Chester County Public Transportation Plan

An element to Landscapes2—Chester County Comprehensive Policy Plan

COUNTY OF CHESTER
COMMONWEALTH OF PENNSYLVANIA
RESOLUTION 33-14

WHEREAS, Chester County continues to experience a sprawl development pattern that consumes vast amounts of land and exacerbates traffic congestion; and

WHEREAS, this sprawl pattern contributes to the escalating use of the automobile as the primary means of transportation in the County; and

WHEREAS, the 2014 Chester County Commissioners' Priorities and Goals states as its primary Transportation goal: "Enhance access to and use of transportation systems to reduce traffic congestion"; and

WHEREAS, in order to achieve this goal, the County will need to provide additional options and/or enhanced services to attract more 'choice' riders into the public transportation system; and

WHEREAS, pursuant to Act 247, the Pennsylvania Municipalities Planning Code, the Chester County Planning Commission has prepared a Public Transportation Plan to serve as an amendment to Landscapes2, the County's long-range comprehensive plan; and

WHEREAS, the plan defines a bold and ambitious strategy for public transportation that will redefine the commuter preferences, facilities, and experiences for Chester County residents and workers over the next 25 years.

NOW, THEREFORE, be it resolved that on the 8 of July, 2014, the Board of County Commissioners of Chester County adopts the Chester County Public Transportation Plan as an amendment to the comprehensive plan, Landscapes2, as recommended by the Chester County Planning Commission.

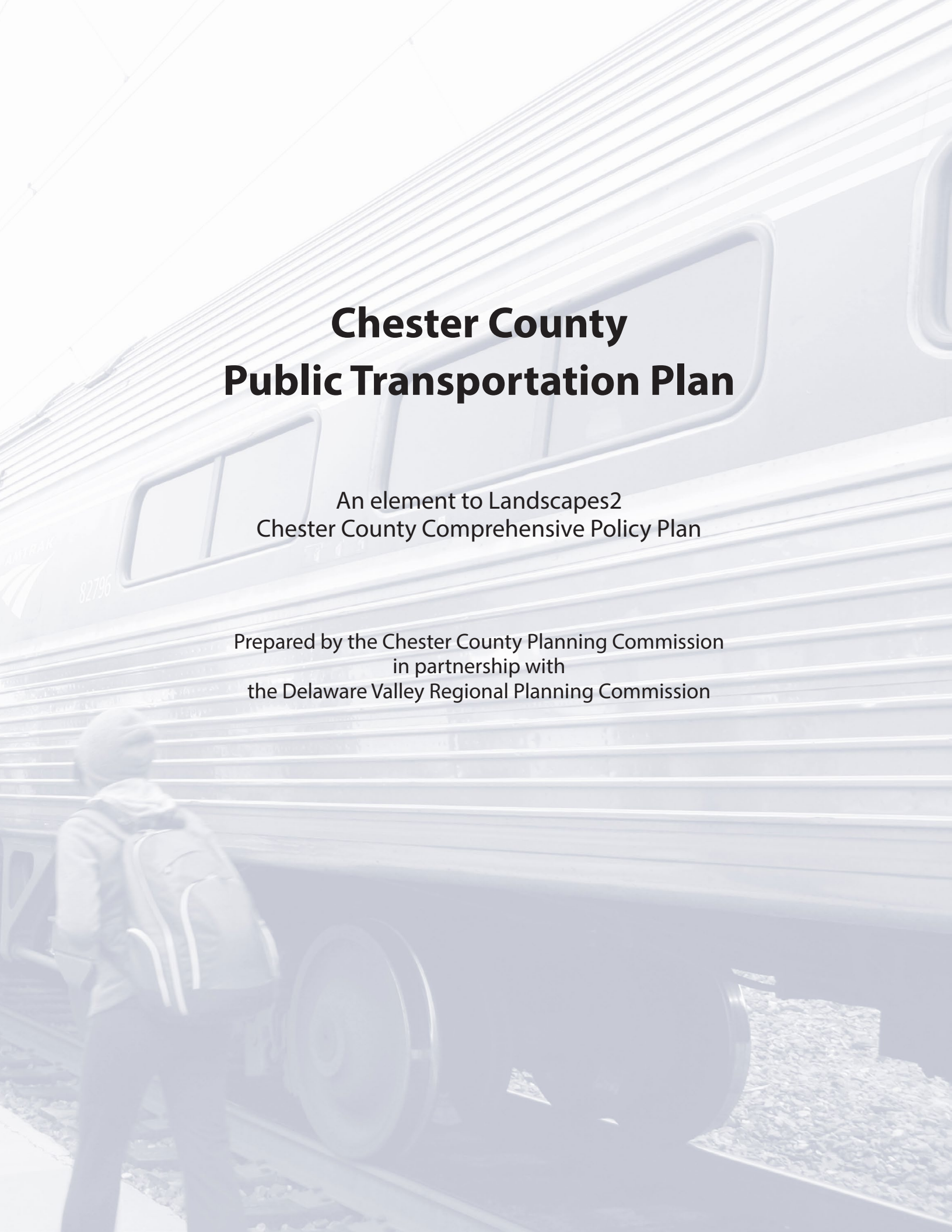
Ryan Costello, Chairman

Kathi Cozzone, Commissioner

Terence Farrell, Commissioner

ATTEST:

Janelle Swab
Chief Clerk



Chester County Public Transportation Plan

An element to Landscapes2
Chester County Comprehensive Policy Plan

Prepared by the Chester County Planning Commission
in partnership with
the Delaware Valley Regional Planning Commission

Chester County Board of Commissioners

Ryan Costello
Kathi Cozzone
Terence Farrell

This plan was developed as part of a two-year effort in partnership with the Delaware Valley Regional Planning Commission (DVRPC). To assist with the plan development, two committees were formed—one Technical, and one Policy. The following are the agencies and organizations that participated in one or both of the Technical and Policy Committees and provided valuable guidance throughout the plan development:

Kevin Johnson, SEPTA Board

Cuyler Walker, SEPTA Board

John Calnan, SEPTA

Mark Cassel, SEPTA

Byron Comati, SEPTA

Catherine Smith, DART: Delaware Transit Corporation

Bernard Au, DART: Delaware Transit Corporation

Erica Weekley, Pottstown Area Rapid Transit

Gary Krapf, Krapf Buses

Anne Taylor, Krapf Buses

Tim Phelps, Transportation Management Association of Chester County

Mary Alice Springs, Transportation Management Association of Chester County

Rob Henry, Greater Valley Forge Transportation Management Association

Shayne Trimbell, Greater Valley Forge Transportation Management Association

Carolyn Comitta, West Chester Borough

Kirby Hudson, City of Coatesville

Gary Smith, Chester County Economic Development Council

Mike Grigalonis, Chester County Economic Development Council

Pat Bokovitz, Chester County Department of Community Development

Dolores Colligan, Chester County Department of Community Development

Greg Krykewycz, Delaware Valley Regional Planning Commission

Josh Rocks, Delaware Valley Regional Planning Commission

**Chester County Planning Commission members that served on committees*

Chester County Planning Commission

Matthew Hammond, P.E., Chairman*

Dr. Douglas Fasick, Vice Chairman

Daniel DiMucci, RLA, ASLA*

Judy L. DiFilippo

Kevin C. Kerr*

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E. Martin Shane*

Joseph J. Tarantino

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Graphics Specialist

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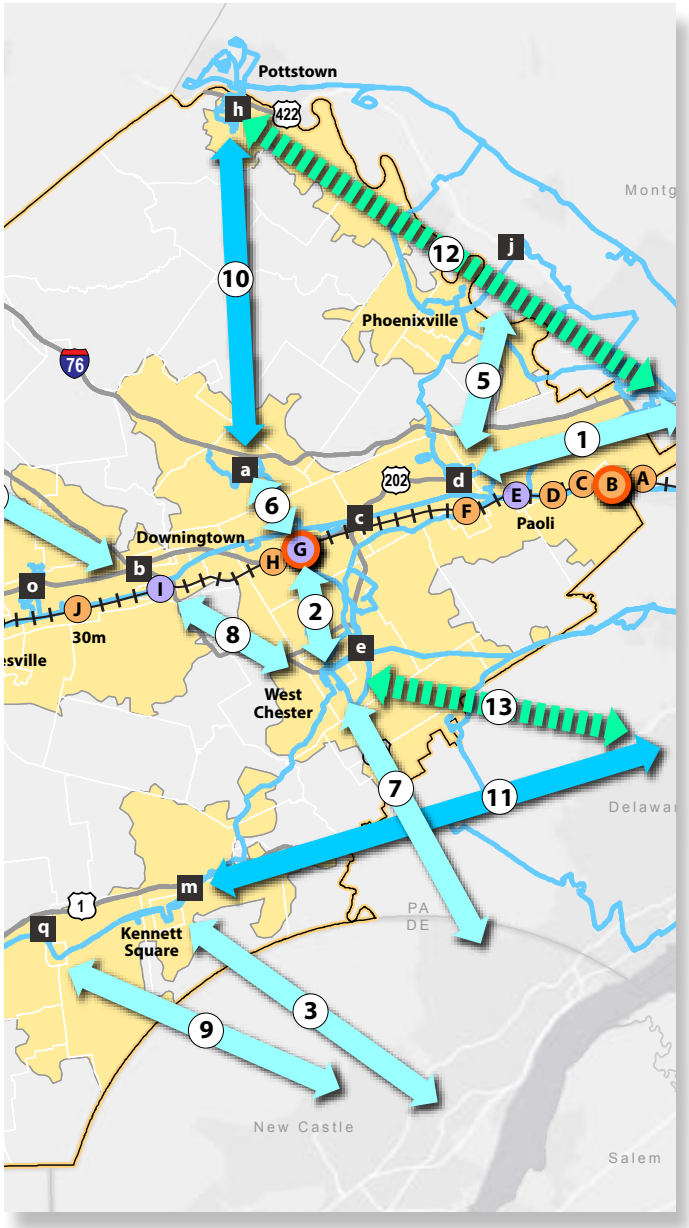
Summary of the plan




West Chester Transportation Cen
SEPTA
92 KING OF PRUSSIA
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SEPTA

Summary of the plan

Redefining transit

The purpose of this document is to develop a bold and ambitious plan for public transportation that will redefine the commuter preferences, facilities, and experiences for Chester County residents and workers over the next 25 years.

This plan examines and identifies the public transportation needs of Chester County residents in concert with the projected population and employment figures that will necessitate a shift in the way these services are delivered in Chester County. Upon adoption by the Board of County Commissioners, this document will serve as an element to Landscapes2, Chester County's Comprehensive Policy Plan.

Chester County's land use patterns and transportation system dictate reliance on an automobile. However, that way of thinking will need to be revisited in order for the county to attract new residents and workers and to foster strong sustainable economic development.

Chester County's strategic plan—managing for results

The 2014 Chester County Board of Commissioners' Priorities and Goals states the following as its primary transportation goal: "Enhance access to and use of transportation systems to reduce traffic congestion." To do this, the commissioners established the following 'Create Transportation Choices' objective:

> *"By 2019, there will be improved transportation choices as expressed by a 15% increase of residents using means other than a single occupant vehicle (such as walking, biking, carpooling, or transit) for transportation to work."*

This presents a significant challenge in the realm of public transportation because historically public transportation has maintained a steady mode share of approximately 3% for the last 30+ years, as shown in the graph on the next page.

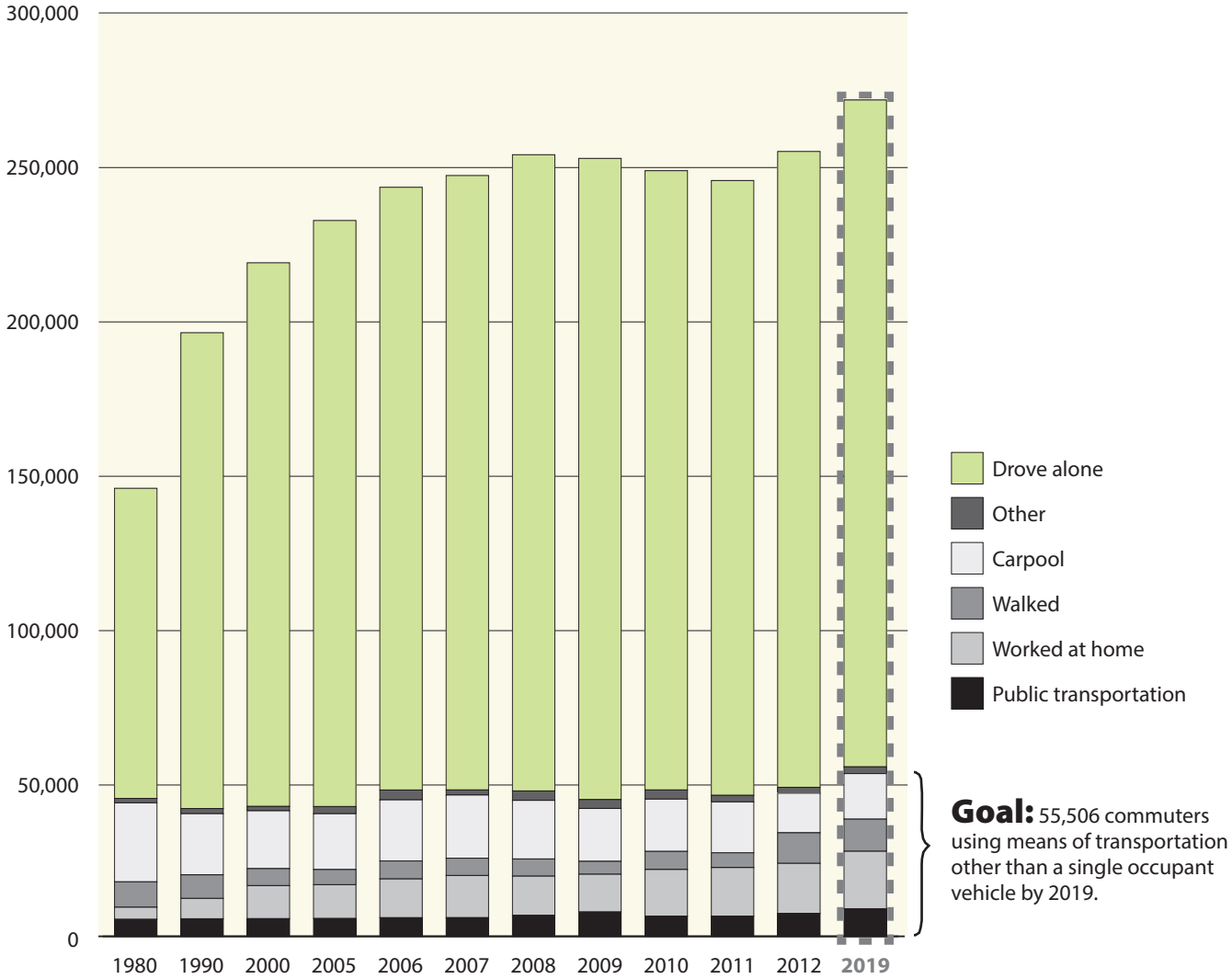
In order to achieve this goal, the county will need to provide additional options and/or enhanced services to attract more 'choice' riders into the public transportation system. In 2012, a total of 48,266 residents used alternate means to work. Fulfilling this goal would require 55,506 to commute by alternate means by 2019, or an additional 7,240 commuters.

The commuting challenge

Of approximately 315,000 daily commuters that either live or work in Chester County, less than 8,000 utilize public transportation for a rate of about 2.5%. The flow between Chester County and the City of Philadelphia includes 16,280 daily commuters with 4,645 of those using public transit, or 29%. This figure can mostly be attributed to the regional rail ridership along SEPTA's Paoli/Thorndale line and constitutes the vast majority of public transportation use in and out of Chester County.

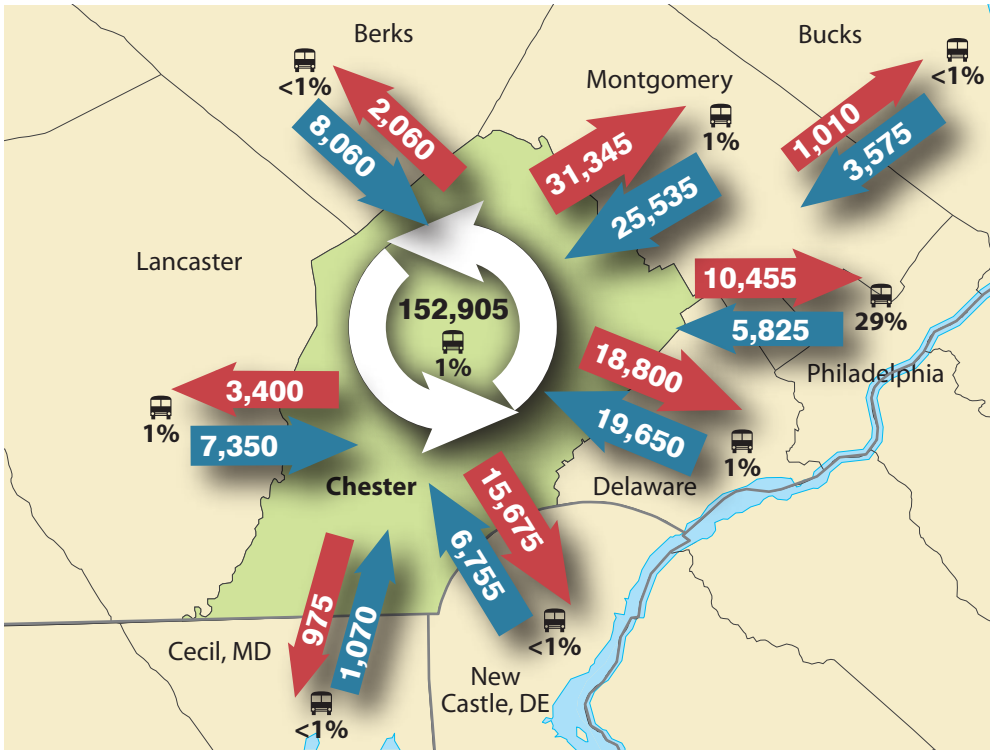
Within Chester County, less than 1% use transit. Between Chester and Montgomery Counties (the largest commuter connection) less than 2% use transit. This is a byproduct of both our land use and transportation system design. Changing these trends will require a coordinated effort on both fronts.

Means to work—Chester County residents (1980–2012)



Source: U.S. Census Bureau, 1990, 2000; American Community Survey, 2002–2012. Graphic by CCPC.

Commute flows and percent using public transportation between Chester County and adjacent counties



Data Source: 2006-2008 ACS CTPP. Graphic by CCPC.

The land use challenge

The photo below of the Great Valley Corporate Center illustrates the automobile centric land use and transportation system patterns evident in many land developments throughout the county. Main entrances to buildings are found behind the buildings, facing parking lots, and away from street frontages. Moreover, the streets lack the pedestrian facilities necessary to provide connections to the transit system.

Aerial photo of the Great Valley Corporate Center at the intersection of Morehall Road (PA 29) and the Great Valley Parkway.

A paradigm shift

In the last decade, driving rates in the U.S. have been declining with more emphasis toward the use of public transportation. This shift in mindset from an automobile centric society toward heavier use of public transportation is being driven, in part, by the millennial generation. The following is an excerpt from the American Public Transportation Association (APTA) report entitled *Millennials & Mobility: Understanding the Millennial Mindset:*

> *"The Millennial Generation, those born between 1982 and 2003, is the largest and most diverse generation in American history. According to Millennial Makeover, a seminal volume on generational change, 40% of Millennials are African American, Latino, Asian or racially-mixed compared to only 25% of the next two older generations.*
>
> *Millennials are also living through times of economic dislocation and technological change. History shows that the combination of technological change, such as the advent of smartphone technology, television, or radio; combined with macro forces that shape behaviors, such as the Great Recession, the Great Depression, or World War II can lead to societal change that can last generations.*
>
> *It is in this context that millennials, with their relative propensity for urban lifestyle components (whether they live in cities or in suburbs), dexterity with technology, while starting careers during economically constrained times can leave a lasting impact on society. In fact, they are already driving trends."*

Cover page courtesy of APTA.

The subsequent trend in the real estate market is now moving away from the traditional suburban development and towards the revitalization of our urban centers. This dynamic fits well with the Livable Landscapes growth areas as defined by Landscapes2 where the urban landscape, suburban landscape, and suburban centers can best accommodate future growth and where the county encourages future development to be concentrated.

Public transportation ridership—nationwide

On the national scale, the percentage of people selecting public transportation as their mode of choice is on the rise. The following is an excerpt from an article on the national growth of public transit ridership published by the APTA:

> *Ridership on buses, trains, and subways in 2013 was the highest in 57 years. The growth in transit ridership continued a 20-year trend attributed to higher gasoline prices, a shift by young adults away from automobiles, increased use of mobile technology, and the increasing allure of urban areas.*
>
> *"There is a fundamental shift going on in the way we move about our communities. People in record numbers are demanding more public transit services and communities are benefiting with strong economic growth," said APTA President and CEO Michael Melaniphy.*

Since 1995 public transit ridership is up 37.2 percent, outpacing population growth, which is up 20.3 percent, and vehicle miles traveled (VMT), which is up 22.7 percent. In 2013, riders made 10.7 billion trips on U.S. public transit systems, up 1.1 percent from 2012. That was the most since 1956.

"Access to public transportation matters," continued Melaniphy. "Community leaders know that public transportation investment drives community growth and economic revitalization."

Locally, SEPTA has had a steady increase in ridership over the last ten years. The trend by all accounts is that ridership will continue to grow and that any increases in capacity of the transit system will quickly be met with additional ridership.

Existing services—a legacy system

Bus service includes a total of 16 bus routes operated by four different service providers, including: SEPTA, TMACC, Krapf, and PART. Most of the fixed route bus services are long, slow, and/or circuitous. They do not offer express services and have limited user amenities such as internet access and comfortable seating. There is limited coordination with existing rail services with the exception of SEPTA's 204, 205 and 206 routes and average headways of 30 to 60 minutes do not provide very frequent service.

Passenger rail services are found strictly along the Keystone Corridor as it runs east-west through the county paralleling the US Route 30 corridor. Service providers include SEPTA and Amtrak with a total of 12 rail stations providing access to those services.

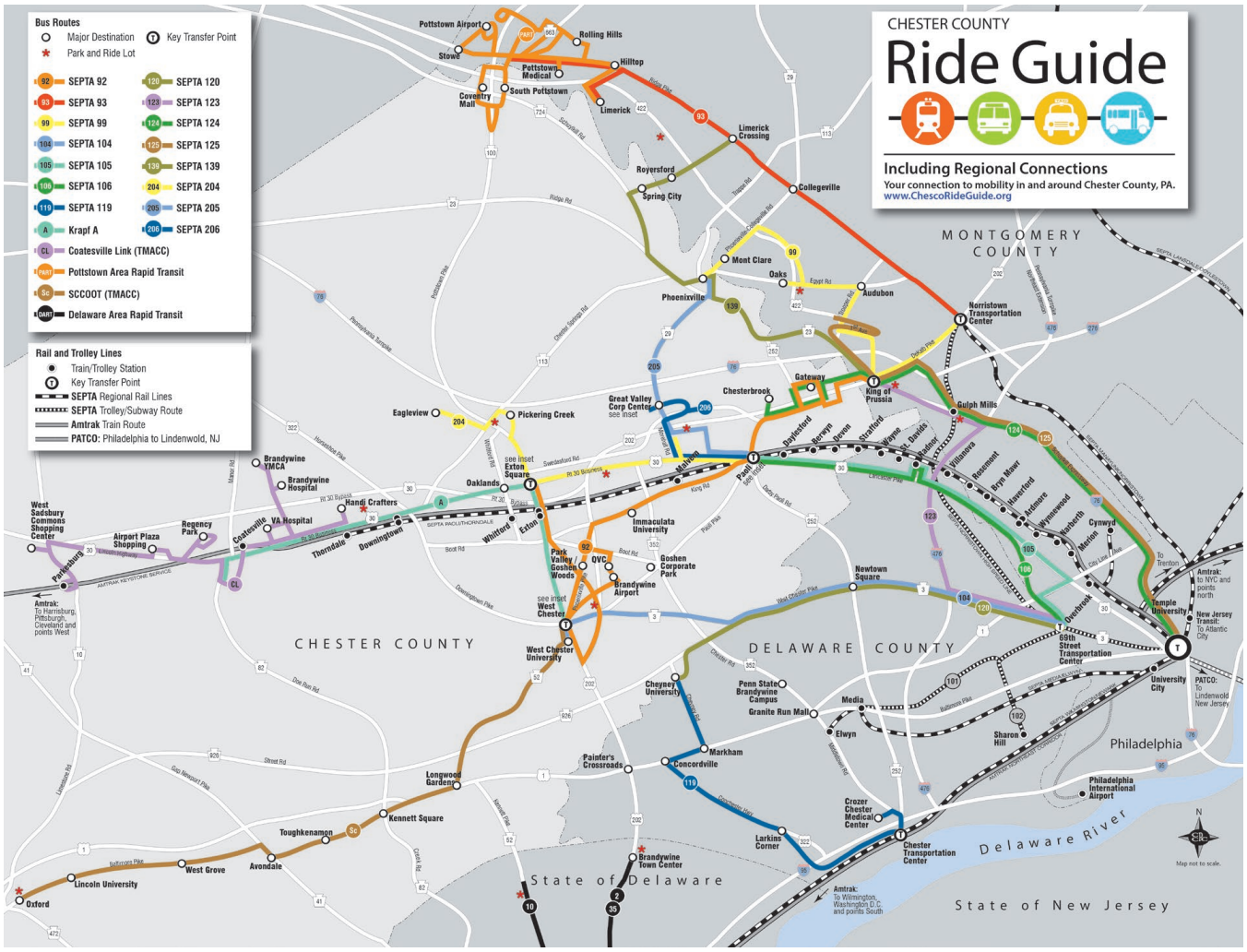
Passengers boarding the Paoli/Thorndale line at Paoli Train Station.

The combination of bus and rail services generate approximately 7,000 transit vehicle miles (actual service route length multiplied by the number of daily trips in operation), and carry 18,300 riders each weekday in Chester County.

The annual public subsidies (full operating costs minus farebox revenue generated) provided by the federal, state, and county governments to operate these services (including Amtrak) are approximately $26.4M ($6.9M bus–$19.5M rail).

Additionally, there are seven park & ride facilities located near major interchanges throughout the county.

Below is an overview map of the existing public transportation services in Chester County. For more information on these routes, please visit the Chester County Ride Guide website at www.ChescoRideGuide.org.



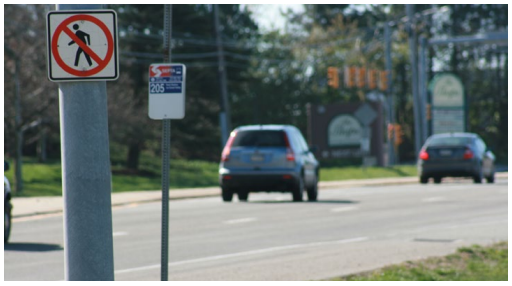
Existing transit services map as provided by the Chester County Ride Guide.

Critical issues

The following have been identified as the most critical issues to be addressed with this plan:

- **Parking availability at stations and transportation centers:** What is the parking availability now, and what is the potential to provide for additional parking?
- **Bus/rail connectivity:** Where are the opportunities to improve bus/rail coordination?
- **Service quality/user amenities:** What are the current user amenities provided on existing bus routes/rail service in Chester County, and what new amenities could be provided and at what cost?
- **Service reliability:** What can be done to make the services provided more reliable, and would more capital investment, i.e. more bus routes result in better service reliability?
- **First mile/last mile connections:** The lack of first mile (home to transit) and last mile (transit to destination) connections creates a significant barrier to public transportation use in Chester County. What opportunities are there to provide these missing connections?
- **Active transportation (bicycle/pedestrian) connections:** How can we better connect bicyclists and pedestrians to the transit system?
- **Fare consistency/coordination between providers:** What is the potential to provide for a universal fare payment system between the multiple service providers operating in the county?
- **Land use at municipal level:** What is the current state of municipal ordinances relative to providing transit facilities within the county? Are there any model ordinance revisions that may be promoted for adoption to better equip growth area municipalities for transit facility implementation?
- **Service gaps/new service requests:** How can additional services be provided to fill the current service gaps, and what is the feasibility of providing the new service requests outlined through the public workshops?
- **Sustainability/efficiency:** What role should sustainable practices play within the future public transit system?
- **Public outreach/marketing of existing services:** How can the public be better informed regarding not only the public transit system, but also its benefits?
- **Funding availability and reliability:** To what extent should the public realm continue to provide funding and subsidize public transportation?
- **Public/private partnerships:** How could the private sector be utilized to account for the lack of available public investment?

Active transportation (bicycle/pedestrian) connections.



Municipal land use.

First mile/last mile connections.

Parking availability at rail stations and transportation centers.

Service quality/user amenities.

Framework of the plan

In order to structure the critical issues identified above into a strategic planning framework, they were categorized into one of the following three main subject areas:

SYSTEM

Includes everything that is operating or 'rolling' such as bus routes, commuter rail services, etc.

SYSTEM issues:

- Bus/rail connectivity
- First mile/last mile connections
- Service gaps/new service requests
- Service reliability (operator perspective)
- Sustainability/efficiency

ENVIRONMENT

Includes all of the points of access to the system, including rail stations, transportation centers, bus stops, etc.

ENVIRONMENT issues:

- Parking availability at stations, transportation centers
- Active transportation (bicycle/pedestrian) connections
- Municipal land use

EXPERIENCE

Includes everyone that utilizes the public transportation system.

EXPERIENCE issues:

- Service quality/user amenities
- Service reliability (user perspective)
- Fare consistency/coordination between providers
- Public outreach/marketing of existing services

While some issues may apply to more than one or can be relative to all three, the issues were placed into their most applicable category. The issues of 'funding availability and reliability' as well as 'public/private partnerships' are global issues that affect all categories.

Vision, goals, objectives and performance benchmarks

The plan's overall vision is provided by Landscapes2 as its primary objective concerning public transportation:

> *"Provide an affordable, reliable, and accessible public transportation network to offer mobility, encourage favorable land use patterns, sustain the environment, and alleviate congestion within designated growth areas."*

Goals and objectives have been established for each of the three main subject areas of SYSTEM, ENVIRONMENT, and EXPERIENCE.

In addition to the baseline analysis and mapping, a series of analyses revolving around the critical issues was performed. These analyses established both a baseline summary of existing characteristics and set a series of performance benchmarks to be reviewed over the next 25–30 years at the interim planning horizons of Short Term–2020, Mid Term–2030, and Long Term–2040.

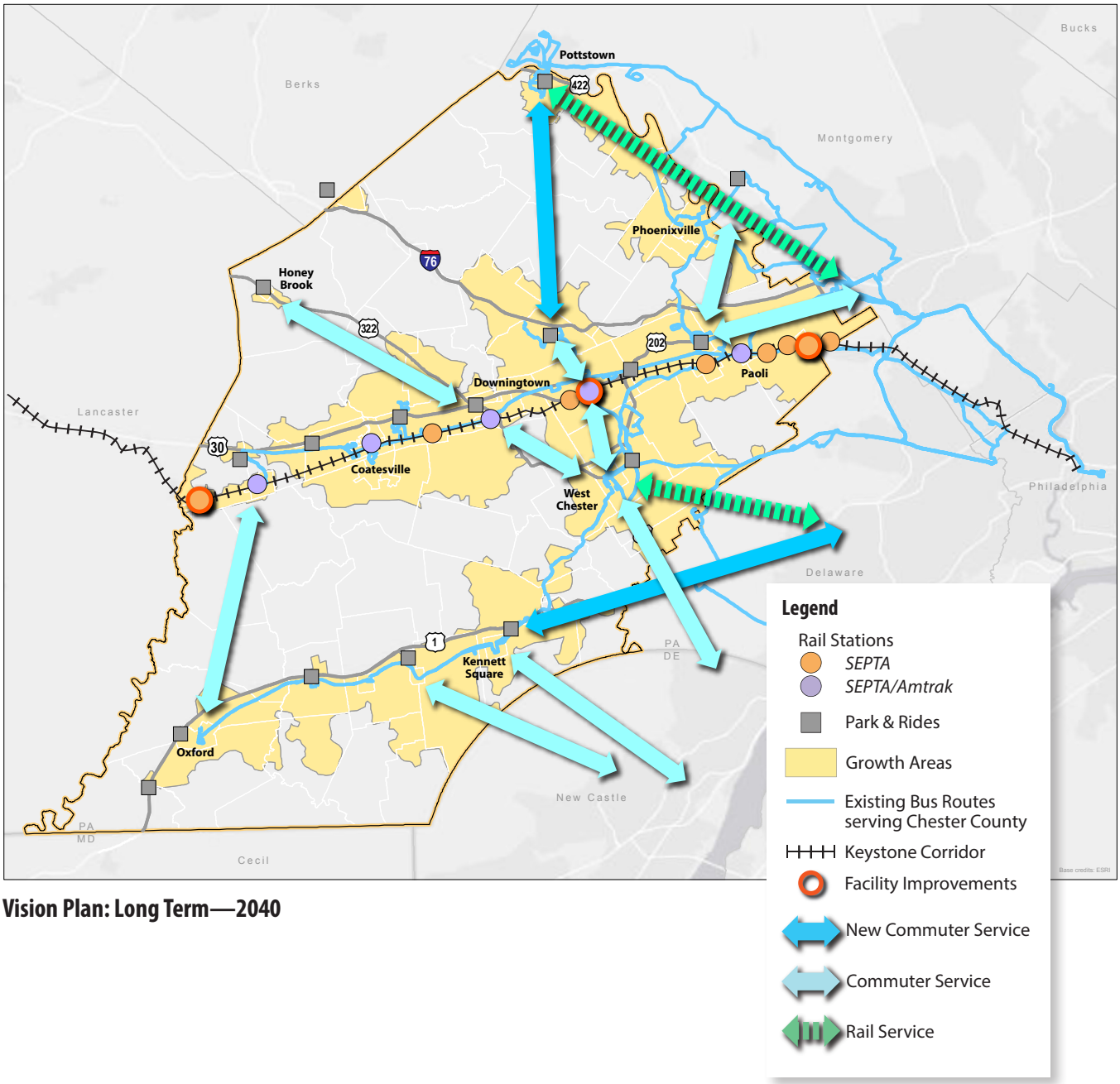
For more detailed information regarding the analyses performed and results, please refer to the following SYSTEM, ENVIRONMENT and/or EXPERIENCE chapters of this plan.

It should be noted that performance benchmarks are intended to be a guidance system towards desired results and will be used to identify potential issues that may be impacting those measures beyond what is understood for any specific fixed route service. These performance benchmarks are not intended to be punitive, meaning that the inability of any one element of the transit system to meet these measures does not constitute absolute failure. There are simply too many factors associated with each and every one of the existing services and facilities (both bus and rail) to provide for a 'one size fits all' recommendation and/or performance measure.

Vision Plan: Long Term—2040

The 25-year plan envisions the extension of hourly service to a new Atglen rail station and local service to Thorndale. New commuter services include the Route 100 corridor between Pottstown and Eagle/Exton, and along the US 1 corridor into Delaware County.

This horizon envisions the return of commuter rail service to the Schuylkill River valley communities and to the Borough of West Chester. Both projects currently face similar obstacles requiring significant capital improvements and further modeling of projected ridership. Further technical assessment will be required to refine cost estimates, ridership, and cost/benefit of these long term services.



Vision Plan: Long Term—2040

SYSTEM

Goal

Develop a reliable, consistent, flexible and efficient system to maximize transit service coverage and provide practical transit options for Chester County residents, workers and visitors.

Objectives

1. Increase the number of bus/rail connections at key rail stations to expand transit system coverage.
2. Foster public/private partnerships to provide for the last mile connections between rail stations, commercial/employment centers, and park & ride lots.
3. Provide efficient routing to maximize ridership, minimize travel times, and increase reliability.
4. Utilize alternative energy vehicles where feasible to maximize fleet efficiency and minimize local greenhouse gas emissions.

Recommendations

The following are general recommendations specific to the critical issues associated with the SYSTEM. Please refer to the SYSTEM chapter for additional detail.

Bus/rail connectivity

- Coordinate new commuter services with services at rail stations and transportation centers for better connectivity.

First mile/last mile connections

- Promote the use of carpooling, vanpooling, and private shuttle services.
- Provide car shares/bike shares at or near rail stations.

Service reliability

- Plan for shorter routes with fewer stops to achieve better on-time performance.
- Implement traffic signal prioritization in major transit corridors where feasible.
- Provide real-time status/traveler information utilizing new communications technology.

Category	Existing conditions	Performance benchmarks		
	2014	Vision 2020	Vision 2030	Vision 2040
SYSTEM				
Service quality/reliability				
Bus routes	16	as required to meet demand, potentially more		
Average on-time performance	78%	80.0% →	82.5% →	85.0%

ENVIRONMENT

Goal

Provide a first class, barrier-free and multimodal means of transport from trip origin to trip destination.

Objectives

1. Maximize available on site parking for transit users at all existing and proposed rail stations and transportation centers.
2. Identify shared use opportunities with existing commercial center or other large parking facilities to provide additional parking for transit and/or park-n-ride users.
3. Provide pedestrian and bicycle connections to and from all transit stop locations, rail stations, transportation centers, employment centers and commercial centers.
4. Encourage local growth area municipalities and engage developers in the creation and adoption of ordinances to provide for the integral development of transit related facilities and/or land uses.
5. Support public/private partnerships as a means to fund necessary capital improvements.
6. Improve communications between municipalities and the business community towards providing better transit related facilities.

Recommendations

The following are general recommendations specific to the critical issues associated with the ENVIRONMENT. Please refer to the ENVIRONMENT chapter for additional detail.

Parking availability at rail stations

- Expand surface parking at all stations where feasible.
- Maximize shared use opportunities adjacent to rail stations.
- Develop structure parking where feasible.

Active transportation (bike/ped) connections

- Focus on providing pedestrian connections and shelters at heavily used bus stops.
- Provide ample secure bicycle parking at rail stations/transportation centers.

Municipal land use

- Work with local municipalities to ensure future development is transit oriented.

Bus shelters

- Develop a maintenance agreement model(s) for maintaining bus shelter facilities.

Park & ride facilities

- Develop a maintenance agreement model(s) for maintaining park & ride facilities.

Category	Existing conditions 2014	Performance benchmarks Vision 2020	Vision 2030	Vision 2040
ENVIRONMENT				
Parking availability				
Rail stations	12			13
Rail stations with more than 90% utilization	7	all stations 80–90%		0
Total spaces—all stations	3,305			6,000
Parking utilization to rail boardings ratio	55%	55% target for all stations		
Total bicycle parking spaces at rail stations	48	more—based on % of ridership		
Bus stops				
Bus stops	847	as required	as required	as required
Percent of bus stops with more than 5 boardings, with shelters	23% (27/116)		75%	
Percent of bus stops with shelters	6% (50)	focus on those with higher boardings		
Percent of bus stops with pedestrian connections	46% (390)			90–100%
Land use				
Percent of growth area municipalities (54) served by transit	76% (41)			85% (46)
Percent of growth area municipalities (54) served by transit, with transit related ordinances	56% (23)			100% (46)

EXPERIENCE

Goal

Improve the convenience, reliability, and safety for all transit users.

Objectives

1. Provide user amenities such as internet access and comfortable seating for long distance fixed bus routes and rail service.
2. Decrease highway congestion by increasing 'choice' ridership.
3. Utilize new technologies to provide transit users with best possible status information regarding current fixed bus routes, rail services and/or facilities.
4. Adopt a singular system for fare collection between service providers.
5. Create a public outreach campaign that enhances public awareness for and improves the perception of public transit services.
6. Develop new travel training models to get transit information closer to individual users.

Recommendations

The following are general recommendations specific to the critical issues associated with the EXPERIENCE. Please refer to the EXPERIENCE chapter for additional detail.

User amenities

- Provide real time status info at all rail stations & transportation centers, and through digital apps.
- Institute an electronic payment system for all service providers in the county.
- Develop a public outreach program to increase public awareness, provide user training, and promote the use of the transit system.
- Create a citizens advisory panel to monitor and report on transit experience related issues.

Category	Existing conditions 2014	Performance benchmarks		
		Vision 2020	Vision 2030	Vision 2040
EXPERIENCE				
User amenities				
Service providers	5	as required	as required	as required
Service providers with real time info	2	→	→	All
Service providers with cashless payment	2	→	→	All

Measuring our success

Plan metrics have been established for measuring its success. The chart below is both a baseline summary of existing characteristics and a series of performance benchmarks to be reviewed at the interim planning horizons of Short Term–2020, Mid Term–2030, and Long Term–2040.

Category	Existing conditions 2014	Performance benchmarks Vision 2020	Vision 2030	Vision 2040
SYSTEM				
Service quality/reliability				
Bus routes	16	as required to meet demand, potentially more		
Average on-time performance	78%	80.0% →	82.5% →	85.0%
ENVIRONMENT				
Parking availability				
Rail stations	12	→		13
Rail stations with more than 90% utilization	7	all stations 80–90% →		0
Total spaces—all stations	3,305	→		6,000
Parking utilization to rail boardings ratio	55%	55% target for all stations		
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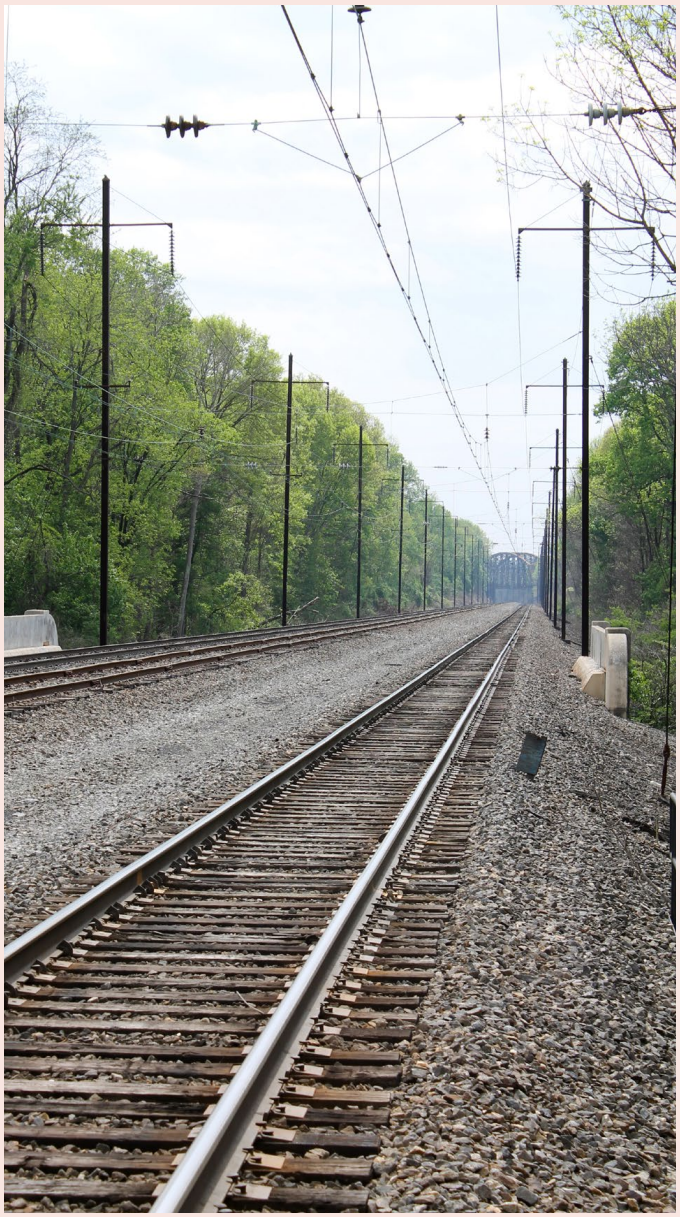
Percent of bus stops with shelters	6% (50)	focus on those with higher boardings		
Percent of bus stops with pedestrian connections	46% (390)	→		90–100%
Land use				
Percent of growth area municipalities (54) served by transit	76% (41)	→		85% (46)
Percent of growth area municipalities (54) served by transit, with transit related ordinances	56% (23)	→		100% (46)
EXPERIENCE				
User amenities				
Service providers	5	as required	as required	as required
Service providers with real time info	2	→		All
Service providers with cashless payment	2	→		All
OVERALL				
Ridership				
Annual subsidy—bus	$6,904,735	to be determined with future scenarios		
Annual subsidy—rail	$19,458,450			
Annual ridership—bus	1,440,950	increase →		
Annual ridership—rail	3,310,965			
Subsidy per rider—bus	$4.79	to be determined with future scenarios		
Subsidy per rider—rail	$5.88			
Mode share				
Percent of workers using public transit	2.9%	3%	4%	5%
Private shuttle ridership	na	increase →		

Chapter 2
SYSTEM



The SYSTEM plan addresses everything that is operating or 'rolling' such as bus routes and commuter rail services.

The SYSTEM goal is to develop a reliable, consistent, flexible and efficient system to maximize transit service coverage and provide practical transit options for Chester County residents, workers and visitors.

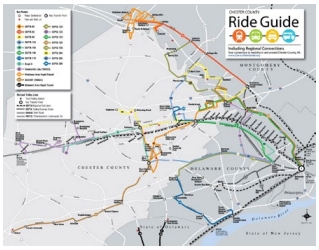
Recommendations contained herein are to address the following plan objectives:

1. Increase the number of bus/rail connections at key rail stations to expand transit system coverage.
2. Foster public/private partnerships to provide for the last mile connections between rail stations, commercial/employment centers, and park & ride lots.
3. Provide efficient routing to maximize ridership, minimize travel times, and increase reliability.
4. Utilize alternative energy vehicles where feasible to maximize fleet efficiency and minimize local greenhouse gas emissions.

System overview

Bus transportation is provided by four separate service providers in Chester County, including the Southeastern Pennsylvania Transportation Authority (SEPTA), Transportation Management Association of Chester County (TMACC), Krapf, and Pottstown Area Rapid Transit (PART). Rail service is provided by both SEPTA and Amtrak along the Keystone Corridor. The combination of bus and rail services generate approximately 7,000 transit vehicle miles (actual service route length multiplied by the number of daily trips in operation), and carry 18,300 riders each weekday in Chester County.

The annual public subsidies (full operating costs minus farebox revenue generated) provided by the federal, state, and county governments to operate these services (including Amtrak) are approximately $26.4M ($6.9M bus–$19.5M rail).



Existing transit services map as provided by the Chester County Ride Guide. *See larger map on page 14.*

Bus services

The following are the existing fixed route bus services operating in Chester County:

SEPTA Routes

- **SEPTA 92:** Exton to King of Prussia serving West Chester and Paoli–25 daily trips.
- **SEPTA 99:** Phoenixville to Norristown Transportation Center serving King of Prussia–64 daily trips.
- **SEPTA 104:** West Chester University to 69th Street Transportation Center serving Newtown Square–108 daily trips.
- **SEPTA 105:** Paoli to 69th Street Transportation Center serving Ardmore and Lankenau Medical Center–48 daily trips.
- **SEPTA 106:** Paoli and Ardmore to 69th Street Transportation Center serving Penn Wynne–33 daily trips.
- **SEPTA 119:** Cheyney University to Chester Transportation Center serving Marcus Hook–31 daily trips.
- **SEPTA 120:** Cheyney University to 69th Street Transportation Center serving Newtown Square–17 daily trips.
- **SEPTA 124:** Chesterbrook and King of Prussia to 13th and Market serving Center City–59 daily trips.
- **SEPTA 139:** Limerick to King of Prussia serving Royersford and Phoenixville–32 daily trips
- **SEPTA 204:** Eagleview to Paoli Station serving Lionville and Exton–30 daily trips.
- **SEPTA 205:** Phoenixville to Paoli Station serving Great Valley–18 daily trips.
- **SEPTA 206:** Great Valley Corporate Center to Paoli Station–27 daily trips.

TMACC Routes

- **Coatesville Link:** Coatesville to Parkesburg–22 daily trips.
- **SCCOOT:** Oxford to Kennett Square with limited service to West Chester–20 daily trips.

Krapf Buses

- **Route A:** serving Coatesville, Thorndale, Downingtown, Exton Square Mall and West Chester–42 daily trips.

Pottstown Area Rapid Transit (PART)

- **Coventry Mall:** from Pottstown serving Town Square Plaza and Coventry Mall–18 daily trips.

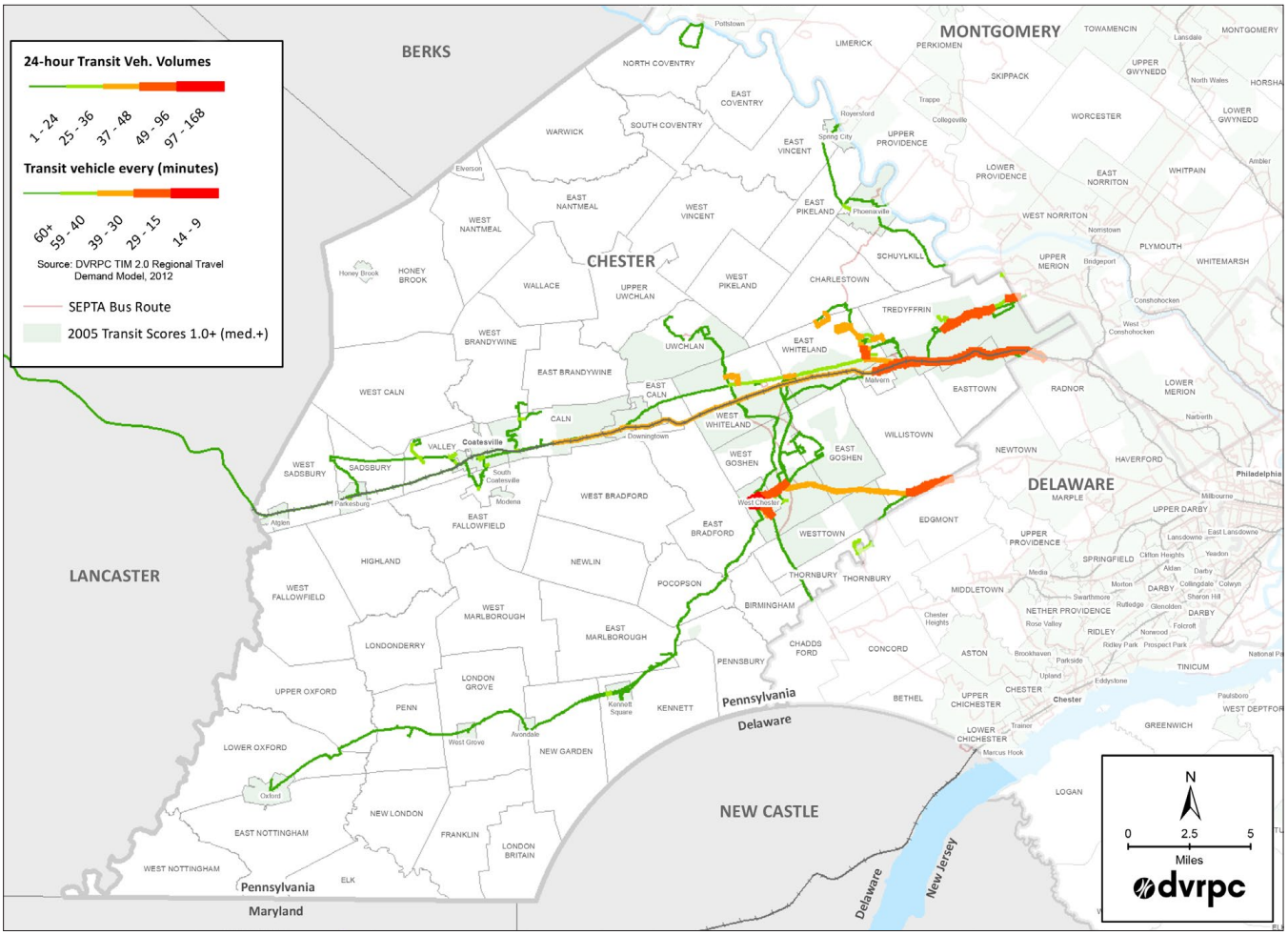
Most of these fixed route bus services are long and occasionally circuitous. They do not offer express services and have few associated user amenities such as internet access and comfortable seating. There is limited coordination with existing rail services with the exception of SEPTA's 204, 205 and 206 routes and average headways of 30 to 60 minutes do not provide very frequent service. The exhibit below illustrates the frequencies of bus and rail services in Chester County.

Rail services

There are two operators providing rail service in Chester County through the Keystone Corridor—SEPTA and Amtrak:

- **SEPTA** operates the Paoli/Thorndale regional rail providing hourly service as far west as Thorndale and local service (30 minute frequency) to Malvern with 76 daily trips. There is limited service to Thorndale on Saturdays and no Sunday service.
- **Amtrak** operates its Keystone Service between New York, NY and Harrisburg, PA with stops at five locations in Chester County and 28 daily trips.

Current transit service frequencies in Chester County



Source: DVRPC Phase I Technical Memorandum, Chester County Public Transportation Plan.

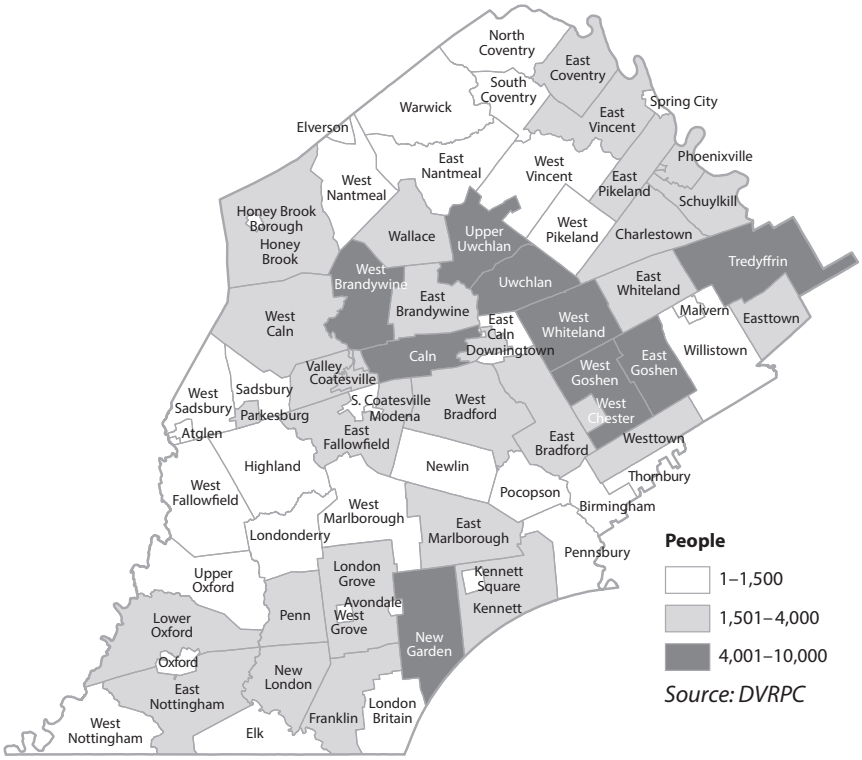
Population and employment forecasts

Population and jobs pose a direct impact on the demand for transit services. The population and employment forecasts were prepared by the Delaware Valley Regional Planning Commission (DVRPC) as part of *Connections 2040*, the region's long range transportation plan.

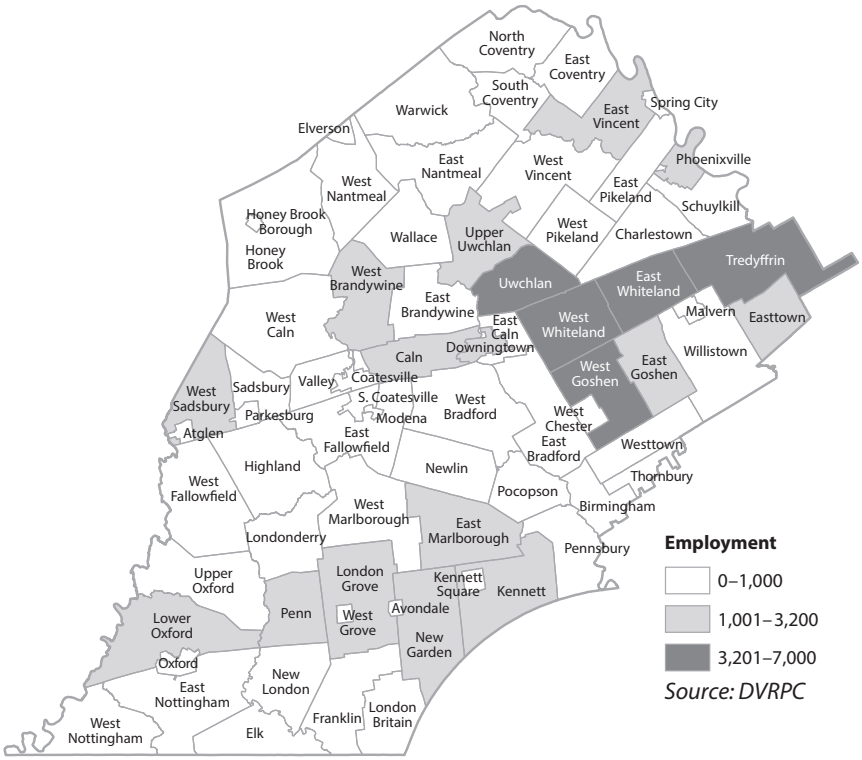
Chester County is projected to have the highest increase in both population growth (29.8%) and employment growth (26.0%) as compared to the regional average of 11.5% for population growth and 11.3% employment growth in the five southeastern Pennsylvania counties. Those percentages equate to an additional 148,000 residents and 76,000 employees over the next 30 years.

Within Chester County, population growth is forecast to occur along the major transportation corridors of US 202, US 30 and US 1. The heaviest concentration of employment growth is forecast for the Great Valley municipalities and those located along the PA 100 corridor between the PA Turnpike and the West Chester area.

According to *Connections 2040*, these changing demographics are mainly driven by the Baby Boomers generation (born between 1946 and 1964) who are either staying put in the suburbs or gravitating towards more developed communities as they get older, and the Millennials generation (born between 1982 and 2003) who tend to live in more dense and walkable communities, and are much less auto oriented and amenable to public transit.



Absolute population change by municipality: 2010–2040



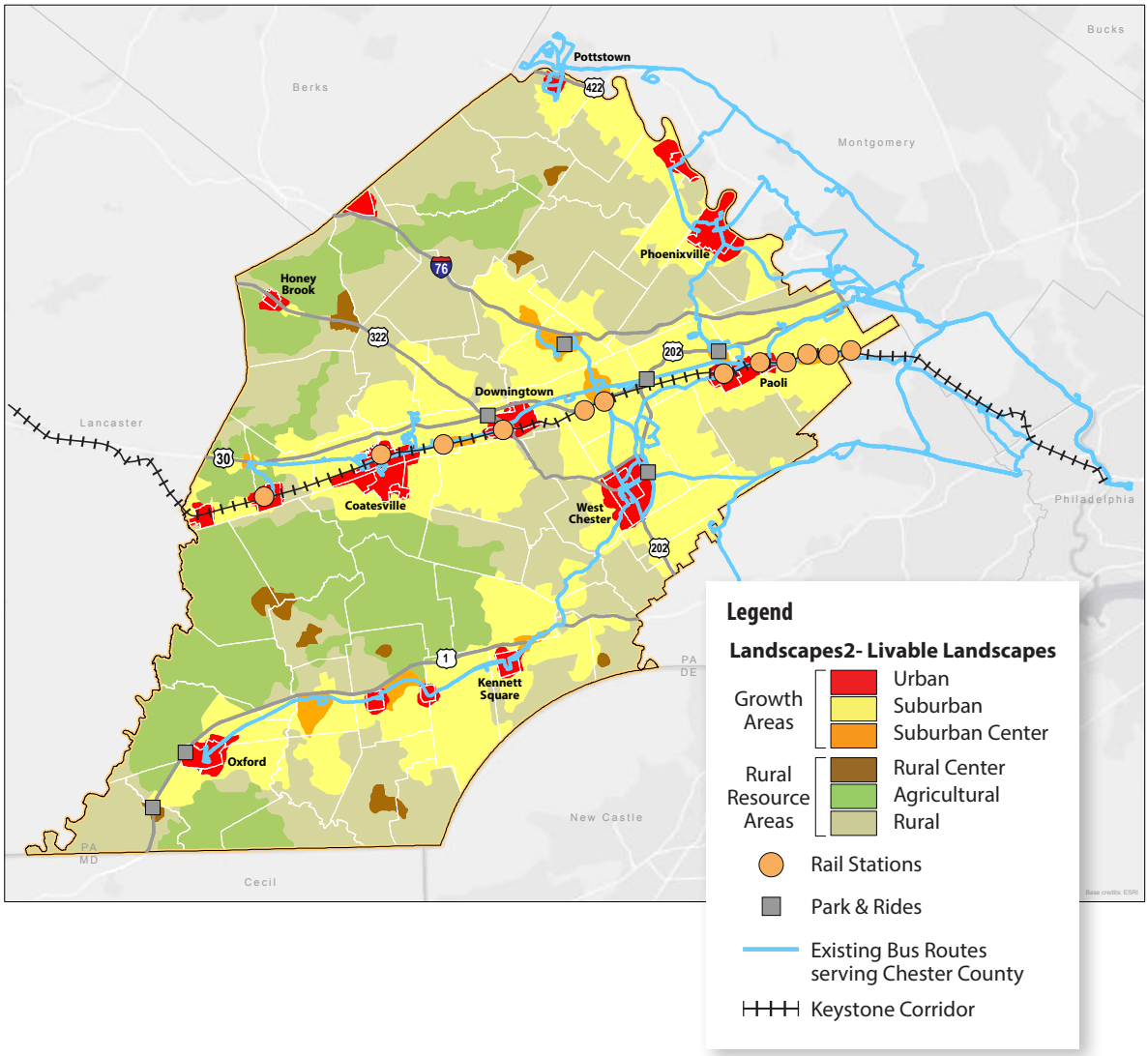
Absolute employment change by municipality: 2010–2040

Land use and transit relationship

There is a direct relationship between land use and transit service. The image below shows Chester County's existing public transit services as an overlay to the Landscapes2 Livable Landscapes map showing both growth and rural resource areas. This map exhibits a strong relationship between public transportation services and the more densely developed landscapes of urban, suburban, and suburban center.

In 2007, DVRPC prepared a report entitled *Creating a Regional Transit Score Protocol* to develop a means to identify where public transportation is most suitable to serve the population. This protocol consists of an equation utilizing population and employment densities and other socioeconomic factors that when combined provide an overall transit score that is used to identify not only where public transportation services would be viable from an operational standpoint, but also what may be the most appropriate mode of public transit (varying degrees of bus and rail service) to serve those areas. The 2007 report utilized projected demographics to prepare mapping based on the 2010 projections.

Landscapes2: Livable Landscapes and existing transit

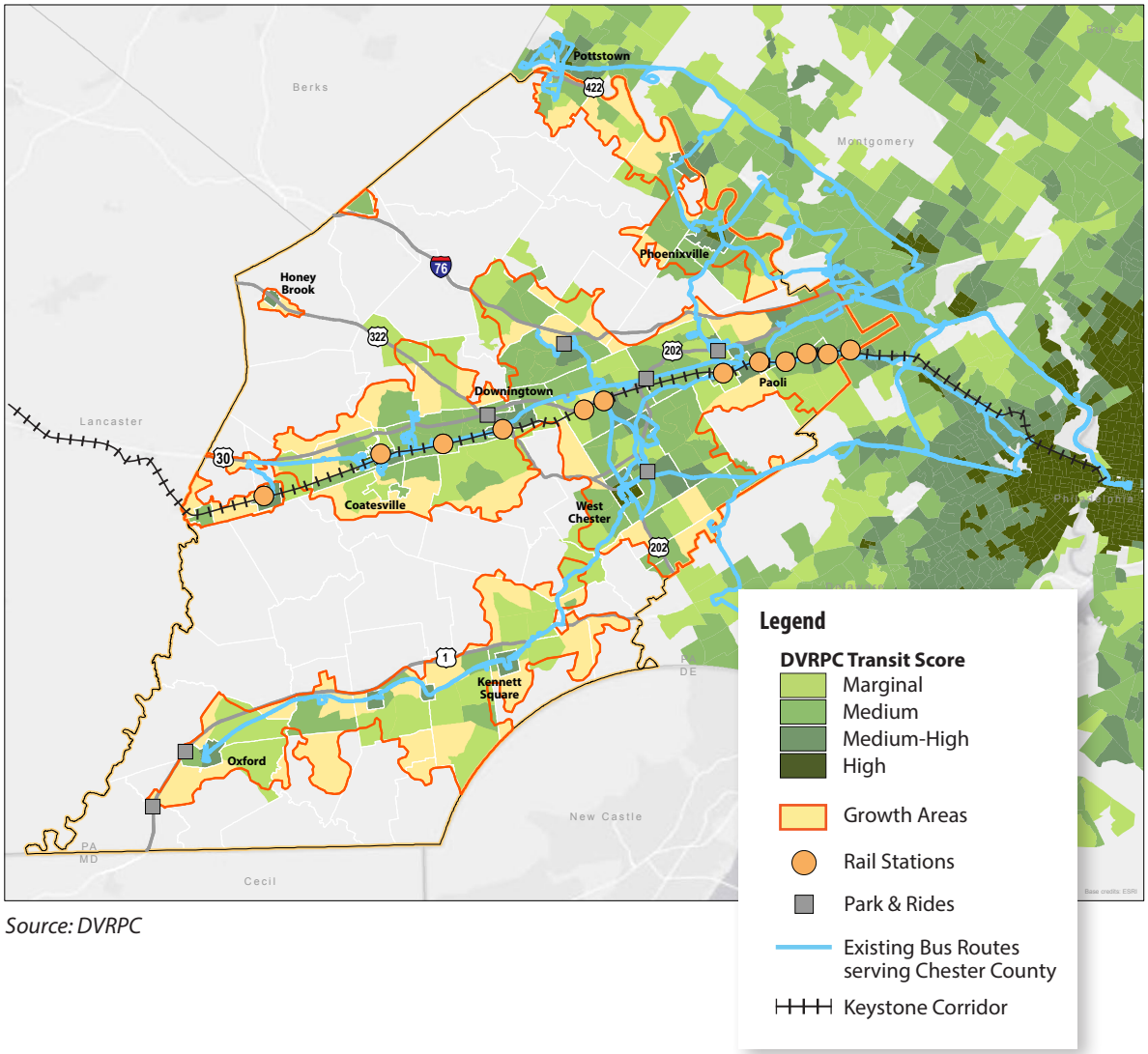


For this plan, population and employment projections were input into the protocol to generate a 2040 Transit Score shown in the exhibit below as an overlay to the Landscapes2/existing transit services mapping.

Scores of Medium–High and High serve as the general threshold for any form of rail service and/or enhanced bus service to be appropriate for any location. Within Chester County, scores of Medium–High are largely associated with the urban centers with the only score of High being associated with the Borough of West Chester. The remaining scores of Medium and Marginal correlate to the major transportation corridors and suburban landscapes and indicate that fixed route and/or local circulator/shuttle buses are most appropriate.

The results show that although Chester County is projected to have the greatest growth in both population and employment in the region by 2040, the viability of public transportation services will still reside within the primary growth areas, and that providing new fixed route services into areas of the county currently not served by public transportation are unlikely.

Landscapes2 and DVRPC Transit Score 2040

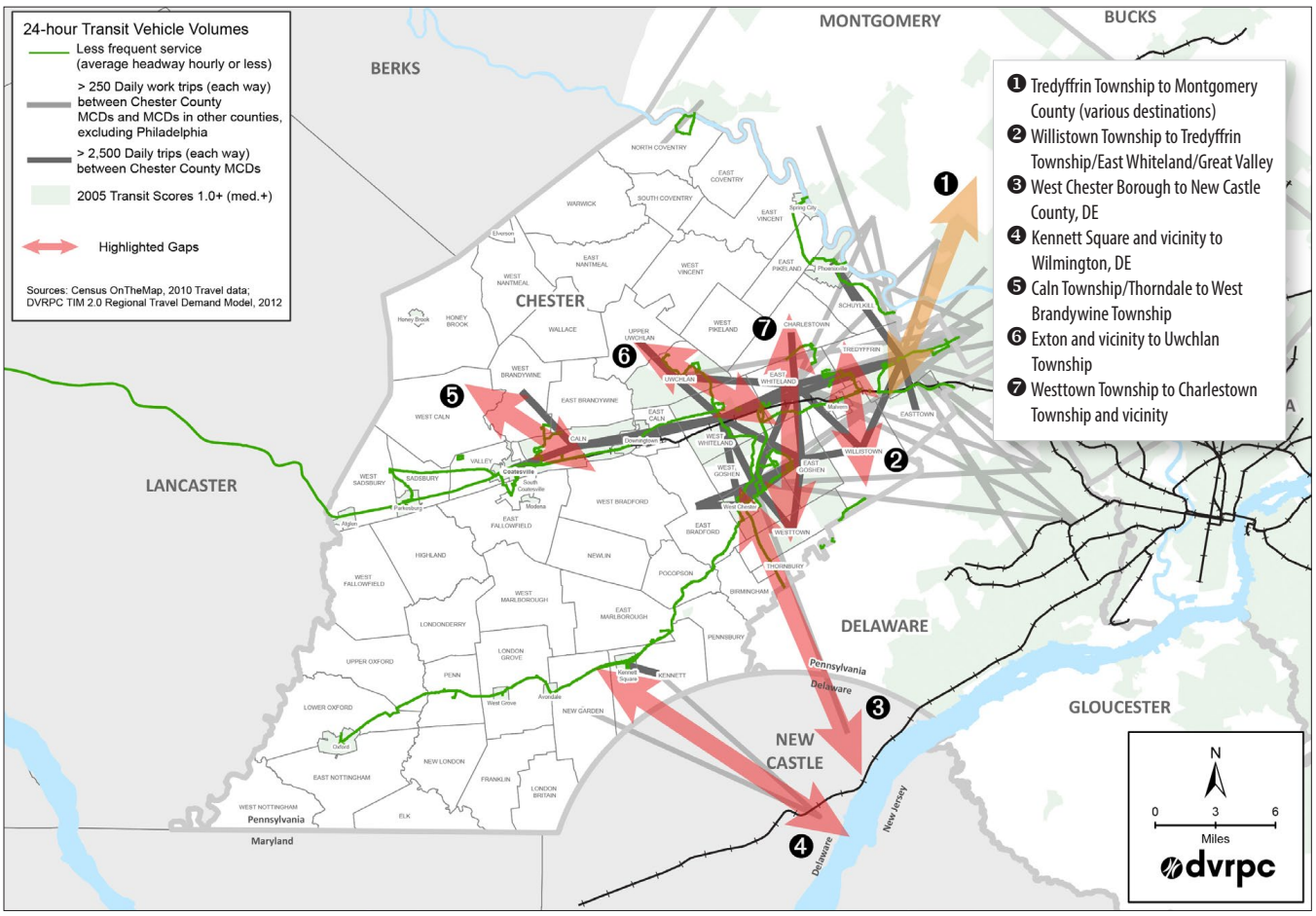


Source: DVRPC

Service gaps

A key aspect of the Chester County Public Transportation Plan is to consider the degree to which available service options serve the trips that are most in demand. The exhibit below highlights mismatches between potential demand and available service as a way of beginning to prioritize connections for future service consideration that are currently unserved or underserved. This initial comparison of the highest-volume trip pairs with available transit service indicates that there are opportunities for existing service to be reinforced (especially north–south service in the eastern portion of the county) and for new service to be developed, particularly between Chester County and Delaware County, Montgomery County, and New Castle County (DE).

Comparison of high-volume trip pairs with available transit service



Source: DVRPC Phase I Technical Memorandum, Chester County Public Transportation Plan.

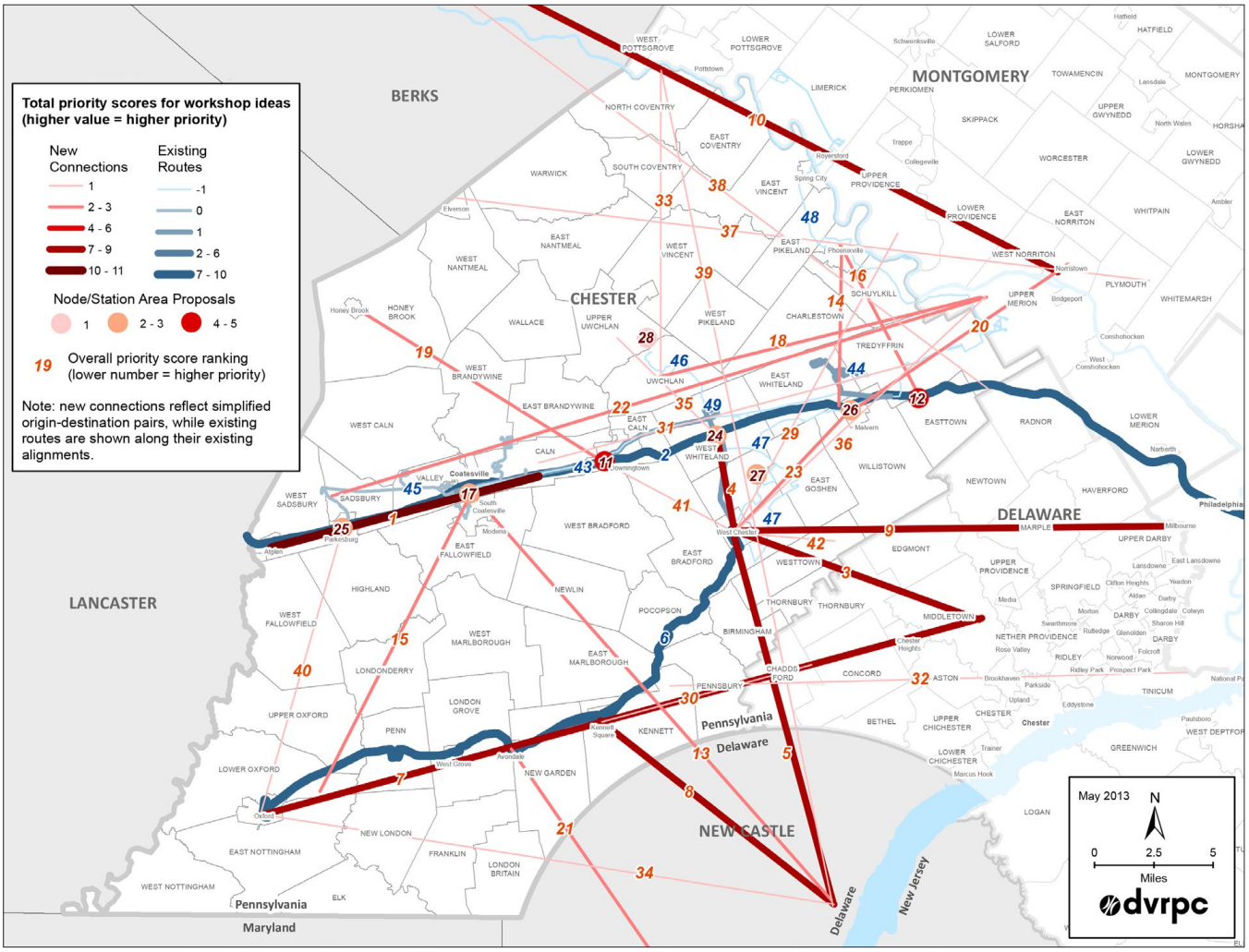
New service requests

DVRPC administered a public workshop for the Public Transportation Plan at the West Chester Historical Society in April 2013. Participants were asked to draw, circle, or otherwise identify specific ideas for new connections, modified routes, and existing routes that should be prioritized for enhancement or considered for service reduction (in favor of other routes).

The exhibit below locates these service requests. The top five requests are:

1. SEPTA extension, Thorndale to Atglen (or Coatesville).
2. Higher levels of service along Paoli/Thorndale and Keystone lines.
3. Media/Elwyn Line extension to West Chester.
4. Exton to West Chester (bus).
5. West Chester to Wilmington (bus).

Workshop group priorities summary

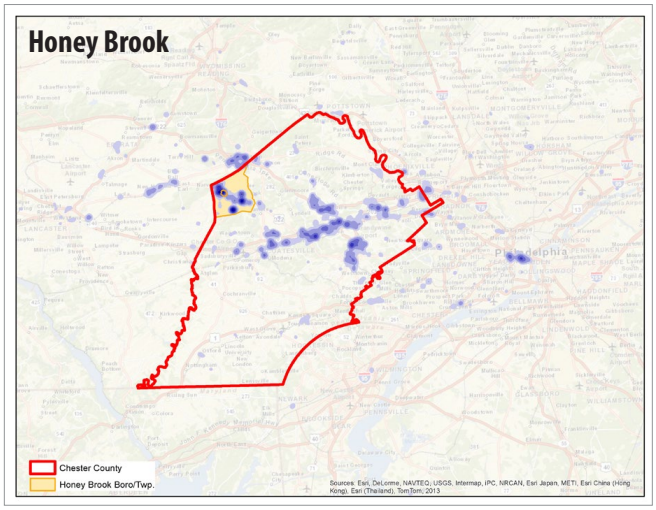


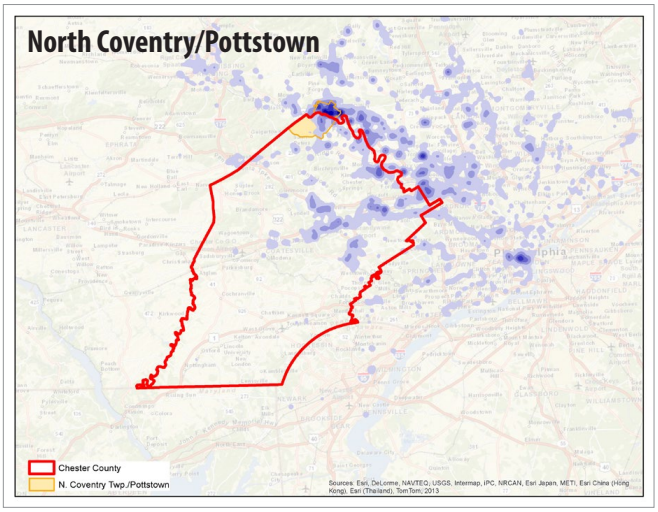
Source: DVRPC Phase I Technical Memorandum, Chester County Public Transportation Plan.

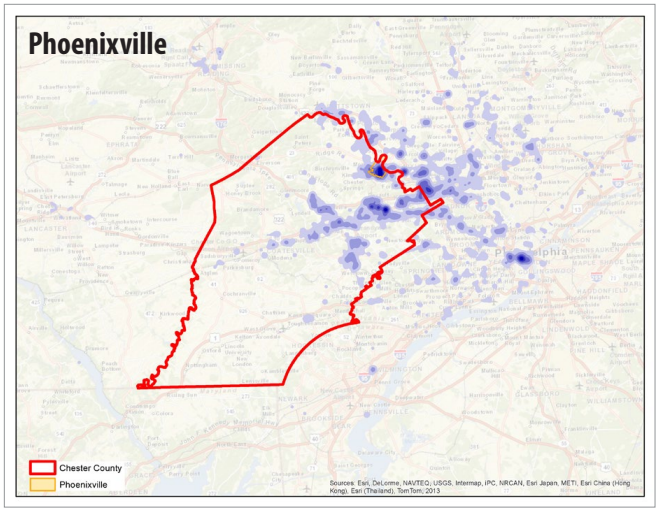
Sub-county commuting

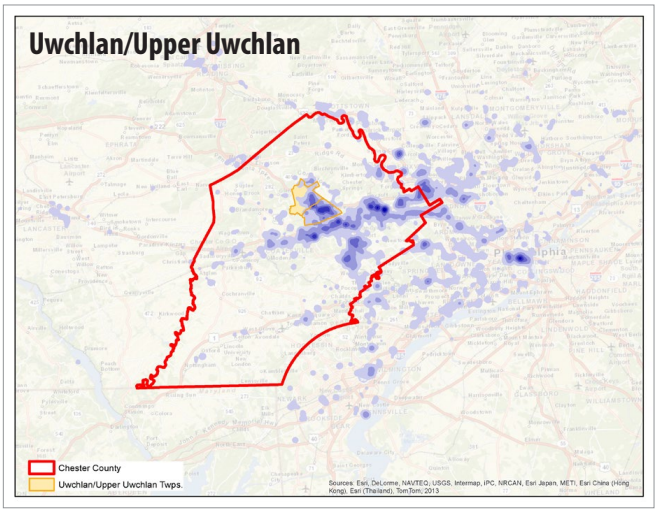
The U.S. Census Bureau Center for Economic Studies provides an online mapping tool named 'On the Map' that allows users to map commuting patterns based on any particular location, including analysis relative to whether people live or work in the areas selected. For purposes of this plan, sub-regions and/or municipalities were selected (highlighted in orange) and analyzed for where the residents of these locations travel to work (purple shaded areas). This finer grain of detail allows for a better view of where residents of a specific area are traveling in their daily commutes. The exhibits shown on this and the following page display these travel dispersions from all corners of the county.

The final two exhibits at the bottom of the next page illustrate not only where people go to work that live in the Great Valley (map on left), but also from where people who work in the Great Valley reside.

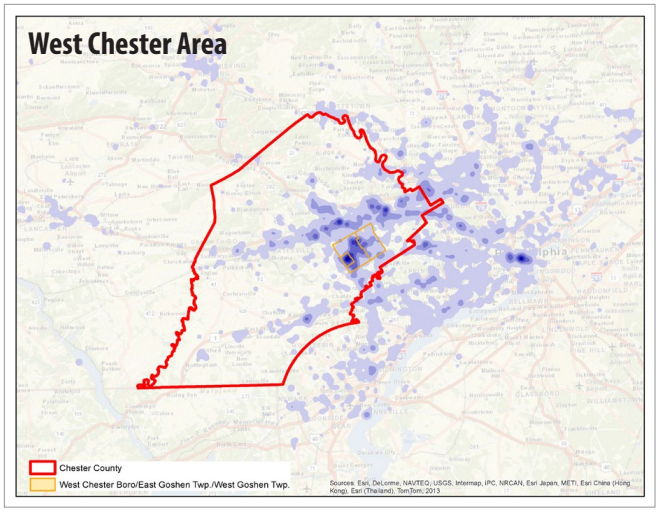


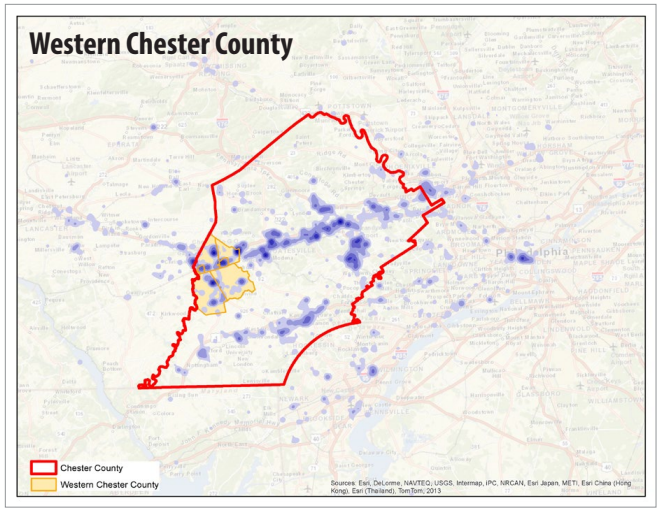


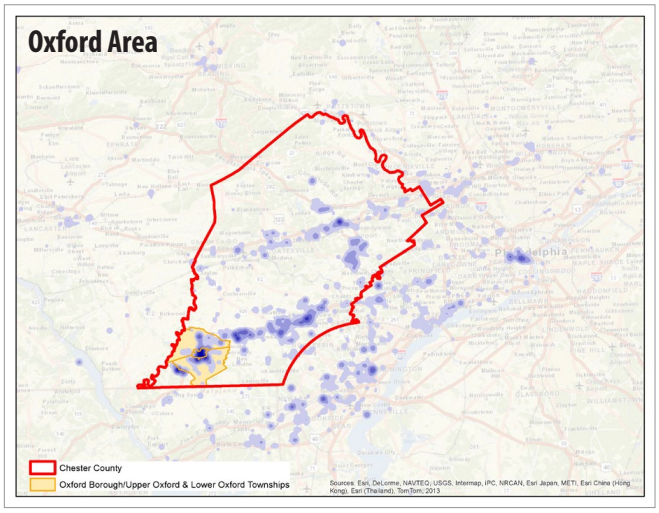


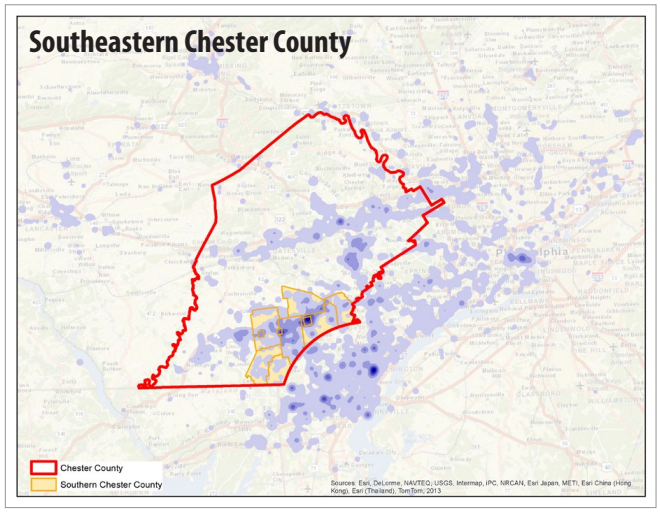


U.S. Census Bureau 'On the Map' application output mapping showing where people live (highlighted areas in orange) and where they go to work (purple shaded areas).

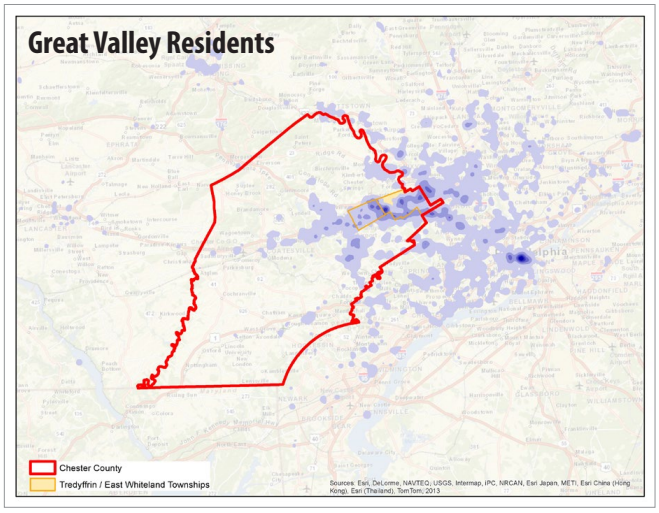


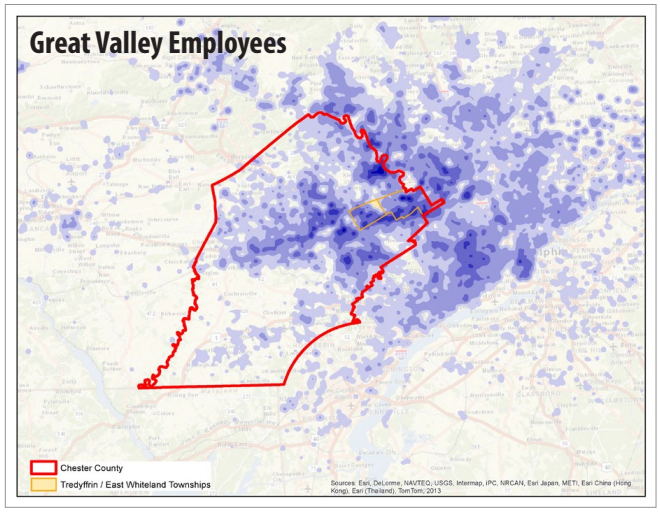






U.S. Census Bureau 'On the Map' application output mapping showing where people live (highlighted areas in orange) and where they go to work (purple shaded areas).





U.S. Census Bureau 'On the Map' for Tredyffrin & East Whiteland Townships. Image on the left displays where people go to work that live in those townships. Image on the right shows from where people who work in those townships reside.

Vision Plan

The primary component of the SYSTEM recommendations is the Vision Plan, or how the public transportation system is envisioned to evolve over the next 25 years. To that end, the following planning 'horizons' were established: Short Term–2020; Mid Term–2030; and, Long Term–2040.

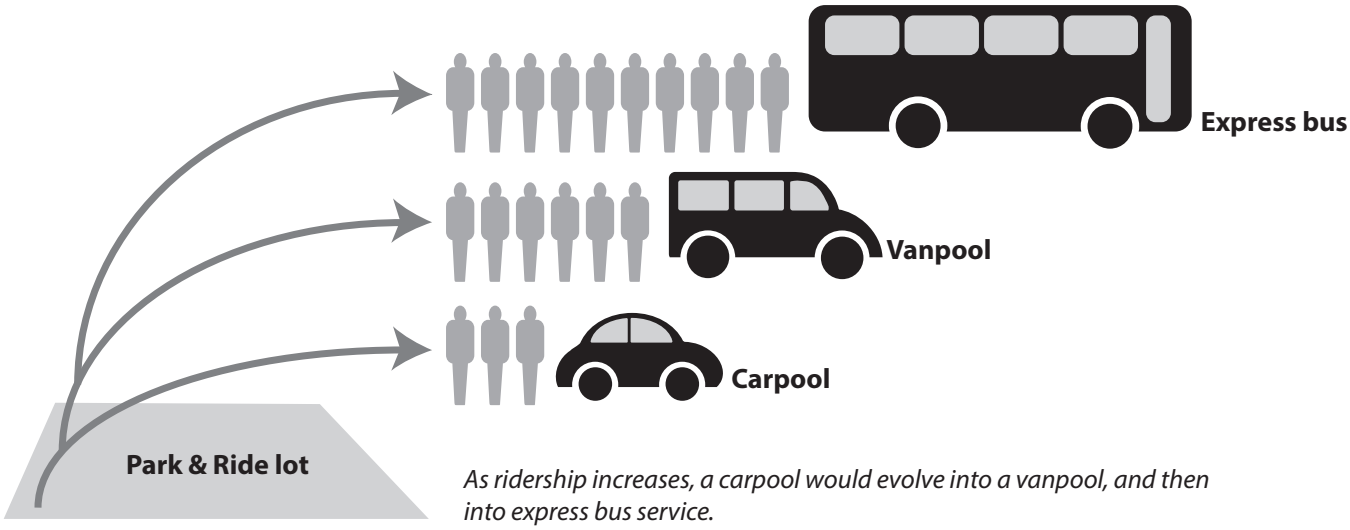
Factors considered in the preparation of the Vision Plan include:

- DVRPC's 2040 population and employment projections.
- DVRPC's transit score based on the 2040 population and employment projections.
- Consultations with SEPTA's Long Range Planning and Capital Improvements Program.
- Planned developments and improvements within the Keystone Corridor.
- Specific sub-region mapping of census data indicating where people live and work.
- Previous and on-going public transportation related studies.

New commuter service model

The majority of new services envisioned to arise in the near and distant future are intended to follow the new commuter service model:

Development of a new commuter service would begin as a carpool originating from one of the park & ride locations or from a group of people working at one of the county's major employment centers or any combination thereof. As the numbers of riders/participants increase, carpools would then evolve into a vanpool, and eventually into an express bus service.



As ridership increases, a carpool would evolve into a vanpool, and then into express bus service.

Graphic by CCPC.

Characteristics of the express bus service would include the following amenities in order to attract and retain 'choice' riders:

- **Limited stops:** including a coordinated stop at a regional rail station, if applicable. This would reduce the amount of factors that affect service reliability and expand the overall reach of the public transit system.
- **Comfortable seating:** These buses would be of the 'coach' variety and provide a more pleasant transit experience beyond the standard 40 foot bus, which will also attract more 'choice' ridership.
- **Internet access:** Access to the internet will allow riders to use their transit time productively. The means of how internet access may be provided will evolve with the technology. This is one of the essential components supporting the modern business world.

If the ridership numbers and potential revenues warrant a new open door service, SEPTA may consider adopting the route. Revenues for these services would be higher than standard fixed route bus services due to the added amenities, thus requiring fewer subsidies, if any to operate these services. Otherwise, private employers/companies would be encouraged to offer these as closed door commuter services to their employees as a benefit. Private investment in these services not only would eliminate the need for any public subsidy, but also contribute to the greater good of congestion reduction on our highways.

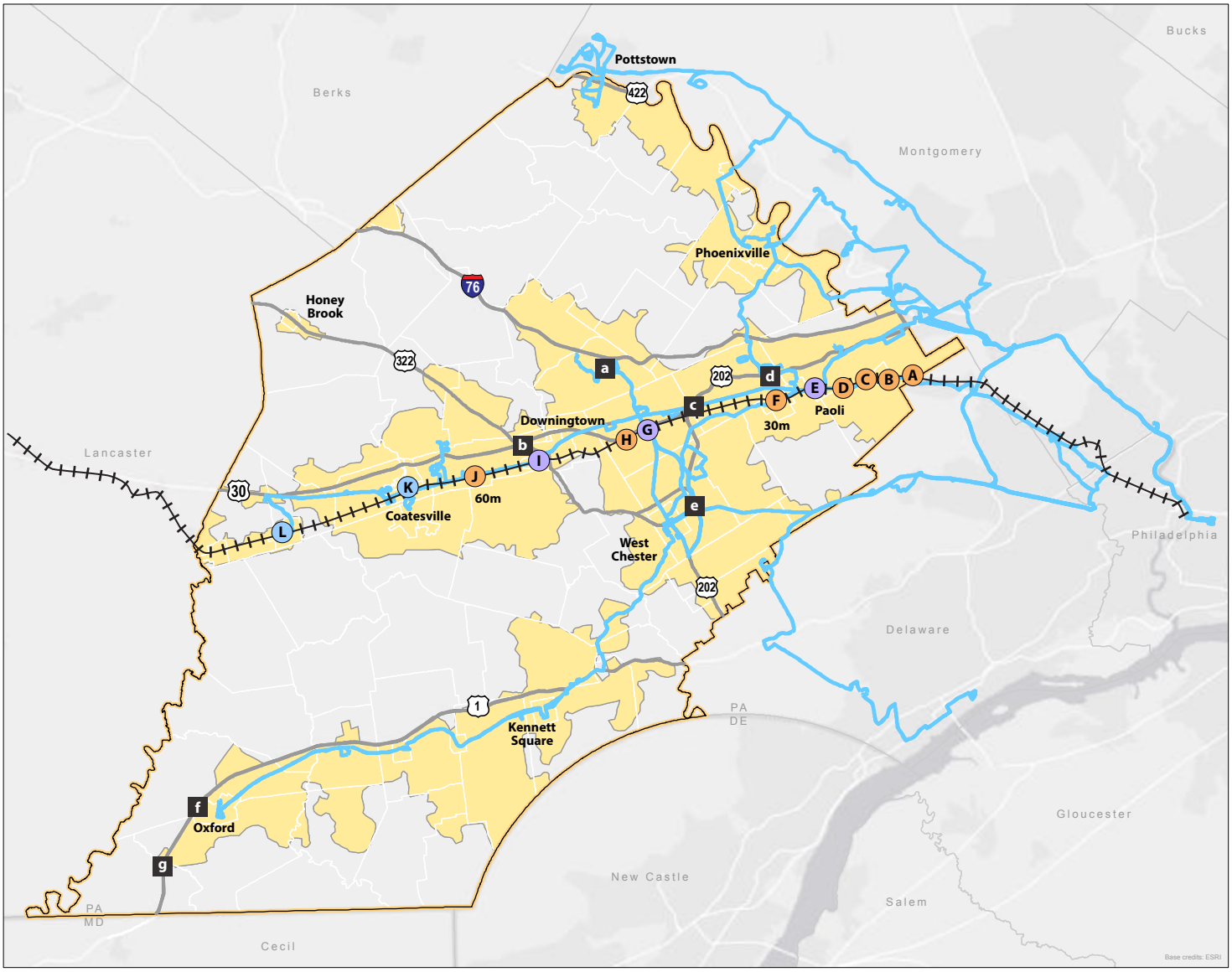
Examples of the desired amenities associated with the express bus new commuter service model.

Existing transit system–2014

The transit system as it exists in 2014 serves as the point of reference for the following Vision Plan exhibits relative the planning horizon years of 2020, 2030, and 2040. Bus routes (currently 16 of them) are provided by four separate service providers in SEPTA, Krapf, TMACC and PART.

Existing rail service includes SEPTA hourly service to Thorndale and 30 minute (local) service to Malvern. Amtrak provides service to five rail stations in Chester County as part of it Keystone Service.

There are seven park & ride facilities located near major interchanges throughout the county: the US 202 corridor has three (PA 29, US 30, and Paoli Pike); US 1 corridor has two (PA 472 & PA 272); one at PA 100/PA 113; and, a newly constructed facility at US 322 & Lloyd Avenue in Caln Township.



Existing transit system–2014

Existing Bus Routes serving Chester County

Keystone Corridor

Growth Areas

SEPTA Rail Service Frequency

30m- every 30 minutes- Malvern
60m- every 60 minutes- Thorndale

Rail Stations

- SEPTA
- SEPTA/Amtrak
- Amtrak

- A Strafford
- B Devon
- C Berwyn
- D Daylesford
- E Paoli
- F Malvern
- G Exton
- H Whitford
- I Downingtown
- J Thorndale
- K Coatesville
- L Parkesburg

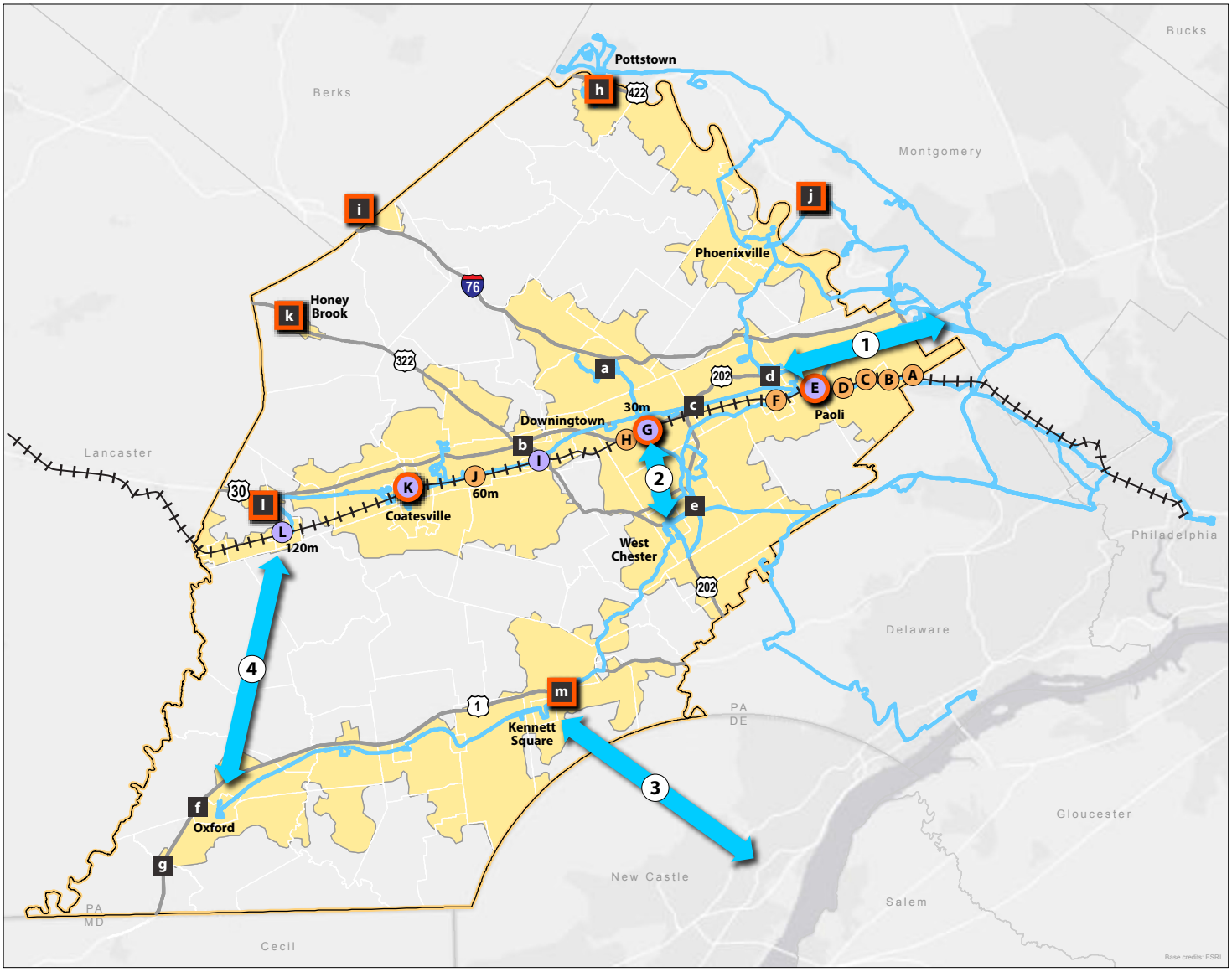
Park & Rides

- a PA 100/PA 113
- b US 322/Lloyd Ave.
- c US 202/US 30
- d US 202/PA 29
- e US 202/Paoli Pike
- f US 1/PA 472
- g US 1/PA 272

Vision Plan: Short Term–2020

The short term plan envisions the establishment of park & ride facilities at many strategic locations throughout the county will provide the opportunity for carpooling and begin the evolution of the new commuter services. These park & ride lots are envisioned through land development opportunities and shared use arrangements. The less expensive and more sustainable approach would be to arrange for the shared use of existing big box/commercial retail center parking lots.

In addition to the rail station improvements listed in legend and map on next page, Keystone Corridor improvements would include extension of SEPTA local service (30 minute frequency) to the Exton Station (from existing Malvern) and the addition of a two hour frequency SEPTA service to the Coatesville and Parkesburg stations. Station development includes new ADA accessible hi-level platforms and installation of a bus loop at Exton; a new Coatesville station as part of a redevelopment effort; and, completion of phase 1 of the Paoli station.



Vision Plan: Short Term–2020

Existing Bus Routes serving Chester County

Keystone Corridor

Growth Areas

Facility Improvements

New Commuter Service

1. Great Valley/KOP
2. West Chester/Exton
3. Kennett Square/Wilmington
4. Oxford/Parkesburg

SEPTA Rail Service Frequency

30m- every 30 minutes- Exton
60m- every 60 minutes- Thorndale
120m- every 120 minutes- Parkesburg

Rail Station Improvements

- E Paoli - Phase 1
- G Exton - Hi-Level Platforms/Bus Loop
- K Coatesville - New Station

Rail Stations

- SEPTA
- SEPTA/Amtrak

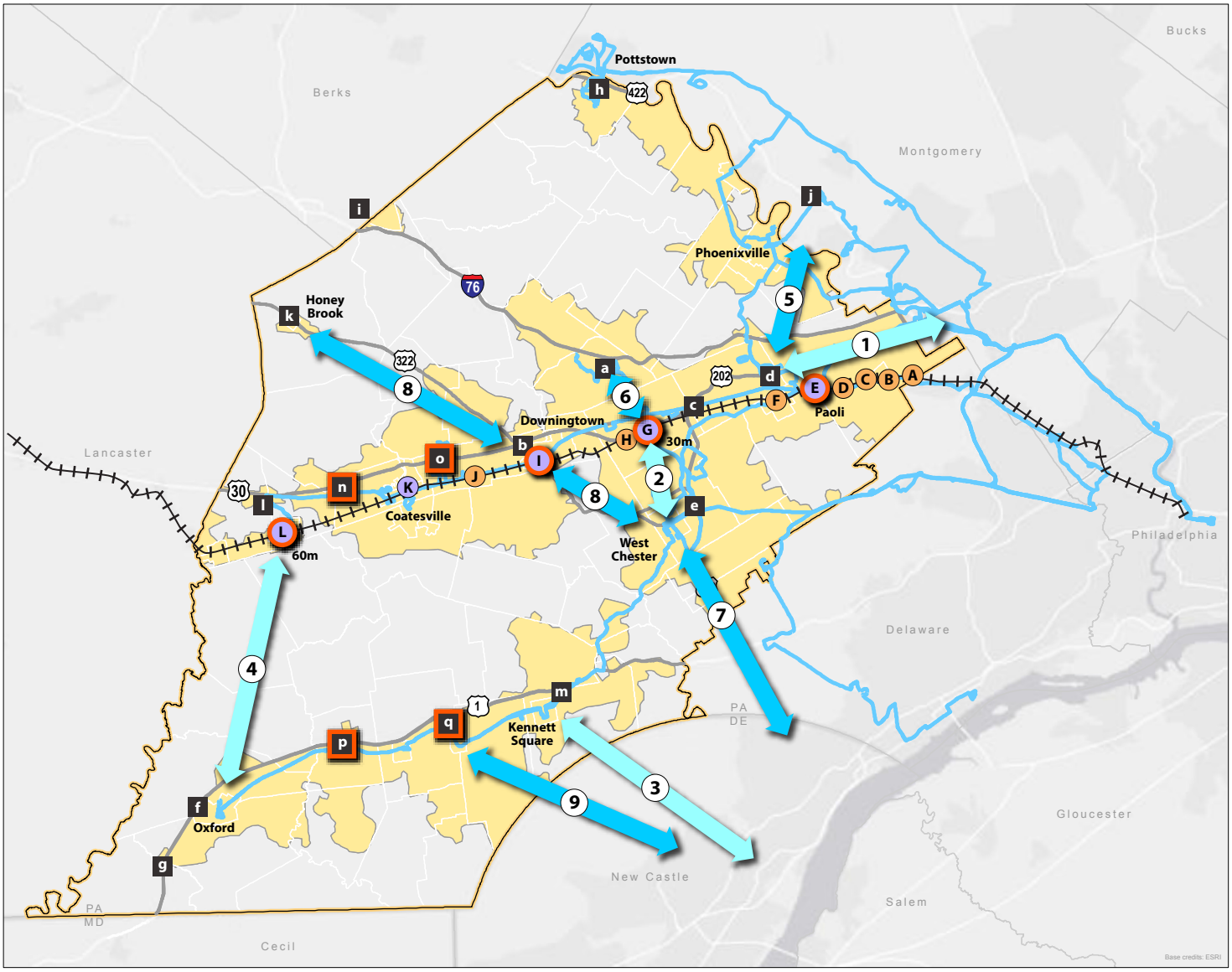
- A Strafford
- B Devon
- C Berwyn
- D Daylesford
- E Paoli
- F Malvern
- G Exton
- H Whitford
- I Downingtown
- J Thorndale
- K Coatesville
- L Parkesburg

Park & Rides

- a PA 100/PA 113
- b US 322/Lloyd Ave.
- c US 202/US 30
- d US 202/PA 29
- e US 202/Paoli Pike
- f US 1/PA 472
- g US 1/PA 272
- h US 422/PA 100
- i Turnpike/PA 10
- j US 422/PA 29
- k Honey Brook
- l US 30/PA 10
- m Kennett Square

Vision Plan: Mid Term–2030

The 2030 planning horizon envisions the establishment of additional park & ride facilities particularly along the US 30 and US 1 corridors, and the extension of hourly SEPTA service to the Parkesburg station on the Keystone Corridor. Rail station upgrades include completion of the Paoli train station, improvements to the Parkesburg and Exton stations, and a new and potentially relocated station in Downingtown.



Vision Plan: Mid Term–2030

Existing Bus Routes serving Chester County

Keystone Corridor

Growth Areas

Facility Improvements

Commuter Service

1. Great Valley/KOP
2. West Chester/Exton
3. Kennett Square/Wilmington
4. Oxford/Parkesburg

New Commuter Service

5. Phoenixville/Great Valley
6. Eagle/Exton
7. West Chester/Wilmington
8. Honey Brook/West Chester
9. Avondale/Wilmington

SEPTA Rail Service Frequency

30m- every 30 minutes- Exton
60m- every 60 minutes- Parkesburg

Rail Station Improvements

- E Paoli - New Station
- G Exton - Add Surface Parking
- I Downingtown - New Station
- L Parkesburg - General Improvements

Rail Stations

- SEPTA
- SEPTA/Amtrak

- A Strafford
- B Devon
- C Berwyn
- D Daylesford
- E Paoli
- F Malvern
- G Exton
- H Whitford
- I Downingtown
- J Thorndale
- K Coatesville
- L Parkesburg

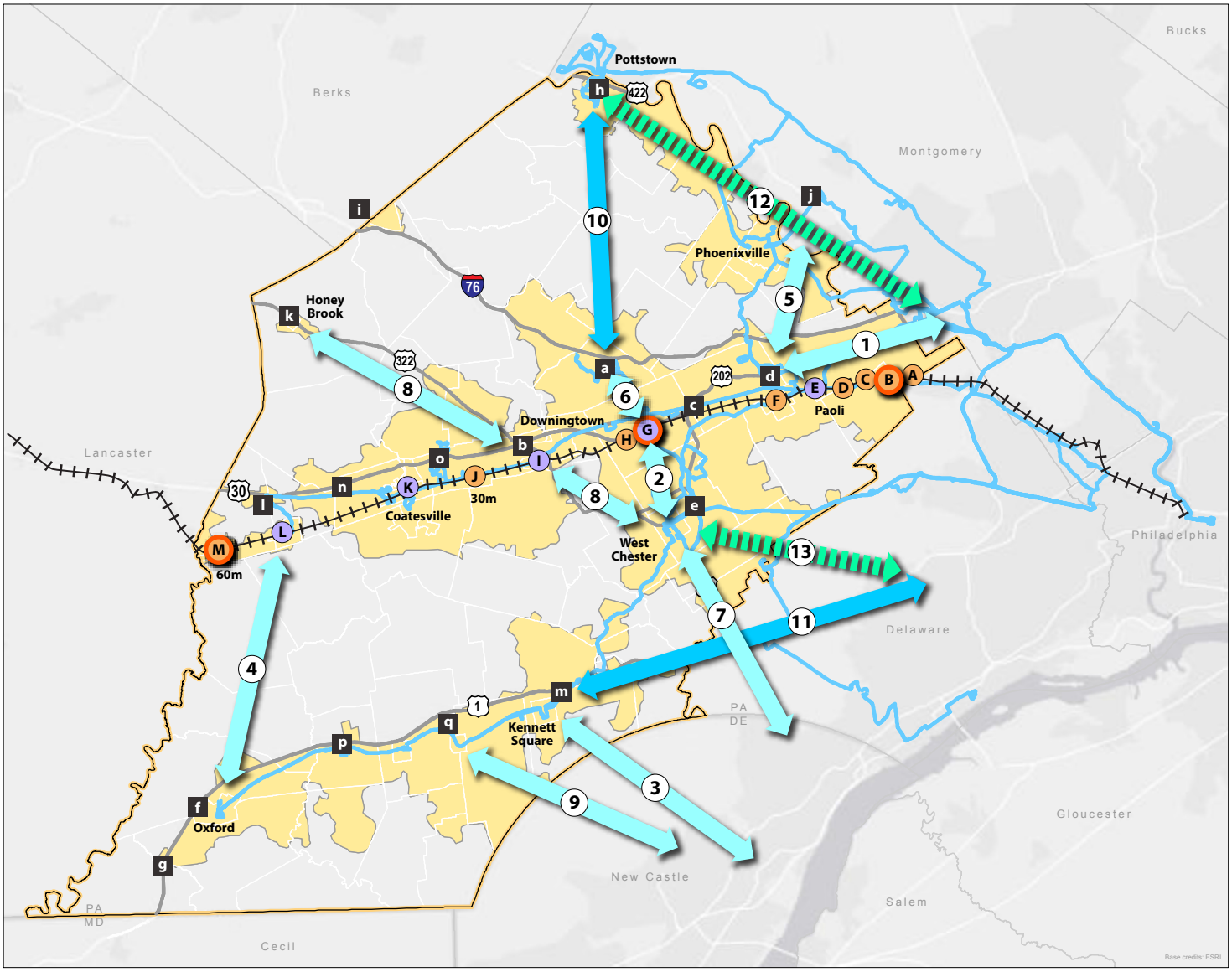
Park & Rides

- a PA 100/PA 113
- b US 322/Lloyd Ave.
- c US 202/US 30
- d US 202/PA 29
- e US 202/Paoli Pike
- f US 1/PA 472
- g US 1/PA 272
- h US 422/PA 100
- i Turnpike/PA 10
- j US 422/PA 29
- k Honey Brook
- l US 30/PA 10
- m Kennett Square
- n US 30/Airport Rd.
- o US 30/PA 340
- p US 1/PA 796
- q US 1/PA 41

Vision Plan: Long Term–2040

The 2040 horizon year plan envisions the extension of hourly service to a new Atglen rail station and local service to Thorndale. New commuter services include the Route 100 corridor between Pottstown and Eagle/Exton, and along the US 1 corridor into Delaware County.

This horizon envisions the return of commuter rail service to the Schuylkill River Valley communities and to the Borough of West Chester. While both projects currently face similar obstacles requiring significant capital improvements vs. projected ridership (high cost per rider), projected population growth and perhaps an alternative mode choice. Further technical assessment will be required to refine cost estimates, ridership, and cost/benefit of these services.



Vision Plan: Long Term–2040

- Existing Bus Routes serving Chester County
- Keystone Corridor
- Growth Areas
- Facility Improvements
- Commuter Service
  - 1 Great Valley/KOP
  - 2 West Chester/Exton
  - 3 Kennett Square/Wilmington
  - 4 Oxford/Parkesburg
  - 5 Phoenixville/Great Valley
  - 6 Eagle/Exton
  - 7 West Chester/Wilmington
  - 8 Honey Brook/West Chester
  - 9 Avondale/Wilmington
- New Commuter Service
  - 10 Pottstown/West Chester
  - 11 Kennett Square/Delaware Co.
- Rail Service
  - 12 Commuter Rail to Pottstown
  - 13 Commuter Rail to West Chester

SEPTA Rail Service Frequency

30m- every 30 minutes- Thorndale
60m- every 60 minutes- Atglen

Rail Station Improvements

- B Devon - Structure Parking (developer)
- G Exton - Structure Parking
- M Atglen - New Station

Rail Stations

- SEPTA
- SEPTA/Amtrak
- A Strafford
- B Devon
- C Berwyn
- D Daylesford
- E Paoli
- F Malvern
- G Exton
- H Whitford
- I Downingtown
- J Thorndale
- K Coatesville
- L Parkesburg
- M Atglen

Park & Rides

- a PA 100/PA 113
- b US 322/Lloyd Ave.
- c US 202/US 30
- d US 202/PA 29
- e US 202/Paoli Pike
- f US 1/PA 472
- g US 1/PA 272
- h US 422/PA 100
- i Turnpike/PA 10
- j US 422/PA 29
- k Honey Brook
- l US 30/PA 10
- m Kennett Square
- n US 30/Airport Rd.
- o US 30/PA 340
- p US 1/PA 796
- q US 1/PA 41

Critical issue

Bus/rail connectivity

To increase transit usage, bus and rail connectivity needs to be improved. Bus/rail connectivity involves the coordinated scheduling of arrival between trains and buses at rail stations that would allow transit users to utilize a combination of both bus and rail services as part of their daily commutes.

The SEPTA 204 and 205 buses awaiting passengers at Paoli Station.

Only SEPTA's 200 series routes (204, 205, 206) are coordinated with rail services. One advantage to coordinating bus and rail services is eliminating the need to drive an automobile to a rail station where parking availability is often scarce, thus reducing congestion and increasing ridership. Another, and perhaps more obvious advantage is providing access to the Keystone Corridor, which provides access and connectivity to the world at large. Increasing SEPTA rail headways will improve coordination opportunities by reducing dwell times between connections.

Coordinating existing fixed route bus services with the rail schedules is difficult due to the many stops and factors associated with each of these long standing services. It is easier to coordinate services where the starting point for the bus is the arrival of passengers from the rail side, but it is much more difficult to coordinate the delivery of bus passengers to a rail station ahead of a train. Buses are subject to traffic congestion, the occasional and unpredictable weather and accident-related closings, and/or many other elements. These factors affect buses ability to deliver passengers in a comfortable amount of time ahead of the next train arrival. This in turn affects the overall service reliability and thus its ability to attract and maintain the ridership that would take the bus because of its connectivity.

The development of new commuter services would be market driven with business (private sector) contribution. These new services present an opportunity to provide for better bus/rail connectivity in the future as the public transit system expands and increases ridership.

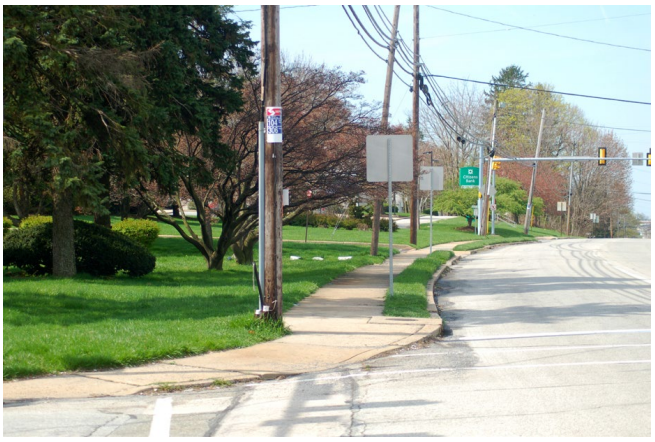
Recommendation

- **Coordinate new commuter services with services at rail stations and transportation centers for better connectivity.** This provision will be an element that not only attracts riders to the express bus services, but will also create a more unified transportation system between bus and rail services. Future opportunities include Downingtown, Exton and Paoli with the improvements slated for those stations.

Critical issue

First mile/last mile connections

Getting to transit from home and to work from transit pose a significant barrier to the use of public transportation. More first mile connections (home to transit) would require better bicycle and pedestrian connectivity to the transit system and/or additional parking at or near transit stops and stations. Assuming most people do not work within walking distance of their place of employment (or the facilities do not exist to do so) providing the last mile connections between train stations and employment centers would likely encourage public transportation use.



First mile/last mile connections.

More last mile connections would involve additional shuttle services or vanpooling, ride sharing, or perhaps bike sharing opportunities at rail stations and transportation centers. Bicycle and pedestrian facilities connecting bus stops with residential and employment centers are the most basic form of the first mile/last mile connections and are discussed in the ENVIRONMENT plan. Taxi services are good for occasional use, however they are cost prohibitive when used as part of a daily commute.

Recommendations

- **Promote the use of carpooling, vanpooling and private shuttle services.** Promoting these services at major employment centers may be the most impactful and cost effective means of providing these connections. Examples include Vanguard's existing 'Crews Line' shuttle services, and the creation of 'the connector' commuter shuttle by the King of Prussia Business Improvement District. Reserved parking at rail stations for carpooling and vanpooling commuters should be considered to provide incentive for establishment of such programs.
- **Provide car shares/bike shares at or near rail stations.** Such facilities would require some form of public/private partnership and the ability for the share provider to establish a presence at or very near to the station site. The shares would also require reciprocal stations at or near the employment centers so that consumers would not be charged for the down time of having the vehicle while they are working. Feasibility studies will be required to further investigate car share/bike share opportunities associated with the rail stations.

Critical issues

Service reliability

Service reliability is an operational issue that directly affects ridership. If any service is consistently late or randomly and indeterminably does not show up, chances are that potential riders will look elsewhere for their transportation options. SEPTA routes in Chester County have an average on-time performance of 78%. It should be noted that not all of the existing bus routes/service providers currently calculate on-time percentages. It is recommended that this measure will be performed for all bus routes operating in Chester County moving forward. Please refer to the 'Existing bus routes time analysis' exhibit shown below. This table shows the length, schedule time, and on-time percentage for all existing fixed route services (bus and rail) operating in Chester County.

Existing bus routes time analysis (2013)

	Length (miles)	**Schedule time** (average minutes)	**On-time** (percent)
BUS ROUTE			
SEPTA 92	31.3	86	70%
SEPTA 99	24.6	75	79%
SEPTA 104	21.8	64	74%
SEPTA 105	19.5	70	78%
SEPTA 106	17.3	66	85%
SEPTA 119	21.5	58	82%
SEPTA 120	17.6	41	74%
SEPTA 124	26.6	76	72%
SEPTA 139	20.1	58	85%
SEPTA 204	15.6	43	na
SEPTA 205	13.1	39	na
SEPTA 206	7.3	19	na
Coatesville Link	22.8	55	na
Route A	19.1	59	na
SCCOOT	32.6	87	na
PART Coventry Mall	12.8	22	na
		Average:	78%
RAIL			
Paoli Thorndale Line	35.4	74	93%
GV Flyer Services	35.4	61	na

a. Transit times based on February 2013 bus schedules.
b. On-time percentages source: SEPTA 2012 route statistics.
c. On-time % for SEPTA 204, 205, 206 not included due to dependency on rail service schedule.

Table by CCPC.

Trip speed

In addition to costs, time is a significant factor in the decision making process for most commuters. It is commonly accepted that taking a bus versus driving an automobile to any location will take additional time due to multiple stops and less direct routing. If that time could be used productively, 'choice' transit users—or those that have the option of automobile use—may choose the public transportation option due to the increase in productivity (assuming internet access) and decrease in overall commuting costs versus operating an automobile (parking fees, gasoline, vehicle wear and tear, etc.). All other factors aside, when that time differential is perceived to be excessive, these same commuters are much more likely to choose the automobile regardless of the cost savings associated with the public transportation option.

This time/cost benefit analysis done by many 'choice' transit users illustrates why the Great Valley Flyer services that SEPTA offers on the Paoli/Thorndale line are so successful and heavily used by Chester County residents. These express services make the trip between Thorndale and Center City Philadelphia in a comparable amount of time as compared to driving during the morning peak. Users of these services may simply relax during their travel time or use it productively without having to navigate through traffic congestion, and for considerably less costs.

The Great Valley Flyer services that SEPTA offers on the Paoli/Thorndale line are heavily used by Chester County residents.

The express bus services as outlined in the new commuter services model are designed to bridge the gap between the options of the lengthy existing fixed route bus services and driving an automobile. While the Paoli/Thorndale line provides a convenient and reliable commuter rail option, its primary purpose is to serve Center City Philadelphia. Express bus services with limited stops, internet access, and comfortable seating has the potential to provide a much more viable transportation option for the 'choice' commuter with the ability to be flexible with respect to origins and destinations serving Chester County, and to have a significant impact towards reducing highway congestion.

Recommendations

- **Plan for shorter routes with fewer stops to achieve better on-time performance.** Longer routes and more stops multiplies the likelihood that unforeseen circumstances will cause delays. Limiting these factors makes for a more reliable service.
- **Implement traffic signal prioritization in major transit corridors where feasible.** This technology can be used to assist buses that are running behind schedule by holding green light phases slightly longer to allow for them to pass through. Coordination between municipalities along a corridor will be required to ensure the prioritization works effectively.
- **Provide real-time status/traveler information utilizing new communications technology.** Real time status information allows transit users to make real time decisions regarding their daily commutes. This information should be provided at all rail stations and transportation centers. SEPTA and Amtrak have recently developed smart phone applications that can be used by individuals at any location.

Category	Existing conditions	Performance benchmarks		
	2014	Vision 2020	Vision 2030	Vision 2040
SYSTEM				
Service quality/reliability				
Bus routes	16	as required to meet demand, potentially more		
Average on-time performance	78%	80.0% →	82.5% →	85.0%

Chapter 3
ENVIRONMENT

The ENVIRONMENT plan addresses all facilities that serve as points of access to the system, including rail stations, transportation centers, bus stops, sidewalks and all related facilities associated with the built environment.

The ENVIRONMENT goal is to provide a first class, barrier free and multimodal means of transport from trip origin to trip destination.

Recommendations contained herein are to address the following plan objectives:

1. Maximize available on site parking for transit users at all existing and proposed rail stations and transportation centers.
2. Identify shared use opportunities with existing commercial center or other large parking facilities to provide additional parking for transit and/or park & ride users.
3. Provide pedestrian and bicycle connections to and from all transit stop locations, rail stations, transportation centers, employment centers and commercial centers.
4. Encourage local growth area municipalities and engage developers in the creation and adoption of ordinances to provide for the integral development of transit related facilities and/or land uses.
5. Support public/private partnerships as a means to fund necessary capital improvements.
6. Improve communications between municipalities and the business community towards providing better transit related facilities.

Background

State of the transit environment

This chapter consists of two primary sections. The first pertains to bus services and issues relative to the built environment and the municipal land development process. The second focuses on rail stations and what will be done to increase system capacity through various on-going and recommended site improvements.

Transportation centers

There are two transportation centers associated with bus service located in Chester County, as follows:

- **West Chester Transportation Center** (220 W. Market St.)–This facility is located in the ground floor of the parking structure across from the Chester County Justice Center and provides connecting bus service for the SEPTA 92, SEPTA 104, Krapf's Route A, and TMACC's SCCOOT bus routes. Public parking is available in the garage, although space is limited.
- **Exton Transportation Center** (Exton Square Mall)–This facility is located on the eastern side of the Exton Square Mall and provides connecting services for the SEPTA 92, SEPTA 204, and Krapf's Route A. Ample parking is available in the adjacent parking structure.

West Chester Transportation Center.

Exton Transportation Center.

Critical issue

Bus stops

For purposes of this plan, an inventory of existing bus stops in Chester County was performed using a combination of GIS data and field observation. The following are summary statistics of that inventory:

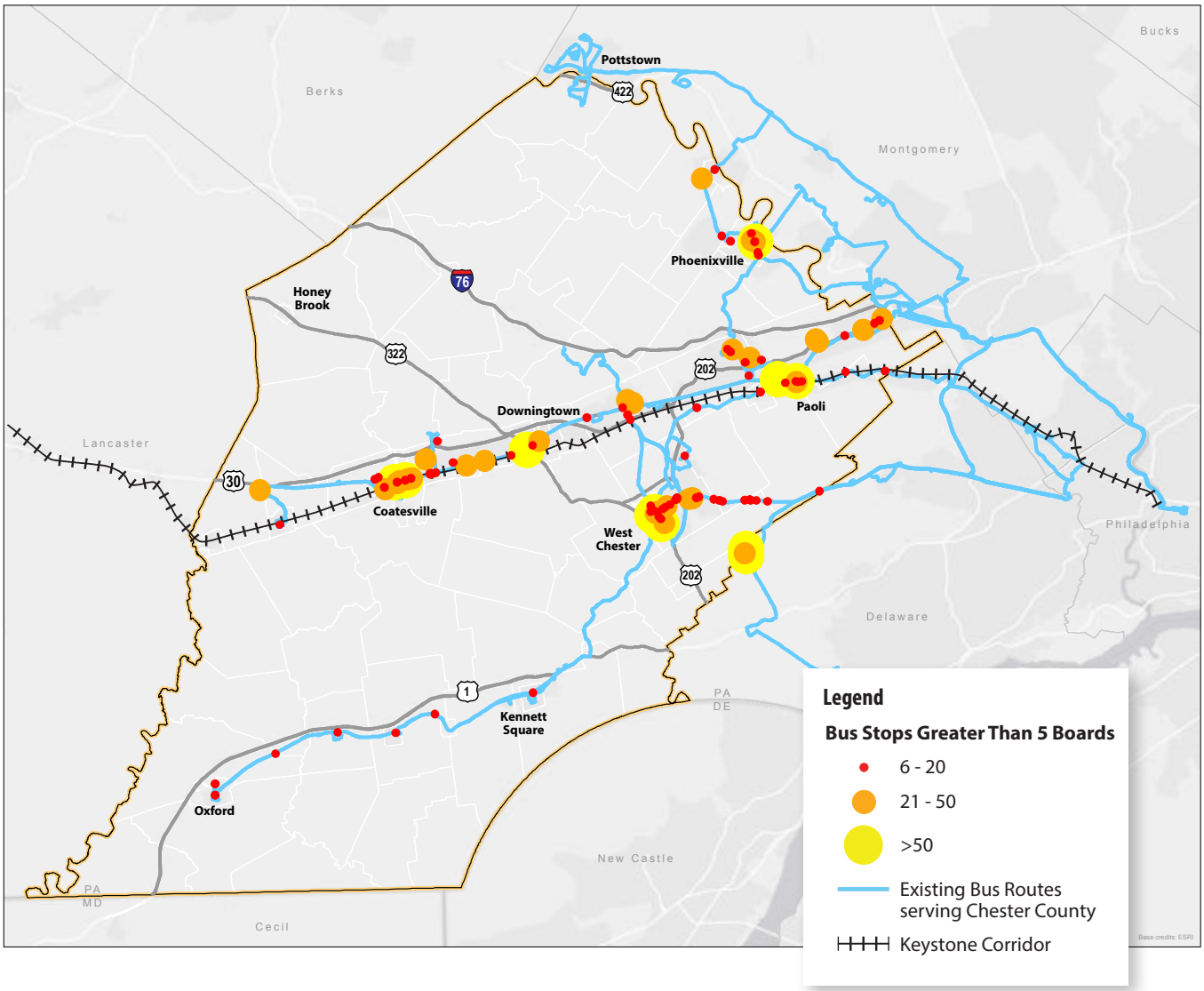
- Total number of bus stops: **847**
- Number of bus stops with walkways connecting the stop to a destination: **390 (46%)**
- Number of bus stops with bus shelters: **50 (6%)**
- Number of bus stops with greater than five daily boardings: **116 (14%)**

One of the most significant limiting factors to transit use and ridership in Chester County is the inability of transit users to safely and easily access transit stops and stations by bicycle or on foot. For purposes of this plan, an analysis was performed to determine the relative pedestrian connectivity to individual bus stops.

To direct improvements where they are most needed, the bus stops with greater than 5 daily boardings (116) were analyzed relative to whether or not these locations have connecting walkways and/or shelters. Only 11% (13) of these "high volume" stops provide both a shelter and connecting sidewalk. By 2030, this plan recommends that 75% (87) of these bus stops have both shelters and connecting sidewalks.

Substandard pedestrian environment for a bus stop.

Bus stops recommended for shelters in Chester County



Bus shelter with no pedestrian connections.

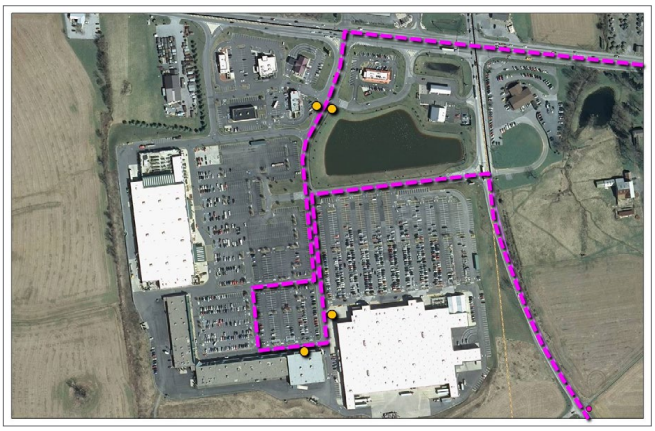
SEPTA Bus Stop Design Guidelines publication.

Implementation of pedestrian connections and bus shelters will rely heavily upon the local land development process as well as targeted capital improvement projects at key locations where land development may not be imminent or where these facilities are identified to be most needed.

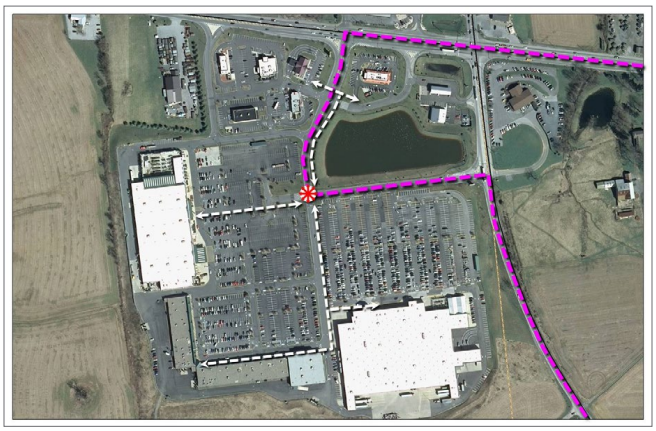
SEPTA in partnership with DVRPC has recently published the *SEPTA Bus Stop Design Guidelines* which includes specific amenity and dimensional recommendations for the installation of different bus stop configuration types applicable to a multitude of locations, including a number of case studies illustrating specific examples.

An example of how these guidelines may be implemented is shown to the right. The Coatesville Link bus currently takes a rather circuitous route through an existing commercial center in West Sadsbury Township, stopping at three different locations along the way. This is due to there not being any existing pedestrian facilities that connect the parking lot to the buildings.

The second image illustrates a shortening of the bus route though the commercial center and placement of a centralized transit stop, and pedestrian connections that would lead to the buildings. The benefits of such a configuration are less travel time with fewer stops required by the bus leading to a shorter, more efficient route, and the creation of a safe pedestrian environment for everyone who visits the commercial center.



Bus routing (purple) and stop locations (orange) in an existing commercial center in West Sadsbury Township.



Proposed re-routing of bus and installation of centralized transit stop with pedestrian connections extending to destinations.

Typical sign on post bus stop.

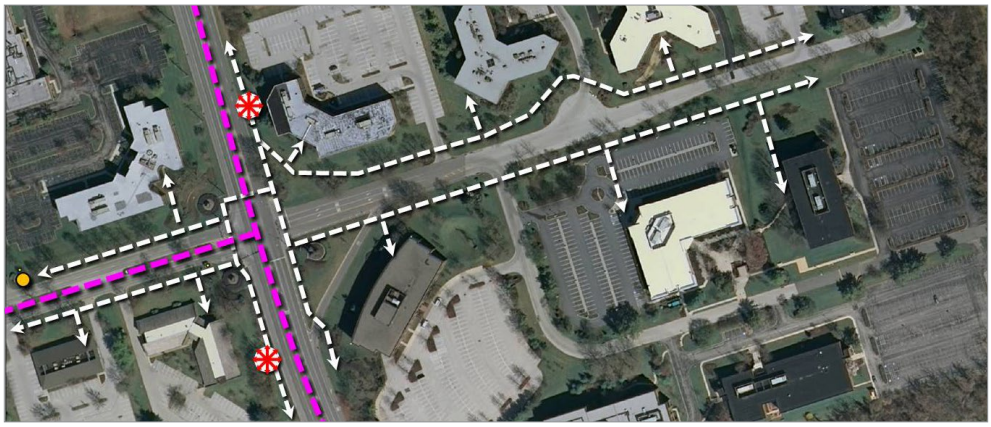
The following page shows examples of how the proper application of the SEPTA design guidelines may improve the pedestrian environment in the Great Valley Corporate Center through photo simulations.

The bottom inset images show the existing conditions of the proposed locations, existing bus stops that are merely signs on a post with no pedestrian walkways to connect transit users to their destinations. This is the case in over 50% of bus stops in Chester County.

The improvements shown in the photo simulations would not only provide for the immediate need of safety, but also demonstrate to the transit user that bus stops are a welcoming part of the overall transportation system in contrast to the many stops that are simply signs on posts demarcating the stop location.

An existing barrier to bus stop development is the reluctance of various agencies to assume the maintenance responsibilities of bus shelters. Many existing shelters are provided and maintained by advertising agencies who at the present time have no interest in expanding their footprint in Chester County.

Bus stop with pedestrian connections in Downingtown.



Plan image of the Great Valley Corporate Center at the intersection of Morehall Road (PA 29) and the Great Valley Parkway. Existing bus routing is shown in purple with proposed new bus stop locations and proposed pedestrian connections that would connect transit users to the corporate center buildings.

Site 1: Example of a bus bay stop along Morehall Road north of the Great Valley Parkway.

Site 2: Example of a curb side stop along Morehall Road south of the Great Valley Parkway.

Category	Existing conditions 2014	Performance benchmarks Vision 2020	Vision 2030	Vision 2040
ENVIRONMENT				
Bus stops				
Bus stops	847	as required	as required	as required
Percent of bus stops with more than 5 boardings, with shelters	23% (27/116)		75%	
Percent of bus stops with shelters	6% (50)	focus on those with higher boardings		
Percent of bus stops with pedestrian connections	46% (390)	→	→	90–100%

Recommendations

- **Provide pedestrian connections and shelters at heavily used bus stops.** Prioritizing the installation of these basic amenities at the more frequently used stops will create a safe and inviting point of access to the transit system and serve as an example for the implementation of improvements at other stop locations. Additional bus stops with greater than 10 boardings may be created through the merging of lesser used stops to provide for more boardings at certain locations which would also contribute to increased route efficiency. Local ordinances may also need to be adjusted or revisited to allow for the placement of bus shelters, depending on the existing statutes.
- **Develop a maintenance agreement model(s) for maintaining bus shelter facilities.** Given that bus shelter maintenance is one of the existing barriers to implementing additional bus shelters in retrofit contexts, the public transportation agency providers, the TMAs, chambers of commerce, municipalities, and Chester County must identify at least one (preferably multiple) model for maintaining bus shelters that is agreeable and endorsed by all aforementioned parties. In the context of future land development projects, the maintenance of bus shelters should be codified as an obligation of the land developer/property owner.

Critical issue

Municipal ordinances

Implementation of the bus stop amenities and connecting pedestrian facilities will have to be accomplished either through the land development process or as retrofits to existing facilities. Land development activities are within the jurisdiction of the local municipalities and their established subdivision and land development and/or zoning ordinances. By working to improve, standardize and/or assist municipalities with the creation of transit related ordinances, Chester County could help improve access to the public transit system and work towards the common goal of increasing transit ridership.

An environment in need of pedestrian facilities.

For purposes of this plan, 'transit related ordinances' are defined as any zoning or subdivision/land development ordinance specific to transit facilities such as bus stops, bus shelters, transportation centers, rail stations, and park & ride lots, as well as any Transit Oriented Development (TOD) or other similarly named base or overlay zoning districts.

Not all of Chester County's 73 municipalities are served by fixed route public transportation services, nor will many of them based on growth projections and the recommendations of this plan. Only those municipalities envisioned to contain fixed route services located within the urban, suburban and suburban center livable landscapes (as defined by Landscapes2) were inventoried for the presence of transit related ordinances. The exhibit on the next page identifies the selected growth area municipalities. The following are summary results of the transit related ordinance inventory:

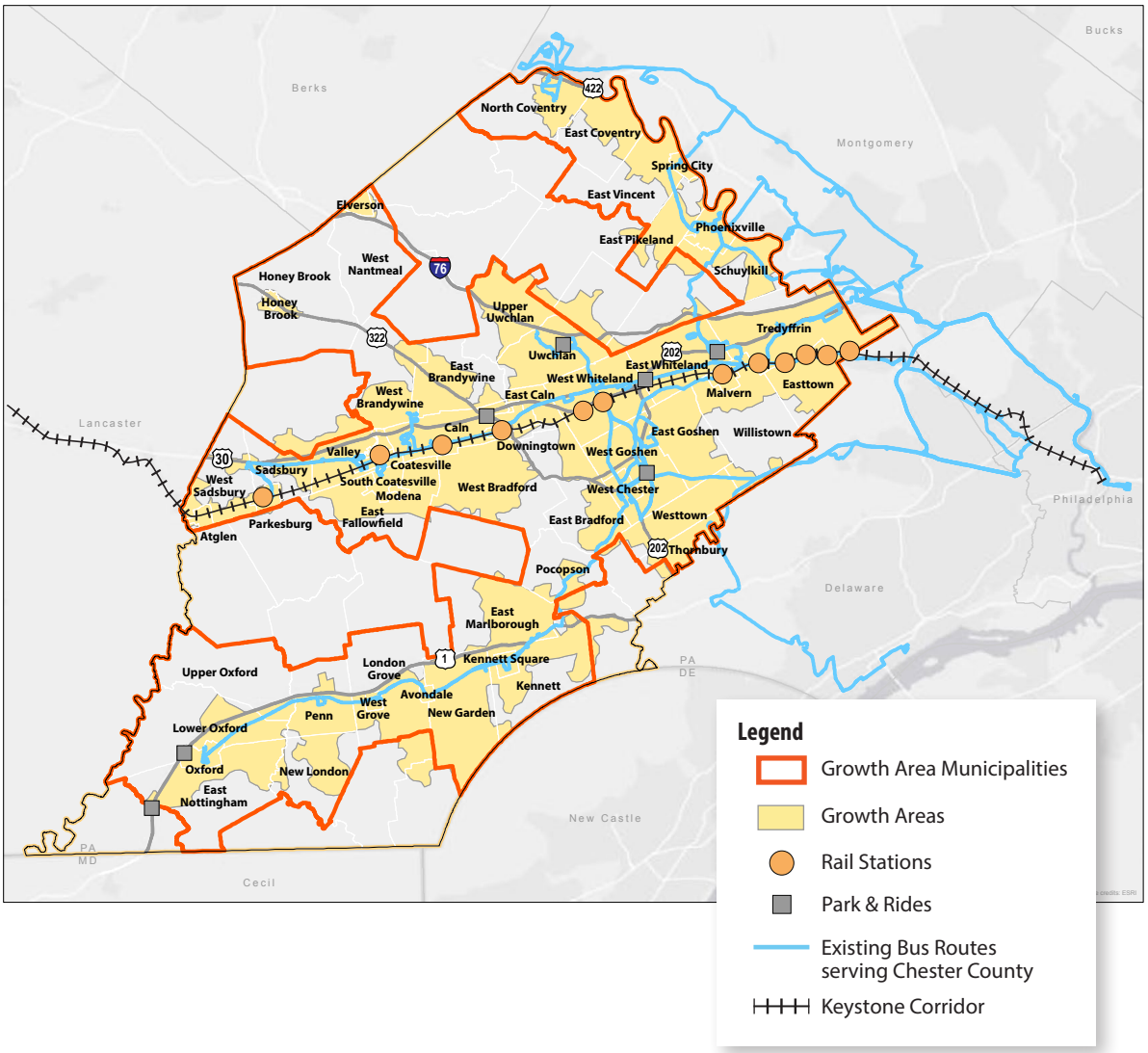
Category	Existing conditions 2014	Performance benchmarks		
		Vision 2020	Vision 2030	Vision 2040
ENVIRONMENT				
Land use				
Percent of growth area municipalities (54) served by transit	76% (41)	→	→	85% (46)
Percent of growth area municipalities (54) served by transit, with transit related ordinances	56% (23)	→	→	100% (46)

Growth area municipalities served by public transit as exhibited below assumes the steady expansion of public transportation services correlating to the forecast population and employment growth and likelihood that fixed route or new commuter services will one day be developed within these municipalities.

Recommendation

- **Partner with local municipalities to ensure future development is transit oriented.** The Planning Commission will work with designated growth area municipalities to inventory existing ordinance standards for public transportation amenities; identify best practices for regulation of public transportation amenities; and, develop zoning ordinance and subdivision/land development standard amenments targeting improvements for transit amenities, pedestrian, and bicycling features.

Growth area municipalities in Chester County

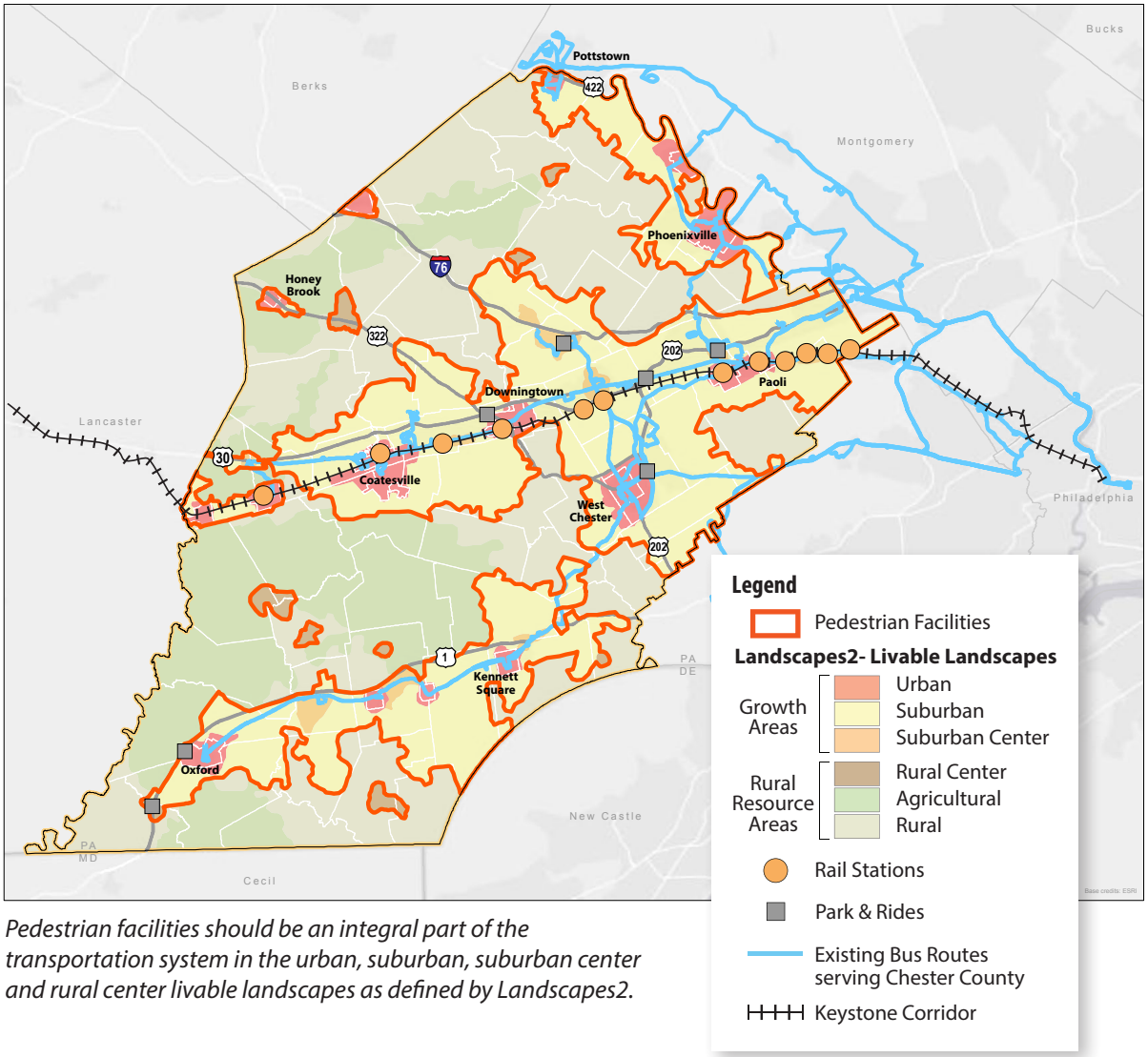


Pedestrian facilities. The exhibit below illustrates where pedestrian facilities should be included as an integral part of the transportation system within the urban, suburban, suburban center, and rural center livable landscapes as defined by Landscapes2. Pedestrian facilities provide many more functions and advantages than just access to public transportation. They provide essential basic connectivity between local destinations as well as recreational opportunities that both contribute to healthy and vibrant communities and provide additional transportation options.

Recommendation

- **In coordination with local municipalities, encourage pedestrian facilities in the urban, suburban, suburban center, and rural center landscapes.** Ensure that subdivision & land development, zoning, comprehensive plans and traffic impact guidelines support the inclusion of pedestrian amenities.

Recommended areas for pedestrian facilities



Pedestrian facilities should be an integral part of the transportation system in the urban, suburban, suburban center and rural center livable landscapes as defined by Landscapes2.

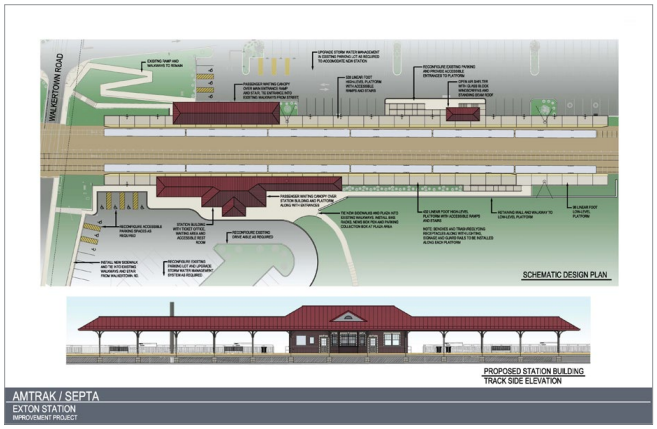
Background

Passenger rail stations

There is a total of twelve existing passenger rail stations in Chester County. Listed from east to west, their locations and services provided are as follows:

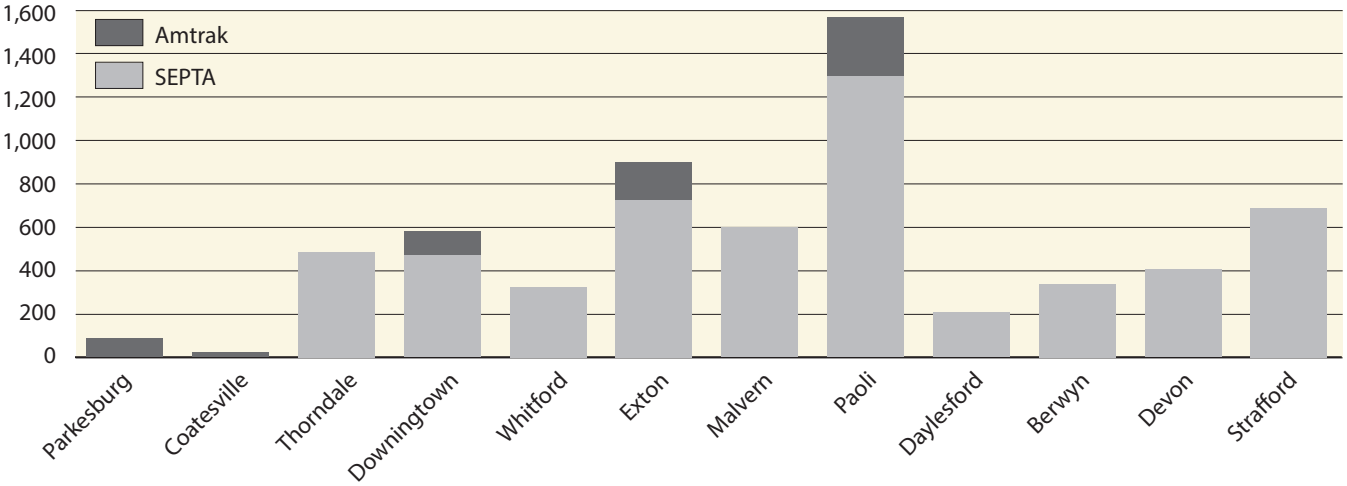
- **Strafford:** Old Eagle School & Crestline Roads–SEPTA
- **Devon:** Lancaster Ave. & Devon State Rd.–SEPTA
- **Berwyn:** Lancaster Ave. & Main Ave.–SEPTA
- **Daylesford:** Lincoln Highway & Glenn Ave.–SEPTA
- **Paoli:** North Valley Rd. & Lincoln Highway–SEPTA and Amtrak
- **Malvern:** Warren Ave near King St.–SEPTA
- **Exton:** Walkertown Rd. at PA 100–SEPTA and Amtrak
- **Whitford:** Whitford & Spackman Roads–SEPTA
- **Downingtown:** Lancaster & Stuart Avenues–SEPTA and Amtrak
- **Thorndale:** Lincoln Highway & South Bailey Road–SEPTA
- **Coatesville:** North 3rd Ave. between Coates & Fleetwood Streets–Amtrak
- **Parkesburg:** West 1st & South Culvert Streets–Amtrak

Rendering of proposed new Paoli Intermodal Transportation Center. Source: SEPTA.



Proposed improvements at Exton Station. Source: SEPTA.

Amtrak and SEPTA ridership at stations summary



Source: SEPTA and Amtrak.

A number of improvements to these existing stations are currently being planned and/or are underway. A summary of these improvements is as follows:

- **Paoli station:** The Paoli Intermodal Transportation Center (ITC) Project involves the proposed relocation and expansion of the SEPTA Paoli station to a new site near the existing facility. The new station will be a fully accessible transportation center servicing buses, shuttles, taxis, and pedestrians. More information regarding the status of current planning and design efforts may be found at: www.paolitransportationcenter.com/
- **Exton station:** Slated improvements include the installation of new high level ADA accessible platforms and development of a bus loop with parking expansion.
- **Downingtown station:** This station is planned to be relocated approximately 1/2 mile to the east near the corridor's intersection with US 322. A net increase in parking is expected.
- **Coatesville station:** Improvements will be part of a current redevelopment project that will include transit oriented development around the station site. New ADA high level platforms and additional parking are expected.
- **Parkesburg station:** Improvements will include high level ADA accessible platforms and parking expansion of 30–40 spaces.

Sketch plan of Coatesville station redevelopment.
Source: PennDOT.

Sketch plan of a relocated Downingtown station.
Source: PennDOT.

Concept plan rendering of proposed new Atglen station.
Source: CCPC.

Future stations

This plan calls for the development of a new rail station in the Borough of Atglen on the western end of the Keystone Corridor in Chester County. A concept plan completed in 2012 identifies development of 120 initial parking spaces with the future potential for and additional 110 spaces. Other plan improvements include rail infrastructure upgrades and the amenities necessary to make this station a full multi-modal and ADA accessible station and site, such as high level platforms, bike racks, and a kiss & ride drop off loop.

Additional rail stations may be developed as part of new commuter rail services located in the Schuylkill River valley and along the extension of the Media/Elwyn line to West Chester. These locations include Phoenixville, Westtown, and Cheyney University. More information relative to the specific locations including proposed improvements and costs will be developed as part of future technical studies to be completed towards the return of these commuter rail services.

Critical issue

Parking availability

Limited parking at rail stations and to a lesser degree transportation centers limits the ability for people to access the public transit system. This limitation essentially places a cap on ridership. As described in the summary chapter section entitled 'The Commuting Challenge', the majority of people that use transit in Chester County typically drive from their homes to access the rail stations. If no spaces can be found at the station of choice, potential transit users either choose to drive to another station, or in most cases decide to complete the trip in their automobile.

Full parking lot at Exton Station.

The analysis exhibit on the next page inventories the existing vehicular parking availability and utilization, as well as the bicycle parking provided at all SEPTA rail stations. The Amtrak-only stations of Coatesville and Parkesburg only include the number of parking spaces available (not utilization) and are assumed to have utilization greater than 90%.

Average weekday SEPTA ridership info is referenced to the parking utilization to determine a parking utilization to boardings ratio for each of the SEPTA rail stations. The higher the ratio, the more likely there is a higher concentration of single occupant vehicles accessing the system from that station. Lower ratios indicate the higher likelihood of bicycle/pedestrian access, carpooling, and/or kiss & ride/drop-offs.

Parking utilization at all rail station locations is envisioned to be 80-90% to strike a balance between being heavily used and available capacity to provide for the one time or non-regular system user. Parking utilization to rail boardings of 55% is perceived to be a good target level for all rail stations, though due to specific characteristics of each, may not be attainable for all stations.

CHESTER COUNTY RAIL STATIONS												
	Strafford	Devon	Berwyn	Daylesford	Paoli	Malvern	Exton	Whitford	Downingtown	Thorndale	Coatesville	Parkesburg
Subtotal spaces	289	166	140	152	486	323	643	229	360	447	30	40
Subtotal availability	0	0	30	20	0	50	0	45	20	125		
Capacity	100%	100%	79%	87%	100%	85%	100%	80%	94%	72%		

TOTAL	
Total parking	3,305
Total availability	290
Percent utilized	91%

Sources: SEPTA and Amtrak.

Recommendations

- **Expand surface parking at all stations where feasible.** Surface parking should be developed to maximum capacity feasible at all station sites.
- **Maximize shared use opportunities adjacent to rail stations.** Arrangements with adjacent properties with existing lots or the space available to create additional parking should be explored to maximize parking if no additional space is available at existing stations.
- **Develop structure parking where feasible.** Once surface parking at the station sites is maximized, and all shared use opportunities with adjacent properties are exhausted, structure parking should be developed if feasible.
- **Provide ample secure bicycle parking at rail stations/transportation centers.** Bicycle parking should correlate to the percentage of ridership that access the stations via bicycle. With the implementation of better bicycle facilities in the vicinity of the stations, demand for bicycle parking will increase.

Category	Existing conditions 2014	Performance benchmarks Vision 2020	Vision 2030	Vision 2040
ENVIRONMENT				
Parking availability				
Rail stations	12	→	→	13
Rail stations with more than 90% utilization	7	all stations 80–90%	→	0
Total spaces—all stations	3,305	→	→	6,000
Parking utilization to rail boardings ratio	55%	55% target for all stations		
Total bicycle parking spaces at rail stations	48	more—based on % of ridership		

Park & ride facilities

There are seven park & ride facilities located near major interchanges throughout the county: the US 202 corridor has three (PA 29, US 30, and Paoli Pike); US 1 corridor two (PA 472 & PA 272); one at PA 100/PA 113 in Uwchlan Township, and a newly constructed facility at US 322 & Lloyd Avenue in Caln Township.

Proposed facilities as indicated in the Vision Plan should be developed through the land development process and/or shared use arrangements with existing commercial centers. New facilities should provide adequate turning radii for both a standard 40 foot bus and a coach bus that will be part of the new commuter express services described in the SYSTEM chapter.

Park & Ride at US 202 and Paoli Pike in West Goshen Township.

Similar to bus shelters, the maintenance of park & rides is an existing barrier to the expansion of these facilities. Presently, PennDOT will develop but not accept the maintenance. Resolution of this issue is critical to the expansion of the park & ride network as envisioned by this plan.

Recommendation

- **Develop a maintenance agreement model(s) for maintaining park & ride facilities.** The maintenance of park & ride facilities is one of the existing barriers to implementing additional park & rides across Chester County. Therefore, PennDOT, the TMAs, chambers of commerce, municipalities, and Chester County must identify at least one (preferably multiple) model for maintaining park & ride facilities that is agreeable and endorsed by all aforementioned parties. In the context of future land development projects, the installation and maintenance of park & ride should be codified as an obligation of the land developer/property owner through the land development process.

Chapter 4
EXPERIENCE

The EXPERIENCE plan addresses the encounters shared by everyone that uses the public transportation system. While the overall transit user experience will be positively affected by many of the SYSTEM and ENVIRONMENT recommendations and subsequent improvements outlined by this plan, there are a number of other user amenities that can contribute to the enhancement of the user experience.

The EXPERIENCE goal is to improve the convenience, reliability, and safety for all transit users.

Recommendations contained herein are to address the following plan objectives:

1. Provide user amenities such as internet access and comfortable seating for long distance fixed bus routes and rail service.
2. Decrease highway congestion by increasing 'choice' ridership.
3. Utilize new technologies to provide transit users with best possible status information regarding current fixed bus routes, rail services and/or facilities.
4. Adopt a singular system for fare collection between service providers.
5. Create a public outreach campaign that enhances public awareness for and improves the perception of public transit services.
6. Develop new travel training models to get transit information closer to individual users.

The previous SYSTEM and ENVIRONMENT chapters pay specific attention to these factors by offering recommendations towards the development of new commuter services that would offer improved express type services with limited stops and the overall physical improvements to bus stops and all other access related facilities. Other factors that may contribute to the desired mode shift are the user amenities and other communications related recommendations discussed in this chapter.

Critical issues

Service quality/user amenities

To maintain the current trend in public transportation ridership growth, the service providers will need to address the evolving demands of the transit users. These demands include the need to stay connected with society and make valuable use of one's personal time. Due in large part to the rapid expansion of cellular technology and the devices used to capture it (smartphones, tablets, etc.) many people are finding that they may be more productive by working online and staying connected digitally through social media during their commute time than they would be by driving an automobile, and would like to see the following improvements in the realm of public transportation over the next ten years:

- 61% want more reliable systems.
- 55% want real-time system updates.
- 55% desire Wi-Fi or 3G/4G wherever they go.
- 44% want a more user-friendly and intuitive travel experience.

Service reliability is one issue addressed in the SYSTEM chapter relative to how operational changes may improve system reliability, however the more important issue from the transit user EXPERIENCE perspective is the ability to know the current status of any particular service in real time so that one may have the ability to adjust their daily commuting pattern accordingly. Therefore, service providers will need to provide these user amenities to not only attract, but also to maintain transit ridership in the years ahead.

SEPTA's new digital smart phone application.

Recommendation

- **Provide real time status information.** The ability for transit users to make real time decisions regarding their daily commutes is invaluable and with new technologies can be accessible to everyone. This information should be provided at all rail stations and transportation centers. Smart phone applications have recently been developed by SEPTA and Amtrak. Other service providers should make use of modern technologies to provide this information as well.

Category	Existing conditions 2014	Performance benchmarks		
		Vision 2020	Vision 2030	Vision 2040
EXPERIENCE				
User amenities				
Service providers	5	as required	as required	as required
Service providers with real time info	2	→	→	All
Service providers with cashless payment	2	→	→	All

Critical issue

Fare consistency/coordination between providers

There are currently five different service providers in Chester County between bus and rail services in Chester County, all with different fare structures and accepted methods of payment.

While cash is still accepted by all, SEPTA will soon be transforming to implement a new fare collection system currently labeled as their 'new payment technology' or NPT. This new 'smart system' will be a method of payment that will span the entire SEPTA network and will utilize digitally based technologies including smart cards, key fobs, smart phones and other contactless devices to accept payment. According to SEPTA, the benefits of such a system for transit users include:

- Seamless travel across all SEPTA services
- An accurate payment history
- Improved convenience, reliability, and security
- Added fare purchasing options, including self-service
- Simplified fare system and policies

The benefits for SEPTA include the reduction of operating and maintenance costs through the improved efficiencies afforded by the automated process and increased revenue through better accountability of the fare collection system. The system is also envisioned to provide for better origin & destination information which can be used to provide better service planning which will lead to overall system service improvements. Rollout of the NPT is scheduled to be done in three phases and be complete in 2015.

Other service providers in the region are expected to have the options to coordinate with SEPTA's NPT system, however the costs associated with such a venture may be cost prohibitive and otherwise impractical. Ultimately the goal would be to have a payment system similar to the EZPass system utilized on the highways that spans multiple agencies. Until such an EZPass system is developed, service providers could benefit from the increased efficiency in boarding and accounting by converting to an all electronic fare collection system.

Recommendation

- **Institute an electronic payment system for all service providers in the county.** A fare collection system that coordinates with SEPTA's new payment technology may or may not be feasible for other service providers in Chester County. Otherwise the application of new technologies may provide a more affordable alternative.

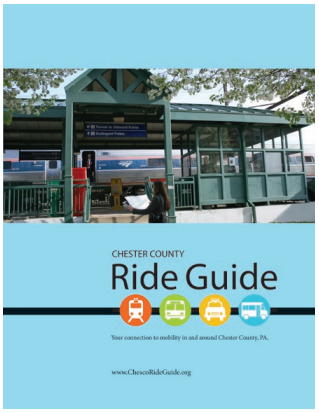
Critical issue

Marketing of existing services

A significant limiting factor in people making use of the public transportation system is the user's lack of knowledge regarding the system and/or the inability to interpret and navigate the system to full advantage.

What route should I take? What are the fares? How long will it take for me to get there? Will I need a transfer? These are samples of the many questions initial transit users ask before deciding whether or not to use public transit. The less information one is able to obtain, the more likely that person will seek other modes of transport.

The Chester County Ride Guide—a joint effort by the Chester County Planning Commission and Chester County Health Department was developed to inform and direct Chester County residents to the available public transportation options. This information is available in both print (pdf) and interactive online formats at: www.ChescoRideGuide.org.



Chester County Ride Guide: www.ChescoRideGuide.org

Additional public outreach and marketing of existing public transportation services, including development of the new commuter service model discussed in the SYSTEM chapter could be made targeting employment centers in the county, as this is where many of the potential choice riders reside that currently use automobiles as the primary mode of choice. The county will look to TMACC to assist with the creation, promotion, and implementation of such a marketing campaign.

Recommendations

- **Develop a public outreach program.** Knowledge is power. Spreading knowledge regarding available public transportation services and how best to take advantage of them will enlighten potential transit users to their opportunities and increase transit ridership. A public outreach program will also help to promote the new commuter services model based on carpooling and vanpooling to the business community.
- **Create a citizens advisory panel to monitor and report on transit experience related issues.** This will allow for valuable feedback from the transit user community towards targeting specific improvements in Chester County. The Planning Commission and TMACC should work together to develop the best methodology towards establishing such a panel.


SEPTA
Whitford
Trains to Center City Philadelphia

Chapter 5
Implementation Plan


EXIT

Implementation Plan

The Implementation plan provides guidance towards the accomplishment of the recommendations described in the SYSTEM, ENVIRONMENT, and EXPERIENCE chapters of this plan.

Each recommendation has been assigned a general priority as well as the organization or agency that should take the lead with its implementation.

General priorities relative to the timeframes within each recommendation should be acted upon are defined as follows:

- **High:** Actions that require immediate attention towards implementation.
- **Medium:** Actions that require general or on-going attention towards implementation.
- **Low:** Actions that require additional studies or events prior to implementation.

It should be noted that these priorities may shift depending on the availability of funding programs that may be utilized for implementation of any specific recommendation.

Lead organizations or agencies are abbreviated as follows:

- **CCPC**: Chester County Planning Commission
- **SEPTA:** Southeastern Pennsylvania Transportation Authority
- **PennDOT:** Pennsylvania Department of Transportation
- **DVRPC:** Delaware Valley Regional Planning Commission
- **TMACC:** Transportation Management Association of Chester County
- **Providers:** All Service Providers, including: SEPTA; TMACC; Krapf's Buses; Pottstown Area Rapid Transit (PART); DART: Delaware Transit Corporation, and any other future service provider that may operate in Chester County.

Recommendations are sorted relative to their respective plans and are preceded by the performance benchmarks established for each on the following pages.

SYSTEM

Performance benchmarks

Category	Existing conditions 2014	Performance benchmarks Vision 2020	Vision 2030	Vision 2040
SYSTEM				
Service quality/reliability				
Bus routes	16	as required to meet demand, potentially more		
Average on-time performance	78%	80.0% →	82.5% →	85.0%

Recommendations—action plan/priorities

Recommendation	Priority	Lead	Notes
SYSTEM			
Bus/rail connectivity			
• Coordinate new commuter services with services at rail stations and transportation centers for better connectivity.	Medium	Providers	Connectivity for existing routes should also be investigated.
First mile/last mile connections			
• Promote the use of carpooling, vanpooling, and private shuttle services.	High	TMACC	Please refer to the new commuter services model described in the SYSTEM plan.
• Provide car shares/bike shares at or near rail stations.	Low	DVRPC	Feasibility studies should be performed to determine applicability.
Service reliability			
• Plan for shorter routes with less stops to achieve better on-time performance.	Medium	Providers	Applies to both new commuter services and existing fixed route services.
• Implement traffic signal prioritization in major transit corridors where feasible.	Medium	CCPC	Coordination with municipalities will be necessary as major transit corridors traverse many boundaries.
• Provide real-time status/traveler information.	Medium	Providers	Applicable to both the SYSTEM and EXPERIENCE plans.

ENVIRONMENT

Performance benchmarks

Category	Existing conditions 2014	Performance benchmarks Vision 2020	Vision 2030	Vision 2040
ENVIRONMENT				
Parking availability				
Rail stations	12	→	→	13
Rail stations with more than 90% utilization	7	all stations 80–90%	→	0
Total spaces—all stations	3,305	→	→	6,000
Parking utilization to rail boardings ratio	55%	55% target for all stations		
Total bicycle parking spaces at rail stations	48	more—based on % of ridership		
Bus stops				
Bus stops	847	as required	as required	as required
Percent of bus stops with more than 5 boardings, with shelters	23% (27/116)		75%	
Percent of bus stops with shelters	6% (50)	focus on those with higher boardings		
Percent of bus stops with pedestrian connections	46% (390)	→	→	90–100%
Land use				
Percent of growth area municipalities (54) served by transit	76% (41)	→	→	85% (46)
Percent of growth area municipalities (54) served by transit, with transit related ordinances	56% (23)	→	→	100% (46)

Recommendations—action plan/priorities

Recommendation	Priority	Lead	Notes
ENVIRONMENT			
Parking availability at rail stations			
• Expand surface parking at all stations where feasible.	High	PennDOT/SEPTA	These recommendations comprise a three tiered sequential approach to providing additional parking at the rail stations. All opportunities for expansion should be explored. Parking needs will vary by location based on supply and demand.
• Maximize shared use opportunities adjacent to rail stations.	High	PennDOT/SEPTA	
• Develop structure parking where feasible.	Medium	PennDOT/SEPTA	
Active transportation (bike/ped) connections			
• Focus on providing pedestrian connections and shelters at heavily used bus stops.	High	CCPC	This will provide the most impact and provide examples for future development.
• Provide ample secure bicycle parking at rail stations/transportation centers.	High	PennDOT/SEPTA	Bicycle parking will have a direct relationship to the cycling environment in the vicinity of each station/transportation center.
Municipal land use			
• Work with local municipalities to ensure future development is transit oriented.	High	CCPC	The land development process is where many transit related improvements will be implemented.
Bus shelters			
• Develop a maintenance agreement model(s) for maintaining bus shelter facilities.	High	CCPC	Required for the success of these facilities.
Park & ride facilities			
• Develop a maintenance agreement model(s) for maintaining park & ride facilities.	High	CCPC	Required for the success of these facilities.

EXPERIENCE

Performance benchmarks

Category	Existing conditions 2014	Performance benchmarks Vision 2020	Vision 2030	Vision 2040
EXPERIENCE				
User amenities				
Service providers	5	as required	as required	as required
Service providers with real time info	2	→	→	All
Service providers with cashless payment	2	→	→	All

Recommendations—action plan/priorities

Recommendation	Priority	Lead	Notes
EXPERIENCE			
User amenities			
• Provide real time status information at all rail stations and transportation centers.	Medium	Providers	Applicable to both the SYSTEM and EXPERIENCE plans.
• Institute an electronic payment system for all service providers in the county.	Low	Providers	Intended for transit user convenience and better system operation efficiency.
• Develop a public outreach program to increase public awareness, provide user training, and promote the use of the transit system.	High	CCPC/TMACC	This program is intended to increase use of the public transportation system.
• Create a citizens advisory panel to monitor and report on transit experience related issues.	High	CCPC/TMACC	CCPC and TMACC to work together to develop most appropriate forum for public input.

Implementation funding

The costs associated with the recommended physical improvements and service enhancements (both capital improvements and operations/maintenance) outlined in this Public Transportation Plan spans such a vast range of options and variable factors that are impossible to quantify and subsequently provide an estimate for those costs.

The budgeting, programming and eventual implementation costs will need to be addressed on a project specific basis by the project sponsor. However, it is envisioned that implementation of many of the site related improvements associated with bus stops and the pedestrian facilities to connect them to destinations can be accomplished through the municipal level land development process.

There are multiple potential funding opportunities available covering the range of potential improvements and services outlined in this plan. Funding programs and/or one time funding opportunities evolve over time and should be periodically revisited for applicability to any specific project. Two sources providing information relative to current funding programs include:

- Delaware Valley Regional Planning Commission
  www.dvrpc.org/Funding/
- Pennsylvania Department of Community and Economic Development
  www.newpa.com/find-and-apply-for-funding/

For more information:
Chester County Planning Commission
601 Westtown Road
Suite 270
P.O. Box 2747
West Chester, PA 19380-0990

Tel: 610.344.6285
Fax: 610.344.6515

www.chesco.org/planning
www.landscapes2.org
www.ChescoPaGreen.org

This plan prepared in partnership with

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