA) data on licenses by age group.<sup>6</sup> Trends by decade are summarized below.

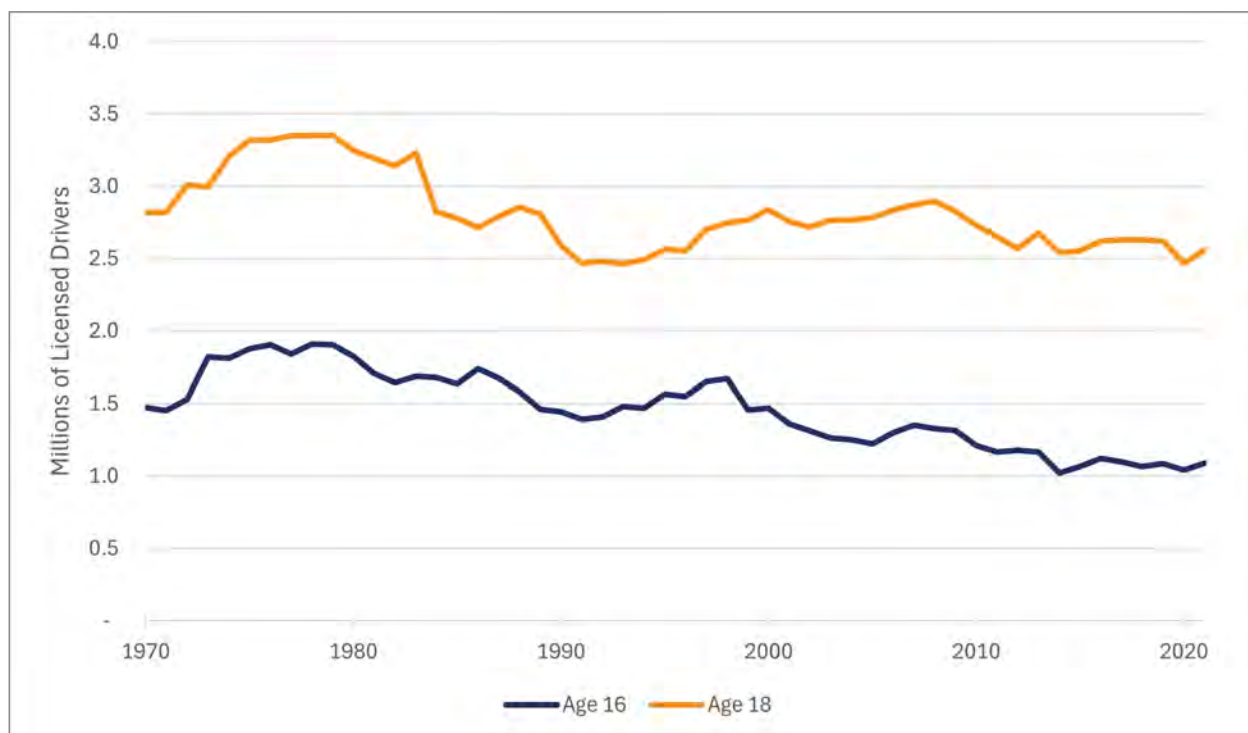
- **1980s** – More than 50% of teenagers aged 15–19 have a driver's license, and obtaining a driver's license is a "rite of passage" and a sign of independence.
- **1990s** – The percentage of teen drivers remains high but increasing regulations with the introduction of graduated driver licensing (GDL) programs in many states enact restrictions on teenage drivers.
- **2000s** – Approximately 48% of teen drivers have their license; rising car ownership and insurance costs start to impact teen driving rates.
- **2010s** – The rate of teenagers with a license continues to decline to 45.3% over the decade. Increased availability of public transportation and ride-sharing, particularly in urban areas, provides alternatives to driving.
- **2020s** – By 2020, approximately 40.0% of teens are driving.

Figure 5 illustrates teen driver's license trends since 2000, showing that teens are less likely to be driving than in previous generations, or may be older than 16 when they become licensed.

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<sup>6</sup> Federal Highway Administration, Policy and Governmental Affairs, Office of Highway Policy Information, Highway Statistics 2021. Accessed 9/6/24 at <https://www.fhwa.dot.gov/policyinformation/statistics/2021/>.

**Figure 5: Number of Licensed Drivers Aged 16 and 18, 1970-2021**



Source: FHWA and USA Today, [“GenZ is less likely to have a driver’s license. Here’s why,”](#) by Sara Chernikoff, May 17, 2024.

Today, teens and younger adults are delaying driving for several reasons.

- **Economics and Expense** – Today, young adults face different economic circumstances than previous generations. The cost of owning and maintaining a car (gas, insurance, etc.) has increased, making car ownership cost-prohibitive for some young adults. This is particularly challenging for those college graduates with higher debt.<sup>7</sup>
- **Societal and Lifestyle Changes** – Many teens socialize online through phones and gaming, which decreases in-person visits and reduces the need to drive or own a car. Therefore, owning and maintaining a car is less important than it once was. However, as younger adults become older and want to start a family or a new job, car ownership and obtaining a driver’s license may become necessary.
- **Other Transportation Options** – Rather than driving a car, many teens are choosing more environmentally sustainable options such as a ride-share service (Uber or Lyft), public transportation, biking, or walking. This is also reflected in part by the attraction of living in urban areas for younger adults.

<sup>7</sup> Brookings Institution, “Why are young people driving less? Evidence points to economics, not preferences,” March 24, 2023. Accessed 9/6/24 at <https://www.brookings.edu/articles/why-are-young-people-driving-less-evidence-points-to-economics-not-preferences/>.

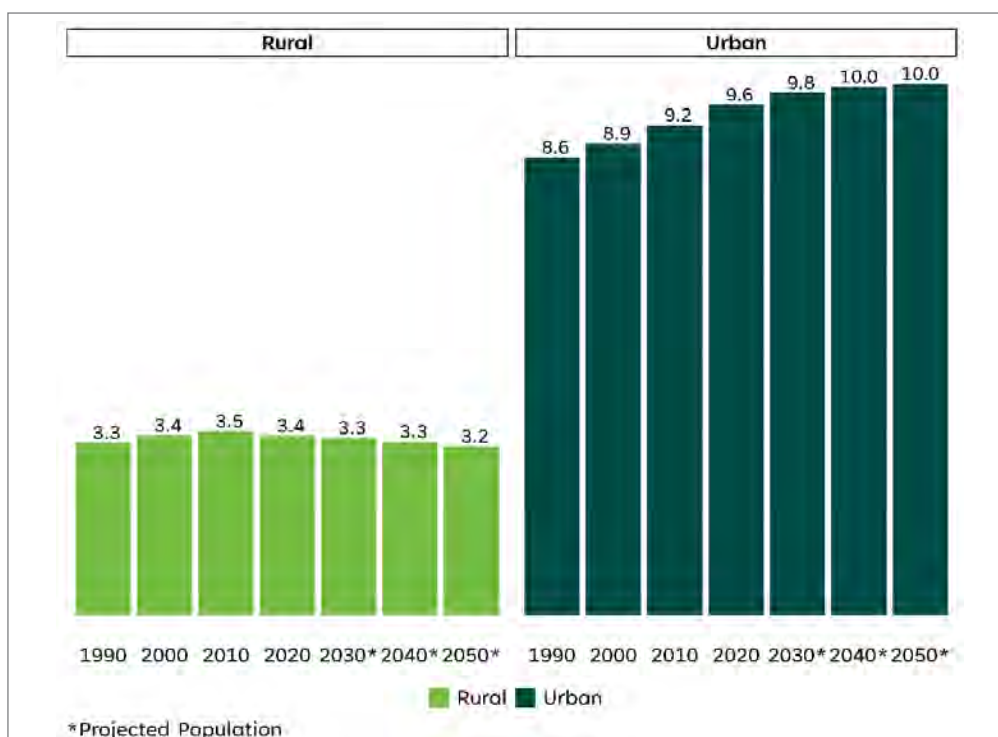
**Pennsylvania's population is concentrating in urban areas, leading to more demand for transit and other transportation infrastructure and services in the state's more metropolitan counties.**

Rural counties across the nation lost population over the past decade for the first time in history. A similar trend has been experienced within Pennsylvania and is projected to continue for most rural areas over the next 30 years (Figure 6).

Pennsylvania rural counties largely followed national population shrinkage trends, however, where there were slight population increases due to in-migration in some parts of rural America, Pennsylvania did not experience similar in-migration. In fact, these counties experienced a decline of 2.63% in population from 2010 to 2019.<sup>8</sup>

Population in Pennsylvania's rural counties is projected to decline 5.8% over the next 30 years. Overall, the state's population is projected to grow 1.6% due to net migration, but most of this increase will be experienced in or near urban centers.<sup>9</sup>

**Figure 6: Projected Total Population (in millions), Rural and Urban Pennsylvania Counties, 1990-2050**



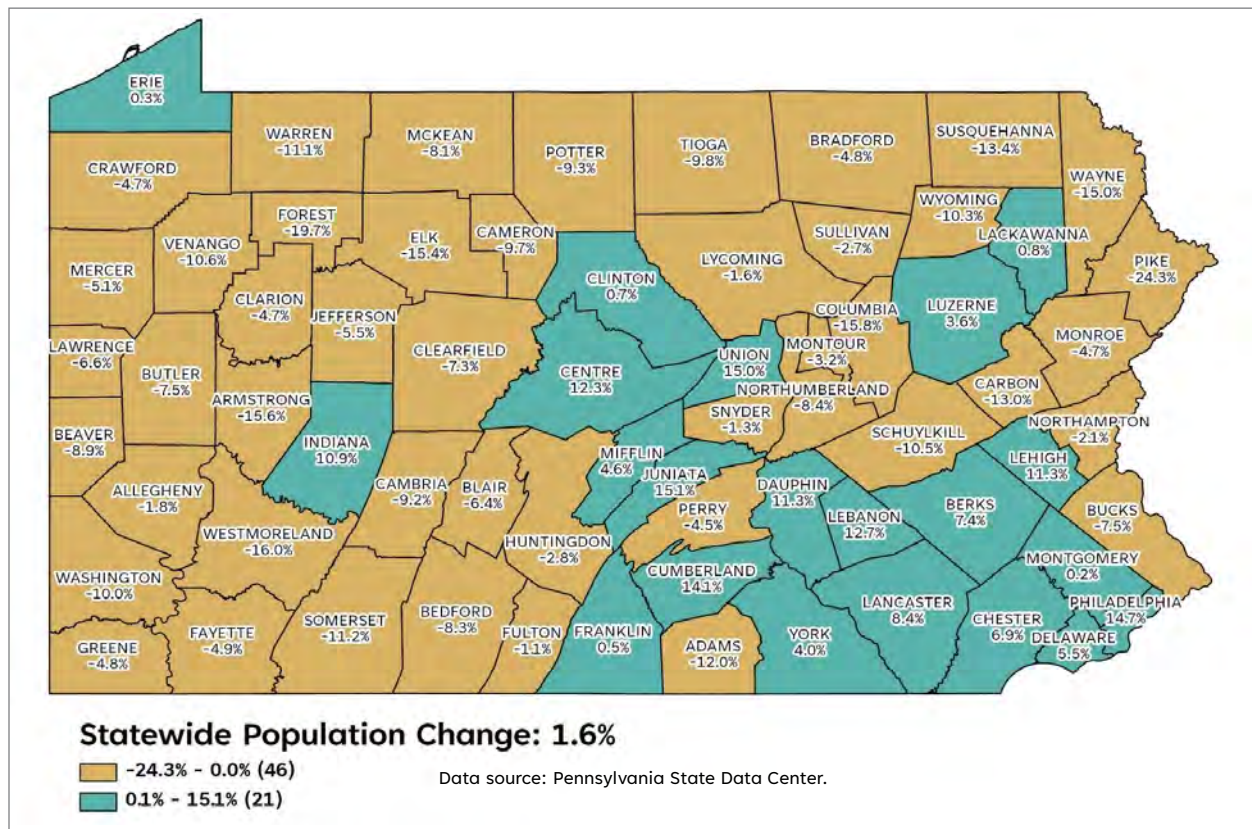
Center for Rural Pennsylvania, "Pennsylvania Population Projections 2050: A First Look," October 2023, p.3.

<sup>8</sup> Center for Rural Pennsylvania, "[Reversing Population Decline in Rural Pennsylvania](#)," by Bing Ran, The Pennsylvania State University – Harrisburg and Joseph Hafer, the University of Memphis, June 2023.

<sup>9</sup> Center for Rural Pennsylvania, "Pennsylvania Population Projections 2050: A First Look," October 2023.

Population growth will likely continue to concentrate in the southeast of the Commonwealth, with counties farther north and west experiencing more population decline (Figure 7). The economic performance of the Delaware Valley region relies extensively on all transportation modes. With one-third of the state's total population living in the five Southeastern Pennsylvania counties, the Commonwealth cannot afford to trade off transportation modes but must invest in each and help to ensure a stable workforce for the long term.

**Figure 7: Projected Statewide Population Change by County, 2020-2050**

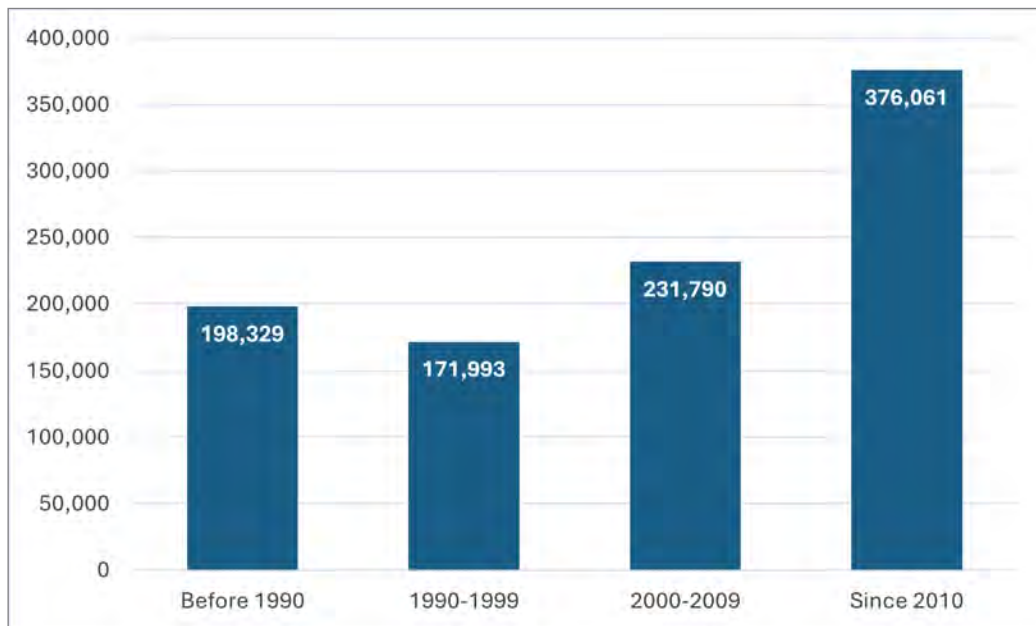


Center for Rural Pennsylvania, "Pennsylvania Population Projections 2050: A First Look," October 2023, p.4.

**Pennsylvania's ethnic diversity and foreign-born population has increased; these residents often rely more on public transit.**

Data from the Migration Policy Institute show the number of foreign-born individuals entering Pennsylvania has increased over time, with more than 376,000 entering the state since 2010 (Figure 8).

**Figure 8: Number of Foreign-Born Individuals Entering Pennsylvania**



Source: Migration Policy Institute, State Immigration Data Profiles, ["Pennsylvania, Demographics and Social, 2023."](#)

Note: The "foreign-born population" data includes naturalized U.S. citizens, lawful permanent immigrants (or green-card holders), refugees and asylees, certain legal nonimmigrants (including those on student, work, or some other temporary visas), and persons residing in the country without authorization.

Estimates from the U.S. Census American Community Survey for the past five years indicate that an increasing share of foreign-born workers in Pennsylvania are more reliant on modes such as carpooling and public transportation to get to work (Table 3). Additional research published by the [University of Missouri](#), the [Journal of Public Transportation](#), and the [Migration Policy Institute](#) also found that immigrants tend to rely on public transportation modes more than native-born citizens do; however, as these individuals adapt to their new surroundings, transit dependence begins to decline.

**Table 3: Means of Transportation to Work,  
Foreign-Born Workers 16 Years and Older, 2019-2023**

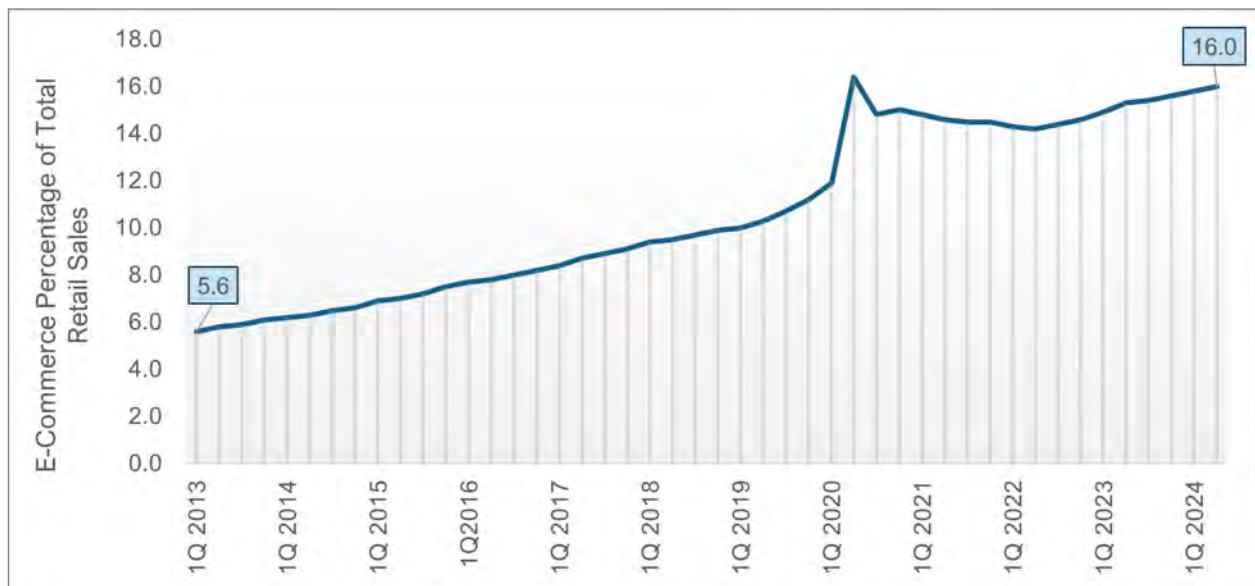
Commuting Mode	2019	2020	2021	2022	2023
Drove Alone	7.6%	7.3%	7.6%	8.1%	8.5%
Carpool	14.1%	13.9%	16.3%	15.7%	16.3%
Public Transportation	12.8%	13.9%	15.0%	14.3%	15.1%
Worked from Home	–	–	–	–	9.3%

Source: U.S. Census Bureau, American Community Survey Estimates

### E-commerce is expanding, requiring more delivery drivers and shifting transportation demand.

As of Fall 2024, the Quarterly Retail E-Commerce Report from the U.S. Census Bureau found that e-commerce's share of total retail sales nationwide continues to increase. Since the first quarter of 2013, e-commerce's share of national retail sales has nearly tripled, totaling \$291.6 billion (16% of all retail sales) in the second quarter of 2024 (Figure 9).

**Figure 9: E-Commerce Share of Total Retail Sales, United States (1Q 2013-2Q 2024)**



Source: U.S. Census Bureau, ["Quarterly Retail E-Commerce Report,"](#) Seasonally Adjusted Time Series, August 2024.

Between 2012 and 2022, retail employment in Pennsylvania decreased from 620,500 to 609,250—a reduction of about 1.8%. Conversely, employment in transportation and warehousing grew from 226,500 to 313,000 over the same period—an increase of more than 38%.<sup>10</sup>

In a survey conducted for the 2025 TAC report on e-commerce, approximately 78% of the state's metropolitan planning organizations and rural planning organizations (MPOs/RPOs) indicated that e-commerce is impacting their regional transportation system.

The following trends were reported:

- **Observed Increases in Freight and Delivery Traffic** – Several MPOs/RPOs stated they have observed an increase in freight and delivery traffic on their region's Interstates, "Inter-state look-a-likes," and lower-tier roadways that connect to these corridors. Related impacts cited included increased traffic congestion and the need for more frequent maintenance on roadway infrastructure.
- **Observed Reductions in Passenger Vehicle Traffic** – Reductions in commuter and other passenger vehicle traffic have been observed due to more people working from home since the COVID-19 pandemic and fewer people driving to shop for goods at brick-and-mortar stores.
- **Pressure on Local Transportation Infrastructure and Downtown Areas** – Some planning regions said that they have observed increases in medium- and heavy-duty freight trucks driving on local roadways not designed to handle the size or weight of these vehicles. Large, heavy-duty trucks traveling through small towns have also contributed to congestion.
- **Growing "Curbside Competition"** – The state's more urban areas highlighted growing competition for curbside space due to increases in delivery vehicle traffic, larger trucks making business deliveries, and third-party food delivery companies like DoorDash and Uber Eats.
- **Increase in Air Cargo and Intermodal Traffic** – Increases in air freight traffic related to e-commerce (UPS, FedEx, Amazon PrimeAir) were mentioned by several regions whose transportation networks include commercial service airports (e.g., Philadelphia, Lehigh Valley). This growing activity also increases demand for landside traffic/connections off airport property as cargo proceeds to the next destination.

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<sup>10</sup> U.S. Census Bureau, OnTheMap Application and LEHD Employment Statistics, 2002-2022.

**The Commonwealth's 10-year economic development strategy targets five priority industry sectors for growth, likely expanding freight transportation and commuting.**

According to the Commonwealth's 10-year statewide economic development strategy<sup>11</sup> released in 2024 by the PA Department of Community and Economic Development, the following are Pennsylvania's Priority Industry Sectors:

- Agriculture
- Energy
- Life Sciences
- Manufacturing
- Robotics and Technology

These sectors are the focus of state-level economic initiatives to support industry growth. They were selected due to their economic growth potential to create high-wage family sustaining jobs; the opportunity to capitalize on the Commonwealth's competitive advantages such as existing infrastructure, business–education partnerships, and a skilled workforce; their alignment with opportunities to compete in the global economy; and the focus on balanced economic development throughout Pennsylvania's economically diverse communities.

All five priority sectors require safe, reliable, compliant transportation of raw materials and finished products, much of which would be transported by truck. This can be expected to increase the demand for professional drivers, from long-haul truck drivers to less-than-load (LTL) operators and regional and local delivery workers. Specialized services may also be in demand:

- **Agricultural Workforce** – Transporting agricultural products requires a workforce trained in the handling of seasonal and perishable products and training in operating specialized vehicles, including training in cold-chain logistics.
- **Energy Workforce** – The energy industry requires workers skilled in moving heavy and potentially hazardous commodities, necessitating hazardous safety training.
- **Life Sciences Workforce** – The life sciences industry sector requires a workforce with specialized training in medical and pharmaceutical regulations and compliance.
- **Manufacturing Workforce** – Manufacturing requires just-in-time delivery with the workforce highly trained to avoid production delays. The manufacturing sector also requires the movement of large amounts of commodities and finished goods. The workforce needs to be adept at bulk transportation whether via truck, rail, or cargo vessel.
- **Robotics and Technology Workforce** – Continuous advancements in robotics and technology related to transportation and logistics require a highly trained and adaptable workforce.

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<sup>11</sup> Pennsylvania Department of Community & Economic Development, A Ten-Year Strategic Plan for Economic Development in Pennsylvania, 2024-2033.

## Advanced and emerging technologies require transportation workers with specialized technical skills.

### Automated and Connected Vehicles

For Pennsylvania to sustain its leadership in the emerging field of automated vehicles (AV), attracting and retaining students and workers with advanced specialized skills will be essential.

- PennDOT, the Pennsylvania Turnpike Commission, Ohio DOT, the Ohio Turnpike, and Michigan DOT jointly formed the Smart Belt Coalition—a first-of-its-kind collaboration—with transportation agencies and universities in Pennsylvania, Ohio, and Michigan to focus on automated and connected vehicle initiatives. The coalition brings together leaders on these technologies to support research, testing, policy, funding pursuits and deployment, as well as to share data and provide unique opportunities for private-sector testers.<sup>12</sup>
- Act 130 of 2022 advanced Pennsylvania's position as a national leader in highly automated vehicle (HAV) research and development by providing for the regulation and operation of HAVs. Act 130 took effect in July 2023, designating PennDOT as the sole regulatory authority and directing the Department to develop guidelines for HAVs in the Commonwealth.<sup>13</sup>
- Jobs in the AV industry are well-paying, with 82% offering wages above the U.S. median. AVs could strengthen the U.S. auto industry's resilience and foster new job centers in tech-rich regions. To capitalize on these economic opportunities, PennDOT notes that further technology development is essential.<sup>14</sup>
- The adoption of HAV technologies represents both a disruptive shift and an opportunity within the U.S. workforce. Certain sectors, particularly those with driving as a primary duty, may face significant changes or risks of displacement. PennDOT estimates that 60 to 65% of heavy-truck driving jobs could be eliminated with the ultimate adoption of full driving automation. However, the broader implications for the economy indicate potential growth and job creation across various fields related to HAV technologies.<sup>15</sup>

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<sup>12</sup> Pennsylvania Department of Transportation, "CAV Initiatives." Accessed 2/20/2025 at <https://www.pa.gov/agencies/penndot/research-planning-and-innovation/automated-vehicle/cav-initiatives.html>.

<sup>13</sup> Pennsylvania Department of Transportation, "PennDOT Adopts New Automated Vehicle Guidelines for Driverless Operation," October 23, 2024. Accessed 2/20/2025 at <https://www.pa.gov/agencies/penndot/news-and-media/newsroom/statewide/penndot-adopts-new-automated-vehicle-guidelines-for-driverless-operation.html>.

<sup>14</sup> Pennsylvania Department of Transportation, "PennDOT Act 130 Reporting: Evaluating the Impact of Connected and Automated Vehicles to the Commonwealth of Pennsylvania," January 8, 2025. Accessed 2/20/2025 at [https://www.pa.gov/content/dam/copapwp-pagov/en/penndot/documents/research-planning-innovation/researchandtesting/autonomous\\_vehicles/documents/havac-specialreports\\_final-12192024.pdf](https://www.pa.gov/content/dam/copapwp-pagov/en/penndot/documents/research-planning-innovation/researchandtesting/autonomous_vehicles/documents/havac-specialreports_final-12192024.pdf).

<sup>15</sup> Pennsylvania Department of Transportation, "PennDOT Act 130 Reporting: Evaluating the Impact of Connected and Automated Vehicles to the Commonwealth of Pennsylvania," January 8, 2025. Accessed 2/20/2025 at [https://www.pa.gov/content/dam/copapwp-pagov/en/penndot/documents/research-planning-innovation/researchandtesting/autonomous\\_vehicles/documents/havac-specialreports\\_final-12192024.pdf](https://www.pa.gov/content/dam/copapwp-pagov/en/penndot/documents/research-planning-innovation/researchandtesting/autonomous_vehicles/documents/havac-specialreports_final-12192024.pdf).

- Several high-tech employers are authorized to conduct automated vehicle testing in Pennsylvania, including Aurora Innovation, Motional AD Inc., Stack AV, Carnegie Mellon University, Perrone Robotics, Inc., and Mapless AI, Inc.

At the national level, the **U.S. Department of Transportation (USDOT)** anticipates a change in the skills needed for future jobs in transportation, noting that employees may need to adjust to new positions that include managing and servicing automated systems.<sup>16</sup> Training and retraining initiatives will be needed to assist displaced workers in transitioning into new roles within the transportation sector. **The American Association of State Highway and Transportation Officials (AASHTO)** has also identified the need for ongoing training and retraining initiatives due to the fast pace of technological change that requires employees to continually refresh their skills.<sup>17</sup>

Similarly, the **Transportation Research Board (TRB)** has examined the need for new skill sets as a likely result of automation and technological progress in the transportation industry.<sup>18</sup>

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<sup>16</sup> U.S. Department of Transportation, [Driving Automation Systems in Long-Haul Trucking and Bus Transit: Preliminary Analysis of Potential Workforce Impacts](#), January 2021.

<sup>17</sup> American Association of State Highway and Transportation Officials, "Finding the Future Workforce for State DOTs Becoming Tougher," August 17, 2018. Accessed 3/5/25 at <https://aashtojournal.transportation.org/finding-the-future-workforce-for-state-dots-becoming-tougher/>.

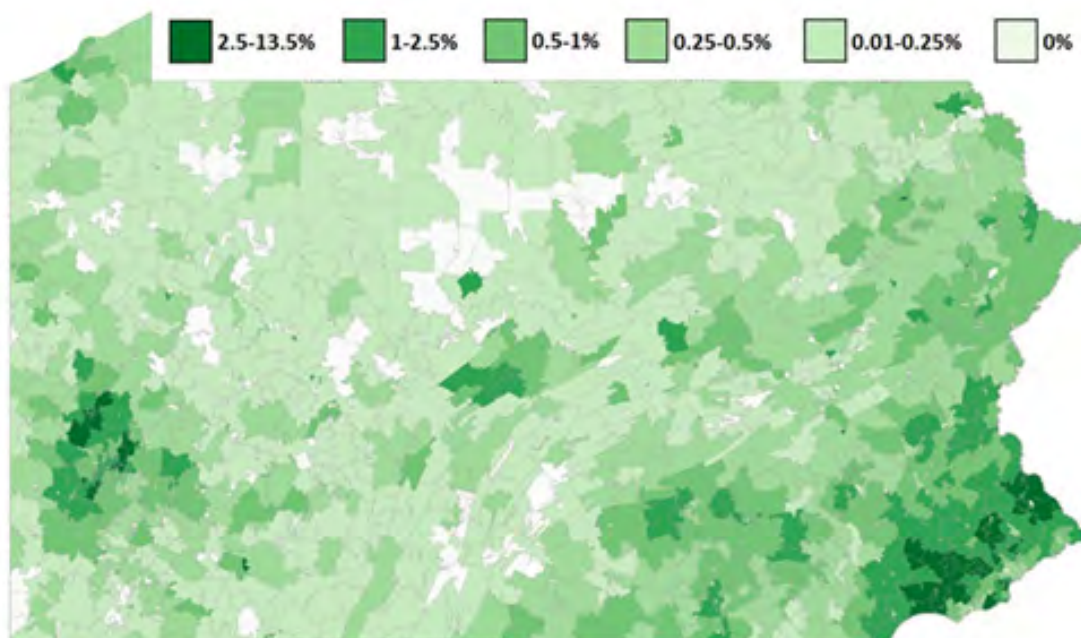
<sup>18</sup> Transportation Research Board, "Current Workforce Challenges to Recruit and Retain Construction Inspectors." Accessed 3/5/25 at <https://rip.trb.org/View/2433903>.

## Alternative Fuels

Servicing alternative-fuel vehicles, including electric vehicles (EVs), requires specialized training. Constructing and maintaining fueling stations and related infrastructure also requires a Pennsylvania workforce with training in advanced technologies. As EV use in Pennsylvania gradually expands, such workers will be in increasingly high demand.

- PennDOT Driver and Vehicle Services tracks annual data on EV ownership/registrations. PennDOT's 2024 NEVI Plan reports that there were 75,000 battery electric vehicles (BEVs) registered statewide, an increase of 40% from the previous year with an average of 1,800 BEVs registered monthly. These registrations are concentrated in the state's urban centers such as Philadelphia, Pittsburgh, Harrisburg, Erie, Scranton, and State College (Figure 10).
- The NEVI plan also reports that Pennsylvania continues to see "steep, linear growth" in EV registrations, while overall motor vehicle registrations have remained steady— implying that EV registrations are replacing older, non-EVs.

**Figure 10: Electric Vehicle Registrations in Pennsylvania by Zip Code, January 2024**



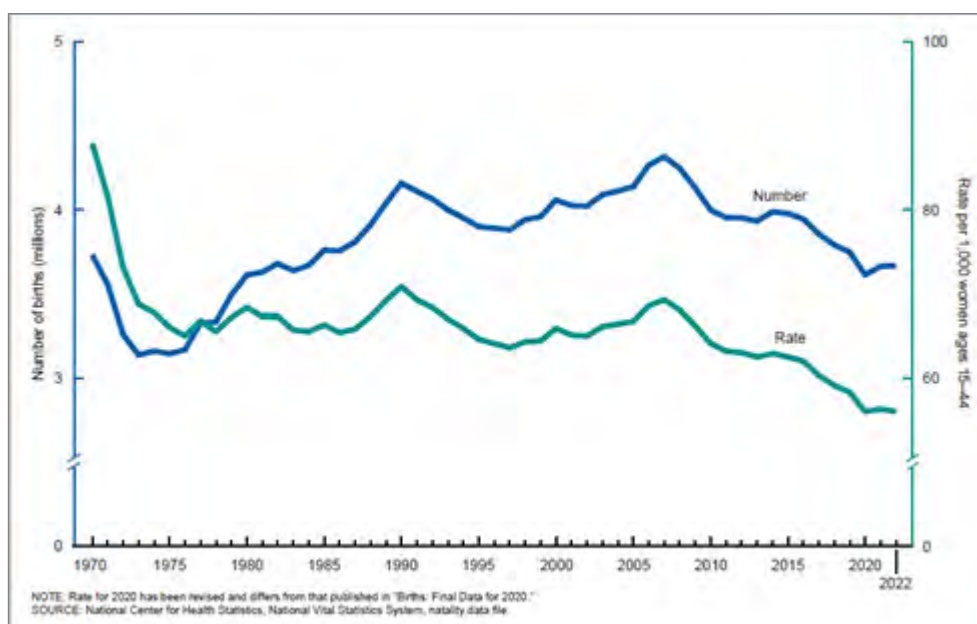
Source: Pennsylvania Department of Transportation,  
[2024 Pennsylvania NEVI Plan for Electric Vehicle Infrastructure Deployment](#),  
August 30, 2024, p.24.

## Trend Decreasing Demand for Transportation Workers

**A declining birth rate combined with the aging and passing of the Baby Boomer generation will result in a smaller overall population, likely leading to a decreased need for transportation services.**

According to the National Center for Health Statistics, National Vital Statistics System, the number of live births in the U.S. peaked in 2007 and has been decreasing as shown in Figure 11. The overall decline in births from 2010 to 2022 was 8.2%, decreasing from 3,999,386 in 2010 to 3,667,758 in 2022. Similarly, the general fertility rate—the number of live babies born per 1,000 women of childbearing age—has been declining, dropping from 64.1 in 2010 to 56.0 in 2022.<sup>19</sup>

**Figure 11: U.S. Live Births and General Fertility Rate, 1970-2022**

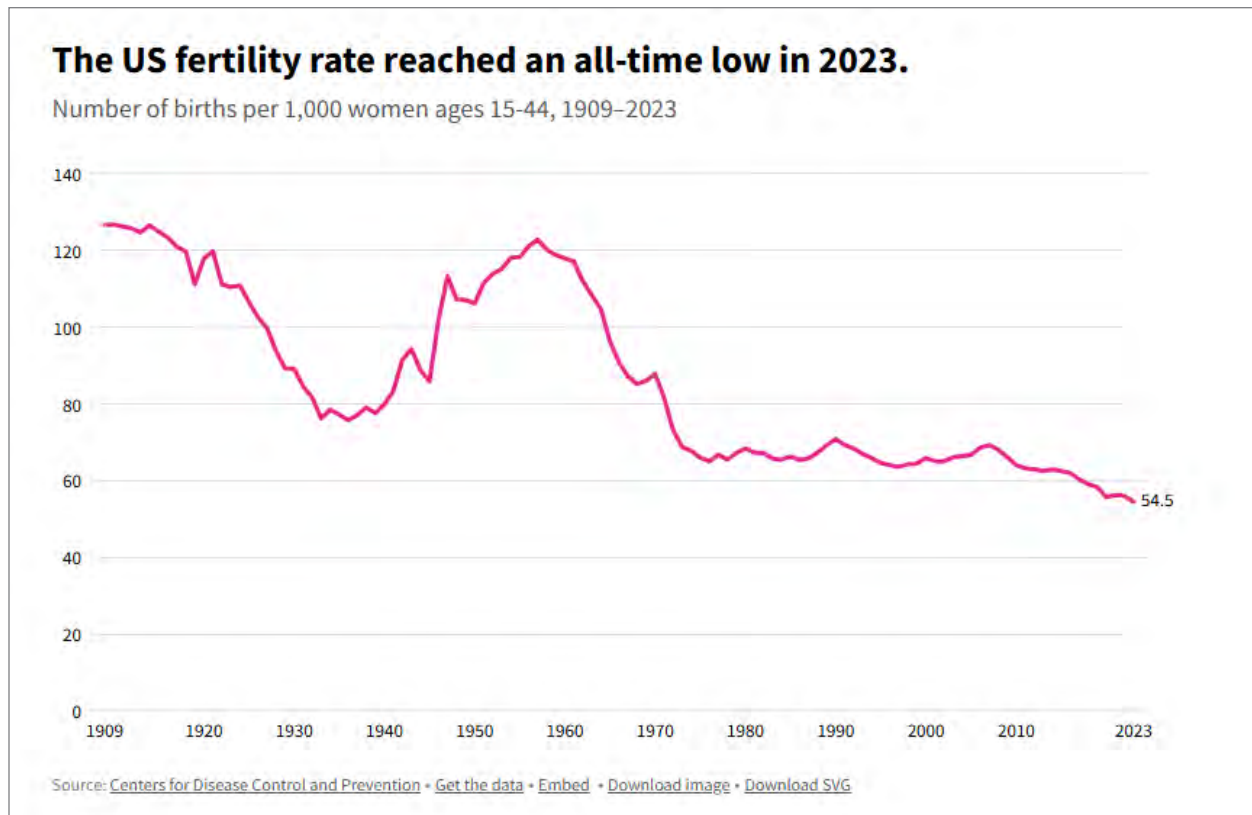


Source: National Center for Health Statistics, National Vital Statistics System

<sup>19</sup> U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System, National Vital Statistics Reports, Volume 73, Number 2, April 4, 2024, p. 1.

As shown on Figure 12, the U.S. fertility rate has been in an overall decline since the late 1950s, with the last of the post-war Baby Boomer generation born in 1964.<sup>20</sup>

**Figure 12: U.S. Fertility Rate, 1909-2023**

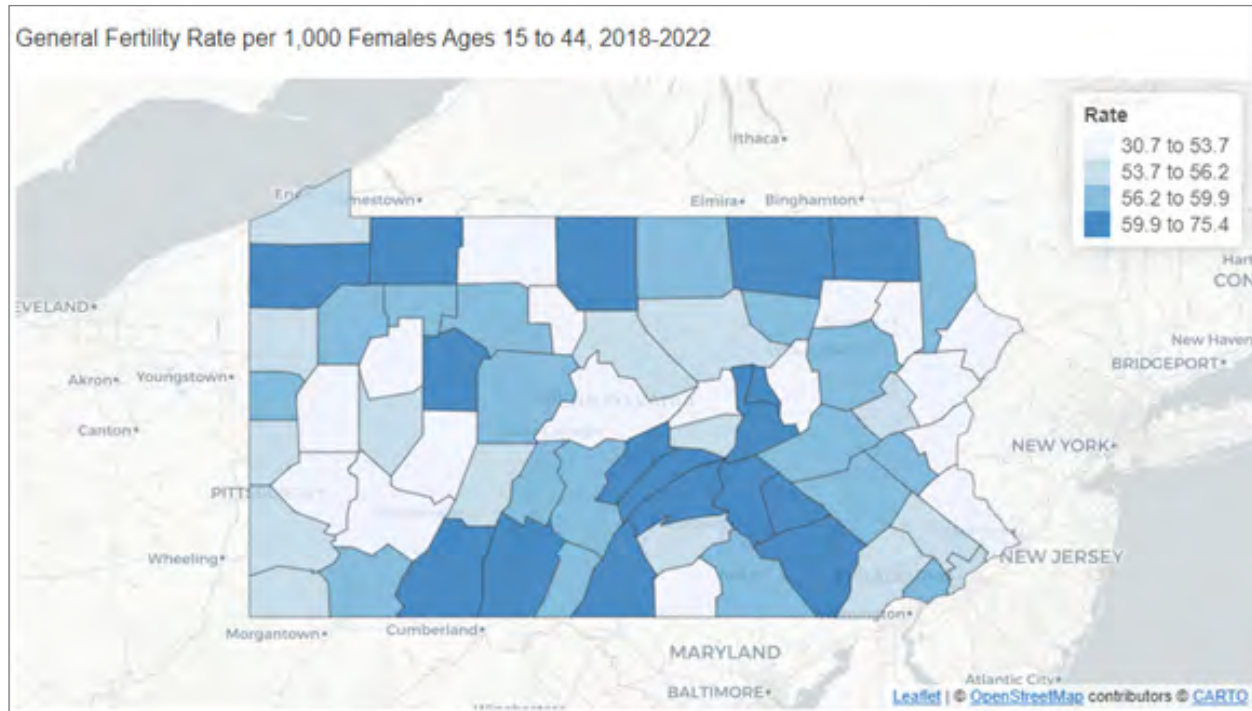


Source: USA Facts, "How have US fertility and birth rates changed over time?" October 25, 2024.  
Accessed 3/14/2025 at  
<https://usafacts.org/articles/how-have-us-fertility-and-birth-rates-changed-over-time/>.

<sup>20</sup> USA Facts, "How have US fertility and birth rates changed over time?" Accessed 9/4/24 at <https://usafacts.org/articles/how-have-us-fertility-and-birth-rates-changed-over-time/>.

Pennsylvania's fertility rate aligns with nationwide figures, at 53.3. Fertility rates vary across the Commonwealth's counties as shown on Figure 13, ranging from a low of 30.7 to a high of 75.4.<sup>21</sup>

**Figure 13: Pennsylvania Fertility Rate by County, 2018-2022**



Source: Pennsylvania Department of Health, Division of Health Informatics, "Pennsylvania County Health Profiles," August 2024.

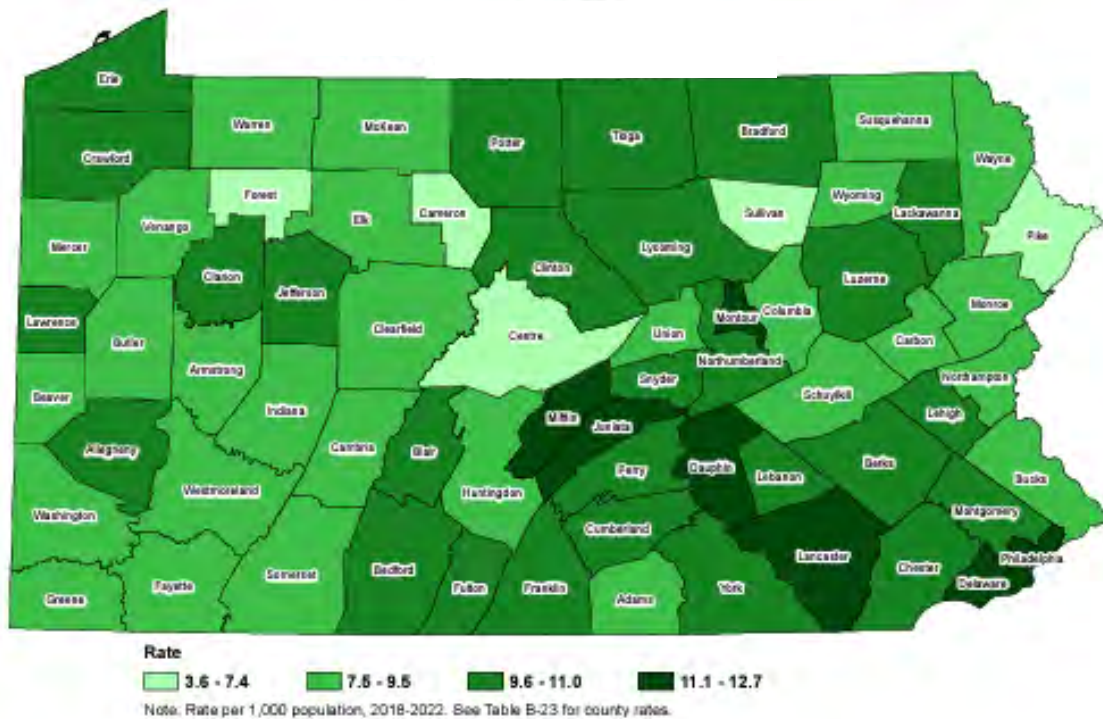
Relatively higher birth rates in some Pennsylvania counties as mapped on Figure 14 may in part reflect higher populations of Amish and Mennonite residents. The highest concentrations of Amish and Mennonite communities are in Lancaster, York, and Chester counties. There are also substantial populations in Lawrence, Indiana, Juniata, Mifflin, and Somerset.<sup>22</sup> Amish and Mennonite couples typically have between 6 and 8 children.<sup>23</sup>

<sup>21</sup> Pennsylvania Department of Health, Division of Health Informatics, "Pennsylvania County Health Profiles," August 2024.

<sup>22</sup> Amish America, "The Amish in Pennsylvania: 2024 Guide (60+ Communities), by Erik Wesner, August 20, 2024. Accessed 10/31/24 at <https://amishamerica.com/pennsylvania-amish/#other%20pa>.

<sup>23</sup> Amish America, "Amish Family Size: How many children is typical?" by Erik Wesner, October 10, 2024. Accessed 10/31/24 at <https://amishamerica.com/how-many-children-do-amish-have/>.

**Figure 14: Pennsylvania Average Annual Birth Rates by County, 2018-2022**



Source: Pennsylvania Department of Health, Pennsylvania Vital Statistics 2022, p. 42.

For Pennsylvanians who are not Amish, Mennonite, or similar, declining birth rates have been driven by several social and economic factors over the past several decades.

- **Education and Career** – Particularly for women, education and career opportunities have led to a delay in marriage and childbearing. More women are having children later in life, with birth rates for women under age 25 declining and those over age 25 increasing. Women aged 20-24 experienced the greatest decline in birth rate between 2010 and 2022, from 90.0 to 57.5.<sup>24</sup>
- **Economic Conditions** – The cost of childrearing, including housing, childcare, and increasing food prices has made larger families less financially feasible. In addition, added debt from student loans for those who attended college is delaying many couples in starting a family.
- **Personal and Professional Priorities** – Emphasis on personal and professional goals has led to smaller families or couples choosing not to have children.

<sup>24</sup> U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System, National Vital Statistics Reports, Volume 73, Number 2, April 4, 2024, p.15.

## Trends Decreasing Supply of Transportation Workers

**Pennsylvania's overall workforce is shrinking, with fewer people available to fill all jobs.**

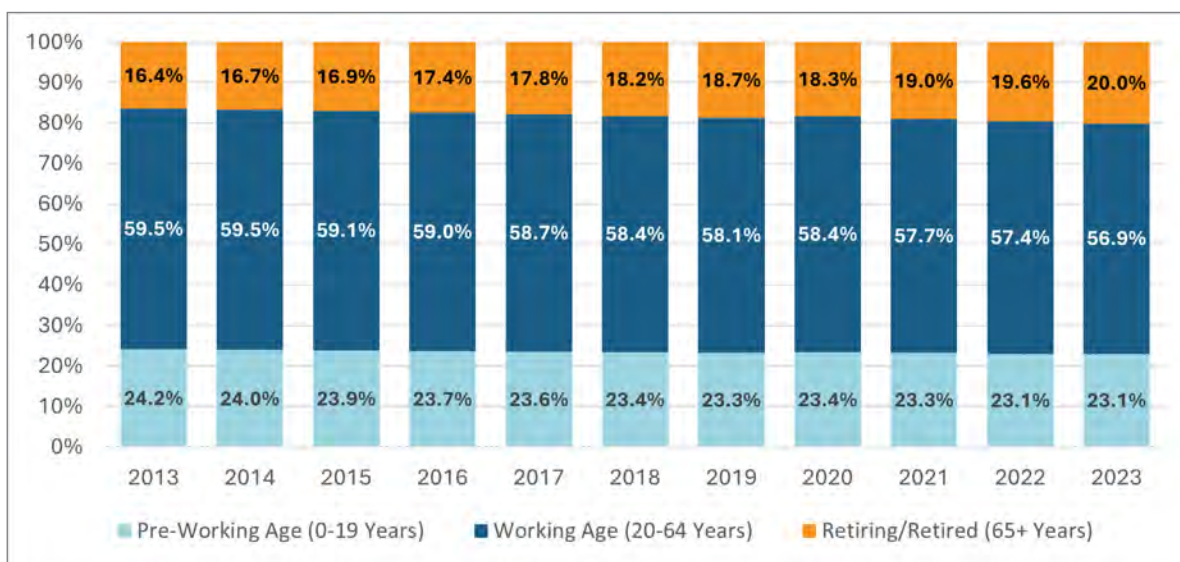
There are fewer workers available to fill all jobs, including jobs in transportation. This is because there are fewer people of working age, and of those, fewer are participating in the workforce.

According to the [Pennsylvania Demographic Outlook \(October 2023\)](#) by the Independent Fiscal Office, Pennsylvania's working-age population (20-64 years old) is expected to decrease by 2.6% between 2020 and 2025, and again by another 1.7% between 2025 and 2030. This is due to various factors, as highlighted below.

### The Baby Boomer generation is aging out of the workforce.

One factor contributing to the decrease in working-age citizens is the aging of the "Baby Boomer" generation. Data from the U.S. Census Bureau's American Community Survey (2013-23) confirm that most of the Baby Boomer generation (born 1946-1964, aged 60-78) is past working age and entering retirement.

**Figure 15: U.S. Population by Age Segment, 2013-2023**



Source: U.S. Census American Community Survey 1-Year Estimates (Table S0101: Age and Sex)

Workers 55 years or older have been the only part of the state population to grow in the last decade and to increase their share of the workforce. Prime-aged workers (aged 25 to 54) have decreased by nearly five percentage points as a share of the workforce during the last decade.<sup>25</sup>

<sup>25</sup> Pennsylvania Workforce Development Association, ["Workforce Trends #2: Pennsylvania Has More Job Openings Than Workers to Fill Them."](#)

National transportation and workforce entities have reported on the implications of an aging workforce:

- **American Public Transportation Association (APTA)** – APTA states that 43% of transit workers are over 55, “nearly double the percentage of the broader transportation sector.” Transit agencies also report that 24% of workers are leaving due to retirement, increasing to 34% at rural transit agencies.<sup>26</sup>
- **American Association of State Highway and Transportation Officials (AASHTO)** – A large number of workers in state transportation departments (DOTs) are approaching retirement age, resulting in a notable departure of seasoned employees and valuable institutional knowledge.<sup>27</sup>
- **U.S. Bureau of Labor Statistics** – A significant number of employees in the transportation sector are nearing retirement, leading to a gap that younger workers will need to fill.<sup>28</sup>
- **Transportation Research Board (TRB)** – Numerous reports address the aging workforce in the transportation industry, emphasizing the need for future workforce planning and offering training programs to prepare the next generation for jobs in this field.<sup>29</sup>

#### **The birth rate continues to decline.**

The decline in the working-age population in Pennsylvania is also linked to the state’s declining birth rate, which mirrors the trend seen nationally. Data is provided in the preceding section.

#### **The percentage of working-age Pennsylvanians in the workforce is decreasing.**

Fewer people of traditional working age are seeking employment, with labor force participation of the 16-64-year-old population decreasing over the past decade, from 59.97% in 2013 to 58.10% in 2023 (Figure 16).

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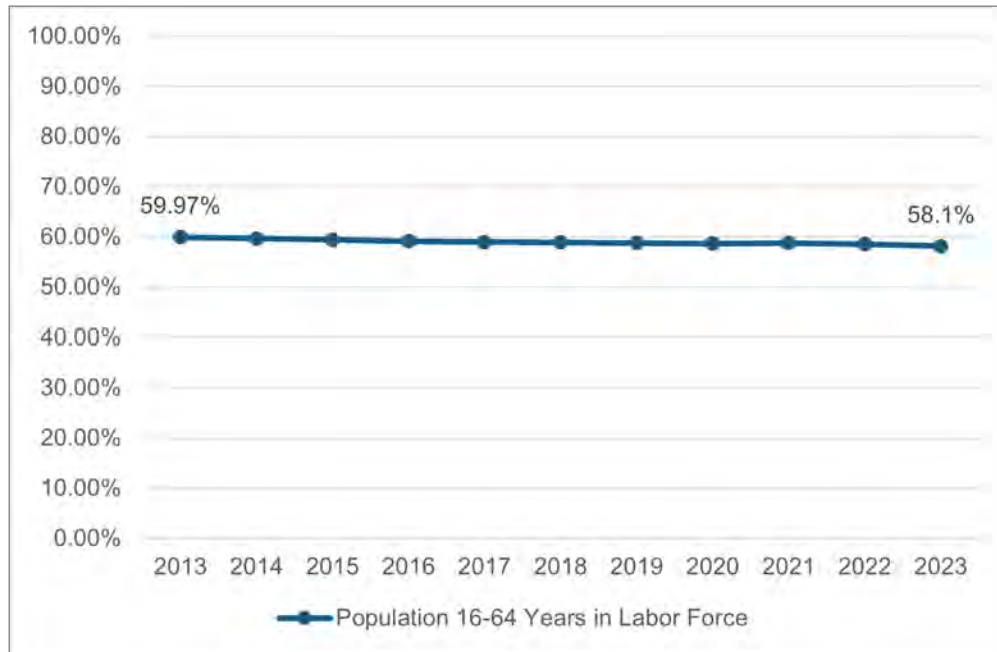
<sup>26</sup> American Public Transportation Association, [Transit Workforce Shortage: Synthesis Report](#), March 2023.

<sup>27</sup> American Association of State Highway and Transportation Officials, “Finding the Future Workforce for State DOTs Becoming Tougher,” August 17, 2018. Accessed 3/5/25 at <https://aashtojournal.transportation.org/finding-the-future-workforce-for-state-dots-becoming-tougher/>.

<sup>28</sup> U.S. Bureau of Labor Statistics, “Keeping America Moving: Employment in transportation and warehousing industries,” July 2024. Accessed 3/5/25 at <https://www.bls.gov/spotlight/2024/keeping-america-moving-employment-in-transportation-and-warehousing-industries/>.

<sup>29</sup> Transportation Research Board, “Current Workforce Challenges to Recruit and Retain Construction Inspectors.” Accessed 3/5/25 at <https://rip.trb.org/View/2433903>.

**Figure 16: Pennsylvania Labor Force Participation Rate, Residents Ages 16-64, 2013-2023**



Source: U.S. Census Bureau, American Community Survey (ACS, 2013-23)

**Pennsylvania transportation jobs are not always competitive with other opportunities, making them less attractive for potential workers.**

### **Wage Competition**

Stakeholders in the December 2024 workshops conducted for this study emphasized the following themes:

- “Poaching” of skilled workers is a common issue, with employees being lured away by better offers from other industries or companies. Competition is particularly intense in trades like HVAC, welding, and mechanics, where shortages are prevalent. Trucking companies that perform in-house fabrication and maintenance also struggle to recruit younger individuals, who often leave for higher-paying jobs elsewhere.
- Wage competition remains a significant concern for transportation occupations such as mechanics and CDL drivers. Younger workers are more attracted to higher wages offered by other industries (even Sheetz and McDonald’s) and are less influenced by benefits packages. Government-subsidized transportation providers face additional challenges because they cannot increase wages with the flexibility of private industries.
- Recruiting and retaining qualified drivers and mechanics is an ongoing challenge, particularly due to less competitive wages for mechanics. For example, in the North Central region, maintenance service technicians are in short supply at airports.

- The transportation workforce is experiencing a significant demand for skilled workers. For instance, many older mechanics are expected to retire within the next 3-5 years, prompting employers to seek replacements. To address this, employers have been collaborating with technical schools to raise awareness about mechanic careers and offer training opportunities. However, despite these efforts, the wages offered may not be competitive enough to retain these workers long-term.
- Employers in rural areas face difficulties in recruiting quality employees due to lower salaries, despite lower living costs. Recruiting for public transportation, particularly rural paratransit, is challenging, although it is a rewarding service with opportunities for professional development.
- National-level studies have also noted the difficulties that wage competition poses to transportation workforce recruitment:
  - » **American Public Transportation Association (APTA)** – The demanding nature of transportation jobs, combined with compensation that may not be competitive, makes it difficult to recruit and retain workers. Further, a competitive labor market means job-seekers have more choices, which makes it more difficult to hire and retain public transportation workers.<sup>30</sup>
  - » **American Association of State Transportation Officials (AASHTO)** – State DOTs frequently find it challenging to match the salaries offered by the private sector, which complicates their efforts to attract and keep talented employees.<sup>31</sup>

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<sup>30</sup> American Public Transportation Association, [Transit Workforce Shortage: Synthesis Report](#), March 2023.

<sup>31</sup> American Association of State Highway and Transportation Officials, "Finding the Future Workforce for State DOTs Becoming Tougher," August 17, 2018. Accessed 3/5/25 at <https://aashtojournal.transportation.org/finding-the-future-workforce-for-state-dots-becoming-tougher/>.

### Competition with Other States

Workforce concerns are a nationwide issue, and Pennsylvania must compete with other states for transportation workers, especially those students and workers trained in Pennsylvania. Table 4 lists the number of Pennsylvania residents employed in transportation jobs in another state. Many of these workers likely reside in border counties but commute to jobs in neighboring states.

**Table 4: Pennsylvania Residents Employed in Transportation Jobs in Another State, 2023**

Occupation	Number of Exported Jobs
Stockers and Order Fillers	2,955
Laborers and Freight, Stock, and Material Movers	1,716
Heavy and Tractor-Trailer Truck Drivers	1,425
Light Truck Drivers	1,210
Industrial Truck and Tractor Operators	528
Driver/Sales Workers	398
Automotive Service Technicians and Mechanics	394
Bus Drivers, School	362
Bus Drivers, Transit and Intercity	313
Training and Development Specialists	291
Bus and Truck Mechanics and Diesel Engine Specialists	284
Dispatchers, Except Police, Fire, and Ambulance	263
Industrial Engineers	201
Transportation, Storage, and Distribution Managers	165
Shuttle Drivers and Chauffeurs	155
Railroad Conductors and Yardmasters	151
Aircraft Mechanics and Service Technicians	150
Logisticians	134
Locomotive Engineers	103

Source: Pennsylvania Department of Community and Economic Development, Pennsylvania On Target; Michael Baker International

**Barriers such as language, complex screening and licensing procedures, and changing views on work result in fewer qualified applicants and high job turnover.**

### **Changing Views of Employment**

Stakeholders in the December 2024 workshops conducted for this study emphasized the following themes:

- Younger generations often have different expectations regarding employment. While seasoned employees generally value in-person attendance and career longevity, younger workers tend to seek quick promotions and remote work opportunities. This generational difference affects their motivation to work, with money not always being the deciding factor.
- The recession altered how individuals view work, especially mid-career professionals who witnessed mass layoffs. This has led to a justified shift away from long-term commitments to one employer due to a lack of job stability.
- Many drivers now prioritize jobs that allow for family-based, community-oriented lifestyles, seeking routine hours over long periods away from home associated with long-haul trucking.
- Wegman's Food Markets utilizes two different trucking (CDL) schools, both within a 50-mile range of the company's distribution center. Employees are compensated for mileage, travel time, and schooling for the 4-week program. Despite these benefits, the distance remains a hindrance to recruitment.

### **Desire for Remote Work and Flexible Hours**

- U.S. News and World Report notes that one of the enduring outcomes of the COVID-19 pandemic is the prevalence of working from home (i.e., remote work) for jobs that do not require in-person contact.<sup>32</sup>
- The American Association of State Highway and Transportation Officials (AASHTO) reports that younger employees are less inclined to view jobs at state DOTs as lasting careers. They tend to desire more adaptable work settings and chances for remote employment.<sup>33</sup>
- According to Harvard Business Review, four-day workweeks will "move from radical to routine." A four-day workweek has been discussed in union negotiations and has become a worker preference. A 2023 Gartner survey revealed that 63% of candidates rated a four-day workweek with the same pay as the top new benefit that would attract them to a job.<sup>34</sup>

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<sup>32</sup> U.S. News & World Report, "Remote Work Has Radically Changed the Economy – and it's Here to Stay," January 25, 2024. Accessed 08/29/24 at <https://www.usnews.com/news/economy/articles/2024-01-25/remote-work-has-radically-changed-the-economy-and-its-here-to-stay>.

<sup>33</sup> American Association of State Highway and Transportation Officials, "Finding the Future Workforce for State DOTs Becoming Tougher," August 17, 2018. Accessed 3/5/25 at <https://aashtojournal.transportation.org/finding-the-future-workforce-for-state-dots-becoming-tougher/>.

<sup>34</sup> Harvard Business Review, "9 Trends That Will Shape Work in 2024 and Beyond," January 23, 2024. Accessed 08/29/24 at <https://hbr.org/2024/01/9-trends-that-will-shape-work-in-2024-and-beyond>.

## Other Barriers to Hiring

Stakeholders also cited the following barriers:

- **Complexity of CDL Licensing:** Various levels of CDL licensing have specific requirements and endorsements, creating licensing delays for potential drivers (e.g., a truck driver requires a passenger endorsement before being allowed to operate a bus). Turnover among in-house CDL trainers further delays the licensing process.
- **Language:** Increasing Limited English Proficiency (LEP) populations necessitate diverse training methods. Recruiting multilingual drivers, particularly for school bus transportation, is challenging in areas with large Spanish-speaking communities.
- **Drug Testing Considerations:** Potential legalization of recreational marijuana may complicate health screenings and drug testing requirements, as federal regulations mandate a drug-free workplace.
- **Safety and Security:** Security concerns, particularly in urban areas like Philadelphia, impact driver recruitment and retention. Measures such as increased officer presence and protective shields<sup>35</sup> are being implemented to address these issues.

**Students and working-age adults may be unaware of or uninterested in transportation career opportunities.**

Participants in the stakeholder workshops noted that there has been a decline in interest in trucking and transportation industry jobs among workers under age 35. Additionally, turnover rates for drivers in this age group are higher compared to their older, more experienced counterparts.

Transportation agencies are working with local schools and vocational institutions to educate students about career opportunities in the industry. Efforts are also being made to raise awareness among individuals facing obstacles such as criminal records or past substance abuse issues. However, promoting specialized career pathways in schools remains a challenge due to the significant commitment required to build relationships with numerous school districts.

Specialized training pathways and education are required for many transportation industry positions, but funding limitations create barriers to recruiting and filling these roles.

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<sup>35</sup>TransitTalent, "SEPTA is launching its first buses with armored compartments for operators," February 25, 2025. Accessed 2/5/2025 at [https://www.transittalent.com/articles/index.cfm?story=SEPTA\\_Tests\\_Buses\\_With\\_Armored\\_Compartments\\_2-25-2025](https://www.transittalent.com/articles/index.cfm?story=SEPTA_Tests_Buses_With_Armored_Compartments_2-25-2025).

Nationally, the **American Association of State Highway and Transportation Officials (AASHTO)** notes that state DOTs encounter challenges in recruiting new employees, especially among younger individuals. This is partly because of the perception that jobs within state DOTs are not as cutting-edge as those in the private sector.<sup>36</sup>

The **U.S. Bureau of Labor Statistics** reports that the transportation and warehousing industry faces challenges in attracting new employees because of the rigorous demands of the positions and the extended hours required.<sup>37</sup>

The **American Public Transportation Association (APTA)** highlights the transit industry's struggle to appeal to younger generations, who often prefer careers in other fields.<sup>38</sup>

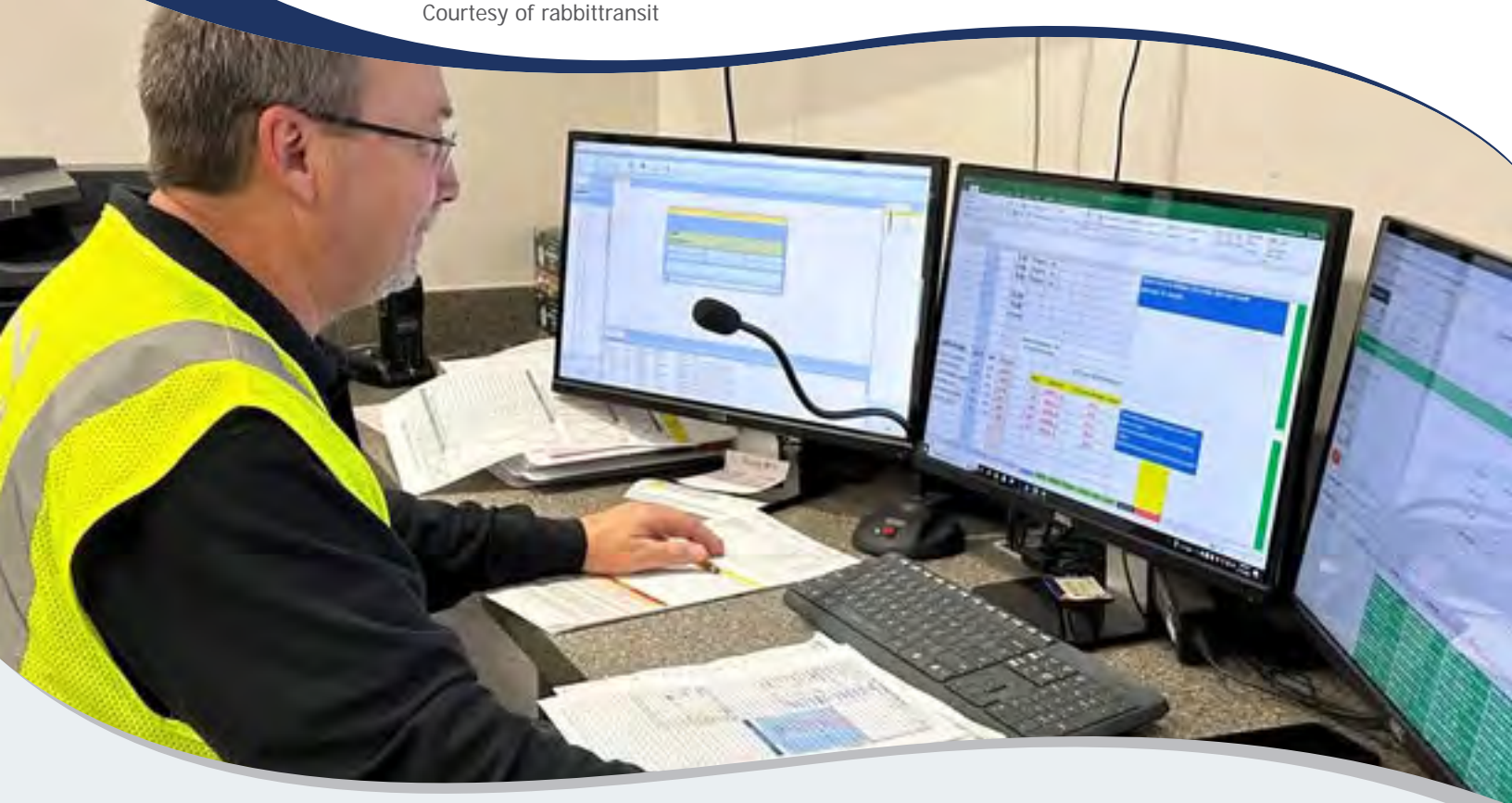
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<sup>36</sup> American Association of State Highway and Transportation Officials, "Finding the Future Workforce for State DOTs Becoming Tougher," August 17, 2018. Accessed 3/5/25 at <https://aashtojournal.transportation.org/finding-the-future-workforce-for-state-dots-becoming-tougher/>.

<sup>37</sup> U.S. Bureau of Labor Statistics, "Keeping America Moving: Employment in transportation and warehousing industries," July 2024. Accessed 3/5/25 at <https://www.bls.gov/spotlight/2024/keeping-america-moving-employment-in-transportation-and-warehousing-industries/>.

<sup>38</sup> American Public Transportation Association, [Transit Workforce Shortage: Synthesis Report](#), March 2023.

Bus dispatcher  
Courtesy of rabbittransit



Trend Increasing the Supply of Transportation Workers

**Pennsylvania’s foreign-born population has increased, and this demographic is more likely to work in transportation fields.**

One trend that may improve the supply of the transportation workforce is the increase in Pennsylvanians from other countries.

- The Bureau of Labor Statistics’ analysis of the labor force characteristics of foreign-born workers (2023) found that foreign-born individuals are more likely to be employed in service occupations; natural resource, construction, and maintenance occupations; and production, transportation and material-moving occupations. The American Immigration Council’s (AIC’s) “Map the Impact” report for Pennsylvania confirms this pattern for the state, with results showing that the transportation and warehousing industry has the second-highest share of immigrant workers in Pennsylvania (15.2%)

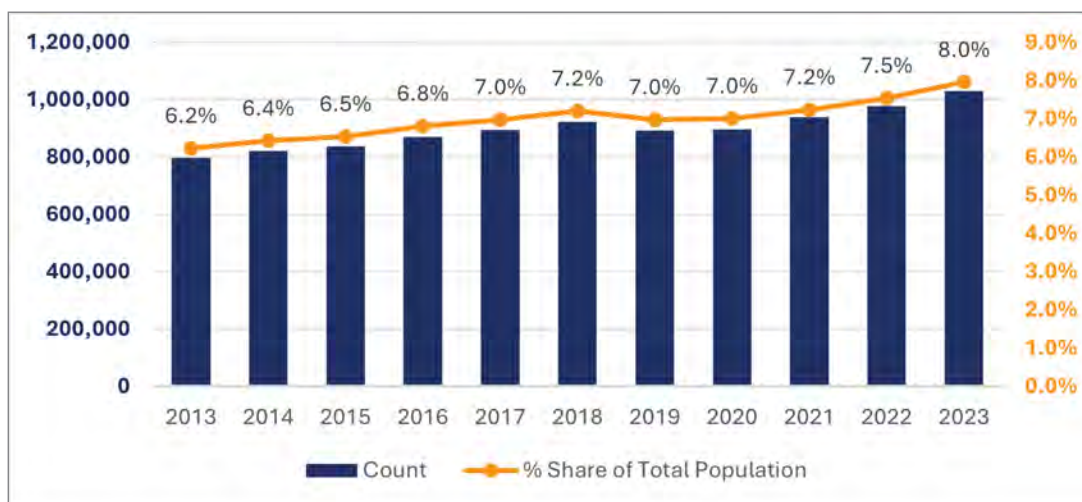
**Table 5: Industries with Highest Share of Foreign-Born Workers, 2022**

Industry	Share of Foreign-Born Workers
Agriculture	17.6%
Transportation and Warehousing	15.2%
Professional Services	11.6%
Manufacturing	11.5%
General Services	10.7%

American Immigration Council, Map the Impact Report, “New Americans in Pennsylvania,” 2023.

- The AIC’s “Map the Impact” report for Pennsylvania finds that immigrants comprise nearly 10% of the state’s labor force, equating to just over 650,000 workers.
- According to the Bureau of Labor Statistics, immigrants comprised 18.6% of employed truck drivers in 2020. That value is higher than the percentage of immigrants in the overall U.S. labor force (17%). The number of foreign-born truck drivers increased from 315,981 in 2000 to 720,000 in 2021.
- [Statista](#), a global data and business intelligence platform, reports that Pennsylvania’s population had a 7.5% share of foreign-born residents in 2022, which falls below the national average of 14%. Historical data from the U.S. Census’ American Community Survey (2013-23) show that this share has slowly increased over the past decade, reaching a high of 8% (1.03 million people) in 2023 (Figure 17).

**Figure 17: Foreign-Born Population in Pennsylvania, 2013-2023**



Source: U.S. Census American Community Survey (ACS) 1-year Estimates, Table S0501: Select Characteristics of the Native and Foreign-Born Populations

- Pennsylvania counties with the highest foreign-born populations are largely concentrated in the eastern half of the state and within urban/suburban areas (Table 6).

**Table 6: Pennsylvania Counties with the Largest Foreign-Born Populations**

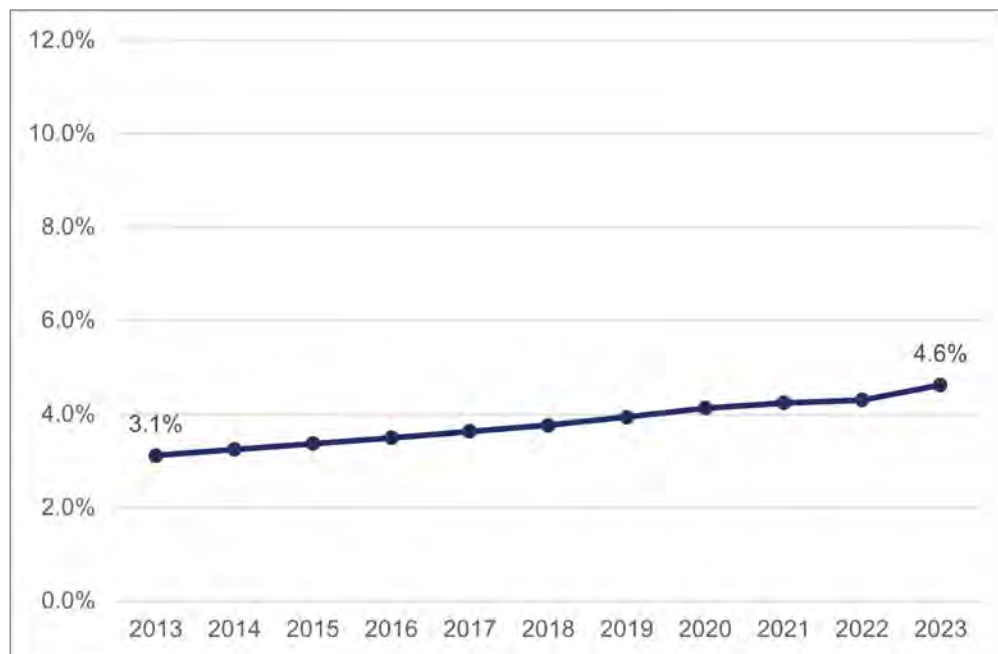
County	Foreign-Born Population, 2018-2022
Philadelphia	232,800
Montgomery	93,700
Allegheny	77,100
Bucks	65,600
Delaware	61,900
Chester	51,800
Lehigh	48,300
Berks	34,800
Lancaster	30,400
Luzerne	27,000
Northampton	25,900
Dauphin	24,800
York	19,900
Cumberland	17,500
Monroe	17,200

Source: [Migration Policy Institute](#), U.S. Immigration Population by State and County

**Many Pennsylvanians are working past the traditional retirement age of 65, helping to bolster the transportation workforce.**

Countering the trend of a shrinking workforce, the labor force participation of people aged 65 and older is gradually increasing (Figure 18). This reflects the increasing average age of Pennsylvanians, workers electing to postpone retirement, and seniors re-entering the workforce to make ends meet.

**Figure 18: Labor Force Participation Rate, Residents Aged 65 and Older, 2013-2023**



Source: U.S. Census Bureau, American Community Survey (ACS, 2013-2023)

Overpass construction, Chester County  
Courtesy of Associated Pennsylvania Constructors

"Promote trade-based education as an option and bring younger generations into these industries."  
~Stakeholder workshop participant



## Appendix E: Stakeholder Outreach Summary

# Stakeholder Workshop Purpose and Approach

## Purpose

The three workshops held in December 2024 were an opportunity to convene transportation employers, economic development organizations, and other stakeholders to share perspectives and brainstorm solutions for issues related to the transportation workforce. For the purposes of the TAC study, the transportation workforce is defined as those jobs in the public and private sectors necessary for moving people and goods, and the various other jobs that keep our transportation system, services, and projects in good working order.

## Approach

Representatives from transportation-related agencies, economic development organizations, and workforce providers were invited to participate in one of three workshops held in December 2024. Workshops lasted approximately 1.5 hours and focused on challenges, opportunities, and solutions to address gaps within the transportation workforce.

Participants were provided information about the study approach and purpose in advance of the meetings and were given “Think Ahead” Questions to help prepare them for the discussions. After a brief overview of the study objectives and purpose, stakeholders were asked a series of questions to collect their input on areas that need to be addressed within the study. Questions centered around the following:

- Defining the nature and severity of the problem.
- Identifying opportunities to address the problem.
- Brainstorming solutions to address the problem.

### “Think Ahead” Questions

- What trends are most impacting the transportation workforce?
- To what extent is the transportation workforce/job gap a problem now and in the foreseeable future?
- What might the private and public sectors do in collaboration to ensure a strong transportation workforce for Pennsylvania?

# Key Themes

## Challenges

- **Retirements** – The loss of expertise, manpower, and a traditional work ethic with recent and upcoming waves of retirements.
- **Recruitment** – Difficulty attracting new workers to transportation careers; fewer young people entering the trades or becoming professional drivers. Wages are often not competitive; benefits are not enough to attract applicants.
- **Retention** – Declining commitment to or interest in long-term employment by the workforce; poaching common among employers.
- **Qualifications** – Need for skilled workers in traditional trades as well as newer high-tech fields. Need for applicants willing to undergo on-the-job training and licensing/certification processes. Need for the “soft skills” that make for good team members and a stable workforce.

## Opportunities

- **Build on existing resources** – Transportation employers could expand utilization of existing workforce and training programs and workforce organizations, such as PA CareerLink®.
- **Employer investment in workforce development** – Piloting and expanding work-based training opportunities to equip individuals with the skill sets needed to fill workforce shortages has been successful. Also apprenticeships, internships, mentoring, etc.
- **Outreach and communication** – Informing students and job-seekers about employment opportunities in the transportation industry.

Detailed participant feedback follows the participant lists.

# Participants

## Workshop #1 – December 3, 2024

Name	Organization	Type
Christian Snyder	Centre Area Transportation Authority	Transit
Jim Raymond	Bucks County Transport	Transit
Megan Krusi	Suburban Transit Network Inc	Transit
Sheila Gombita	Freedom Transit	Transit
Rick Blaker	Greene County	Transit
Shawna Russell	Pennsylvania Public Transportation Association (PPTA)	Transit
John Summers	Summers Trucking	Trucking
Leo Horne	PA CareerLink® Mercer County	Workforce
Alisa Woods	PA CareerLink® Greene County	Workforce
Avery Keyes	PA CareerLink® York County	Workforce
Justin Miller	PA CareerLink® Northumberland/Snyder/Union Counties	Workforce
Brian Sharkey	PennDOT Program Center	State Agency
Daniel L. Keane	PennDOT Program Center	State Agency
Kevin Wray	PennDOT Program Center	State Agency
Nathan Walker	PennDOT Program Center	State Agency
Terry Pinder	PennDOT Program Center	State Agency

## Workshop #2 – December 4, 2024

Name	Organization	Type
Bob Shaffer	PA Aviation Advisory Committee	Aviation
Rae Ann Miller	EDC Lancaster	Economic Development
Lindsay Young	Port of Philadelphia	Ports
Tabatha Johnson	CamTran	Transit
Richard Schlameuss	Monroe County Transit Authority	Transit
Gerry Wosewick	Pennsylvania School Bus Association	Transit
Jeffrey Missan	SEPTA	Transit
Gary Evans	SEPTA	Transit
Carl Albright	Wayne County Transportation System	Transit
Jason Evans	PGT Trucking, Inc.	Trucking
Sonya Metzger	Bradford County Action	Workforce
David Grimaldi	Johnstown Area Regional Industries (JARI)	Workforce
Jennifer Butler	Montgomery County / MontcoWorks	Workforce
Melissa Handlovitch	PA CareerLink® Allegheny East	Workforce
Bonny Yeager	Partner4Work	Workforce
Mary Salony	Tri-County Health Care Consortium	Workforce
Sandra Tosca	PA Commonwealth	State Agency/Workforce
Gwen Ross	PA Department of Community and Economic Development (DCED)	State Agency/ Workforce
Danielle Spila	PennDOT Bureau of Public Transportation	State Agency
Laura Dimino	Center for Rural Pennsylvania	State Agency
Kevin Wray	PennDOT Program Center	State Agency
Terry Pinder	PennDOT Program Center	State Agency
Daniel L. Keane	PennDOT Program Center	State Agency
Mark Murawski	Lycoming County Planning	Study Task Force

### Workshop #3 – December 5, 2024

Name	Organization	Type
Valerie Piper	PhilaPort	Ports
Anna Frantz	Port of Erie	Ports
Mike Curry	Lebanon Transit	Transit
Mike Ritter	Lebanon Transit	Transit
Jamie Leonard	rabbittransit	Transit
Rhonda Lomas-Rose	Schuylkill Transportation System	Transit
Susan Kopystecki	Suburban Transit Network	Transit
Maria Church	TransNet	Transit
Ashley Cooper	Westmoreland Transit	Transit
David Barth	Wegman's	Trucking
Jane Stein	Montgomery County	Workforce
Gary Ailes	PA CareerLink® Monroe Valley	Workforce
Monique Yost	Partner4Work	Workforce
Karianne Gelinas	Lehigh Valley Economic Development	Economic Development
Amy Kessler	North Central Pennsylvania Regional Planning and Development Commission	Planning Partner
Amy Mathieson	Airport Corridor Transportation Association	Aviation
Richard Montanez	City of Philadelphia	Local Government
Angela Watson	PennDOT Bureau of Rail, Freight & Ports	State Agency
Trish Meeks	PennDOT Multimodal Deputate	State Agency
Terry Pinder	PennDOT Program Center	State Agency
Kevin Wray	PennDOT Program Center	State Agency
Daniel L. Keane	PennDOT Program Center	State Agency
Mark Murawski	Lycoming County Planning	Study Task Force

# Defining the nature and severity of the problem(s):

## 1. What are the biggest challenges related to the transportation workforce in Pennsylvania?

- **Shifts in truck driver preferences** – Many drivers seek jobs that allow for family-based, community-based lifestyles than they have been in the past. This includes the desire to work more routine/regular hours rather than being away for long periods of time.
- **Reduced interest levels** – There has been a reduced interest in trucking/transportation industry jobs by workers under the age of 35. The industry is also facing increased turnover among existing drivers under the age of 35 compared to seasoned, older drivers.
- **Introduction of transportation career paths** – Several transportation agencies/ employers are working with local schools, vocational/technical schools, and higher education institutions to make students aware of available career paths, such as trucking. Additional efforts are being made to raise awareness of these opportunities among individuals that have criminal records or past histories with substance abuse to expand opportunities for these people and to expand the hiring pool.
- **Dwindling driver and mechanic labor pools** – Recruiting and retaining qualified drivers and mechanics to fill open positions has been an ongoing challenge. Specifically for mechanics, recruitment has been difficult due to wages not always being competitive.
- **Barriers facing an aging workforce** – Older workers looking to enter a profession requiring a Commercial Driver's License (CDL) have experienced barriers in meeting training requirements. Some have health issues and have been unable to pass required CDL physicals.
- **Administrative staff recruitment** – There are not as many qualified individuals applying for and securing administrative/ office-based positions with transportation industry employers.
- **Varied generational perspectives on work** – Stakeholders stated that younger generations tend to be less driven to come to work and stick with a job. Seasoned employees are dedicated to meeting in-person attendance requirements and value career longevity and benefits. However, younger workers have different expectations for employment (e.g., quick promotions, ability to work remotely).
- **Finding and securing quality candidates/ employees** – Vetting processes have been a challenge across multiple industries and multiple position types (e.g., drivers, administrative staff). This has included vetting candidates through their social media profiles, and meeting/interviewing candidates several times to ensure offers are being made to the "right people."
- **Wage competition** – Transportation employers have experienced challenges in recruiting skilled

staff/drivers who are willing to work for relatively low wages. Some examples provided by stakeholders include mechanics and CDL drivers. Some have been unable to compete with wages offered by other employers/industries (e.g., Sheetz, McDonalds). Younger workers are attracted to higher wage rates and are not considering benefits packages as an inducement.

- **Improving accessibility to employee testing/training** – Applicants for school bus driver jobs include individuals looking for a second job, retirees, and veterans, among others. Ensuring accessibility to training and testing for these individuals will be helpful in increasing the overall labor pool for school bus/CDL operators.
- **Ongoing workforce competition between industries** – There is significant competition for workers in career pathways within transportation industries and beyond, particularly for younger workers. Younger workers have been able to find jobs that better fit their preferences (e.g., remote work, etc.) and employers have had difficulty in attracting them to jobs that

require daily in-person attendance or have lower wages.

- **Lack of promotion of specialized career pathways in schools** – Students may not be considering careers in transportation industries like maritime, aviation, etc. It is important to provide education and collaborate with schools to raise awareness of these specialized career paths and guide them to necessary education/training opportunities. With the number of individual school districts in each region and statewide, it can be a significant commitment for any employer to build the necessary school relationships.
- **Forum for workforce needs** – Aerium is a non-profit organization founded by Dr. Larry Nulton (FBO for Johnstown Airport and a TAC member) that provides a forum for public and private stakeholders to address workforce needs in the aviation and aerospace industries. Partners in this effort include St. Francis University and the Johnstown Airport.
- **Rural recruitment** – Rural areas/employers face chal-

lenges in recruiting quality employees. These areas tend to have lower costs of living, but also lower salaries, which makes recruiting a challenge.

- **Broadband connectivity barriers** – Remote work opportunities are limited by a lack of broadband/Internet connectivity in rural areas. These opportunities tend to be expected and preferred by younger workers.
- **Medical facility consolidation/centralization** – Consolidation of hospitals/medical facilities has posed a workforce strain on public transportation. As medical facilities become more centralized, public transportation providers will need to address longer routes to provide better access and mobility to these facilities while also remaining affordable.
- **Truck driver recruitment and retention** – As older truck drivers retire, trucking companies are shifting toward hiring younger drivers to fill the gap; however, younger drivers are not staying within the industry for the long run. Beyond truck drivers, other modal operators and career paths within transportation have

raised concerns about an increase in job-hopping.

- **Language barriers and related training** – Limited English Proficiency (LEP) populations are increasing, which has led to language barriers and the need for diverse training methods. Stakeholders in attendance noted that CDL training for limited English-speaking individuals has been a challenge because many training materials are provided in English.
- **CDL training barriers** – There are different levels of CDL licensing and endorsements (A, P, etc.), all of which have their own set of requirements. Stakeholders mentioned that each CDL license may require individuals to retake the CDL exam each time, which was identified as an “unnecessary” workforce barrier. Additionally, some companies have CDL trainers in-house, but when those positions
- experience turnover, it further delays the licensing process.
- **Technological advancement and alternative fuel readiness** – Alternative fuels in development and/or use include liquid natural gas, hydrogen, methane, battery electric, etc. Education on alternative fuel technology use, maintenance, and handling is essential to raise awareness of these career paths. Alternative fueling also brings workforce challenges to the trucking industry when serving major destinations (e.g., ports). Larger trucking companies are better positioned to handle the cost of alternative fuels and related infrastructure. The cost of certain fuels, like hydrogen and electric, can be more costly than diesel fuel. The trucking workforce is burdened by not having sufficient parking and taking on additional
- cost and mileage to serve the port.
- **Limited funding for workforce development and training** – Several transportation industry positions require specialized training pathways and education. Funding has been a challenge to provide these training pathways, leading to barriers in recruiting and filling positions.
- **Water port employee recruitment and retention** – New port workers are commonly brought on as casual workers. This has been a challenge in attracting new port terminal workers—many of whom seek a 40-hour work week, benefits, etc. until they are eligible for a union position.
- **Aviation mechanics** – A shortage of airport maintenance service technicians at North Central region airports was noted.

## 2. To what extent is the transportation workforce gap presently a problem?

Workshop participants were provided with three options to answer this question: substantial problem, problem, or not presently a problem. Consistent with responses to question 1, the transportation workforce gap was acknowledged as a problem in all workshops, with several participants considering it a substantial issue. No participant selected the “not presently a problem” option.

## SEPTA expects an increase in retirements over the next two to five years.

### 3. To what extent do you expect the transportation workforce gap to be a problem in five years?

Like question 2, workshop participants were provided with three options to answer this question: substantial problem, problem, or not presently a problem. Workshop participants acknowledged that the transportation workforce gap will continue to be a problem in five years, with several participants considering it to be a substantial issue. One participant noted: “It will be a substantial problem in five years, especially if we keep kicking this down the road.”

Additional input from the three workshops included:

- **Drug testing considerations** – Recreational marijuana could potentially be legalized in the near future and may cause more of a problem in the next five years, particularly around requirements focused on health screenings, physicals, and drug testing.
- **School bus driver shortages to continue** – The Pennsylvania School Bus Association noted they experienced a 20-25% shortage in drivers in 2023. In 2024, that shortage reduced to 10-15%. It is anticipated the shortage will worsen as older drivers retire.
- **Retirement of public transportation employees** – SEPTA expects an increase in retirements over the next 2-5 years.
- **Data/forecast affirmations** – The Pennsylvania Department of Labor and Industry's Center for Workforce Information and Analysis releases occupational projections regularly. Current data projections affirm that the transportation workforce gap will continue to be a “substantial problem” heading into the future if major shifts do not occur.<sup>39</sup>
- **Consider influence of technological advancements** – How will AI influence transportation, job scope, and availability over the next five years?

<sup>39</sup> Pennsylvania Occupational Employment 2023-2025 Short-Term Forecast projections indicate that transportation and material moving occupations will increase 1.3%.

#### 4. Among the position types below, which will be the most challenging to retain and recruit over the next few years?

Workshop participants were given the following list of positions to choose from:

- |                              |                             |                                     |
|------------------------------|-----------------------------|-------------------------------------|
| a) Drivers/vehicle operators | e) Transportation Engineers | h) Administration/<br>support staff |
| b) Mechanics                 | f) Maintenance              |                                     |
| c) Construction              | g) Planners                 | i) Other                            |
| d) Construction Inspectors   |                             |                                     |

In all three workshops, participants highlighted that retaining and recruiting drivers/vehicle operators and mechanics would be particularly challenging. Participants then discussed specific concerns as follows.

- **CDL challenges** – Commercial drivers continue to be a high-priority occupation and every workforce development board works with mandated training providers (e.g., PA Career-Link®) where funding is available. There are more barriers and longer time commitments required to earn CDLs. These barriers are discouraging to potential workers because they are seeking jobs in the immediate future. While the money is available for the CDL training, potential candidates are not willing to invest the time needed to get the CDL.
- **Need for skilled workers** – There is a demand for skilled workers throughout the transportation workforce. One example provided during the session was mechanics. Older mechanics are going to be retiring in the next 3-5 years, and employers are looking to replace those individuals as they leave. Many have been engaging with technical schools to raise awareness about mechanic occupations and which employers offer on-the-job training. However, wages may not be competitive enough to retain them for the long haul.
- **Early training** – Starting training programs with younger workers is critical in raising awareness of transportation careers as the current workforce continues to age.
- **Insurance for younger commercial drivers** – While training opportunities are essential and there is more funding available for training programs, there are hurdles in getting younger commercial drivers licensed or insured (i.e., insurance is more expensive and the work they secure will be constricted to short haul due to federal CDL minimum age requirements).
- **Ongoing competition between trades** – Many trade jobs are facing shortages despite offering competitive wages (e.g., HVAC, welding, mechanic/maintenance). Many are competing for the same labor pool. Many young workers are not drawn to trades like welding. Trucking companies that perform their own in-house fabrication/maintenance are also struggling to recruit younger individuals.
- **Vehicle aides** – Vehicle aides are likely those who are not driving anymore. It is also a great retirement job for veterans.
- **Rural trucking opportunities** – Coal mining/oil and gas industries (particularly in rural counties)

**“Transportation providers are competing with employers like Sheetz and McDonald’s. We have better benefit packages, but our wages don’t compete.”**

have many transportation opportunities with water trucks, etc.

- **Aviation mechanics** – In aviation, hiring mechanics is a challenge, along with pilots. DuBois Regional Airport facilitated an academy for students to learn about airport ground positions. The intent is to retain them after they are trained—it allows them to move into other positions as they learn these skill sets.
- **Limited appeal of benefits** – Younger generations don’t care about the benefit packages, which used to be an attraction item (healthcare, benefits, etc.). It’s a different mindset. We’re trying to make those things important to them.
- **Experienced alternative fuel professionals** – Clean energy industries are looking for experienced professionals who

can also act as educators to provide necessary training for new and incumbent workers. Recruitment is also about finding the people to be the trainers.

- **Less long-term commitment to careers** – Career longevity continues to change. People used to make careers out of their positions—30- to 40-year or longer careers. Younger people don’t look at it that way anymore. Workers tend to job-hop for greater pay, flexibility, etc. The state of the economy is also impacting this longevity—older generations are back in the workforce because they can’t make ends meet.
- **Lower public-sector wages** – A lot of transportation providers/agencies are government subsidized or controlled to an extent. We don’t have the ability to increase

wages like the private industry and nobody wants to pay higher taxes to subsidize these transportation services. We are competing with wages that places like Sheetz and McDonald’s are offering. We have better benefit packages, but our wages don’t compete.

- **Lack of job stability erodes loyalty** – It’s important to look at the reasons why individuals view work as they do now. We’re also fighting against a real reality that many mid-career professionals witnessed mass layoffs in the recession. This changed the mentality around being long-term, career professionals—and it’s justified. There wasn’t a sense of job stability allowing individuals to see themselves at an organization for a long time.

## 5. What are the unique workforce challenges among the transportation modes (e.g., recruiting, retention, technical skills, professional development)?

Workshop participants were given the following to choose from:

- |  |                          |                          |
|--|--------------------------|--------------------------|
| a) Roads and bridges (state and local) | d) Passenger rail        | g) Airports/Aviation     |
| b) Trucking                            | e) Public transportation | h) Water ports           |
| c) Rail/freight                        | f) Intercity bus         | i) School transportation |

Workshop participants detailed specific challenges, which are summarized below.

- **Multilingual school bus drivers** – Recruiting drivers that are multilingual has been a challenge in school bus transportation. We have communities in PA that are largely Spanish-speaking communities, and that population is growing. We have to train the drivers and also ensure they get through the testing at PennDOT, but that's another barrier.
- **Driver security** – Safety and security is a unique challenge in Philadelphia for SEPTA drivers. Every time something happens to a bus operator, our weekly applications drop. Some don't feel safe driving around North Philadelphia at 10:00 pm. We're increasing officer presence, installing shields to help protect the operator, etc. But that's a huge issue facing us and it's a priority for the labor unions as well. It impacts recruitment and retention—people want a job where they feel safe. We onboard 60 employees a month, but we'll lose 20% in training, we have some that don't show up and they get terminated, etc. Adding extra safety measures also adds to overall operational costs.
  - » Perception of safety issues is also an issue. If there's a shooting near a bus stop, SEPTA gets impacted.
  - » Driver safety is also an issue for school bus drivers.
- **Paratransit** – In public transportation, recruiting is an issue. Rural paratransit is a rewarding service to be a part of, and people generally stay and are willing to train/develop professionally. But getting qualified individuals in the door has been challenging.
- **Drug testing** – Drug testing is also an issue. Some people say, "I have a medical card," but that's not good enough. Federal requirements want it to be a "drug-free workplace."
- **Maritime/ports** – Not unique to maritime but the base issues are the aging workforce and the need for succession planning and training. As the industry moves to digitalization and making things more efficient, we need to ensure there's a trained workforce to handle that, as well as green technologies/sustainable practices.
- **Port industry** – PhilaPort is a landlord port—we have terminal operators. We don't necessarily have direct control, but are working with these operators in dealing with retention. I don't think workers see a path if they are non-union. If you stay and

you're trained, where are the benchmarks? Where are you getting trained? Where are you getting the raise? As people retire, it's important to focus on knowledge transfer.

- **Rail** – The State Rail Plan is currently conducting listening sessions. The plan will consider impacts to workforce in general for freight rail and passenger rail, however it will be

high-level. We recognize that workforce development is an issue in rail and we can share what we gather even if it isn't super-granular.

## Identifying opportunities to address the problem(s)

### 6. What is the priority issue that this TAC report should address for strengthening the transportation workforce in Pennsylvania?

- **Outreach** – Continue to educate and let people know these life-sustaining employment opportunities are out there.
- **Promote the trades** – Combat the “you have to go to college” mindset—promote trade-based education as an option and bring younger generations into these industries.
- **Wage competition** – Wage issues are real in rural areas. For example, Dunkin’ Donuts pays more than a local transit provider for paratransit drivers.
- **Understand reasons for turnover** – Examine why employees are quitting/leaving transportation jobs.
  - » Lifestyle is a huge influence.
  - » For CDLs, demand was strong for other jobs like grocery delivery—and truckers were buying their own trucks and leaving trucking companies for other sub-industries in 2021.
  - » Some employers are not keeping employees/drivers safe. Some companies are not maintaining truck/vehicle fleets, resulting in major accidents or deaths. This safety concern has pushed some to shift to new positions.
- **“Poaching” across industries** – People have the potential to be “poached” when they learn the skills needed. This could be between industries or between companies. How can we work together and not against each other in terms of dealing with limited workforce availability?
- **Retention of technical education facilities/opportunities** – DuBois recently lost access to technical/vocational education programs when Triangle Tech closed its doors. How can Pennsylvania retain those technical schools in local communities to provide the basic education to fill these positions?
- **Streamline training for the school bus workforce** – Seasoned workers have taken the steps to find a second career or a part-time job. It's important to make training accessible to them. Eliminating some technical aspects when getting a CDL to operate a school bus could be helpful—drivers need to stay on the bus when

the bus breaks down; they can't get off and fix it.

- **Wages/benefit competition and retention** – It is important to find ways to increase wages to attract younger employees, while keeping the fringe benefits that retain long-term employees.
- **Career shift impacts** – We see a lot of failed plumbers/mechanics that are looking to other industries for their next career—you're not always getting the "sharpest" folks. It plays into the

quality of people, the cost of recruiting and retention, etc.

- **"Workforce behind the workforce"** – Consideration needs to be made for the individuals that "work so the rest of the workforce can go to work." Several transportation industries fall into this category, like transit drivers who help the workforce get to work. As we look at the demographics going forward, it's critical for us to activate as many individuals in our workforce as possible.

- **Employer investment in workforce development** – Piloting work-based training opportunities to equip individuals with skill sets needed to fill employment shortages. Pittsburgh WDB takes some of that customized job training and partners with the local transportation department. Opportunities for on-the-job training through Pittsburgh Regional Transit (PRT) so employees get the skill sets they need through an investment by the employers themselves. Transportation industry jobs are on the high-priority list.

Bus driver  
Courtesy of rabbittransit



**“If we train people and they leave,  
that is better than  
not training them and they stay.”**

## **7. What are the biggest opportunities related to the transportation workforce in Pennsylvania?**

- **Workforce development** – Earlier and sustained workforce development.
- **State-subsidized training** – Training and certifications supported through state investment/funding.
- **Transportation to work** – Public transportation to places of employment has been viewed as a barrier. PPTA is exploring opportunities to improve site investment.
- **Training has inherent value** – “A former boss of mine once said, ‘If we train people and they leave, that is better than not training them and they stay.’”
- **Customized strategies** – Depending on the region or workforce development area, you can customize workforce development strategies for the transportation workforce as needed by local employers. That can be in the form of customized job training and incumbent job training for current employees.
- **Industry partnerships** – The Pittsburgh WDB team works with local employers and pairs them with employment/training providers like PA CareerLink® that are serving job-seekers. It helps identify what the needs are and what the employers are looking for.
- **Linking employers to existing training programs** – Linking existing training programs/opportunities with the employers, such as through Workforce Solutions for North Central PA (Local Workforce Development Board).
- **Employer CDL training incentives** – Wegmans uses two CDL schools; neither is close to our distribution center (within 50 miles). We pay the employees for the mileage, travel time, and schooling for the 4-week program. I would think distance is still a hinderance to recruitment despite these benefits.
- **CDL licensing streamlining** – Reach out to PennDOT Driver and Vehicle Services regarding the CDL discussion. Is there an opportunity to streamline these processes? Can the program be restructured to be better integrated with the Driver License Centers in PA?
- **Automation** – Manufacturing is going to jump to more automation to solve employee shortages.
- **Higher wages** – In rural areas, if you want good people, you have to pay them. It’s a challenge.

## 8. What is already underway to address the problems noted above and/or what can we build upon to bolster the transportation workforce?

**L&I/PA CareerLink®** are resources to promote that there is value in the transportation industry—good wages. There are a lot of dislocated workers who have been with a company for a while and want to reenter. We do promote CDL options for trucking companies, bus companies... especially those that offer assistance in getting that training.

## 9. Are there examples or best practices of workforce development programs that are successful in addressing transportation workforce gaps?

- **Other workforce development programs/opportunities:**
  - » State- and federally funded opportunities for transit to partner with colleges and workforce development centers to bring in new candidates to transportation careers.
  - » Workforce Innovation and Opportunity Act (WIOA) funding and on-the-job training opportunities to both pay for training and to get a foot in the door. They are focused on high-priority occupation/industries list and a list of schools approved for that training.
  - » Reemployment Services and Eligibility Assessment (RESEA) customers interested in new employment, education, or training—individuals who are in the midst of exhausting their unemployment or have little education/training. They can enter this program which allows them to pursue new employment opportunities or education/training to help reenter the workforce.
- **Reaching younger people** – Opportunities are out there—the issue is finding individuals to pursue those opportunities, particularly younger individuals. Many people coming into PA CareerLink® are older generations who are still actively looking to work and many employers are looking for longevity in their hires.
- **Successful hiring of candidates with a criminal record** – SEPTA has established partnerships with justice-impacted groups and made major policy changes through the use of individualized assessment programs. This involves partnerships with other Philadelphia-based agencies (e.g., Uplift Solutions, HopeWorks, City of Philadelphia Reentry Office, District Attorney's office) that provide career training and help individuals with a criminal record reenter the workforce. SEPTA has hired 79% of such applicants.
- **K-12 vocational outreach** – Take a hard look at how high schools provide vocational training (outside of county/district technical insti-

tutes with limited seats) for students who will not be college-bound. As a school board member, I've been challenging folks to not think of "pathways" to careers but to help develop wide "runways" with bright lights to steer students toward careers.

- **School bus driver recruitment** – We are encouraging a lot of our contractors to recruit at events focused on veterans' organizations. Elected officials have hosted veterans' breakfasts, for example. We're advertising to parents to do some extra side work while students are at school, etc., but

veterans are one of our most successful areas of recruitment.

- **Transit apprenticeships** – PPTA and PennTrain are initiating an apprenticeship program for mechanics.
- **SEPTA internships** – SEPTA partners with military bases like Joint Base McGuire-Dix. We also have an internship program for mechanics. If they don't meet the requirements as a mechanic, we'll help them find another career avenue that leverages their strengths within SEPTA.

- **Outreach campaign** – Is marketing an option for the Commonwealth? We know that industrial jobs need a makeover, to be rebranded. Perhaps create a "Got Milk?" equivalent for PA industrial jobs. I would link manufacturing and transportation/logistics in the marketing message.
- **Slogan ideas** – Something like: "We make and move things in PA" type rebrand with campaign components about the jobs and training opportunities.

## Brainstorming Solutions

### 10. What ideas or innovative approaches should be considered for recruiting, retention, technical training, and/or professional development?

- **Apprenticeship** – PPTA is working with Penn College on a mechanic's apprenticeship program. This is an emphasized need given the aging workforce and advancing technologies. The program is in its early stages and it is hoped it will make a difference in the industry.
- **Transportation Tuesdays** – Prior to the pandemic, monthly meetings were held at PA Career-Link® with trucking companies, CDL training companies, school districts, etc., with a seminar to discuss issues, barriers, and strategies to address worker recruitment and retention. It was popular prior to COVID and has yet to be revived since the pandemic.
- **Include mentorship as an area of focus** – It is a proven way to bridge generational gaps that could be impacting employment across the board.
- **Ensure proper on-boarding** – This is important as an area of employee retention.
- **On-the-job training** – Work-based training/apprenticeship programs where the employees are trained while being paid are helpful.
- **Leverage available resources** – US Department of Commerce and US Department of Labor's Job Quality Toolkits offer an immense number of resources related to employee retention. Some of these are operational changes by the employer.
- **Incentivize CDL certification** – I spoke to a trucking school rep recently and he told me that when people earn a CDL-A, they don't want to advance on to get the B. Unless we have a transit-specific avenue to train and develop drivers... maybe it's a higher conversation at the state to coach and forge relationships with the schools in getting them to offer the B and support that somehow as an expanded avenue/option for us as trucking companies to get more drivers.
- **Outreach and training** – How are we introducing transportation careers early through STEM programs and career exploration activities? Internships, apprenticeships, on-the-job training?
- **Skilled trade focus** – Address workforce shortages in skilled trades like welding, equipment operation, and surveying.

**“Work-based training/apprenticeship programs where the employees are trained while being paid are helpful.”**

## 11. What other ideas do you have for public and private sector collaboration to attract and retain qualified employees?

- **Partnerships with churches and veterans' organizations** – The SEPTA representative noted that churches have a lot of outreach programs and also host job fairs. They can be a one-stop-shop to help with resume writing, interview preparation, etc. The Philadelphia Chamber of Commerce and other departments within the city have offered great partnerships. Veterans' organizations as well.
- **Local government associations** – Are we engaging local government associations? We need to get with PSATS and others and hear what they have to say.
- **Attract young people to industrial jobs** – There is a stigma around industrial jobs—rebranding those opportunities in industrial sectors is important.

## 12. What partners and stakeholders need to work together to effectively address the transportation workforce challenge?

- **Broad collaboration** – Partnerships among government, educational institutions, industry employers, unions, and non-profits are all essential.
- **Student outreach** – How are we introducing transportation careers early through STEM programs and career exploration activities? Internships, apprenticeships, on-the-job training?
- **Partnerships essential** – Continue existing partnerships in both private and public sectors—we're all the same boat. I don't think there's anything unique as we're all facing the same issues. I don't have an answer—but we need to work together.

**“I don't have an answer—  
but we need to work together.”**