

Pennsylvania

ACTIVE TRANSPORTATION

Plan





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Altoona MPO
Centre County MPO
DVRPC MPO
Erie County MPO
Franklin County MPO
Johnstown MPO
Lackawanna/Luzerne MPO

Lancaster MPO
Lebanon County MPO
Lehigh Valley MPO
Lycoming County MPO
Mercer County MPO
North Central RPO
Northeastern PA Alliance MPO
Northern Tier RPO

Northwest RPO
Reading MPO
SEDA-COG MPO
Southern Alleghenies RPO
Southwest PA Commission MPO
Harrisburg Area Transportation Study
Wayne County
York County MPO

LETTER FROM THE SECRETARY

Dear Fellow Pennsylvanians:

It gives me immense pleasure to present you with Pennsylvania's 2019 Active Transportation Plan. This document sets the stage for the Department of Transportation, along with our state agency partners, local and regional planning organizations, and advocacy groups to improve conditions for walking and biking across our state.

Achieving success over the next five years and beyond will depend on statewide recognition of the value of Active Transportation, the development of regional and local Active Transportation plans, and the prioritization of resources.

In support of this work, the 2019 Active Transportation Plan moves beyond a traditional focus on strictly roadway safety to also explore challenges

and opportunities related to health, equity, connectivity, climate change, and economic development in communities across Pennsylvania. Documents accompanying the 2019 Plan offer guidance on creating local plans and securing funding to design and construct needed infrastructure.

I encourage you to explore and discuss the themes, strategies, and implementation steps within the 2019 Active Transportation Plan with your colleagues and elected officials as your community develops its own vision and plan for a walkable and bikeable public spaces over the next five years.

Sincerely,



Leslie S. Richards
Secretary of Transportation



Photo Credit: PennDOT



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Photo Credit: BikePGH

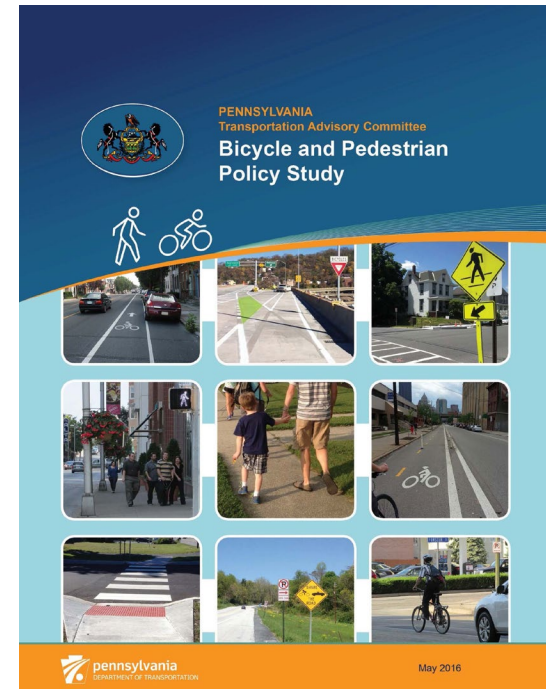
INTRODUCTION/VISION & GOALS

HISTORY OF ACTIVE TRANSPORTATION PLANNING IN PENNSYLVANIA

Pennsylvania has a long history in promoting active transportation, with leadership from PennDOT, Metropolitan Planning Organizations (MPOs)/Rural Planning Organizations (RPOs), counties, and cities across the Commonwealth. In 1970, Act 120 established PennDOT as a multimodal transportation agency and the first Statewide Bicycle and Pedestrian Plan was published in 1976. With federal transportation legislation leaning toward intermodal planning in the 1990s, PennDOT published their first long-range intermodal transportation plan in 1995. The following year, the Statewide Bicycle and Pedestrian Plan was updated, identifying a vision for bicycling and walking transportation. In 2007, the Plan was again updated and was formally a component of the Pennsylvania 2007 Mobility Plan, the state's long-range transportation plan. The 2007 Plan continued a

strong focus on coordination between PennDOT, other state agencies, MPOs, RPOs, counties, cities, tourism agencies, bicycle/pedestrian advocacy groups, and health agencies that set a tone for future coordination that still occurs today through the PennDOT Connects Initiative.

PennDOT Connects reaches into community and transportation planning processes to initiate early dialogue with state, regional, and local partners to help establish coordinated visions for transportation projects and ensure non-motorized transportation needs are considered. In addition, each PennDOT district office has an appointed bicycle and pedestrian coordinator, district planner, and safety press officer, to ensure active transportation needs are considered within regional and district initiatives. In 2016, the Pennsylvania State Transportation Advisory Committee developed the Bicycle and Pedestrian Policy Study which set the core policy statement that directs this Pennsylvania Active Transportation Plan.



The Pennsylvania Transportation Advisory Committee Bicycle and Pedestrian Policy Study was adopted in 2016 and provides recommendations that were integrated into this plan update.

MPOs, RPOs, counties, and municipalities have also been leading active transportation planning initiatives across the Commonwealth for the better part of the last two decades. Most recently, the Commonwealth's major cities have elevated the importance of active transportation projects through their commitment to improving pedestrian and bicycle connectivity, shared-use paths, bicycle lanes, and protected bicycle lanes. PennDOT has been a partner in these efforts and is updating its Design Manuals to advance current, national design standards.

PennDOT continues its commitment to sustainable, active, and multimodal transportation with the development of this Pennsylvania Active Transportation Plan. The Plan outlines a vision and framework for improving conditions for walking and bicycling across Pennsylvania, with clear guidance towards advancing

active transportation in Pennsylvania by building upon the original 1976, 1996, and 2007 plans.

PENNSYLVANIA ACTIVE TRANSPORTATION VISION

While this Plan is geared toward improving conditions for walking and bicycling across Pennsylvania, it is a priority to focus on Pennsylvanians who walk and bicycle out of necessity rather than for leisure and recreation. The Plan identifies and prioritizes strategies that will increase the number of people walking and bicycling while supporting safety and multimodal connectivity throughout the Commonwealth. This Plan will be a resource for MPOs, RPOs, and municipalities throughout Pennsylvania providing guidance as they develop and implement regional and local active transportation plans.

Core Policy Statement, Vision, Theme, Goals, and Objectives

The core policy statement, vision statement, themes, goals, and objectives of the Pennsylvania Active Transportation Plan were developed through extensive stakeholder and public input through the planning process. Together, they will guide the planning, funding, and implementation of multimodal infrastructure policies and programs.

The **Core Policy Statement** was developed through the 2016 Transportation Advisory Committee and highlights the Department's complete commitment to supporting non-motorized transportation.

The **Vision** is a narrow, future-oriented declaration of what we want walking and bicycling to be in Pennsylvania.

Themes are broad topics that provide insight into areas of interest which will guide the goals and objectives for advancing active transportation projects in Pennsylvania.

Goals are developed to track our success and will push initiatives forward. Goals should be S.M.A.R.T (Specific, Measurable, Achievable, Realistic, and Timely).

Objectives are more-specific action items that will help to achieve the goals.

Core Policy Statement

“PennDOT shall make accommodations for active transportation a routine and integral element of planning, project development, design, construction, operations, and maintenance.”



Pennsylvania Active Transportation Plan Vision Statement

“Biking and walking are integral elements of Pennsylvania’s transportation system that contribute to community health, economic mobility, and quality of life.”

Themes

The Plan outlines the following six themes and provides specific goals and actionable objectives for advancing bicycling and walking in Pennsylvania.

THEME 1: ENHANCE SAFETY



THEME 2: PROVIDE TRANSPORTATION EQUITY



THEME 3: CONNECT WALKING & BICYCLING NETWORKS



THEME 4: LEVERAGE PARTNERSHIPS



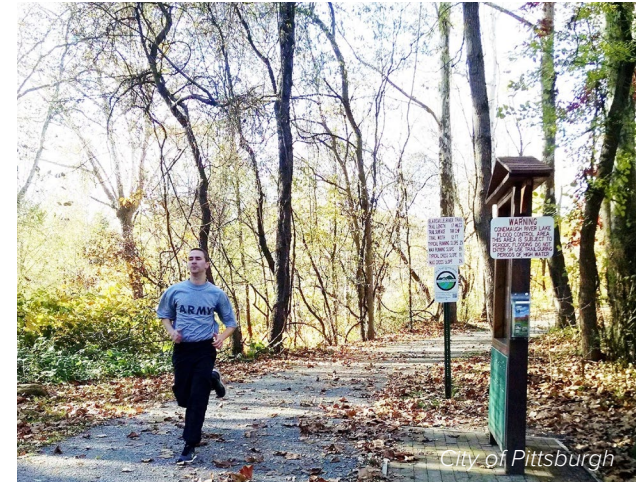
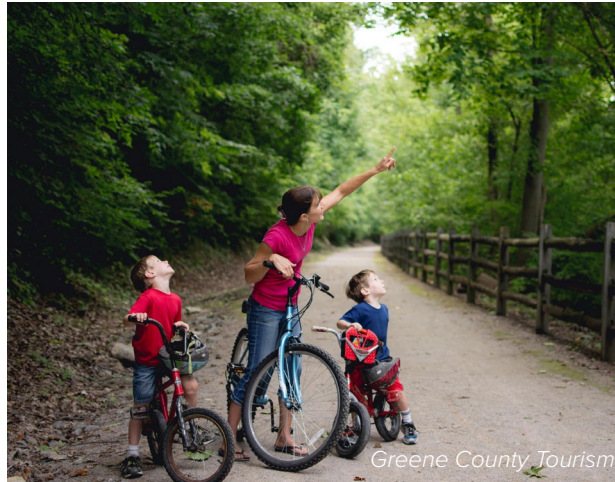
THEME 5: IMPROVE PUBLIC HEALTH



THEME 6: INCREASE ECONOMIC MOBILITY



WHAT IS ACTIVE TRANSPORTATION?



Active transportation is any self-propelled, human-powered mode of transportation, such as walking or bicycling. Use of the term “active transportation” highlights the growing recognition of the connection between public health outcomes and transportation planning.

As a form of human-powered transportation, active transportation engages people in healthy physical activity while they travel from place to place. People walking, bicycling, using wheelchairs, skateboarding, scootering, and rollerblading are engaged in active transportation. Active transportation supports transit use since many people reach transit stops using active travel modes.

EXPANDED OPTIONS: NEW MOBILITY

Transportation is always evolving, and there are more mobility options than ever before including ride-hailing services, bikeshare, scooter share, e-bikes, and more. It is critical to think about these options not only as new applications of technology but also new ways to connect people. New mobility continues to change how we think about transportation with a focus on shared mobility.

These new micromobility modes of transportation represent innovative responses to the demand for new options and offer an opportunity to:

- Provide more mobility choices
- Offer last mile and first mile connections
- Reduce traffic congestion
- Mitigate various forms of pollution
- Reduce transportation costs
- Improve efficiency of transportation networks
- Provide options for those who cannot afford to buy and maintain a vehicle
- Offers accessible mobility options for persons of all ages, abilities, and skill levels



*NEV: Neighborhood Electric Vehicle

ACTIVE TRANSPORTATION BENEFITS

SAFETY

Proven safety countermeasures can substantially reduce crash rates and increase pedestrian comfort. Safety features help to promote active transportation as a viable means of mobility.

Pedestrians account for **16.9%** of all traffic deaths in Pennsylvania, despite representing only **3.3%** of traffic crashes.

(Pennsylvania Crash Facts and Statistics, 2018)

PROVEN SAFETY COUNTERMEASURES

	% DECREASE IN CRASHES
Install sidewalk to avoid walking along roadway	65-89
Increase enforcement to reduce speed	70
Install pedestrian refuge island	56
Add exclusive pedestrian phasing to signalized intersection	34

(Desktop Reference for Crash Reduction Factors)



The combined rate of pedestrian and bicyclist fatalities were **greater than 15%** of the total fatalities on state roads.

SAFETY IN NUMBERS



The likelihood that a given person walking or bicycling will be struck by a motorist decreases as the number of people bicycling and walking increases.

(Jacobsen, PL 2003.)

HEALTH

Active transportation encourages people to build physical activity into their everyday life. Even a moderate amount of daily physical activity has an impressive range of benefits to overall health.



24% of all deaths in Pennsylvania are caused by heart disease and cases are expected to increase by **344%** by 2030.

(The State of Obesity, 2018; Pennsylvania Department of Health, 2016)



Walking or biking for **20 minutes** each day can lower the risk of heart failure by **21%** for men and by **29%** for women.

(Rahman, I, et al. 2014; Rahman, I, et al. 2015)



Almost **12%** of all schoolchildren in Pennsylvania suffer from asthma.

(Pennsylvania Department of Health, 2016)

Statewide, **25.9%** of PA residents were physically inactive and reported no physical activity beyond that required in their job.

(State of Obesity, 2017)



Approximately **32%** of Pennsylvania's population is considered obese.

(The State of Obesity, 2018)



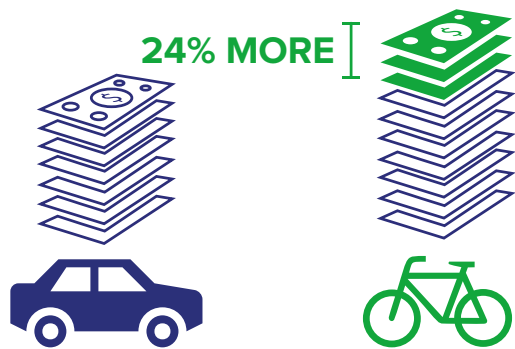
For every **0.6 miles** walked daily, there is a **5%** reduction in the likelihood of obesity.

(Frank, L.D., et al. 2004)

ECONOMIC

Active transportation supports the economy and influences spending patterns and growth.

A 2012 study found that people on a bicycle spend **24% more** on food, goods, and services on a monthly basis than those who arrive by automobile.

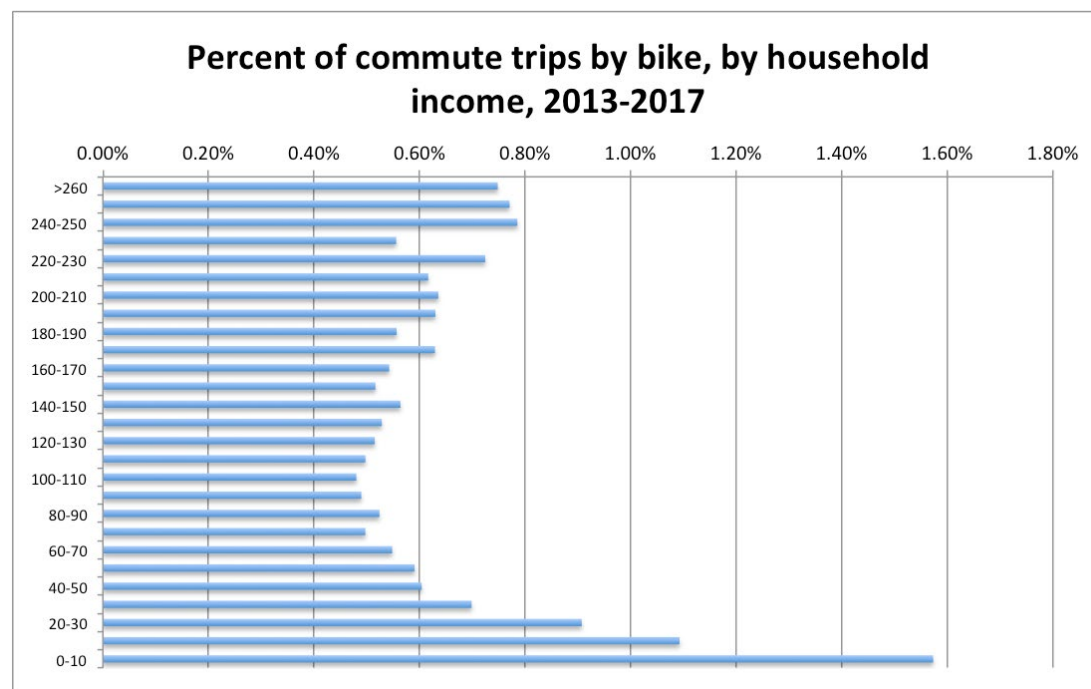


(Clifton, KJ, et al. 2012)

Diabetes and prediabetes cost an estimated \$13.4 billion in Pennsylvania each year in medical costs and lost productivity.

(Dall, TM, et al. 2014)

Commuters earning less than \$10,000 are nearly 3x as likely to ride a bike as the national average of 0.5



(<http://cityobservatory.org/who-bikes/> 28 May 2019)

Physical activity helps prevent or delay diabetes, arthritis, and osteoporosis, while helping maintain balance, mental cognition, and independence.

(NIH-National Institute on Aging)

ENVIRONMENTAL

Active transportation can help to address a number of environmental challenges and reverse detrimental environmental trends in Pennsylvania.



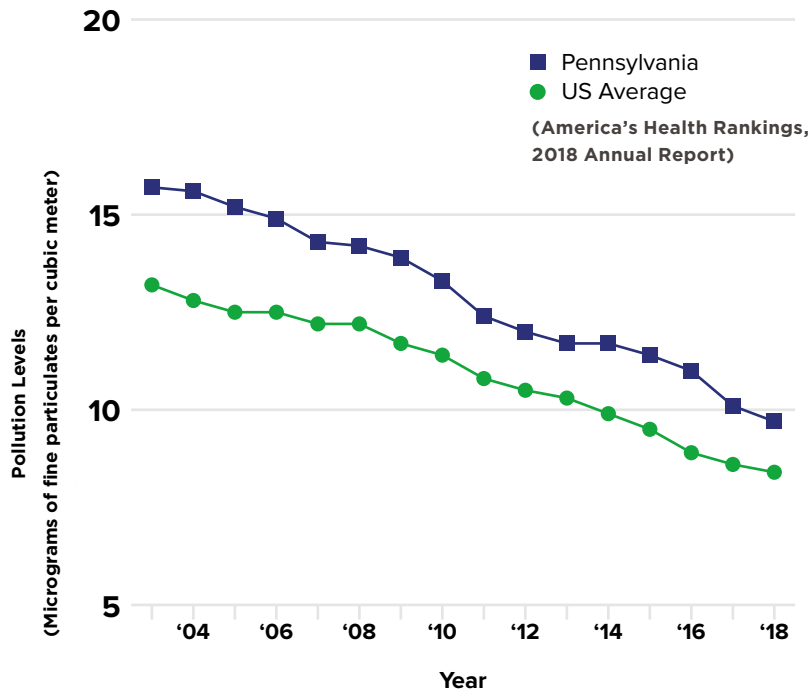
Pennsylvania is ranked
48th in the country
for poor air quality

(America's Health Rankings, 2018)



If **8%** more children living within 2 miles of a school were to walk or bike to school, the air pollution reduced from not taking a car would be equivalent to removing **60,000 cars** from the road for one year.

(America's Health Rankings, 2018)



As seen in this graph, Pennsylvania air pollution is decreasing, however, it is consistently higher than the US average.

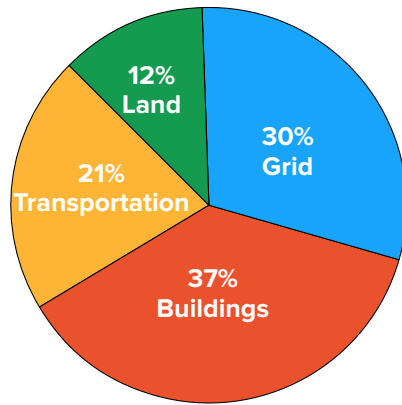
CLIMATE

Transportation emits a significant portion of Pennsylvania's Greenhouse Gas Budget every year. By supporting reductions in vehicle miles traveled, travel delay, and mode shift, PennDOT can significantly improve health, equity, and environmental issues across the state.



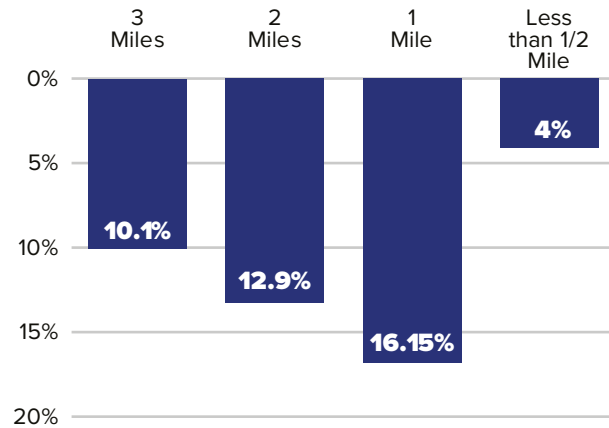
Biking 2 miles, rather than driving, avoids emitting 2 lbs of pollutants, which would take 1.5 months for one tree to absorb the pollutants.

(EPA, 200: NC State, 2001)



Transportation contributes 21% of PA Greenhouse Gas emissions

Number of Vehicle Trips 3 Miles or Less



43% of trips are three miles or less and could be replaced by shifting modes to biking or walking.



(https://nhts.ornl.gov/tables09/fatcat/2009/vt_TRPMILES.html)

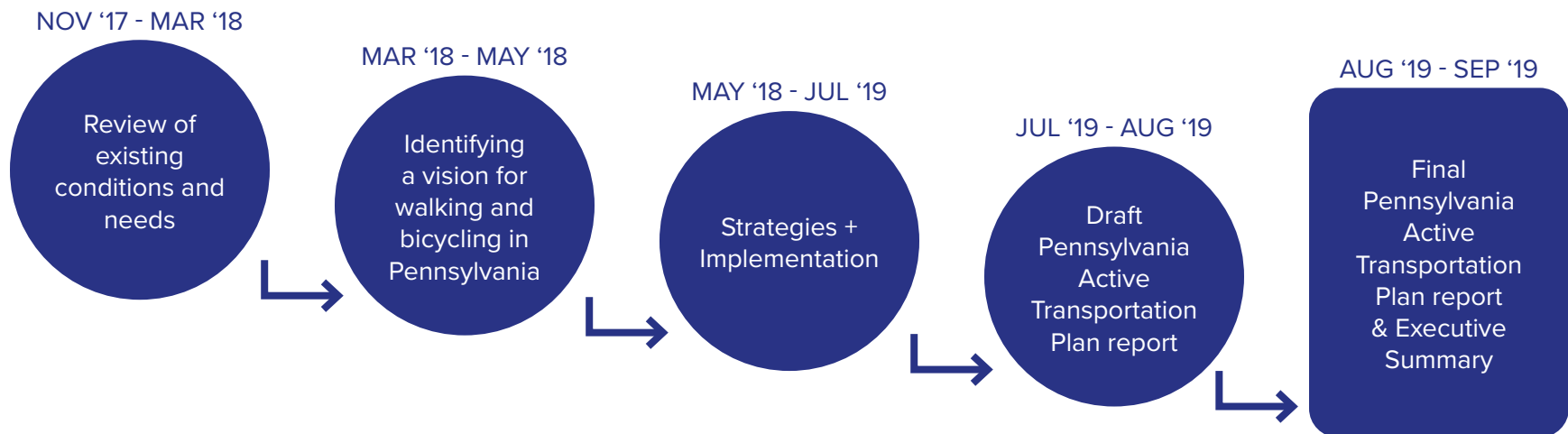
02



PLANNING PROCESS AND OUTREACH

INTRODUCTION AND PROJECT TIMELINE

The Pennsylvania Active Transportation Plan, developed over a 20-month period, was completed in Fall of 2019. The comprehensive planning process engaged thousands of Pennsylvania stakeholders and the general public. Highlights of the engagement are provided in this chapter with additional information found in Appendix A1.



PUBLIC AND STAKEHOLDER ENGAGEMENT

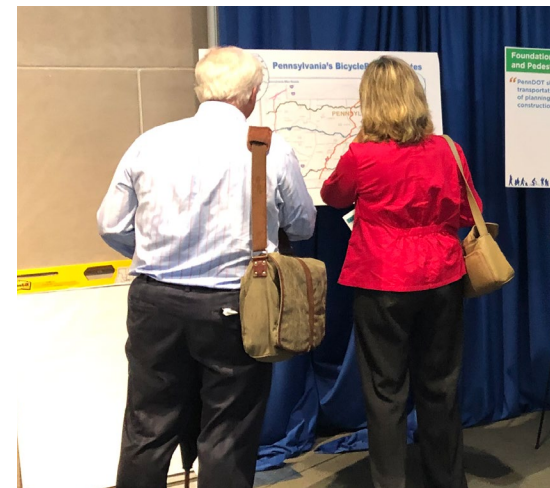
The Pennsylvania Active Transportation Plan was developed through extensive committee, stakeholder, and public engagement and input. Stakeholders and the general public were engaged during the planning process through Advisory Group meetings, regional stakeholder meetings, stakeholder interviews, project website, online project survey, interactive webinars, social media, and public-facing meetings. A brief summary of each is described below.

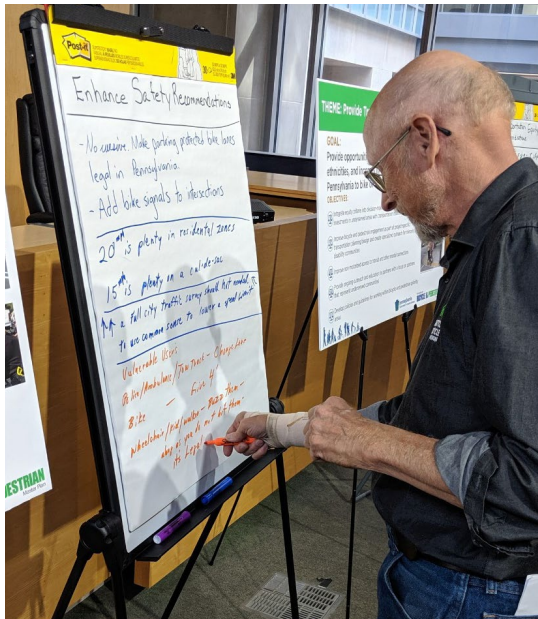
ADVISORY GROUP MEETINGS

The Advisory Group served as technical experts and offered guidance during the development of the Plan. The Advisory Group provided perspective regarding bicycle and pedestrian needs and priorities, confirmed consistency

with existing or future policies or regulations, and helped to develop recommendations. Advisory Group representation included PennDOT staff, as well as other state agencies including the Department of Community and Economic Development (DCED), the Department of Conservation and Natural Resources (DCNR), and the Department of Health (DOH). Bringing local perspective to the Plan were representatives from the Centre Regional Planning Agency and the Bicycle Coalition of Greater Philadelphia.

The Advisory Group met nine (9) times over the course of the project. The Advisory Group provided feedback, helped to identify potential pitfalls, and reviewed project materials. Specifically, the Group provided input and review for vision and goals, public participation planning, existing conditions analysis, implementation strategies, performance measures, and the Draft Plan.





MPO/RPO REGIONAL WORKSHOPS/WEBINARS

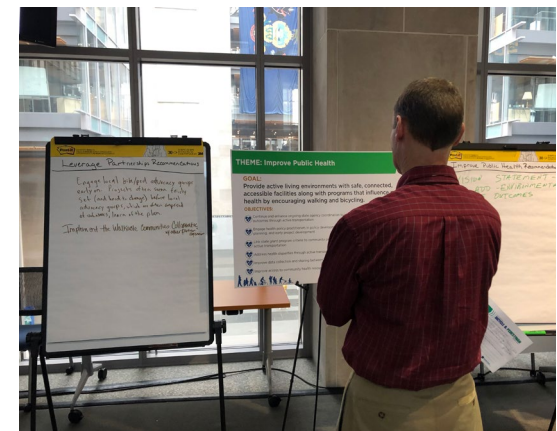
MPO/RPO workshops occurred in the spring of 2018 and 2019. These workshops were an opportunity for regional and local transportation professionals to provide input at the onset of the project (spring 2018) and also respond to draft recommendations later in the process (spring 2019). Topics discussed included urban/rural differences, funding, prioritization, and facility design. These workshops provided valuable direction when developing the Plan.

STAKEHOLDER MEETINGS

To understand regional needs, challenges, and accomplishments, PennDOT facilitated eight (8) meetings across Pennsylvania with local stakeholders. Stakeholders included representatives from PennDOT Districts, community groups, other state agency personnel, MPOs/RPOs, county and regional planning departments, trail organizations, bicycle advocates, and design professionals.

Each meeting included an overview of the planning process and a review by each region with a snapshot of each PennDOT District. Each meeting included an interactive session for visioning and goal setting and a facilitated discussion around existing conditions and key issues in the region.

Additional stakeholder meetings occurred to discuss the Plan components and to solicit input on bicycling and walking in Pennsylvania. These meetings included: PennDOT District Executive Quarterly meeting, Trails Advisory Committee Meeting, Pennsylvania Interagency Health Equity Team meeting, APBP Delaware Valley Chapter quarterly meeting, and 5th Square/Bicycle Coalition of Greater Philadelphia meeting. A presentation was also made at the York County Latino Health Conference.

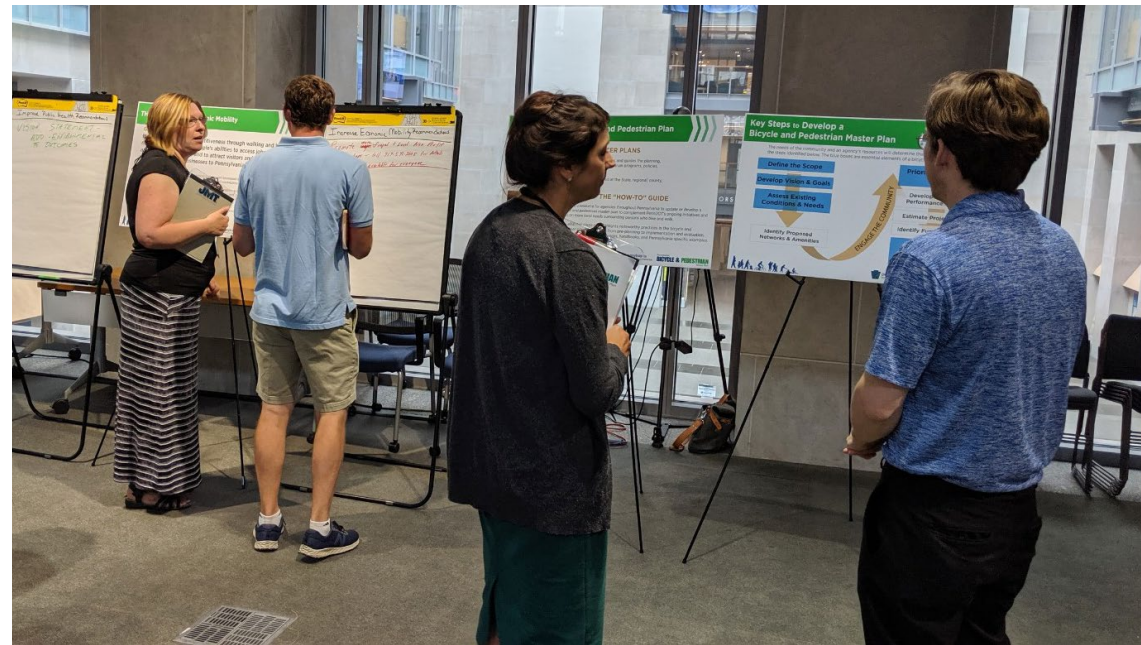


PEDALCYCLE AND PEDESTRIAN ADVISORY COMMITTEE (PPAC)

PPAC's role is to advise and comment on all phases of cycling and pedestrian program activities being undertaken or financially assisted by PennDOT and agencies of state government. Coordination with PPAC occurred throughout the development of the Plan. PPAC will provide ongoing assistance with bicycle and pedestrian recommendations on policy and infrastructure improvements.

PUBLIC MEETING

An Open House Meeting was held May 30, 2019, to present the vision, themes, objectives, and solicit recommendations for the Plan. Citizens were able to participate interactively via a live webcast of the meeting or by attending the Open House Meeting in Harrisburg or one of the PennDOT District offices throughout the Commonwealth.



ONLINE ENGAGEMENT

In addition to in-person opportunities, a robust online strategy was designed to afford multiple ways for people to provide input into the Plan. The online engagement included a project website, Facebook and Twitter messages, and a community survey. The importance of the outreach is to understand the concerns and issues

regarding walking and bicycling in Pennsylvania. The following pages provide a brief overview of some of the information heard, and details for each type of outreach are included in Appendix A1.

WHAT WE HEARD

BICYCLE

- Bumps and potholes in the road cause drivers and bicyclists to swerve on the road
- Concerned by lack of bicycle lanes, especially protected bicycle lanes
- Need better maintenance
- Vehicles often block bicycle lanes
- Want improved connectivity to reach destinations
- Lack of bicycle parking
- Backed up drainage when it rains causes flooding and problems for bicyclists
- Improve signage
- Educate bicycle riders on bicycle traffic laws
- Lack of traffic enforcement for cars speeding, running red lights and stop signs
- Include more bicycle safety education in driver's license education and exams
- Distracted drivers

PEDESTRIAN

- Lack of sidewalks or wide shoulders
- Broken sidewalks
- Need to clear snow and debris from sidewalks
- More pedestrian crossing signals
- Connect sidewalks, especially around schools
- More street furniture, such as benches to rest on
- Lack of traffic enforcement for cars speeding, running red lights and stop signs
- Include more pedestrian safety education in driver's license education and exams

COMPLETE STREETS

- Invest in walking and bicycling infrastructure instead of only motor vehicle infrastructure to improve quality of life
- Comprehensive solutions to safer streets instead of only adding bicycle lanes
- Need traffic calming measures for safety concerns
- Better bicycle and public transit integration

I am a 62-year-old ex-coal miner that bikes or walks daily because if I do not walk or bike I have to take medication for my arthritis. It is essential to me. In light of the opioid addiction, please consider routine walking/ biking for self-sustaining health as being essential.

Connected communities with the rail to trail network would be great. We have some, but not enough.

Public transportation is lacking and inefficient in Pittsburgh and nearly nonexistent in the suburbs. Public transportation with accommodations for bikes (such as simple bike racks) and bike friendly roads would greatly improve the quality of life and give access to needs and necessities of living for many in western Pennsylvania.

Bike lanes are wonderful but are not well maintained - when there is a storm (snow or rain) debris remains for a long time - sometimes weeks. There are bike lanes now that are full of winter debris and haven't been cleaned since last fall.

In real rural communities, biking and hiking trails would be invaluable. Walking on sidewalks is rare since sidewalks are rare. Walking and biking trails or paths are rare but would be helpful to make our communities better places to live.

PennDOT must evolve more quickly from the old model of "vehicle traffic equals more commerce", and learn that people now care more for a quality living experience where they reside. This means a vast improvement in bicycle infrastructure and better maintenance of sidewalks and crossings.

Pennsylvania has the potential to be a destination state for road and off-road cycling and a great place for avid cyclists to reside. However, the lack of bike lanes, poor condition of roads, lack of education for drivers and not making off-road cycling a selling point for tourism is holding back this opportunity.

03



PENNSYLVANIA TODAY

OVERVIEW

Pennsylvania is facing many changes that will require our transportation network to be more multimodal in nature with a strong focus on Active Transportation. Most obvious are the shifts in demographics, equity, health, and safety but equally important are growing challenges related to global climate change.

Active transportation infrastructure provides Pennsylvanians with affordable, environmentally-friendly modes of transportation and recreational opportunities. The rising number of Pennsylvanians living with chronic diseases linked to physical inactivity, lower-income populations unable to afford cars, and other populations that are more likely to walk or bike, would see some of the greatest benefits from quality active transportation infrastructure. Add that to our many older Pennsylvanians at risk of losing their driving privileges, young Pennsylvanians who increasingly delay getting a driver's

license, and people migrating to our urban centers; all of whom reap the benefits of mobility and access when active transportation is prioritized.

The 2019 Active Transportation Plan works in conjunction with the Department of Conservation and Natural Resources' Statewide Comprehensive Outdoor Recreation Plan 2020-2025 as well as the Department of Health's Pennsylvania State Health Improvement Plan 2015-2020 to develop a safe, connected multimodal transportation network that supports community health, equity, and economic opportunity for all citizens.

The 2019 Active Transportation Plan is also a proactive response to the overarching threat of climate change. Residents face an increased likelihood of severe weather events that disrupt travel, increased day and evening temperatures that impact children and the elderly – particularly in urban areas – and periods of decreased air quality. These issues

affect roadway safety, public health and equity in Pennsylvania and in response PennDOT must act to ensure the transportation network is flexible and resilient in the face of change and move to reduce the amount of greenhouse gases generated due to transportation-related activities.

The strategies contained in the Active Transportation Plan support the 2018 Pennsylvania Climate Action Plan's stated goals of a 26 percent reduction in net greenhouse gas emissions by 2025 from 2005 levels and a reduction in vehicle miles traveled for single-occupancy vehicles. Through increasing the rate and overall amount of mode shift to less impactful types of transportation such as walking, biking, and transit while concurrently improving roadway safety, public health outcomes, and quality of life issues across the state, the plan prepares the state for a more sustainable and equitable future.

DEMOGRAPHIC ANALYSIS

It is important to examine the Commonwealth's demographics as they provide valuable clues about travel behavior and preferences. Characteristics such as population growth, density, age, and other factors can indicate a population's potential for adopting walking and bicycling as everyday modes of transportation.

DENSITY AND POPULATION GROWTH

Pennsylvania is slowly growing in population and urbanizing, and its cities are beginning to see increases in population density.

Although the majority of the state retains a rural character, the number of Pennsylvanians living in urban areas increased 5.6 percent between 2000 and 2010 and is expected to

continue climbing over the next few decades. This parallels a gradual overall population increase of a projected 400,000 new residents by 2032 (Pennsylvania State Data Center, 2018; Beheney, M, et al. 2014).

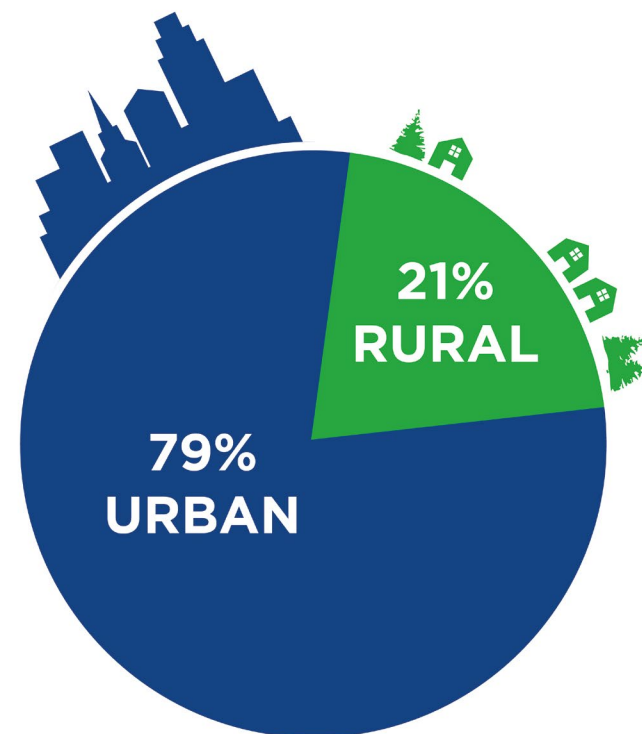


Over the next fifteen years, the slightly larger and increasingly urban population in Pennsylvania will likely demonstrate a substantial change in travel preferences, moving from a desire for a community designed to accommodate the automobile to one where access to a variety of transportation options—including walking, bicycling, and transit—is preferred. These trends are all pointing the way towards the need for safe opportunities for Pennsylvania residents to walk and bicycle.

Population Density

Population density is increasing in many urban areas in Pennsylvania. These increases in density may offer opportunities for shorter trips to work, school, shopping, and other destinations. With a mix of land-uses and supportive infrastructure, such trips could be made in these higher density areas by walking and bicycling, rather than driving.

Nearly eight-in-ten Pennsylvanians live in an urban area.



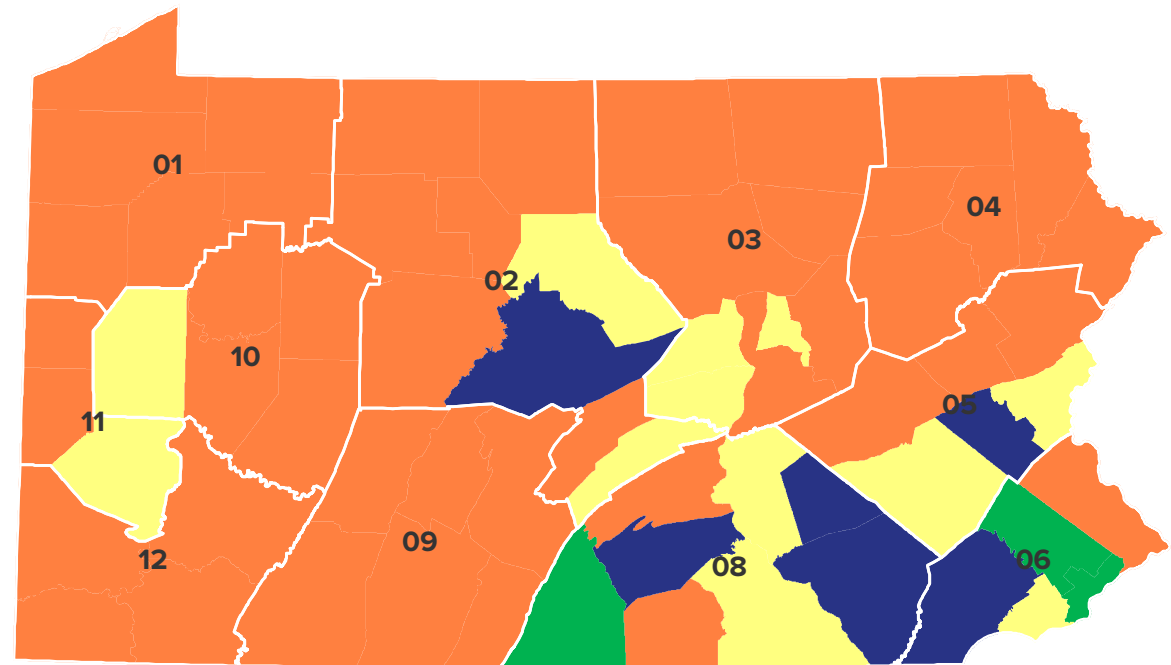
(The Center for Rural Pennsylvania, 2015)

Population Growth

Pennsylvania's population trends have changed over time. A recent trend shows a resurgence of population in major cities. In fact between 2010 and 2015, Pennsylvania continued to urbanize with rural Pennsylvania's population declining approximately 1 percent (ACS, 2017).

As Pennsylvania's population shifts away from rural areas to more urban areas, it is still expected to grow 4 percent between 2015 and 2025. The population will also continue to an aging population as the number of residents over age 65 is expected to grow by over 30 percent (U.S. Census Bureau; PA State Data Center).

Population Growth from 2010 to 2015*



■ **High Growth** (2.1 - 4%)

■ **Moderate Growth** (1.1 - 2%)

■ **Low Growth** (0.1 - 1%)

■ **Declining Population** (-5 - 0%)

00 PennDOT Engineering District
(White Outline)

AGING POPULATION

Pennsylvania's aging population needs more transportation choices now and in the future.

As people live longer, transportation options and needs shift. Physical, cognitive, and sensory impairments restrict many seniors from driving, which makes other forms of transportation even more important. Walking and bicycling provide seniors with mobility options for engaging in community activities, traveling to doctor's appointments, and running errands. Walking and bicycling also provides low impact recreation or exercise opportunities and access to transit for regional travel. Taking seniors' transportation needs into account, especially in terms of active transportation, is necessary as this age group continues to grow.

Pennsylvania ranks

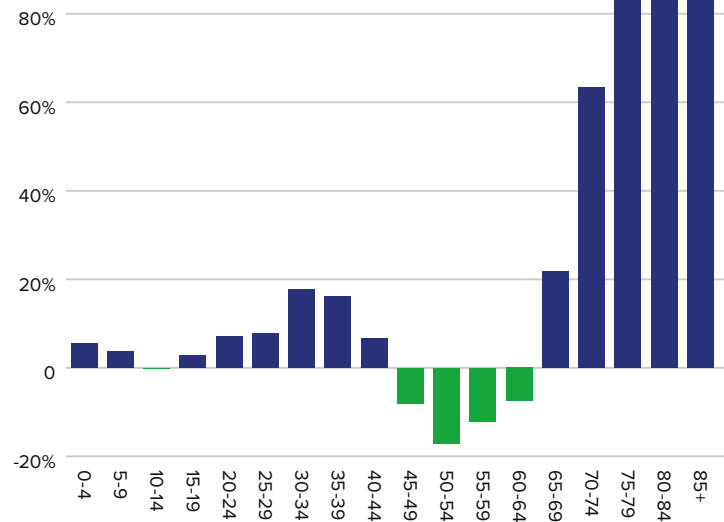
5th in the USA for the percent of residents over the age of 65 years old that don't drive.

Senior population is growing

20x faster than the overall population.

The Older Population will see Huge Growth as Middle-Aged Populations Decline

Percent Change in Population by Age Group between 2010 and 2040



(Pennsylvania State Data Center for the Center for Rural Pennsylvania)

The chart to the above shows which ages will see growth, and which will decline between 2010 and 2040. As shown, the baby boomer group will result in an increase in the 65 and older population in 2040, while there will be a reduction in the ages 45 to 64 population (ACS, 2017).

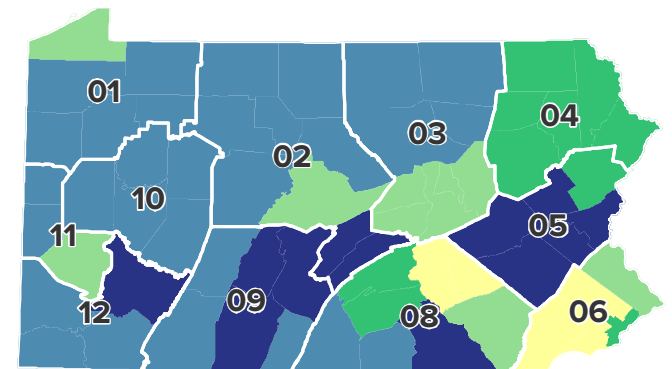
As the aging, baby boomer population (55 to 70 years old in 2016) drive less, their access to independent mobility will be greatly influenced by how well our streets and transportation networks accommodate bicyclists, pedestrians, and pedestrians with physical disabilities in particular.

While 76 percent of Americans over the age of 50 would like to remain in their home and 77 percent in their community (age in place), only 59 percent expect to be able to stay in their community (AARP, 2018).

One of the key factors which prohibits aging in place is reliable transportation especially for people with special needs, as aging population also increases the number of residents with disabilities. Almost 40 percent of people over age 65 have a disability (U.S. Census Bureau, 2014). Mobility is the most common disability among seniors, which highlights the need for attention to for access improvements to area transportation networks.

To improve access for seniors, priority will need to be given to:

- Repairing sidewalks that are in disrepair
- Filling sidewalk network gaps, especially to connect community services
- Increasing crosswalk times at signalized intersections
- Improving crosswalk markings
- Addressing ADA compliance
- Increasing flexibility in land use/ zoning standards to support mixed-use
- Enhancing access and adding benches to transit stops



(ACS, 2016)

- 13 - 14%
- 12%
- 11%
- 10%
- 8 - 9%
- 00 PennDOT Engineering District

Percent of Residents with an Ambulatory Disability

The counties with high ambulatory disability rates are generally rural but close to or contain mid-size cities, such as Allentown and Altoona.

Ambulatory disability means a person that has a permanent physical disability that prohibits a person from moving from place to place without the aid of a wheelchair or has a permanently impaired or unsteady gait that makes it impossible or impractical to walk as a means of transportation.

CAR OWNERSHIP

Younger generations are driving less and wanting more transportation options.

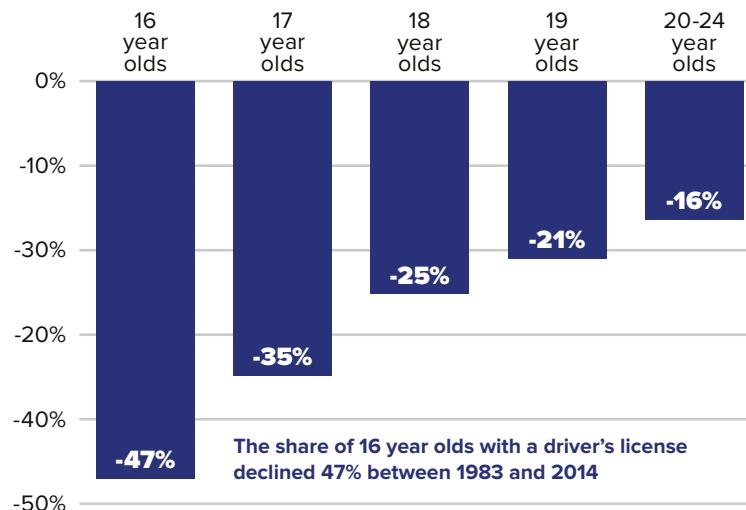
Recent studies have noted trends revealing that Millennials – those born between 1981 and 2001 – are part of a generation of declining car ownership (USDOT Federal Highway Administration, 2011). A number of factors contribute to this decline, including the recent trends toward urban living, the Great Recession, increasing cost of car ownership, shared mobility options, and other technologies that reduce the necessity of private car ownership (Knowledge at Wharton, 2017). According to the National Household Travel Survey, from 2001 to 2009, the annual number of vehicle miles

traveled by young people (16- to 34-year-olds) decreased from 10,300 to 7,900 miles per capita—a drop of 23 percent (Sivak and Schoettle, 2016).

According to the Federal Highway Administration, from 1983 to 2014, the share of 16-year-olds with a driver's license dropped 47 percent (Federal Highway Administration, 2016).

Millennials are Part of a Generation of Declining Car Ownership

Change in Portion of Age Group with a Driver's License between 1983 and 2014



(Sivak and Schoettle, 2016)

HEALTH ANALYSIS

Active transportation planning directly addresses social determinants of health such as access to jobs, education, health care, recreation, and essential goods and services. The following sections highlight health trends in Pennsylvania that reveal opportunities and challenges for increased walking and bicycling across the state.

LACK OF PHYSICAL ACTIVITY & OBESITY RATES

One strategy to address the statewide obesity issue and the co-morbidities of stroke, diabetes, and heart disease would be to increase active living opportunities.

Lack of physical activity is associated with increased risk of many health problems, particularly obesity, diabetes, and heart disease (North Carolina Department of Health and Human Services, 2019). It is also the third highest cause of preventable death in the US, behind only tobacco use and poor nutrition (Mokad, A, et al., 2000). Studies show that improving the built environment to provide more walking and bicycling options helps people meet recommended daily physical activity levels of 60 minutes of moderate to vigorous activity (State of Obesity, 2017).

Pennsylvania's adult obesity rate is currently 31.6 percent, up from 20.3 percent in 2000 and from 13.7 percent in 1990 (State of Obesity, 2017). 25 percent of Pennsylvania's adults reported that during the past month, they had not participated in any physical activity (Pennsylvania Behavioral Risk Factor Surveillance System, 2017).



(State of Obesity, 2017)

25%
of Pennsylvania adults have not exercised in the last month.

Pennsylvania's adult obesity rate is

32%
(24th in US).

(State of Obesity, 2017)



Pennsylvania's child (2- to 4-year-old WIC participants) obesity rate is

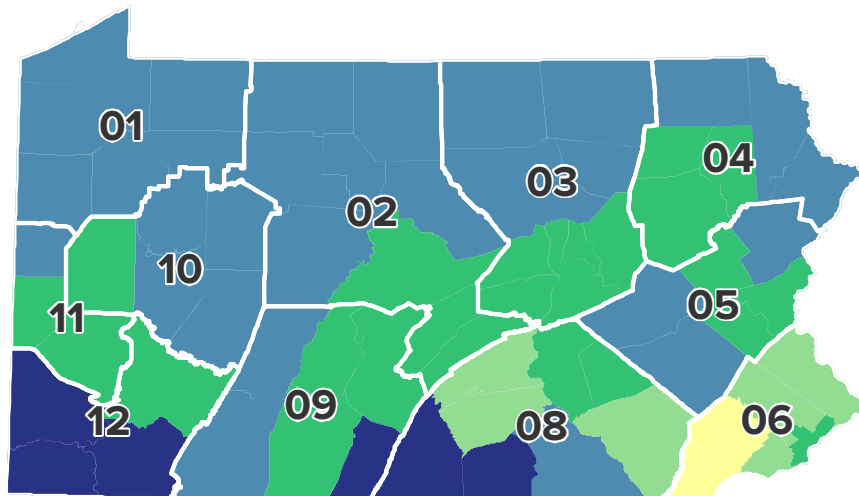
13%
(39th in US).

Pennsylvania's high school aged obesity rate is

14%
(24th in US).

Pennsylvania Obesity Rate

On average, 32 percent of Pennsylvania residents are obese (State of Obesity, 2017). The lowest rates of obesity in Pennsylvania are found in the affluent, suburban counties surrounding Philadelphia and Harrisburg and in Lancaster County. Higher rates of obesity are found in the rural counties along the northern portion of the state and along the Maryland-West Virginia borders.



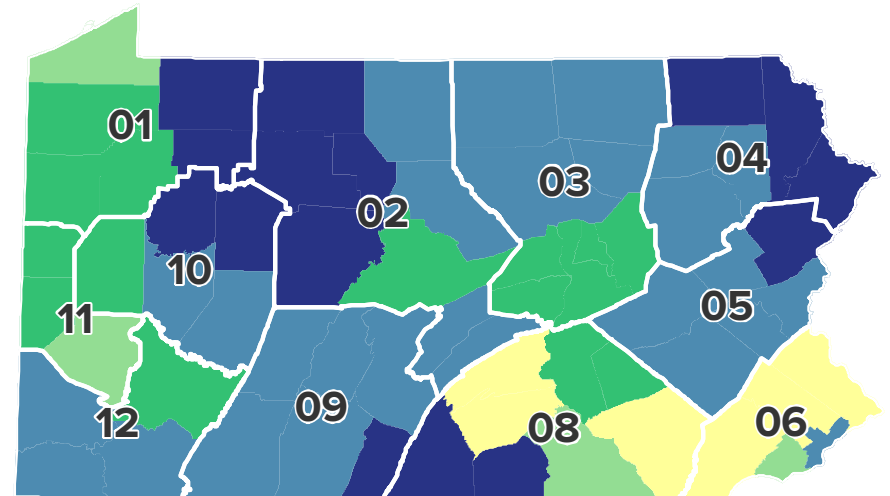
- 36 - 39%
- 33 - 35%
- 28 - 32%
- 20 - 27%
- 18%

00 PennDOT Engineering District

(CDC Data and Statistics; State of Obesity, 2017)

Pennsylvania Physical Inactivity Rate

On average, 25 percent of Pennsylvania residents are physically inactive (State of Obesity, 2017). The counties surrounding Philadelphia and Harrisburg and Lancaster County, have the lowest rates of physical inactivity. Higher rates of inactivity are found in the less affluent, rural counties of Pennsylvania.



- 29 - 31%
- 26 - 28%
- 24 - 25%
- 21 - 23%
- 18 - 20%

00 PennDOT Engineering District

(CDC Data and Statistics; State of Obesity, 2017)

EQUITY ANALYSIS

The goal of equity in transportation planning is to provide access to community resources, such as jobs, education, affordable housing, and healthcare to populations whose transportation options are currently limited.

SOCIO-ECONOMIC INDICATORS

Active transportation investment in areas with a high concentration of vulnerable populations could help alleviate a broader range of issues (access to jobs, education, and healthcare).

The equity analysis model considers demographic factors that can indicate populations and census tracts whose transportation needs are typically underserved by the existing system, especially by bicycling and walking facilities. Using data from the Census Bureau and the 2016 American Community Survey, the following indicators were used to develop a map to identify vulnerable users across the state (see Appendix A2 for full-size maps of each indicator):

- **Vehicle Access:** Households with no access to vehicles
- **Educational Attainment:** Population with no high school diploma or equivalent
- **Income:** Individuals of working age who are living at or below 200 percent of the Federal Poverty Level (FPL)

- **Limited English Proficiency (LEP):** Percentage of the population that identifies as not speaking English well or at all
- **Race:** Percentage of the population that identifies as non-white
- **Age:** The population under 18 years of age and over 65 years of age

“Vulnerable populations”
are defined as non-white populations, children, seniors, individuals with limited education attainment, low-income households, households without access to a vehicle, and residents with limited English proficiency.

SAFETY ANALYSIS

The location and frequency of reported crashes involving people walking and bicycling reveal patterns of safety issues across the Commonwealth. Using crash data from 2013 to 2017, the following section examines the what, when, and where of crashes involving people walking and bicycling to identify areas where infrastructure improvements, as well as other safety countermeasures, could be focused to improve safety in Pennsylvania.

PA Safety Snapshot (2013 - 2017)



21,757

PEDESTRIAN COLLISIONS*

792

PEDESTRIAN FATALITIES



6,462

BICYCLIST COLLISIONS*

83

BICYCLIST FATALITIES

**Total number of pedestrians or bicyclists involved in a crash with a motor vehicle.*

Pennsylvania ranks

32nd in the US

for the number of vehicle crash deaths per 100 million vehicle miles traveled (50=Safest)

(IIHS - Fatality Facts, 2018)

Pennsylvania ranks

33rd in the US

on the 2019 Pedestrian Danger Index (50=Safest)

(Dangerous by Design, 2019)

Pennsylvania ranks as the

11th

most bicycle friendly state in the United States in 2019.

(League of American Bicyclists, 2019)

STATEWIDE BICYCLE AND PEDESTRIAN CRASH TRENDS

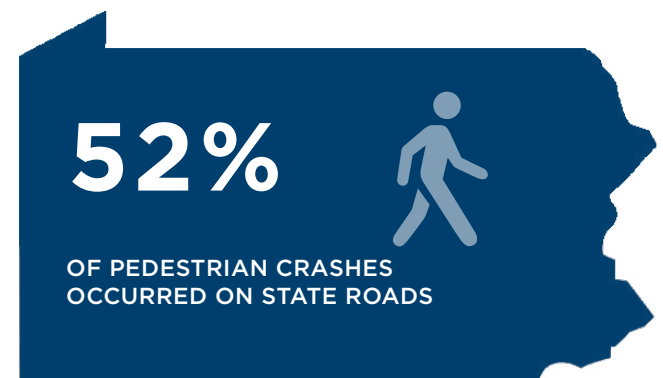
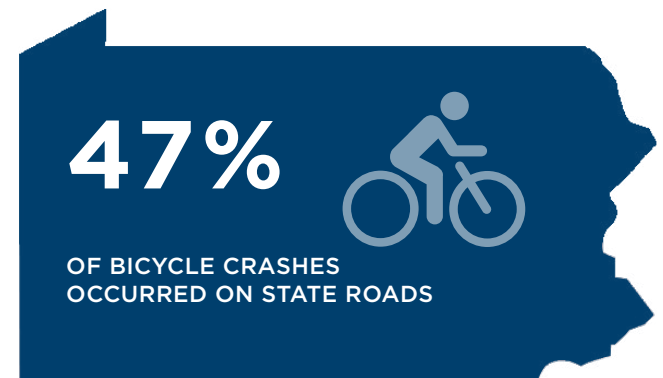
Having adequate bikeways, sidewalks, and wide shoulders can reduce the chances and severity of crashes and thus save lives.

Based on the analysis of type, location, and number of crashes involving people walking and bicycling along Pennsylvania's roadways between 2013 and 2017, several key trends emerged:

- Counties that have the highest concentration of vulnerable populations also have significant crash clusters.
- The majority of bicycle and pedestrian crashes happen in daylight, with no adverse weather conditions.

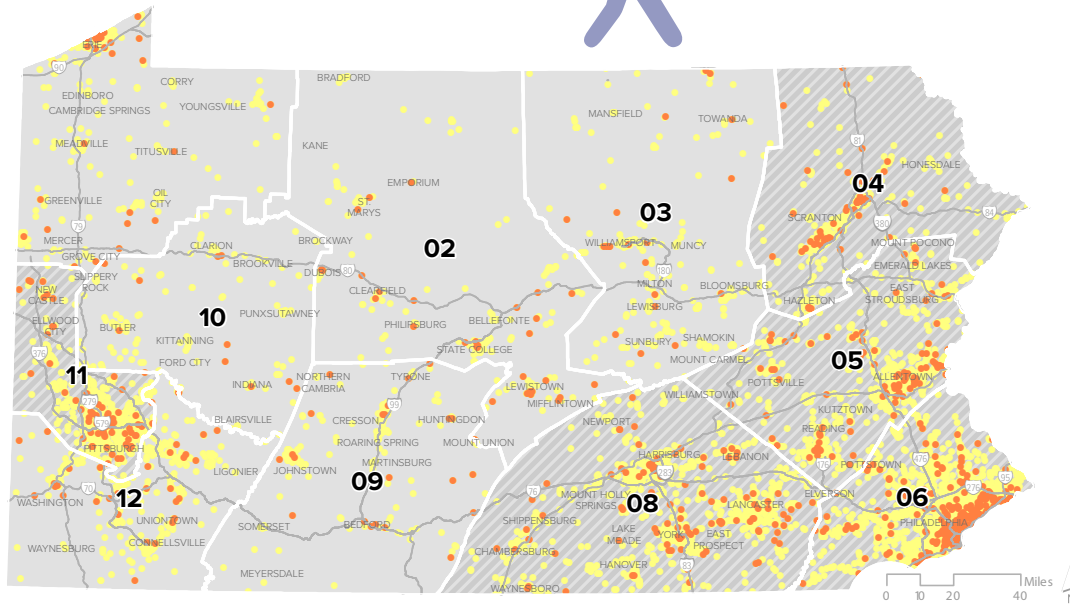
- **23%** of all bicycle and pedestrian crashes cite aggressive driving* as a contributing factor to the collision.
- **5.8%** of all bicycle and pedestrian crashes involved distracted driving.
- **3.2%** of all bicycle and pedestrian crashes note speeding as a prominent factor related to the collision.
- **65%** of bicycle crashes happened at intersections.
- **54%** of pedestrian crashes happened at intersections.
- **60%** of bicycle crashes that occurred at intersections were unsignalized intersections.

**Aggressive driving is defined by the National Highway Traffic Safety Administration as the behavior of an individual who "commits a combination of moving traffic offenses to endanger other persons or property."*



(Pennsylvania Crash Information Tool, 2017)

Pedestrian Safety Analysis (2013-2017)



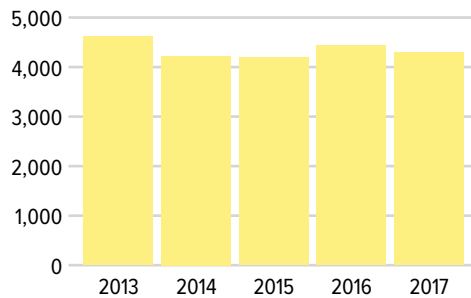
- Pedestrian Involved Collision Resulting in Fatality
- Pedestrian Involved Collision*
- 00** PennDOT Engineering District (white outline)
- PennDOT Engineering District with Most Pedestrian Collisions

The counties that experienced the highest number of pedestrian crashes per 100,000 residents are Philadelphia, Lehigh, and Lackawanna, respectively. District 6 (which includes Philadelphia) had the highest amount of pedestrian injuries and fatalities. District 5 had the second highest amount.

Outside of the major metropolitan areas like Philadelphia and Pittsburgh, crash clusters are also found around Allentown, Scranton, and Erie.

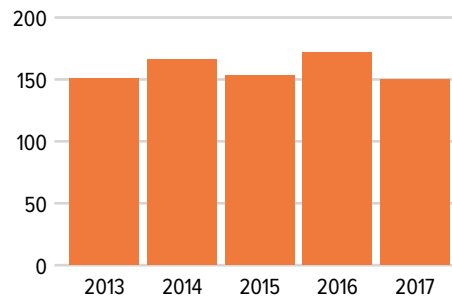
The number of collisions between 2013 and 2017 trends slightly down while the fatality numbers trend slightly up over the same time period.

5 YEAR PEDESTRIAN COLLISION* TRENDS

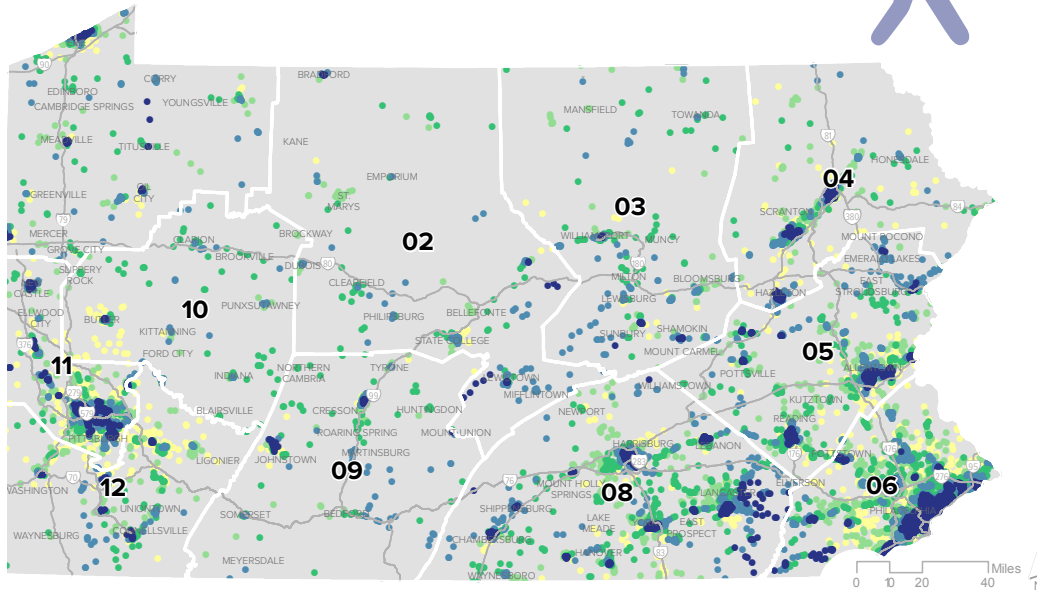


*Total number of pedestrians involved in a crash with a motor vehicle.

5 YEAR PEDESTRIAN FATALITY TRENDS



Pedestrian Safety Analysis + Equity Analysis (2013-2017)



Pedestrian Collisions

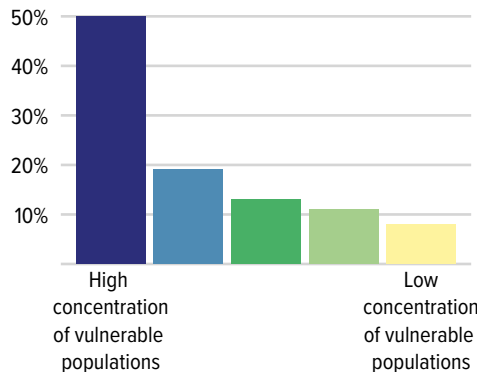
- Crash in Area with High Concentration of Vulnerable Populations
-
-
- Crash in Area with Low Concentration of Vulnerable Populations
- 00** PennDOT Engineering District (white outline)

About half of all pedestrian collisions occur in areas with a high concentration of vulnerable populations. The pedestrian fatality chart illustrates the overlap between social and traffic vulnerability with over 25 percent of all pedestrian fatalities occurring in areas with a high concentration of vulnerable populations.

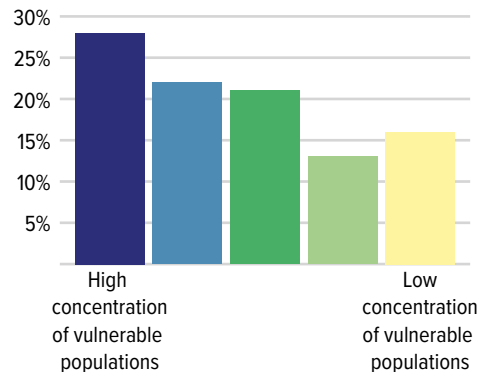
Philadelphia not only has the most pedestrian crashes, but also a large concentration of vulnerable populations, including 5 tracts that have the most vulnerability in the Commonwealth.

Areas with a low concentration of vulnerable populations experience the fewest amount of pedestrian collisions.

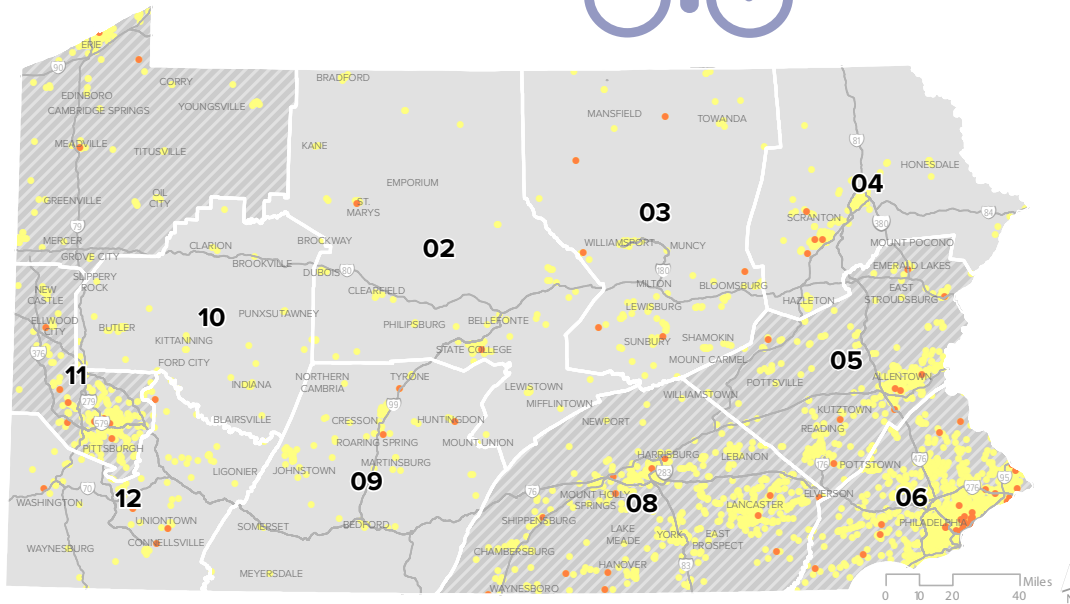
% OF PEDESTRIAN COLLISIONS IN VULNERABLE POPULATIONS



% OF PEDESTRIAN FATALITIES IN VULNERABLE POPULATIONS



Bicyclist Safety Analysis (2013-2017)



- Bicyclist Involved Collision Resulting in Fatality
- Bicyclist Involved Collision*
- 00** PennDOT Engineering District (white outline)
- PennDOT Engineering District with Most Bicyclist Collisions

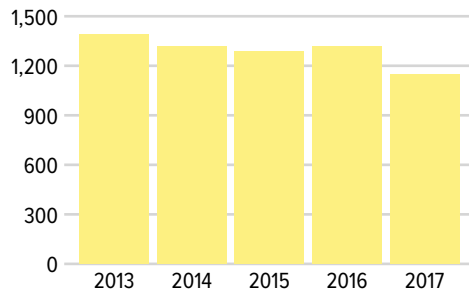
The counties experiencing the most bicycle crashes per 100,000 people are Philadelphia, Erie, and Lebanon.

District 6 (which includes Philadelphia) had the highest amount of bicyclist injuries and fatalities. District 8 had the second highest amount of crashes.

The five year trend charts (2013 to 2017) demonstrate a slight trending decline in collisions but an increase in fatalities.

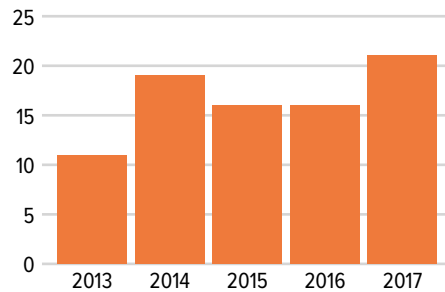
Crash clusters can primarily be found in urban, dense areas where higher rates of bicyclist and pedestrian activity is expected.

5 YEAR BICYCLE COLLISION* TRENDS

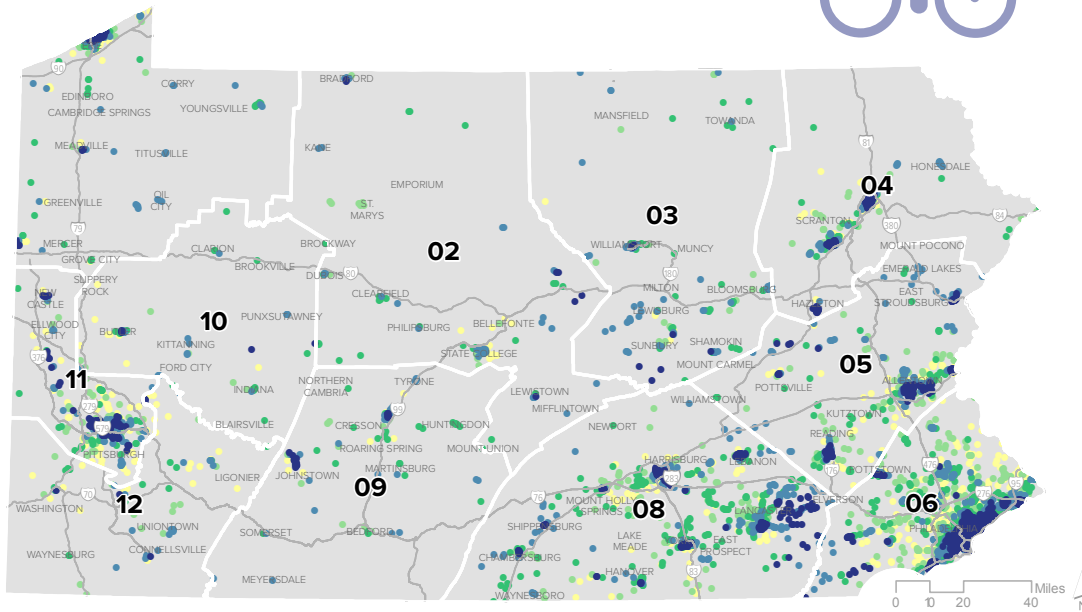


*Total number of bicyclists involved in a crash with a motor vehicle.

5 YEAR BICYCLE FATALITY TRENDS



Bicyclist Safety Analysis + Equity Analysis (2013-2017)

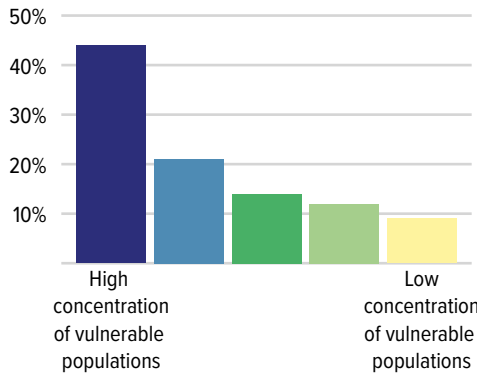


Bicyclist Collisions

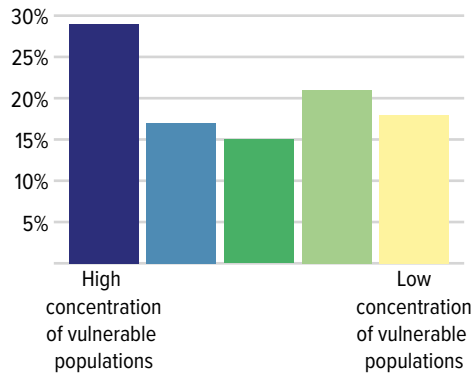
- Crash in Area with High Concentration of Vulnerable Populations
- Crash in Area with Low Concentration of Vulnerable Populations
- 00** PennDOT Engineering District (white outline)

The greatest number of collisions and fatalities took place in an area with a high concentration of vulnerable populations. In contrast, under 10 percent of all bicyclist collisions occurred in areas of low vulnerability.

% OF BICYCLIST COLLISIONS IN VULNERABLE POPULATIONS



% OF BICYCLIST FATALITIES IN VULNERABLE POPULATIONS



Census tracts surrounding Lancaster represent the highest concentration of vulnerable populations in the state. This area also experiences a dense cluster of crashes.

With the exception of Jefferson and Indiana Counties, counties that fall within the highest concentration of vulnerable populations also have substantial crash clusters.

04



STRATEGIES AND IMPLEMENTATION

OVERVIEW

The Pennsylvania Active Transportation Plan has prioritized six main themes to fulfill the vision of this Plan. This chapter presents the proposed policy and program recommendations in a framework that links the goals and objectives of this Plan to strategies and implementable actions. This includes the enhancement of existing policies and practices already in place at PennDOT as well as suggesting new strategies for PennDOT to consider.



Photo Credit: Lancaster, PA

STAKEHOLDERS

To achieve the vision of this Plan and increase the number of people walking and bicycling, coordinated actions and efforts of many agencies and organizations are needed. This is accomplished by coordinating planning, funding, design, construction, and maintenance of facilities. It also requires coordinated programs that encourage and educate all users on traffic safety and support law enforcement efforts.

STAKEHOLDER ROLES & RESPONSIBILITIES

PennDOT has taken the lead to create this Plan, however, it is meant to be a guide for all of Pennsylvania. Municipalities, MPOs, RPOs, various other state agencies, the US Department of Transportation, advocates, and non-profits across the state, all have roles in planning, designing, constructing, and maintaining the statewide transportation system and supporting

connected bicycle and pedestrian access.

PennDOT is committed to improving both the transportation system and Pennsylvania's communities through a collaborative planning process called PennDOT Connects. By working with local governments, creative transportation and land use solutions can be identified to sustain and expand mobility while improving communities throughout Pennsylvania. This Plan is meant to guide PennDOT decisions, be a resource for MPOs, RPOs, and Municipalities to develop and implement active transportation plans, and inspire advocates and non-profits across the state to promote and prioritize strategies that increase the number of people walking and bicycling. PennDOT has developed a How to Guide to assist in developing local and regional plans that includes a list of funding opportunities.

The responsibilities of various stakeholders are detailed on the following pages.



Photo Credit: Pennsylvania Chapter of the American Planning Association

PENNDOT

PennDOT has the leading role in implementing and monitoring this Plan on a statewide level and is responsible to evaluate and provide bicycle and pedestrian facilities on state-owned roadways as appropriate. PennDOT is committed to partnering with stakeholders to better our transportation system and our communities through collaborative planning, policy development and implementation.

PennDOT Responsibilities

- **Enhancing State Roadways** – Enhance the state transportation system by evaluating the needs of people bicycling and walking and incorporating network enhancements into projects and as standalone projects as appropriate.
- **Local/Regional Support & Assistance** – Encourage and support other units of government by providing technical assistance and training.
- **Funding** – Ensure that state and federal funding is being effectively used to enhance walking and bicycling in Pennsylvania by coordinating and supporting the inclusion of bicycle and pedestrian accommodations on projects using state and/or federal funds.
- **Education and Safety** – PennDOT has developed bicycle and walking safety information, videos, and other materials for public consumption. There are also varied funding opportunities for schools and communities to pursue for Safe Routes to School projects and programs. PennDOT has developed and actively shares resources including lesson plans, guides, and other evaluation tools to be used for Safe Routes to School programs. PennDOT also has created training materials for bicycle education and crossing guards.
- **Statewide and District Coordinators** – A full-time Statewide Bicycle and Pedestrian Coordinator and staff serving as [District Bicycle and Pedestrian Coordinators](#) provide guidance and support for bicycle and pedestrian initiatives statewide and locally.
- **Statewide Bicycle Networks** – Pennsylvania has 10 named bicycle networks. Pennsylvania’s first nationally designated bicycle route, U.S. Bicycle Route 50, a 163-mile bicycle route was designated in May 2017, making Pennsylvania the 25th state to join the developing U.S. Bicycle Route System (USBRS). PennDOT is continuing to develop and enhance coordination between the many agencies involved with continuing to complete a safe and connected system of trails and on-road bikeways. Appendix A3 provides information regarding the existing Pennsylvania Bike Routes.
- **Measuring Performance** – Continually monitor the implementation of this Plan to gauge the effectiveness of the policies, actions, and programs being implemented and modify and update the Plan every five years.

MPOS/RPOS

MPOs and RPOs promote transportation projects that maintain, construct, and/or restore transportation infrastructure, providing a safer environment for the traveling public, and enhancing personal mobility and the movement of goods.

MPO/RPO Responsibilities

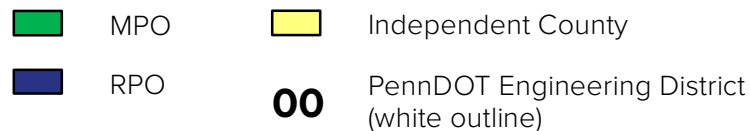
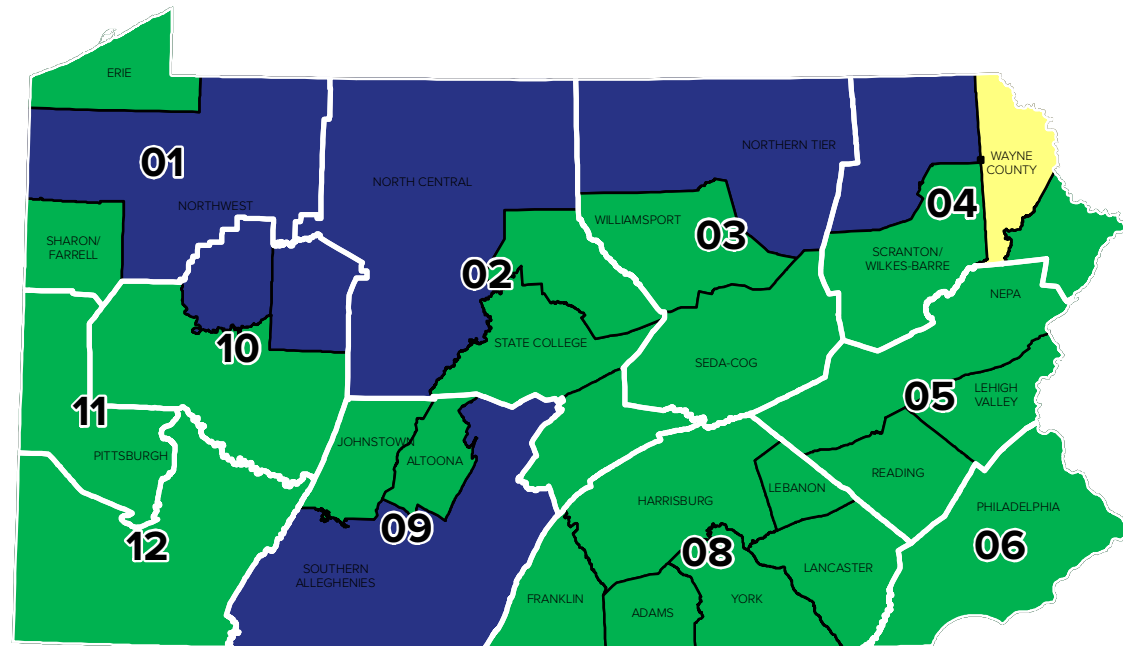
- **Optimize Funding** – Look for innovative ways to optimize funding for active transportation projects, including the Surface Transportation Block Grant (STBG) program and the STBG-TA set-aside.
- **Identify Regional Priorities** – Prioritize funding to maximize benefits for all modes, including using prioritization methods for distributing TA Set-Aside funds based on projects that improve active transportation access and safety.
- **Multi-Agency Collaboration** – Serve as a technical resource to Local Municipalities and liaison to PennDOT advocating for coordinated and consistent

planning and design of active transportation facilities and programs across the state.

- **Regional Network Plans** – Develop and update regional active transportation plans, identifying key needs and facilitating coordination between jurisdictions.

PEDALCYCLE AND PEDESTRIAN ADVISORY COMMITTEE (PPAC)

PPAC will provide input and guidance on the strategies identified within the Plan and facilitate statewide initiatives by reviewing and recommending policy and infrastructure changes.



LOCAL GOVERNMENTS

Pennsylvania municipalities range from bustling metro areas to quaint townships and boroughs, and historic rural communities. Local governments are involved and, in some cases, responsible for, the planning, constructing, and maintaining streets, bridges, and active transportation facilities and networks.

Local Government Responsibilities

- **Interjurisdictional Planning** – Plan municipal wide and cross jurisdictional active transportation networks, in conjunction with bicycle and pedestrian advocacy and community groups, identifying gaps and key connector routes that connect to neighboring jurisdictions and/or regional active transportation networks.
- **Adopt Complete Streets Policies or Methodology** – Consider adopting Complete Streets policies, or at least follow the Complete Streets approach, as appropriate for their projects. Plan and design roadway projects with the assumption that bicyclists and pedestrians will use them, and identify how these modes can be safely incorporated into local projects.
- **Bicycle Parking** – Provide or facilitate the provision of adequate and appropriate bicycle parking at strategic locations that will accommodate and encourage bicycle use.
- **Maintenance** – Maintain roadway surfaces, on locally-owned roads, prioritizing roads that have high levels of actual or potential bicycle use (as identified in local or regional bicycle plans).
- **Encouragement and Education** – Partner with advocates and community groups to sponsor events such as; bicycle to work and walk to work days, bicycle rallies, open streets events and educational opportunities educating all users and the traveling public on safe bicycle and pedestrian transportation.



Photo Credit: Bike Pittsburgh

“Complete streets” are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Complete streets make it easy to cross the street, walk to shops, and bicycle to work.

(Smart Growth America)

OTHER STATE AND FEDERAL AGENCIES

This is a Plan for all of Pennsylvania and will take the coordination and cooperation of several state agencies. The following agencies have been a part of the development of this Plan and will also be key stakeholders in its implementation: Pennsylvania Department of Community and Economic Development (DCED), Pennsylvania Department of Health (DOH), Pennsylvania Department of Conservation and Natural Resources (DCNR), US Department of Transportation (USDOT), and the Federal Highway Administration (FHWA).

Federal and State Agency Responsibilities

- **Formalize Partnerships** – DOH led an initiative to create a Memorandum of Understanding (MOU) between PennDOT and DCNR to cement the collaborative efforts between state agencies to make communities more walkable through funding and technical support. As this effort continues, they will look for opportunities

to increase coordination through information sharing, developing complimentary grant criteria, and potentially establishing MOUs with other agency partners.

- **Leverage Resources** – Ensure that agencies incorporate active transportation access into projects, policies, and programs as appropriate and share resources that promote state and federal policy and funding information with PennDOT staff.

ADVOCATES AND NON-PROFITS

Active transportation advocacy groups and non-profits represent the people walking and bicycling in Pennsylvania. As is common across the country, Pennsylvania has more advocacy groups primarily focusing on bicycling while pedestrian focused advocates are less numerous.

Advocate and Non-Profit Responsibilities

- **Encouragement** – Support and encourage people to walk and bicycle as a mode of transportation and as recreation by hosting and promoting bicycle

to work and walk to work events, holding bicycle rallies and other events, and providing education opportunities and promotional materials for the public.

- **Political and Governmental Engagement** – Encourage and petition elected officials to support legislation that promotes bicycling and walking. Support the efforts of local governments by participating in focus groups and advisory boards, attending public meetings to provide insight into infrastructure needs, and speaking on behalf of bicyclists and pedestrians.
- **Recognition** – Encourage and assist agencies, communities, and businesses to apply for recognition of active transportation improvement projects and programs through award programs such as Bicycle Friendly Community, Walk Friendly Community, and Bicycle Friendly Business.

STRATEGIES AND IMPLEMENTATION STEPS

This section outlines the strategies and implementation steps to achieve the objectives of the Plan. This section is organized by theme. The implementation steps each have an associated timeframe listed to show the anticipated date of completion for each step as well as the lead and support agencies that should be involved to implement the strategies.

The Plan strategies and implementation steps were developed through extensive coordination efforts and communication with stakeholders as well as through research efforts. Information regarding the research efforts can be found in Appendix A4.

The timeframes listed in Implementation tables include:

Short - Anticipated completion within 3 years of Plan adoption.

Medium - Anticipated completion within 5 years of Plan adoption.

Long - Anticipated completion within 10 years of Plan adoption.

Ongoing - Ongoing action.

The following lists consists of acronyms for the partner agencies that are included as partners in implementation tables within this Section.

PennDOT Pennsylvania Department of Transportation

DCED Pennsylvania Department of Community and Economic Development

DCNR Pennsylvania Department of Conservation and Natural Resources

DEP Pennsylvania Department of Environmental Protection

DLI Pennsylvania Department of Labor and Industry

PDE Pennsylvania Department of Education

DOH Pennsylvania Department of Health

MPO Metropolitan Planning Organization

PSP Pennsylvania State Police

RPO Rural Planning Organization



ENHANCE SAFETY

See page 50 for more details

Improve safety for non-motorized users.



PROVIDE TRANSPORTATION EQUITY

See page 56 for more details

Provide opportunities for people of all ages, abilities, races, ethnicities, and incomes in urban, suburban, and rural areas across Pennsylvania to bicycle or walk.



CONNECT WALKING & BICYCLING NETWORKS

See page 60 for more details

Provide a complete pedestrian and bicycling network that reliably and easily connects users of all ages and abilities to destinations and other transportation modes.



LEVERAGE PARTNERSHIPS

See page 64 for more details

Work actively and collaboratively with federal, state, regional, local, and private partners to support walking and bicycling.



IMPROVE PUBLIC HEALTH

See page 70 for more details

Provide active living environments with safe, connected, accessible facilities along with programs that influence public health by encouraging walking and bicycling.



INCREASE ECONOMIC MOBILITY

See page 74 for more details

Maximize economic competitiveness through walking and bicycling networks that improve people's abilities to access jobs, businesses, and other destinations, and to attract visitors and tourists, new residents, and new businesses to Pennsylvania.

THEMES AT A GLANCE

ENHANCE SAFETY



S1: Increase PennDOT capacity to plan, design, construct, and maintain active transportation facilities that support and encourage users of all ages and abilities.

S2: Improve PennDOT processes to ensure the needs of bicyclists and pedestrians are adequately identified during scoping and included in design for all project types.

S3: Implement additional education and enforcement programs to reduce crashes and provide a better sense of security for people who walk and bicycle.

S4: Improve policies and practices for maintaining access for people who walk and bicycle during construction and maintenance projects.

PROVIDE TRANSPORTATION EQUITY



E1: Integrate equity criteria into decision-making and prioritize walking and bicycling investments in underserved areas with transportation disadvantaged populations.

E2: Improve active transportation engagement as part of project-specific transportation planning/design and create specialized outreach for people with disabilities and people from minority groups.

E3: Improve non-motorized access to transit and other modal connections.

E4: Provide ongoing outreach and education to partners with a focus on partners that focus on underserved communities.

THEMES AT A GLANCE

CONNECT WALKING AND BICYCLING NETWORKS



C1: Support the development of regional and local plans that identify bicycle and pedestrian needs and priority projects with a focus on closing gaps and building complete, comfortable networks.

C2: Improve connectivity by addressing bicycling and pedestrian network gaps through the transportation project development process.

C3: Improve access to parks, trails, and other recreational amenities.

LEVERAGE PARTNERSHIPS



P1: Strengthen ongoing coordination, cooperation, and collaboration between federal, state, regional, local, and private partners to facilitate a seamless pedestrian and bicycle system.

P2: Coordinate PennDOT planning and policy with all levels of government to encourage mode shifts, reduce emissions of greenhouse gases, and provide a flexible and resilient transportation network.

P3: Improve the quality and availability of data on bicycle and pedestrian travel and infrastructure.

P4: Engage in proactive evaluations and discussions on emerging technologies and mobility solutions.

THEMES AT A GLANCE

IMPROVE PUBLIC HEALTH



H1: Continue and enhance ongoing state agency coordination to improve public health outcomes through active transportation.

H2: Engage health policy practitioners in policy development, comprehensive transportation planning, and early project development.

H3: Link state competitive funding program criteria to community projects designed to strengthen health and active transportation.

H4: Address health disparities through active transportation policies, plans, and project selection.

H5: Improve data collection and sharing between transportation and public health agencies.

H6: Improve access to community health resources.

INCREASE ECONOMIC MOBILITY



M1: Promote local land use policies and practices that support increased bicycling and walking and add to the overall livability and vitality of communities.

M2: Build partnerships between PennDOT, other state agencies, visitors, and convention bureaus, chambers of commerce, local governments, and private sector to support bicycle and pedestrian infrastructure to enhance economic initiatives within communities.

M3: Identify pre-construction and post-construction assessment methodology to determine the economic vitality of completed pedestrian and bicycle projects.

M4: Improve access to job centers and downtown districts.



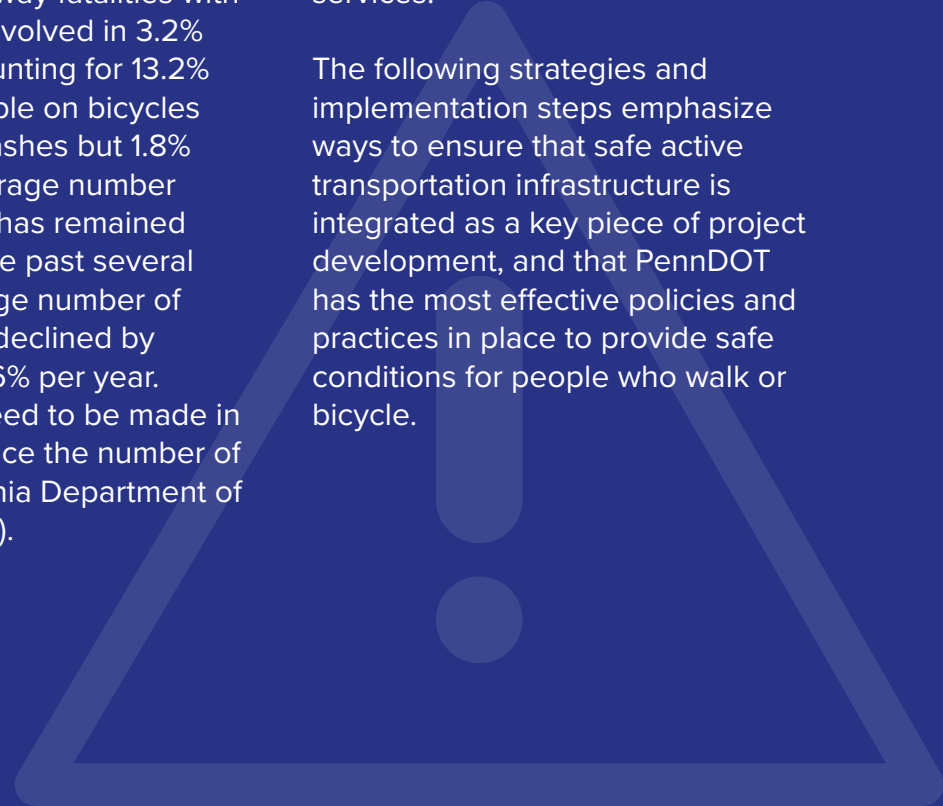
ENHANCE SAFETY

Improve safety for non-motorized users.

People who walk and bicycle are among the most vulnerable groups of roadway users. According to the Pennsylvania Strategic Highway Safety Plan, pedestrians comprise one out of eight highway fatalities. Pedestrians and bicyclists are disproportionately represented in Pennsylvania's roadway fatalities with pedestrians being involved in 3.2% of crashes but accounting for 13.2% of the fatalities. People on bicycles account for 1% of crashes but 1.8% of fatalities. The average number of bicyclist fatalities has remained relatively flat over the past several years, but the average number of serious injuries has declined by an average of over 6% per year. Additional strides need to be made in order to further reduce the number of fatalities (Pennsylvania Department of Transportation, 2017).

To address this situation, PennDOT must improve the conditions and opportunities for active transportation and go beyond minimum standards to provide safe, reliable, cost-effective, and convenient facilities that allow users of all ages and abilities to access their community's goods and services.

The following strategies and implementation steps emphasize ways to ensure that safe active transportation infrastructure is integrated as a key piece of project development, and that PennDOT has the most effective policies and practices in place to provide safe conditions for people who walk or bicycle.



S1: Increase PennDOT capacity to plan, design, construct, and maintain active transportation facilities that support and encourage users of all ages and abilities.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	RESPONSIBLE PARTY
S1.1. Develop guidance to define the roles and responsibilities of District Bicycle and Pedestrian Coordinators and District Planners to provide consistency in planning and continuous evolution of the active transportation staffing roles at PennDOT.	1. Define a set of core roles and responsibilities for all District Bicycle and Pedestrian Coordinators.	Short	Lead: PennDOT
	2. Develop training documents for new District Bicycle and Pedestrian Coordinators and District Planners.	Short	Lead: PennDOT
	3. Explore opportunities to identify additional staff or resources to implement active transportation policies and programs.	Medium	Lead: PennDOT
	4. Continue monthly meeting with District Bicycle and Pedestrian Coordinators, District Planners, and District Safety Press Officers.	Ongoing	Lead: PennDOT
S1.2. Provide active transportation facilities training for all PennDOT technical staff.	1. Develop and provide reoccurring training for new and existing PennDOT technical staff on how to properly plan, design, construct, and maintain active transportation facilities.	Medium	Lead: PennDOT
S1.3. Implement an active transportation counting program.	1. Research and develop a standard collection method for generating statistically meaningful and accurate counts of bicyclists and pedestrians using a representative sample of roadway facilities, off-road trails, and sidewalks and create a central database for storing counts. *	Medium	Lead: PennDOT Support: MPOs/RPOs, DCNR
	2. Establish MPO/RPO active transportation counting program to identify project needs, potential project funding and program guidance.	Medium	Lead: MPOs/RPOs Support: PennDOT
S1.4. Maintain PennDOT design manuals and policies to improve active transportation.	1. Establish a working group that would meet regularly to review and revise PennDOT design manuals and policies to improve active transportation safety.	Short	Lead: PennDOT
	2. Finalize the DM2 guidance to include a more robust Bicycle Facilities Selection and Design Chapter.	Short	Lead: PennDOT
	3. Finalize the DM2 guidance to include a more robust Pedestrian Facilities Selection and Design Chapter.	Short	Lead: PennDOT
	4. Finalize the DM2 guidance to include a more robust Traffic Calming and Plain People Considerations and Design Chapter.	Short	Lead: PennDOT

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S1 (continued): Increase PennDOT capacity to plan, design, construct, and maintain active transportation facilities that support and encourage users of all ages and abilities.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	RESPONSIBLE PARTY
S1.5. Identify crashes involving bicycles and pedestrians and prioritize safety improvements.	1. Map statewide active transportation crash locations annually to identify opportunities for multimodal road safety audits.	Short (update each year)	Lead: PennDOT Support: MPOs/RPOs, Local Governments
	2. Conduct crash analyses of the high crash areas. Prioritize appropriate safety improvements into project and corridor development and work toward state goal of zero traffic deaths.	Ongoing (update each year)	Lead: PennDOT
	3. Identify priority trail crossings for safety improvements, coordinating with DCNR's list of priority trail gaps.	Ongoing	Lead: PennDOT Support: DCNR, MPOs/RPOs
S1.7. Develop processes for testing innovative bicycle and pedestrian improvements/treatments (tactical urbanism) prior to incorporating them as permanent solutions.	1. Develop a process to evaluate innovative standard bicycle and pedestrian treatments through temporary installations (such as raised crosswalks, separated bicycle lanes, curb bump-outs, mini traffic circles, and gateway treatment alternatives for pedestrian crossings.)	Medium	Lead: PennDOT MPOs/RPOs
	2. Establish metrics to measure the success of temporary improvements/treatments and create a reporting system to document best practices. *	Medium	Lead: PennDOT

S2: Improve PennDOT processes to ensure the needs of bicyclists and pedestrians are adequately identified during scoping and included in design for all project types.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	RESPONSIBLE PARTY
<p>S2.1. Ensure that the PennDOT Connects Initiative processes are being used systematically statewide.</p>	<p>1. Review and evaluate District success at identifying and implementing bicycling and pedestrian improvements through the PennDOT Connects Initiative and create best practices guidance for Districts to use as examples.</p>	<p>Short</p>	<p>Lead: PennDOT Support: MPOs/RPOs</p>
<p>S2.2. Include bicycle pavement markings and shoulder improvements as part of PennDOT's resurfacing program and routine maintenance projects.</p>	<p>1. Establish a coordination process between the PennDOT District, MPO/RPO, and the Local or County Governments to review the maintenance program and determine how to incorporate active transportation plans and priorities into the maintenance program.</p>	<p>Short</p>	<p>Lead: MPOs/RPOs, Local Governments Support: PennDOT</p>

S3: Implement additional education and enforcement programs to reduce crashes and provide a better sense of security for people who walk and bicycle.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	RESPONSIBLE PARTY
S3.1. Evaluate and improve Safe Routes to School programs or other similar programs that aim to increase the number and frequency of children bicycling and walking	1. Review existing Safe Routes to School programs and other similar programs to compile an inventory of best practices and to determine ways to improve and expand these types of programs.	Medium	Lead: PennDOT Support: PDE, DOH
	2. . Review hazardous walking routes and maintain GIS data set that is updated to reflect changes in the identified routes.” Timeframe is “Short” and Responsible party is “Lead: PennDOT Support: MPOs/ RPOs, Local Governments, and School Districts.		
	3. Promote the use of Safe Routes to School programs and other similar programs and materials to school boards.	Medium	Lead: PennDOT Support: PDE, DOH
	4. Work with the PDE and the DOH to develop age-appropriate curriculum to educate students on active transportation safety and the health benefits of bicycling and walking.	Long	Lead: PennDOT
S3.2. Establish a PennDOT clearinghouse for active transportation safety education materials.	1. Leverage the Pedestrian and Bicycle Information Center to provide online training materials for different age groups.	Short	Lead: PennDOT
	2. Establish a branded public education program and webpage to inventory active transportation safety education materials, including videos, handouts, and presentations to be downloaded and used by the public and external partners.	Short	Lead: PennDOT
	3. Identify and implement updates for PennDOT Publication 95 - Driver's Manual and PennDOT Publication 380 - Bicycle Driver's Manual.	Medium	Lead: PennDOT
	4. Develop Educational Materials for general public consumption to explain the proper use of key facilities proposed in DM2 for both bicyclists and motorists.	Long	Lead: PennDOT Support: PDE
S3.3. Continue to support law enforcement officials via the Highway Safety Grant Program.	1. Support PA Community Traffic Safety Projects.	Ongoing	Lead: PennDOT Support: State Police
	2. Support Active Transportation Safety-related Training for Pennsylvania Law Enforcement.	Ongoing	Lead: PennDOT
	3. Support local efforts to increase pedestrian and bicycle safety enforcement and education.	Ongoing	Lead: PennDOT
S3.4. Proactively modify the Drivers Licensing Exam to reflect any formal changes to DM2 or any other publications or legislation.	1. Establish a process that will proactively modify the Drivers Licensing Exam to reflect any formal changes to DM2 or any other publications or legislation.	Ongoing	Lead: PennDOT

S4: Improve policies and practices for maintaining access for people who walk and bicycle during construction and maintenance projects.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	RESPONSIBLE PARTY
<p>S4.1. Update PennDOT design manuals and policies to improve active transportation safety during construction and maintenance activities.</p>	<p>1. Create a new chapter within the PennDOT Design Manual and update the District Safety Manual to provide guidance and requirements on how to maintain safe active transportation access during construction and maintenance activities.</p>	<p>Ongoing</p>	<p>Lead: PennDOT</p>
	<p>2. Promote the new guidance and requirements and convey best practices to appropriate PennDOT personnel and external partners.</p>	<p>Short</p>	<p>Lead: PennDOT</p>

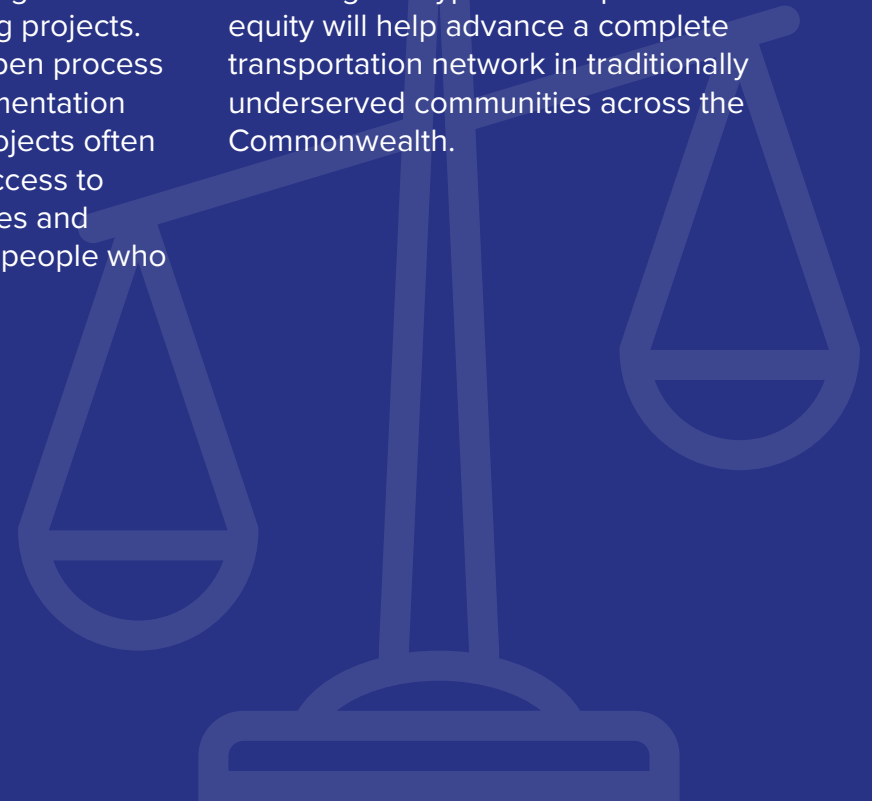


PROVIDE TRANSPORTATION EQUITY

Provide opportunities for people of all ages, abilities, races, ethnicities, and incomes throughout urban, suburban, and rural areas across Pennsylvania to bicycle or walk.

Walking and bicycling are modes of transportation that nearly everyone can use, however, some people use it out of necessity, others out of choice. Traditionally underserved communities often face active transportation planning challenges unlike communities with more access to staff, training, and funding for planning and implementing projects. Having an inclusive and open process in the planning and implementation of active transportation projects often leads to more equitable access to bicycle and walking facilities and resources available to the people who need them most.

The following strategies and implementation steps provide a framework for how PennDOT will integrate equity into active transportation planning and project prioritization to meet the needs of all community members regardless of age, race, gender, ability, or income. Providing this type of transportation equity will help advance a complete transportation network in traditionally underserved communities across the Commonwealth.



E1: Integrate equity criteria into decision-making and prioritize walking and bicycling investments in underserved areas with transportation disadvantaged populations.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
E1.1. Increase disadvantaged communities' opportunity to attain the resources they need to participate in competitive transportation funding programs.	1. Map projects that have been previously funded through the PennDOT Discretionary Multimodal Transportation Fund (MTF) and the TA Set-Aside to evaluate the equitability of funding distribution to traditionally underserved communities.	Short	Lead: MPOs/RPOs, DEP Support: PennDOT
	2. Develop a method to evaluate competitive funding applications to consider equity concerns in funding distribution.	Short	Lead: PennDOT Support: MPOs/RPOs
	3. Develop a workgroup to provide education and guidance for local planning partners to proactively assist underserved communities with active transportation planning and grant applications.	Short	Lead: MPOs/RPOs Support: PennDOT, DCNR, DOH

E2: Improve active transportation engagement as part of project-specific transportation planning/design and create specialized outreach for people with disabilities and people from minority groups.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
E2.1. "Utilize specialize outreach for traditionally.... low-income population to support active transportation.	1. Establish best practices to engage people who are from zero car households in traditionally underserved communities and identify their needs during PennDOT project planning and design processes.	Medium	Lead: PennDOT Support: MPOs/RPOs
	2. Provide training to PennDOT staff highlighting outreach techniques and methods of engagement to increase participation with minority/ low-income and disability communities.	Medium	Lead: PennDOT Support: MPOs/RPOs
	3. Leverage PennDOT Connects to perform targeted outreach to traditionally underserved communities.	Ongoing	Lead: PennDOT Support: MPOs/RPOs
	4. Promote the creation of active transportation or bicycle and pedestrian advisory committees within MPOs/RPOs.	Medium	Lead: PennDOT Support: MPOs/RPOs

E3: Improve non-motorized access to transit and other modal connections.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
E3.1. Improve access to transit by improving the first and last mile connections with active transportation infrastructure.	1. Continue ongoing coordination with transit providers to improve bicycle and pedestrian safety and access.	Ongoing	Lead: PennDOT
	2. Coordinate with passenger rail providers to offer bicycle infrastructure at stations and on trains.	Short	Lead: PennDOT
	3. Collaborate with municipalities, transit providers, and health care entities on how to connect transit infrastructure and networks to private infrastructure projects.	Medium	Lead: MPOs/RPOs Support: PennDOT
	4. Collect data on pedestrian and bicycle facilities on state roads within a 1/4 mile of bus stops and transit stations. Use this data to prioritize improvement projects.	Ongoing	Lead: MPOs/RPOs Support: PennDOT

E4: Provide ongoing outreach and education to partners with a focus on partners that represent underserved communities.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
E4.1. Identify the needs of non-English speaking populations and implement appropriate active transportation safety programs accordingly.	1. Work with MPOs/RPOs, community organizations, and leaders to identify the need for active transportation safety training for people with limited English proficiency.	Medium	Lead: PennDOT Support: MPOs/RPOs
	2. Establish and promote safety programs and trainings in multiple languages, tailoring the information to the specific needs of the community.	Medium	Lead: PennDOT Support: MPOs/RPOs
E4.2. Develop education and public outreach materials that can be distributed to underserved communities.	1. Develop Bicycle Manual in Spanish. Consider other languages as requested.	Ongoing	Lead: PennDOT
	2. Create a statewide bicycling and walking safety guide, available in multiple languages, to promote basic education on active transportation for communities.	Long	Lead: PennDOT

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
E4.3 Establish policies or guidelines to identify bicycle and pedestrian priority area designations.	1. Establish a process for how PennDOT will work with planning partners to identify priority areas.	Medium	Lead: PennDOT Support: MPOs/RPOs, DOH
	2. Determine meaning, impacts, and implications for a community or an area once it has been designated as a priority area.	Short	Lead: PennDOT Support: MPOs/RPOs



CONNECT WALKING & BICYCLING NETWORKS

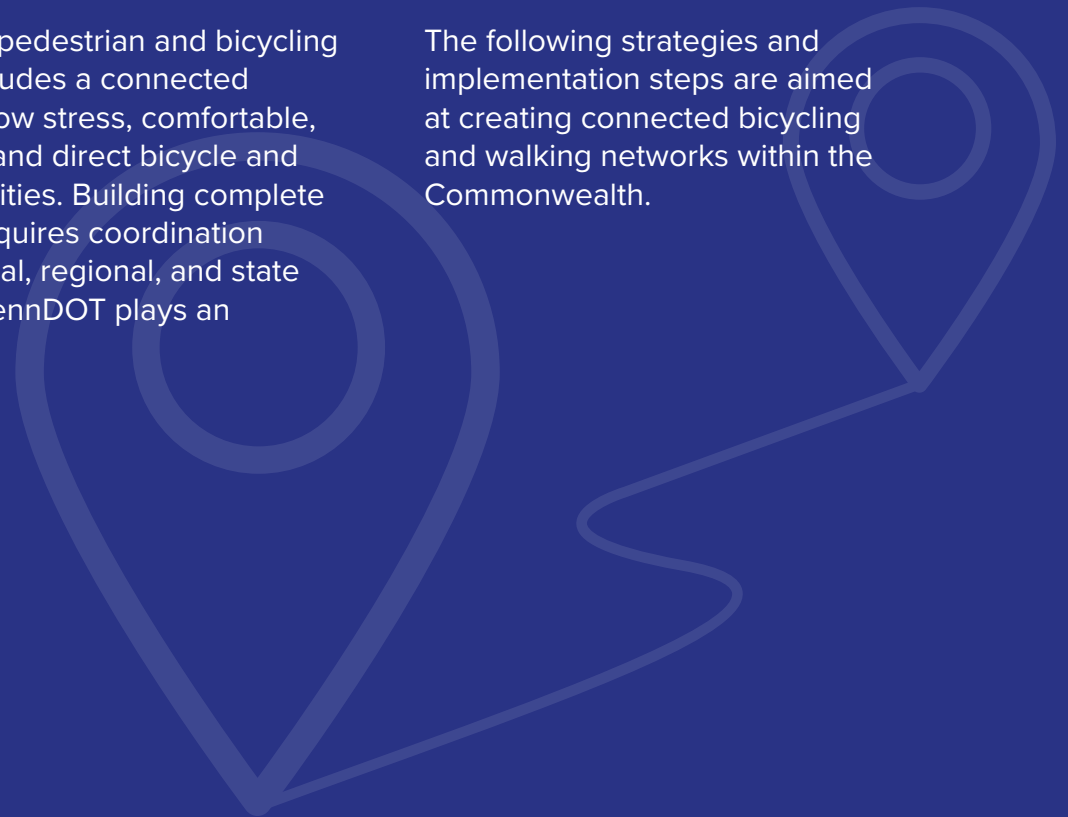
Provide a complete pedestrian and bicycling network that reliably and easily connects users of all ages and abilities to destinations and other transportation modes.

Bicycling and walking facilities should attract and accommodate people of all ages and abilities. Pennsylvania can encourage residents and visitors alike to participate in active transportation by providing facilities that offer increased comfort and seamlessly connect destinations.

A complete pedestrian and bicycling network includes a connected network of low stress, comfortable, accessible, and direct bicycle and walking facilities. Building complete networks requires coordination between local, regional, and state agencies. PennDOT plays an

important role in creating connected networks by working with partners across jurisdictional boundaries. PennDOT can spearhead designing and investing in complete pedestrian and bicycle networks through leveraging existing local and regional plans.

The following strategies and implementation steps are aimed at creating connected bicycling and walking networks within the Commonwealth.



C1: Support the development of regional and local plans that identify bicycle and pedestrian needs and priority projects with a focus on closing gaps and building complete, comfortable networks.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>C1.1. Develop online resource center that provides a comprehensive inventory of bicycle and pedestrian infrastructure.</p>	<p>1. Develop a statewide bicycle and pedestrian inventory process in PennDOT’s Geographical Information System (GIS) format. Database should inventory bicycle and pedestrian facility locations, facility types, network gaps, and proposed and planned active transportation network and routes. Process will include standard mapping and database templates to ensure consistency in the dataset statewide.</p>	<p>Medium (update each year)</p>	<p>Lead: PennDOT Support: MPOs/RPOs, DCNR, Utility Providers, Local Governments</p>
	<p>2. Use state database and mapping templates to compile the prioritized projects and corridors identified within regional and MPOs/RPOs LRTPS, active transportation plans.</p>	<p>Medium</p>	<p>Lead: PennDOT Support: MPOs/RPOs, DCNR</p>
	<p>3. Provide mapping and data to PennDOT Central Office, Districts, and Maintenance Offices for planning consultation, project development, and programming purposes. This mapping can also assist in reviewing permits, preparing the county maintenance work programs, and other routine maintenance activities.</p>	<p>Long</p>	<p>Lead: PennDOT</p>
<p>C1.2. Enhance connected networks through Regional Active Transportation Plans.</p>	<p>1. Create an online public map that shows the active transportation plans currently in place across the Commonwealth and link the map to the final plans.</p>	<p>Medium</p>	<p>Lead: PennDOT Support: MPOs/RPOs</p>
	<p>2. Working through PennDOT Connects, use local and regional active transportation plans to identify specific bicycle and pedestrian projects as well as to show priority corridors where bicycle and pedestrian improvements should be considered when other improvement projects are planned.</p>	<p>Ongoing</p>	<p>Lead: PennDOT Support: MPOs/RPOs</p>

C2: Improve connectivity by addressing bicycling and pedestrian network gaps through the transportation project development process.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>C2.1. Ensure PennDOT's Bicycle and Pedestrian Checklist is utilized effectively throughout the lifecycle of PennDOT projects.</p>	<p>1. Develop a team to evaluate the PennDOT Connects process and the Bicycle and Pedestrian Checklist to ensure that needs of bicyclist and pedestrians are appropriately being identified during the scoping process. Then develop a process to integrate the checklist into PennDOT Connects for use on all projects.</p>	Short	Lead: PennDOT
	<p>2. Ensure that all Districts are using this checklist as part of PennDOT Connects appropriately on every project.</p>	Short	Lead: PennDOT Support: MPOs/RPOs
<p>C2.2. Develop statewide policy to standardize design on state routes to accommodate bicycles and pedestrians.</p>	<p>1. Consider widened shoulders on state routes that provide connectivity and complete gaps for bicycling.</p>	Short	Lead: PennDOT

C3: Improve access to parks, trails, and other recreational amenities.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>C3.1. Establish processes, policies, and guidelines for constructing and maintaining trail networks.</p>	<p>1. Develop PennDOT policy and approval process to allow trails within PennDOT limited access right-of-way.</p>	Short	Lead: PennDOT
	<p>2. Revise standard maintenance agreements to include sidewalks and trails in highway and bridge projects. Ensure District staff have access to and understanding of the current trail and sidewalk agreements.</p>	Ongoing	Lead: PennDOTs
	<p>3. Develop a process of coordinating agreements for existing trail crossings and automate tracking of these agreements.</p>	Medium	Lead: PennDOT Support: DCNR
	<p>4. Assess the potential trail crossings infrastructure needs based upon Federal Highway Administration Guidelines. Provide additional guidance to PennDOT Districts, MPOs/RPOs, and local governments on how to implement trail crossing improvements.</p>	Medium	Lead: PennDOT Support: DCNR
<p>C3.2. Improve and expand statewide, regional, and local bicycle routes to provide active transportation linkages to state’s natural and cultural resources and attractions/ destinations.</p>	<p>1. Relocate and evaluate Bicycle PA Routes, where appropriate, to improve bicycle level of service (BLOS), better connect attractions and destinations, and identify priority improvements.</p>	Short	Lead: PennDOT Support: MPOs/RPOs
	<p>2. Work with DCNR to identify trail gaps and coordinate with partners to identify and prioritize improvements.</p>	Ongoing	Lead: DCNR Support: PennDOT, MPOs/RPOs
	<p>3. Participate as an active partner in supporting development of US Bicycle Routes.</p>	Ongoing	Lead: PennDOT Support: DCNR, MPOs/RPOs
	<p>4. Partner with railroad owners to improve railroad crossings and enhance and expand trails located near rail lines.</p>	Ongoing	Lead: PennDOT Support: DCNR, MPOs/RPOs



LEVERAGE PARTNERSHIPS

Work actively and collaboratively with federal, state, regional, local, and private partners to support walking and bicycling.

The opportunities to expand active transportation and improve the conditions for people walking and bicycling are expansive and dependent upon many agencies, jurisdictions, and organizations throughout Pennsylvania working collaboratively. These recommendations highlight some of the partnerships that should be developed and leveraged to help advance the strategies contained in this Plan.



P1: Strengthen ongoing coordination, cooperation, and collaboration between federal, state, regional, local, and private partners to facilitate a seamless pedestrian and bicycle system.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>P1.1. Coordinate with Metropolitan Planning Organizations (MPO), Rural Planning Organizations (RPO), and local governments to encourage bikeable and walkable communities.</p>	<p>1. Promote funding options and innovative approaches for Metropolitan Planning Organizations (MPO), Rural Planning Organizations (RPO), and local governments to advance active transportation.</p>	Short	<p>Lead: PennDOT Support: RPOs/MPOs</p>
	<p>2. Create an online resource inventory listing all state active transportation funding resources and grant opportunities to educate and inform local governments on how to fund active transportation projects and programs.</p>	Short	<p>Lead: PennDOT Support: MPOs/RPOs</p>
	<p>3. Develop and maintain a list of all bicycle and pedestrian friendly community designations and promote attaining designations.</p>	Short	<p>Lead: PennDOT Support: DCED, DCNR, DOH, RPOs/MPOs MPOs/RPOs</p>
	<p>4. Promote the use of the Pennsylvania How-to Guide for Developing Active Transportation Master Plans.</p>	Short	<p>Lead: PennDOT Support: MPOs/RPOs</p>
	<p>5. Support the DCED, DCNR, and DOH in providing education and outreach to local governments on benefits of becoming trail towns, walkable communities, and creating downtown development districts.</p>	Ongoing	<p>Lead: PennDOT Support: DCED, DCNR, DOH, MPOs/RPOs, DLI</p>
<p>P1.2. Implement a training program on active transportation that satisfies the knowledge and skill needs of various audiences.</p>	<p>1. Develop and provide training on the community benefits of active transportation and technical aspects of planning and design of bicycle and pedestrian facilities. Customized trainings could be developed to focus on PennDOT planners, designers, project managers, or external stakeholders/public.</p>	Short	<p>Lead: PennDOT Support: DOH</p>
	<p>2. Develop web-based training and/or videos for staff and external stakeholders/public, as appropriate.</p>	Medium	<p>Lead: PennDOT</p>
<p><i>Continued on next page</i></p>			

P1 (continued): Strengthen ongoing coordination, cooperation, and collaboration between federal, state, regional, local, and private partners to facilitate a seamless pedestrian and bicycle system.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
P1.3. Partner with other state agencies, planning partners, and advocacy groups to identify legislation and policies to support bicycling and walking.	1. Leverage existing multi-agency work groups and committees to identify collaborative opportunities to enhance bicycling and walking.	Ongoing	Lead: PennDOT Support: DCED, DCNR, PSP, DOH, DEP, MPOs/ RPOs, Advocacy Groups, Local Governments
	2. Establish a multi-agency work group that meets regularly to discuss active transportation as part of a statewide collaboration initiative.	Medium	Lead: PennDOT Support: DCED, DCNR, PSP, DOH, DEP, MPOs/ RPOs, Advocacy Groups, Local Governments
	3. Identify best practices from peer states and federal guidance to update state legislation and policies to better support bicycling and walking.	Ongoing	Lead: PennDOT
P1.4. Coordinate with utility owners to provide active transportation facilities.	1. Continue to coordinate and expand partnerships with utility owners in planning and constructing bicycle and walking infrastructure to reduce costs and prevent overlapping projects that could have relocated infrastructure to accommodate sidewalks or bicycle facilities.	Ongoing	Lead: PennDOT

P2: Coordinate PennDOT planning and policy with all levels of government to encourage mode shifts, reduce emissions of greenhouse gases, and provide a flexible and resilient transportation network.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>P2.1. Leverage PennDOT Connects Policy</p>	<p>1. Continue to communicate the PennDOT Connects process and revise as needed to improve the project planning process to ensure that bicycle and pedestrian needs are being considered in every project.</p>	<p>Ongoing</p>	<p>Lead: PennDOT Support: MPOs/RPOs</p>
<p>P2.2. Support and promote policies that encourage bicycling and walking for all ages.</p>	<p>1. Promote Bike Month, Bike to School Day, Walk to School Day, and other related national events.</p>	<p>Ongoing</p>	<p>Lead: PennDOT Support: MPOs/RPOs</p>

P3: Improve the quality and availability of data on bicycle and pedestrian travel and infrastructure.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
P3.1. Improve and standardize data collection and data management.	1. Identify data gaps that can highlight the active transportation needs of communities, particularly highlighting minority or underserved populations, and improve data collection to capture these needs.	Short	Lead: PennDOT Support: MPOs/RPOs
	2. Utilize mapping of hazardous school routes to prioritize safe routes to school infrastructure projects.	Short	Lead: PennDOT
	3. Develop standardized District wide tracking and mapping for designated regional on-road bicycle routes and trail crossings.	Medium	Lead: PennDOT Support: MPOs/RPOs
	4. Explore opportunities to leverage existing data collected by PennDOT and others to better understand the use of the transportation system by people who walk and ride bicycles.	Medium	Lead: PennDOT Support: MPOs/RPOs
P3.2. Improve data accessibility for partners and data users by linking data systems.	1. Evaluate the benefits of crowdsourcing non-reportable bicycle and pedestrian crashes.	Future	Lead: PennDOT
	2. Evaluate opportunities for data-sharing with personal mobility providers such as rental companies providing shared scooters or bicycles and last mile freight delivery provided by delivery services.	Future	Lead: PennDOT

P4: Engage in proactive evaluations and discussions on new and emerging technologies and mobility solutions.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>P4.1. Determine new policies and practices to integrate new mobility solutions such as e-bicycles, e-scooters, and other emerging transportation technologies into the existing transportation network.</p>	<p>1. Review existing laws and legislation to understand how these new technologies and devices are currently regarded in Pennsylvania.</p>	Short	<p>Lead: PennDOT Support: MPOs/RPOs</p>
	<p>2. Review and revise PennDOT design guides and standards to ensure that these devices can operate safely as part of the transportation network.</p>	Medium	<p>Lead: PennDOT Support: MPOs/RPOs</p>
<p>P4.2. Participate in working groups to understand the impacts of connected and autonomous vehicle technologies and update state laws, policies, and design guidance to safely accommodate this emerging transportation technology.</p>	<p>1. Continue to participate in the Connected and Autonomous Vehicle (CAV) National Working Group.</p>	Ongoing	<p>Lead: PennDOT</p>
	<p>2. Continue to participate in the Pennsylvania State Agency Connected and Autonomous Vehicle (CAV) Advisory Group.</p>	Ongoing	<p>Lead: PennDOT</p>



IMPROVE PUBLIC HEALTH

Provide active living environments with safe, connected, accessible facilities along with programs that influence public health by encouraging walking and bicycling.

Communities that promote safe, connected, accessible bicycle and pedestrian facilities provide residents the opportunity to live a healthier lifestyle through active transportation. People have more opportunities to be more active when they live in communities with sidewalks, open space, connected bicycle facilities, and safe streets that are maintained year-round.

These strategies and implementation steps provide a framework for how PennDOT will integrate public health considerations into bicycle and pedestrian transportation planning and project prioritization to meet the needs of communities across the Commonwealth.



H1: Continue and enhance ongoing state agency coordination to improve public health outcomes through active transportation.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>H1.1. Expand funding of active transportation plans and programs</p>	<p>1. Evaluate the extent and effectiveness of partnerships with county public health agencies, tribal governments, transit agencies, parks and recreation departments, state agencies, and other potential partners to identify opportunities to expand funding and streamline collaboration and cohesion between a variety of funding programs.</p>	<p>Ongoing</p>	<p>Lead: PennDOT Support: DOH, RPOs/ MPOs</p>
<p>H1.2. Highlight successful non-traditional funding partnerships as models for other communities.</p>	<p>1. Work with partner agencies to provide resources and case studies that highlight public health funding mechanisms focused on reducing chronic diseases and obesity or other non-traditional transportation funding that improved public health through active transportation.</p>	<p>Medium</p>	<p>Lead: PennDOT Support: DOH</p>

H2: Engage health policy practitioners in policy development, comprehensive transportation planning, and early project development.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>H2.1. Coordinate with other partners to engage public health practitioners to develop guidance that supports incorporating active transportation.</p>	<p>1. Establish an interdisciplinary workgroup to advance policy development, create a project identification process, and coordinate projects.</p>	<p>Short</p>	<p>Lead: PennDOT Support: DOH, MPOs/ RPOs</p>

H3: Link state competitive funding program criteria to community projects designed to strengthen health and active transportation.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>H3.1. Modify state competitive funding program and evaluations to elevate active transportation projects designed to strengthen community health.</p>	<p>1. Evaluate and implement prioritization methods for transportation projects to support community projects designed to strengthen health and active transportation.</p>	<p>Medium</p>	<p>Lead: PennDOT Support: MPOs/RPOs</p>
	<p>2. Provide education and guidance for local planning partners on how to identify anticipated community health outcomes into active transportation grant applications.</p>	<p>Long</p>	<p>Lead: PennDOT Support: DOH</p>

H4: Address health disparities through active transportation policies, plans, and project selection.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>H4.1. Support planning partners in efforts to proactively identify traditionally underserved communities which have higher health risks and provide resources to assist with active transportation plan development.</p>	<p>1. Work with the DOH to establish criteria for assessing and prioritizing communities in need of assistance based on health risks and disadvantaged community status.</p>	<p>Short</p>	<p>Lead: PennDOT Support: DOH</p>
	<p>2. Work with MPOS/RPOs and local agencies to develop and maintain a list of local active transportation plans.</p>	<p>Short</p>	<p>Lead: MPOs/RPOs Support: PennDOT</p>

H5: Improve data collection and sharing between transportation and public health agencies.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>H5.1. Invest in the collection, analysis, meaningful use, secure sharing, and accessible translation of data to advance health equity.</p>	<p>1. Disseminate data, particularly data gathered with the help of communities, to the public and those communities to promote community engagement and improve public health through active transportation.</p>	<p>Long</p>	<p>Lead: PennDOT</p>

H6: Improve access to community health resources.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>H6.1. Provide and improve active transportation connections to public health facilities.</p>	<p>1. Enhance transportation planning efforts to proactively identify public health care and support facilities located adjacent to PennDOT projects and seek opportunities to evaluate access and incorporate infrastructure, when possible, to link facilities to the broader transportation network.</p>	<p>Long</p>	<p>Lead: PennDOT Support: Local Governments</p>



INCREASE ECONOMIC MOBILITY

Maximize economic competitiveness through walking and bicycling networks that improve people's abilities to access jobs, businesses, and other destinations, and to attract visitors and tourists, new residents, and new businesses to Pennsylvania.

Connected and attractive active transportation networks provide an opportunity to increase economic competitiveness by accessing employment centers, creating new business opportunities, and attracting new residents and visitors. Connected networks and appealing facilities can attract tourists which creates opportunity for tourism-related services.

The strategies and implementation steps detail how PennDOT can work with partners across the Commonwealth to enhance economic initiatives locally and regionally by expanding and promoting connected and attractive active transportation networks.



M1: Promote local land use policies and practices that support increased bicycling and walking and add to the overall livability and vitality of communities.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
M1.1. Update and strengthen existing training for local officials on the value of walkable and bikeable communities.	1. Develop pedestrian and bicycle resource pages for PennDOT’s website that provides information to encourage land use policies and practices that support bicycling and walking.	Ongoing	Lead: PennDOT Support: MPOs/RPOs

M2: Build partnerships between PennDOT, other state agencies, visitors and convention bureaus, chambers of commerce, local governments, and the private sector to support bicycle and pedestrian infrastructure to enhance economic initiatives within communities.

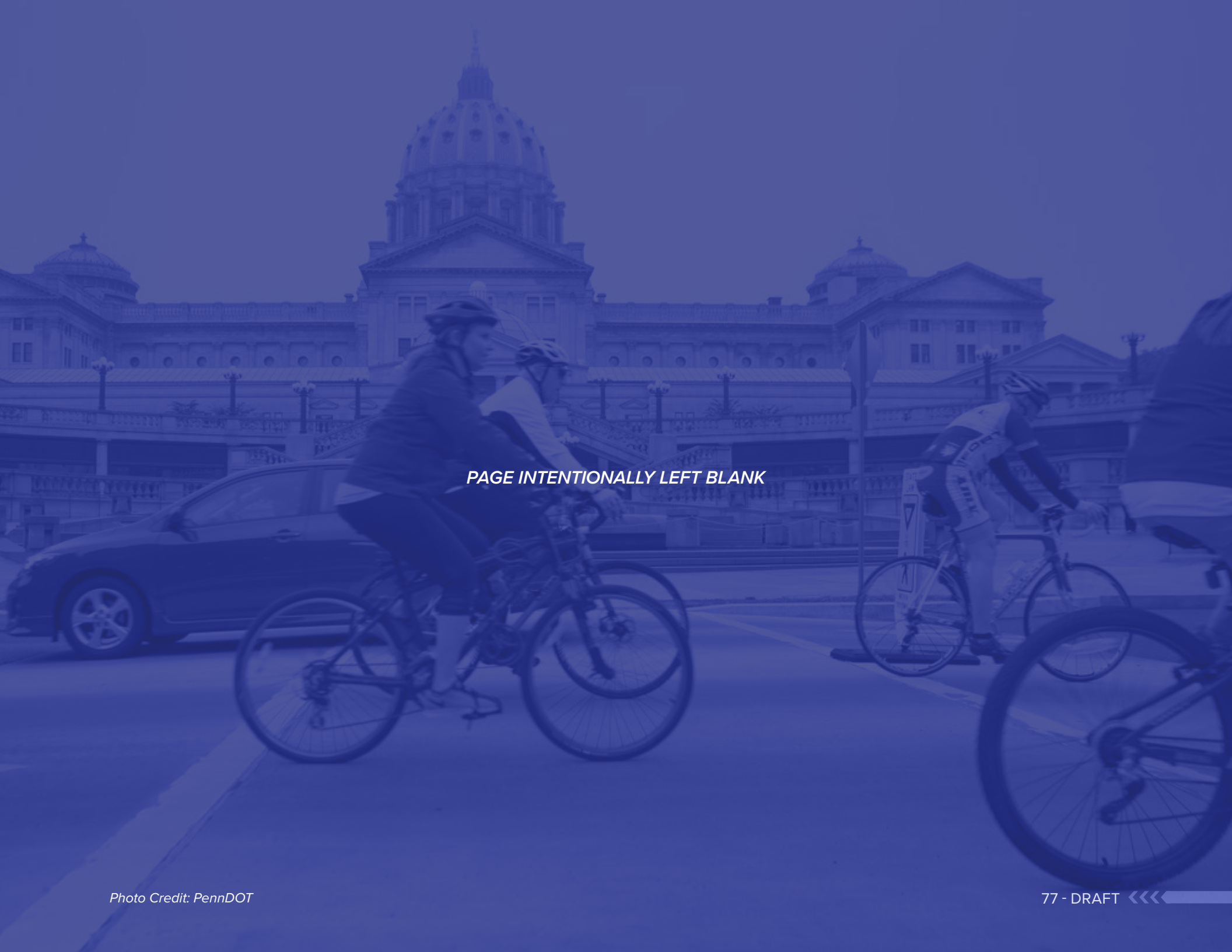
STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
M2.1. Establish new partnerships and strengthen existing partnerships to promote bicycle and pedestrian transportation, recreation, and tourism.	1. Enhance web presence of walking/bicycling attractions on state travel and tourism websites.	Medium	Lead: PennDOT Support: DCED, DCNR
	2. Leverage existing conferences and established partnerships to collaborate and identify opportunities to build new partnerships.	Ongoing	Lead: DCED Support: PennDOT, DCNR, MPOs/RPOs
M2.2. Promote parks, trails, and bicycle and walking options to tourists.	1. Coordinate between PennDOT, DCED, DCNR, DOH, and other partners such as local visitors’ bureaus to market and promote bicycling and walking opportunities to visitors and tourists.	Ongoing	DCED to lead M.2.2 and PennDOT Support

M3: Identify pre-construction and post-construction assessment methodology to determine the economic vitality of completed pedestrian and bicycle projects.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>M3.1. Track return-on-investment for active transportation infrastructure projects.</p>	<p>1. Implement statewide return-on-investment policy. Policy could consider:</p> <ul style="list-style-type: none"> • Number of users to determine if the investment in infrastructure increases users and/or decreases vehicle miles traveled (VMT). • Increase in safety to determine if investment leads to less severe and/or reduced crash rates. • Improvements in user behavior to determine if investment increased vehicle yielding to people on bicycles and pedestrians and/or people on bicycles, pedestrians, and vehicle drivers were more likely to follow traffic rules and signals. 	<p>Long</p>	<p>Lead: PennDOT Support: DCED, DLI, MPOs/RPOs</p>

M4: Improve access to job centers and downtown districts.

STRATEGIES	IMPLEMENTATION STEPS	TIMEFRAME	PARTNERS
<p>M4.1. Prioritize access to employment centers for disadvantaged communities.</p>	<p>1. Encourage MPOs/RPOs, and local government partners to incorporate access to employment and economic opportunities as a key analysis factor for active transportation improvements and local planning efforts.</p>	<p>Ongoing</p>	<p>Lead: PennDOT Support: MPOs/RPOs, DLI</p>
	<p>2. Develop metrics to report on the effectiveness of active transportation programs and projects in supporting access to economic opportunities.</p>	<p>Long</p>	<p>Lead: PennDOT Support: DCED, DLI</p>



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MEASURING SUCCESS

Below is a list of potential performance measures to track the success of the preceding goals and objectives. These performance measures mainly target the high-level goals and objectives listed within this Plan; however, some more specific performances measures are also included that could track the progress of implementing the strategies.

THEME	PERFORMANCE MEASURE	TIME FRAME FOR BEGINNING TO TRACK THE PM/DATA AVAILABILITY
1. Enhance Safety	1. Number of bicycle and pedestrian crashes by severity (annual count + 5-year rolling average)	Ongoing
	2. Number of bicycle and pedestrian crashes on designated Hazardous Walking Routes to School	Short (Hazardous Routes), Long Term (before/after investment)
	3. Number of locations on state-owned facilities with recurring/permanent bicycle/pedestrian counts	Short
	4. Percent of resurfacing/maintenance projects in each district that incorporate bicycle infrastructure improvements	Short
	5. Number of complete streets policies	Short
	6. Number of open streets events	Medium
	7. Number of Safe Routes to Schools programs	Short
	8. Number of designated bicycle friendly communities and universities	Short
2. Provide Transportation Equity	1. Track percent of bicycle/pedestrian funding grants awarded to vulnerable populated communities	Short

THEME	PERFORMANCE MEASURE	TIME FRAME FOR BEGINNING TO TRACK THE PM/DATA AVAILABILITY
3. Connect Walking & Bicycling Networks	1. Miles of bicycle facilities along state road network	Medium
	2. Complete designation of all proposed US Bike Routes	Medium
	3. Prioritize and evaluate 5 percent of the high priority trail crossings on state roads per year.	Short
	4. Track percent of trips walking and bicycling using National Travel Household Survey data and the most current American Community Survey	Short
5. Improve Public Health	1. Number of Active Transportation Plans funded by state agencies	Short
	2. MPOs/RPOs have active transportation plan	Medium
6. Increase Economic Mobility	1. Average Bicycle Level of Service (BLOS) and/or Bicycle Level of Traffic Street (LTS) on Pennsylvania Byways and Bicycle PA Routes - in urbanized and rural areas	Long

DATA NEEDS

Below is a list of the data that is needed to implement and monitor the successful implementation of this Plan. These data needs are reflected in the implementation strategies and performance measures listed in the Plan.

TYPE	DATA
GIS Data	<p>Existing bicycle and pedestrian infrastructure types and locations on PennDOT ROW, including but not limited to:</p> <ul style="list-style-type: none"> • Roadway bicycle facilities • Off-road trails • Pedestrian facilities within a 1/4 mile of bus stops and transit stations • Railroad crossings • Sidewalks
	<p>Existing networks and gaps, including but not limited to:</p> <ul style="list-style-type: none"> • Priority trail crossings (coordinating DCNR's list of priority trail gaps) • Hazardous school routes • Designated regional, county, and municipal on-road bicycle routes and trail crossings • Bicycle and pedestrian network gaps • Proposed and planned bicycle and pedestrian networks and routes • Average BLOS on Pennsylvania Byways and Bicycle PA Routes - in urbanized areas and rural areas
	<p>Existing agreements and coverage location information, including but not limited to:</p> <ul style="list-style-type: none"> • Existing trail crossings agreements • Sidewalk maintenance agreements
	<p>Crash data, including but not limited to:</p> <ul style="list-style-type: none"> • Statewide bicycle and pedestrian crash locations by severity (annual count + 5-year rolling average) • Crowdsourcing non-reportable bicycle and pedestrian crashes • Bicycle and pedestrian crashes on designated Hazardous Walking Routes to School and routes that have received Safe Routes to School investment (before/after)
	<p>Central GIS-based database for storing bicycle and pedestrian count data, including but not limited to:</p> <ul style="list-style-type: none"> • Locations on state-owned facilities with recurring/permanent bicycle/pedestrian automated counting devices or manual counting locations

TYPE	DATA
Existing Projects Data	Projects that have been previously funded through the PennDOT Multimodal Transportation Fund (MTF) and the TA Set -Aside
	Percent of resurfacing/maintenance projects in each district that incorporate bicycle infrastructure improvements
Existing Plans and Planning Data	All the active transportation plans currently in place across the state with linked information on the contents of each plan
	Active Transportation Plans funded by state agencies (include investment costs)
	Bicycle and pedestrian friendly community designations
	Return on investment data and case studies including: <ul style="list-style-type: none"> • Evaluating if projects increase safety to determine if investment leads to less severe and/or reduced crash rates • Evaluating behavior improvements such as increased vehicle yielding to people on bicycles and pedestrians and/or people on bicycles, pedestrians, and vehicle drivers were more likely to follow traffic rules and signals.
Population Demographics Data	Walk and bicycle mode share data provided by the National Household Transportation Survey, American Community Survey
	Percent of population taking Driver Exam scoring correctly on bicycle/pedestrian -related questions (average % of questions correct, % of exam-takers answering all bicycle/pedestrian questions correctly, % of exam-takers answering less than half of bicycle/pedestrian questions correctly, etc.)
	Bicycling and walking rates for low-income people, minorities, and women (from National Household Travel Survey)
Mobility Provider Data	Mobility providers such as rental companies providing shared scooters or bicycles and last mile freight delivery, including but not limited to: <ul style="list-style-type: none"> • Mobility service areas • Mobility devices inventory • Mobility devices use and usage location (origin – destination data) • Crash data • Missing transportation infrastructure links • Customer demographics information (to help determine equitable access)

A1



PUBLIC OUTREACH

ONLINE ENGAGEMENT

This appendix provides summaries of the online engagement activities and presents the results of the community survey.

Project Website

A project website, hosted on PennDOT's main website, provided the public with access to project information, project resources, and meeting materials. It also provided a mechanism for keeping the public apprised of how they can provide input (public meeting, online survey, project listserv, and email for open-ended comments). The website served as a vital tool and primary source to receive and document feedback from the public on existing issues.

The project website included links to information about the project provided by social media outlets.

The project website also hosted a short welcome video from Secretary Richards that informed the public about the project and discussed the importance of bicycling and walking.

Facebook & Twitter Application

Project updates and links to the project website were sent out using PennDOT's Facebook and Twitter accounts. Multiple posts were posted monthly to encourage the audience to visit the project website, participate in the online community survey, and answer single-question polls.

COMMUNITY SURVEY

A survey tool was generated to capture input from stakeholders and the general public on existing conditions for people who bicycle and walk.

Participants were able to identify existing strengths, weaknesses, opportunities, needs, barriers,

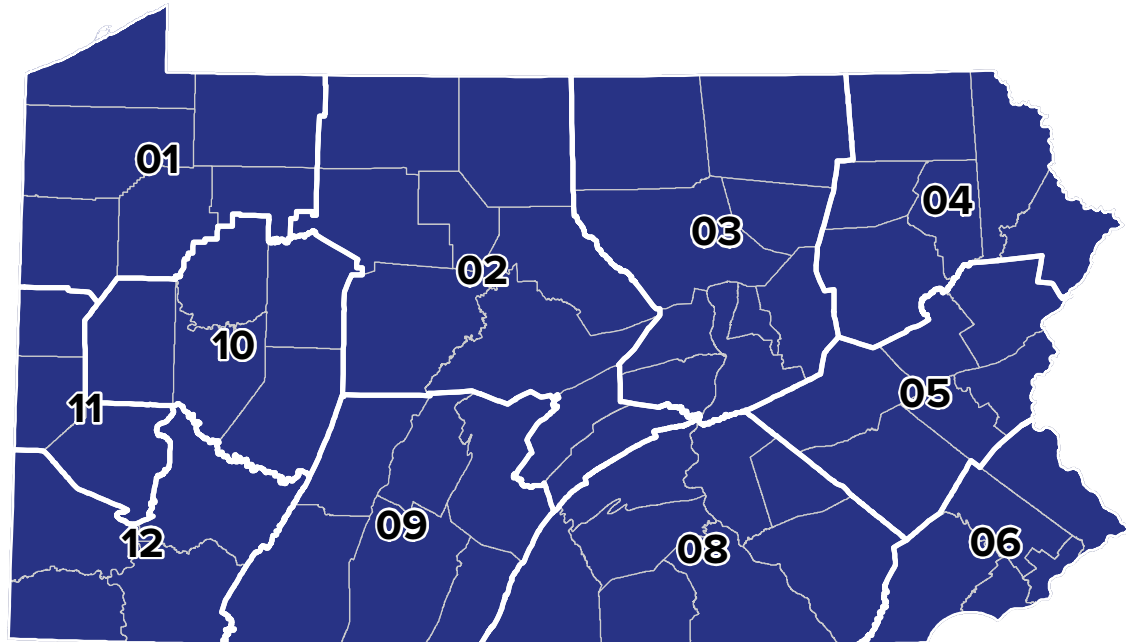
and concerns around walking and bicycling. The survey also contained questions about the adequacy of facilities, demographics, and household travel to understand how different groups of respondents of the survey get from place to place.

The survey was made available electronically in the Spring and Summer of 2018 and shared through hundreds of digital networks across the Commonwealth. An overwhelming number of responses were collected – more than 13,000 – and that input helped to formulate the recommendations found in this Plan.

In summary, survey respondents represented urban, suburban, and rural communities and were predominately white, 30-59 years old, with annual income levels higher than \$50,000, that walk and bicycle generally for recreational purposes. Respondents generally found bicycling to be more challenging

than walking. They identified a lack of infrastructure, traffic speed, and aggressive driving as key challenges to bicycling. Respondents stated improved infrastructure (new or improved facilities and facility connectivity), education (cyclist and motor vehicle driver), and law enforcement as items that would make them bicycle more frequently.

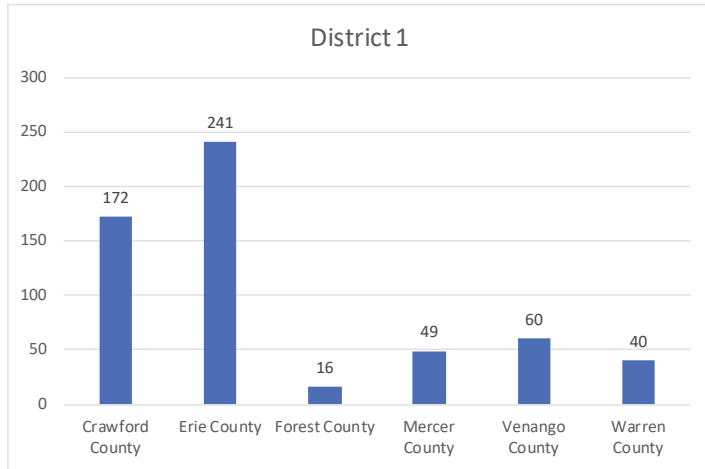
While respondents identified walking as less challenging, they still recognized existing issues. The key issues for people who walk included traffic speed, lack of adequate infrastructure, or poor infrastructure condition. They stated facility installation and improvement as key to increasing the frequency of walking. The following pages provide a District map and an overview of the survey results by District.



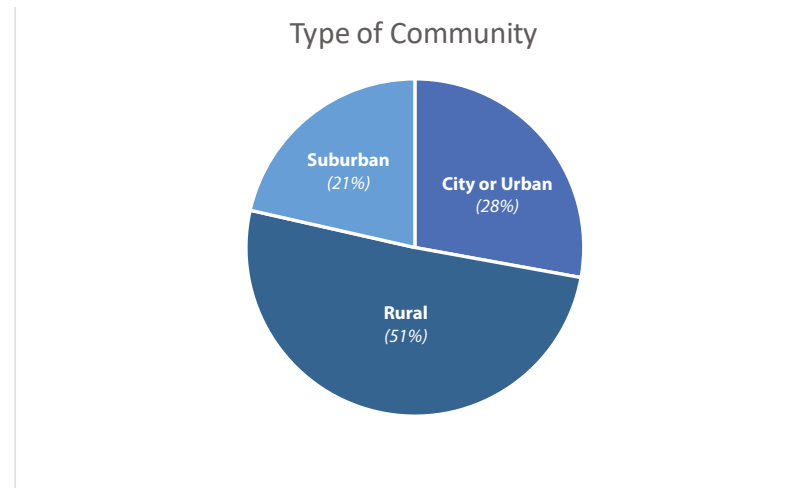
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STATEWIDE SURVEY RESULTS

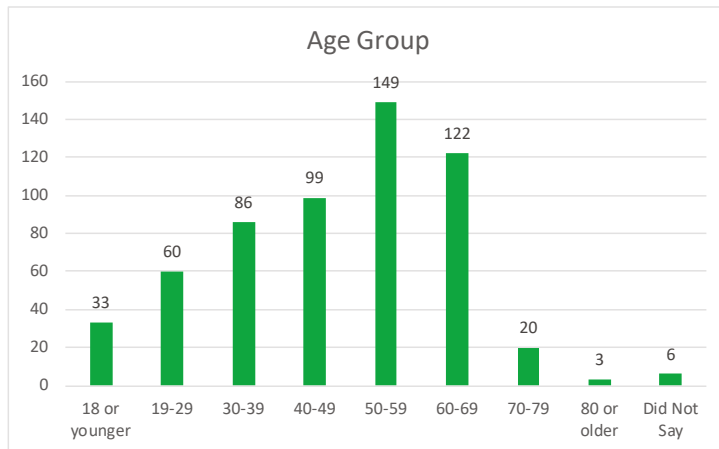
WHERE DO YOU LIVE?



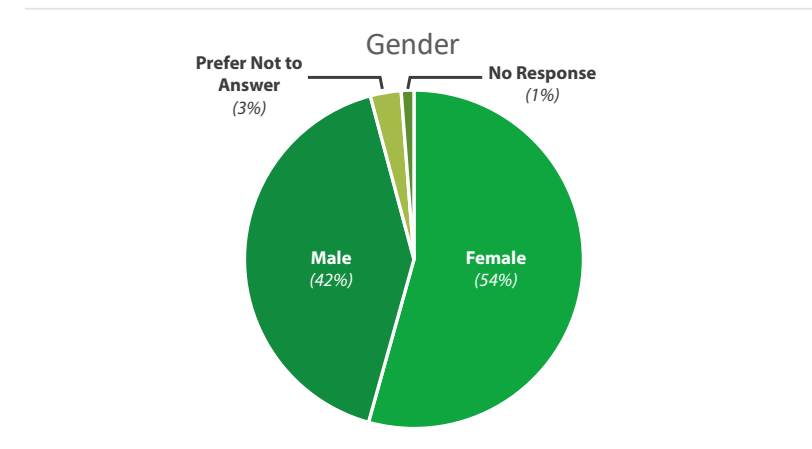
WHAT TYPE OF COMMUNITY DO YOU LIVE IN?



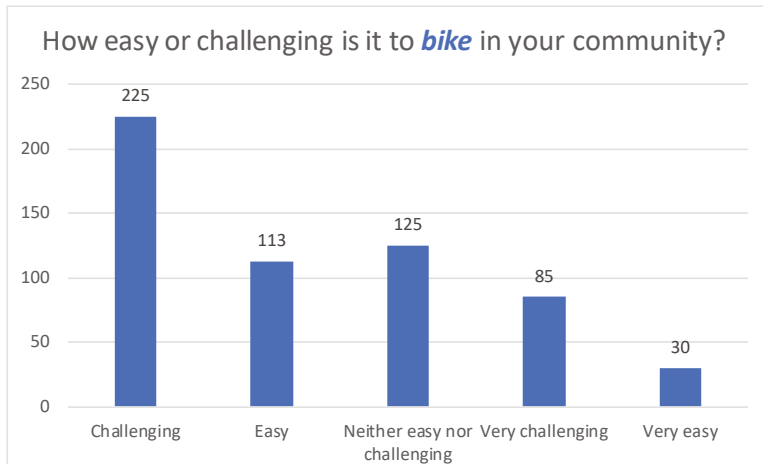
HOW OLD ARE YOU?



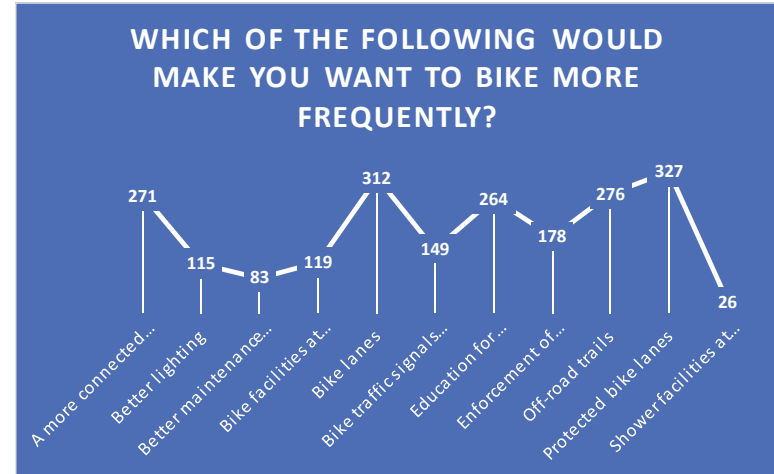
WHAT IS YOUR GENDER?



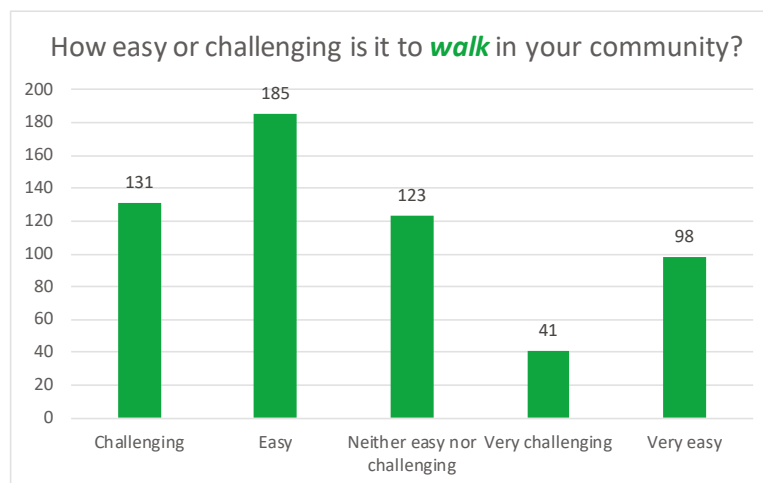
HOW EASY OR CHALLENGING IS IT TO BICYCLE IN YOUR COMMUNITY?



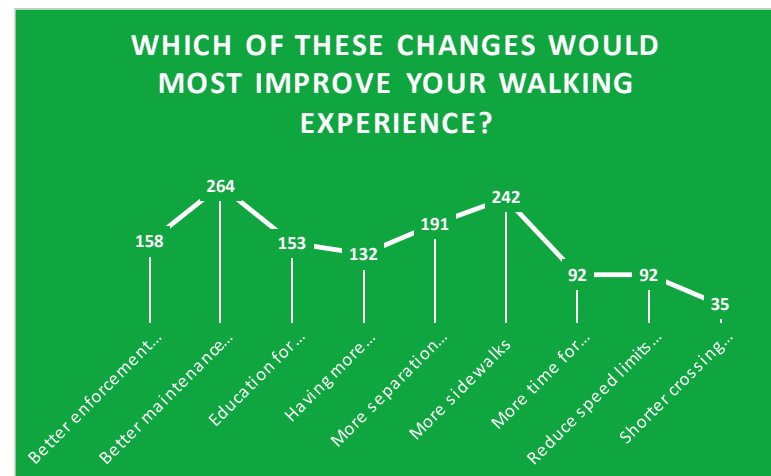
WHICH OF THE FOLLOWING WOULD MAKE YOU WANT TO BICYCLE MORE FREQUENTLY?



HOW EASY OR CHALLENGING IS IT TO WALK IN YOUR COMMUNITY?



WHICH OF THESE CHANGES WOULD MOST IMPROVE YOUR WALKING EXPERIENCE?

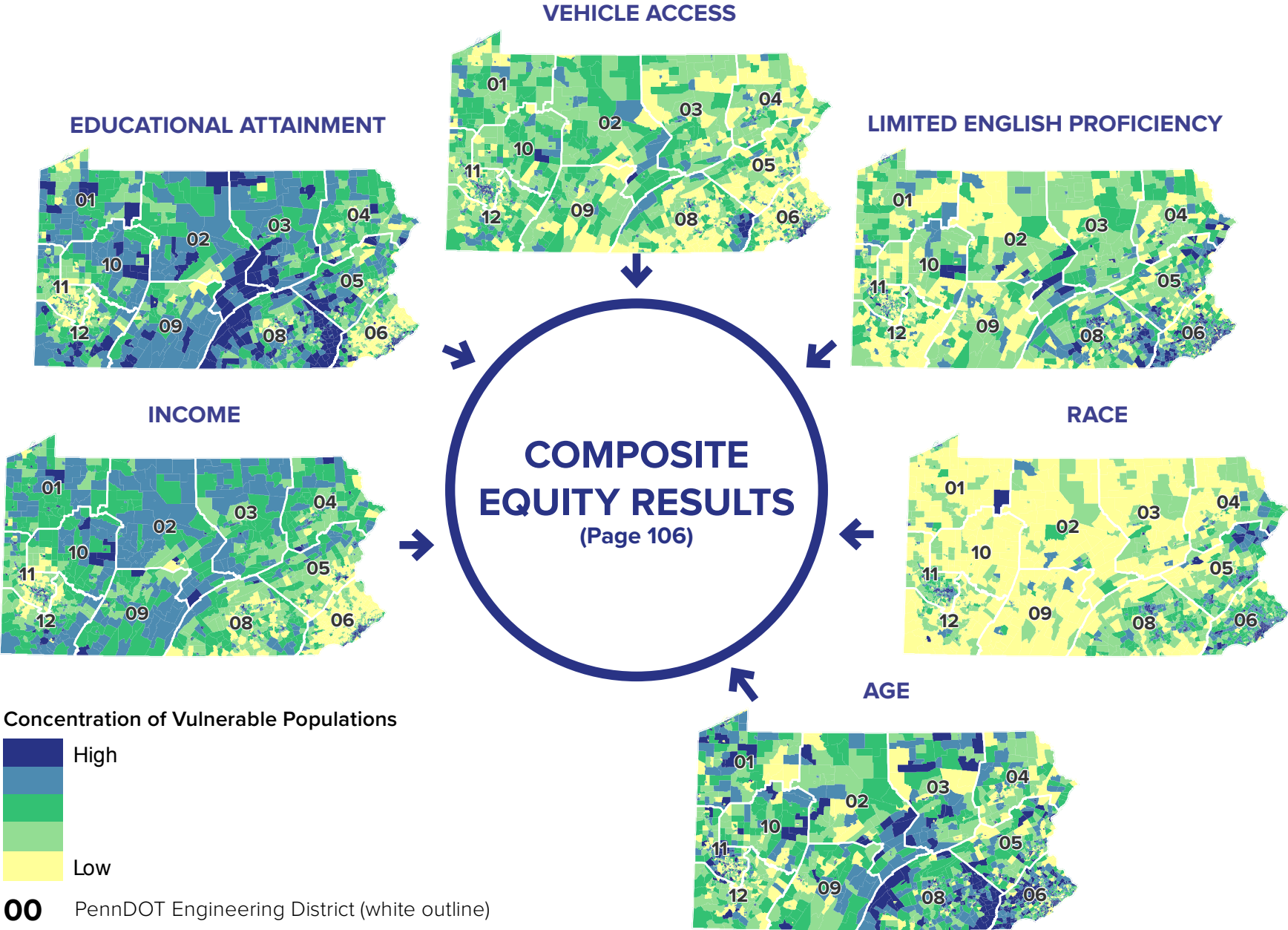


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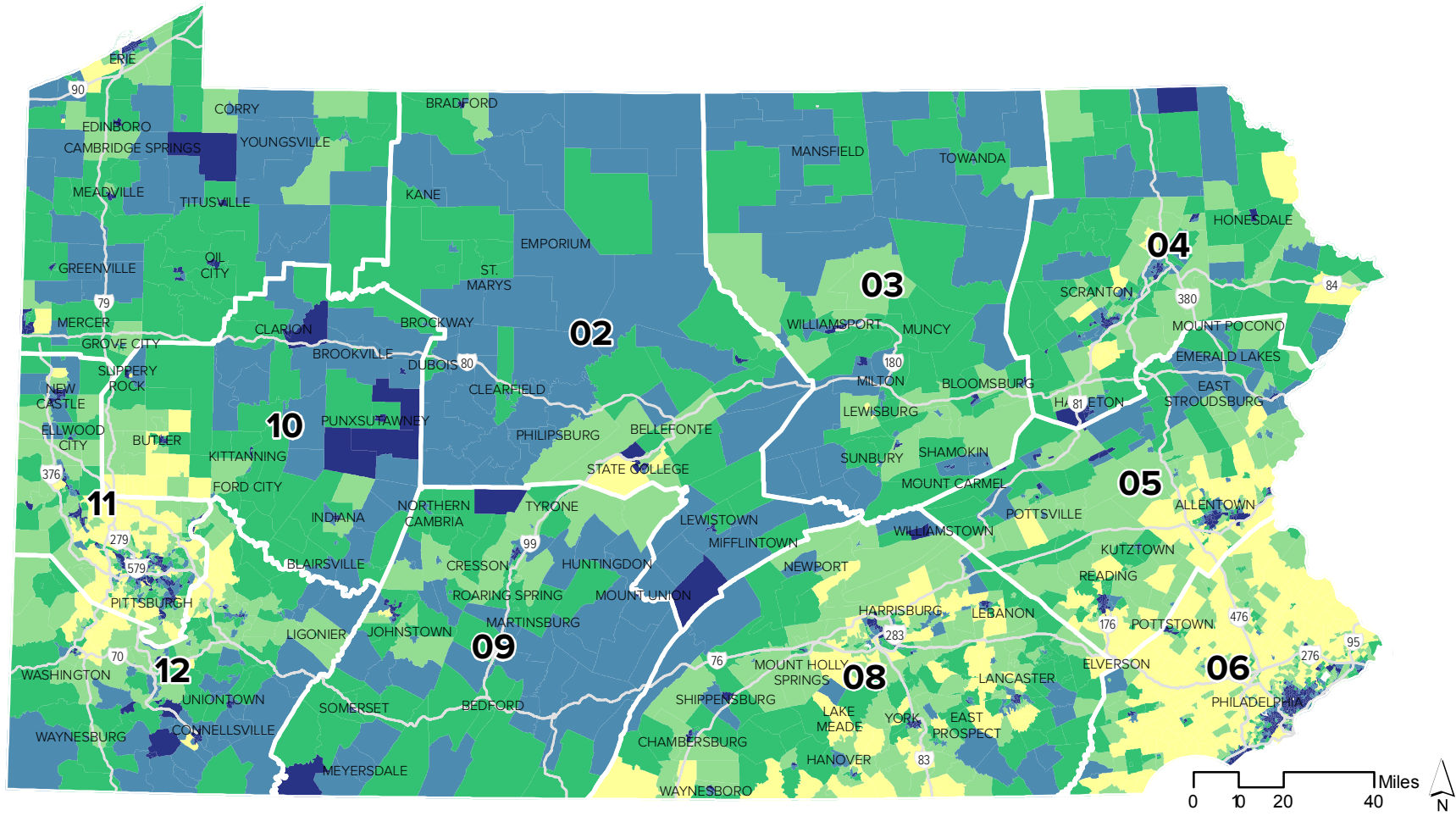
EQUITY ANALYSIS



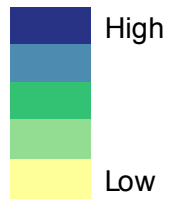
EQUITY MAPPING



Income

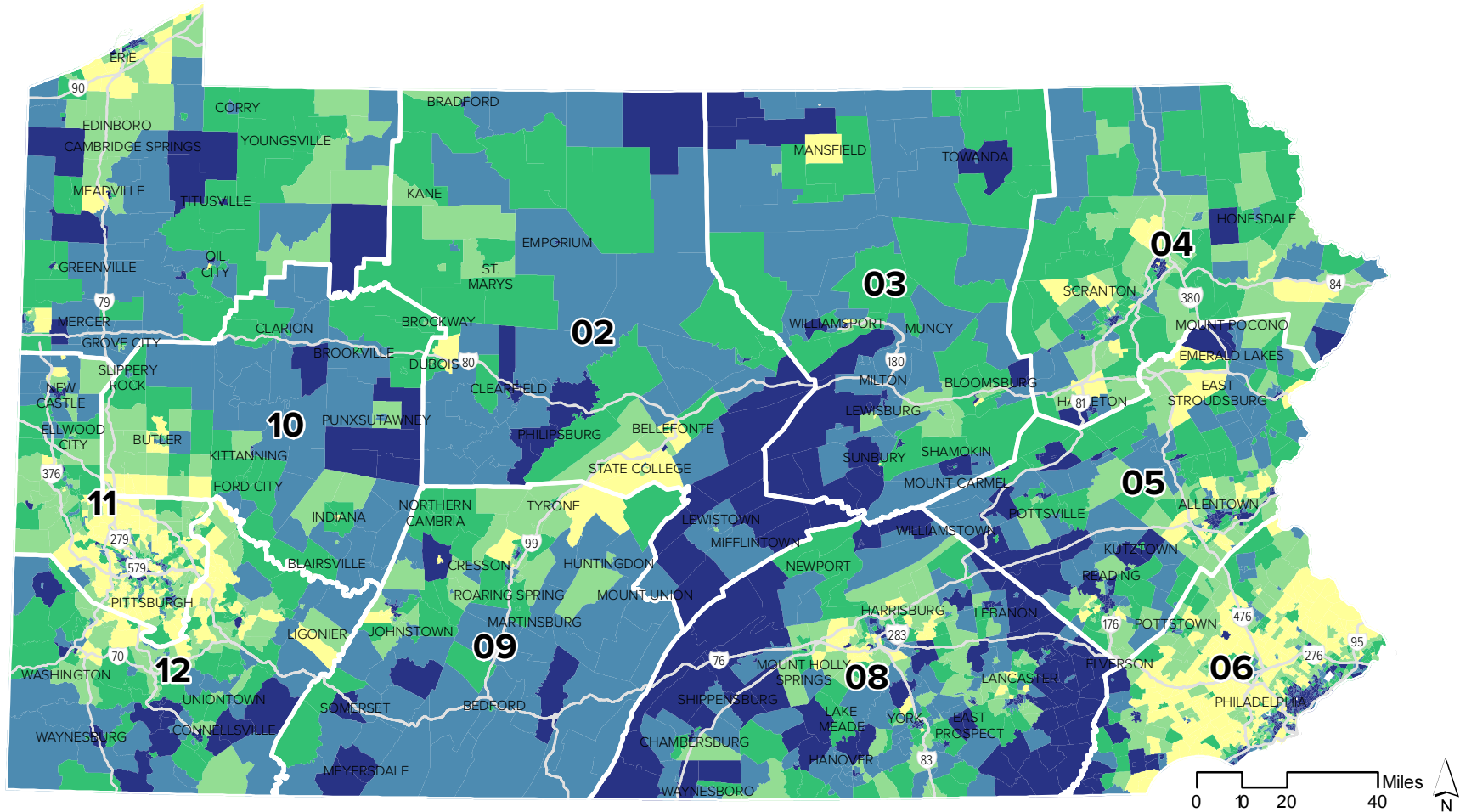


Concentration of Vulnerable Populations

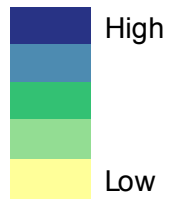


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Educational Attainment

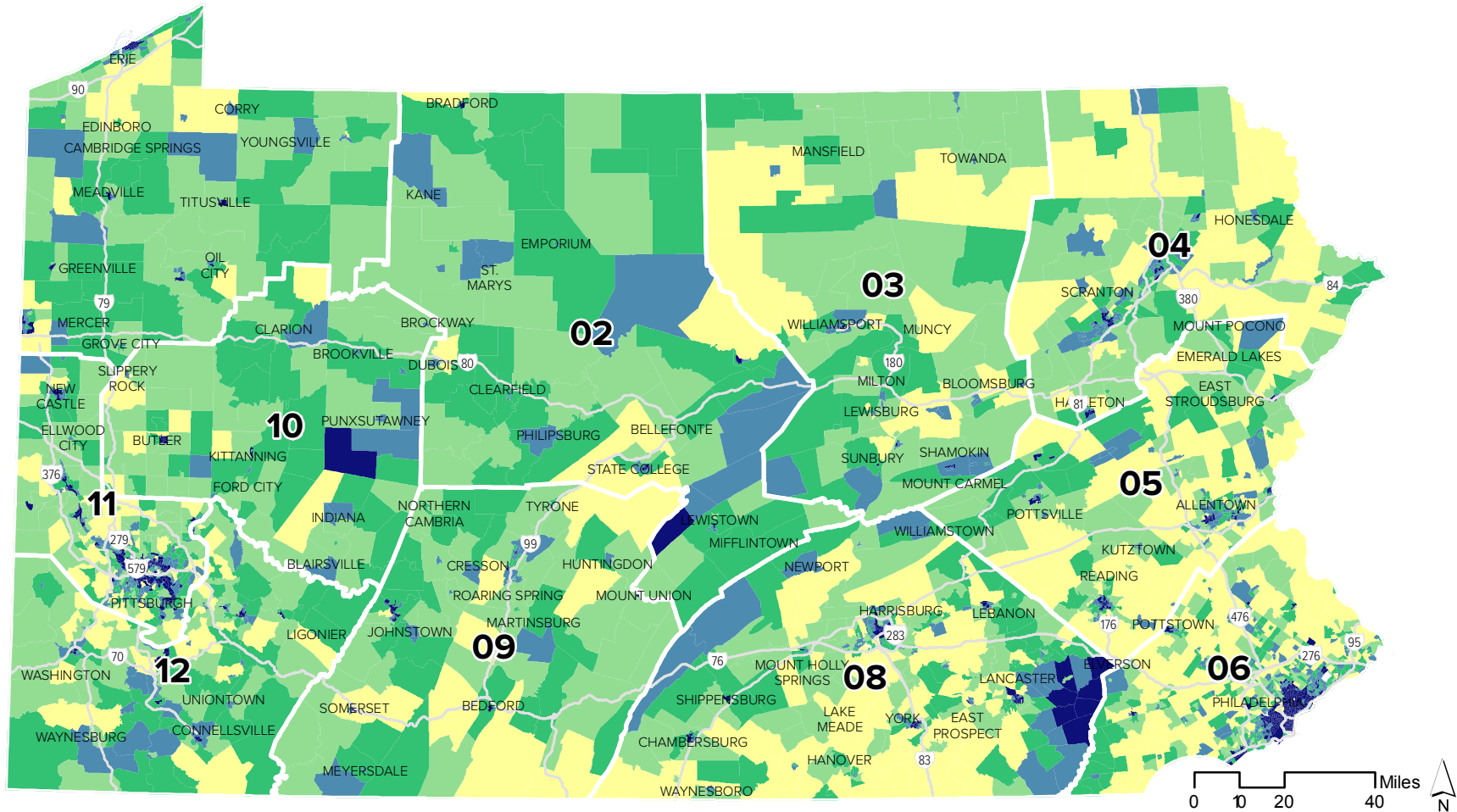


Concentration of Vulnerable Populations

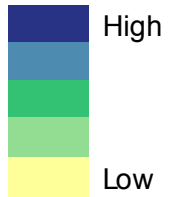


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Access to a Motor Vehicle

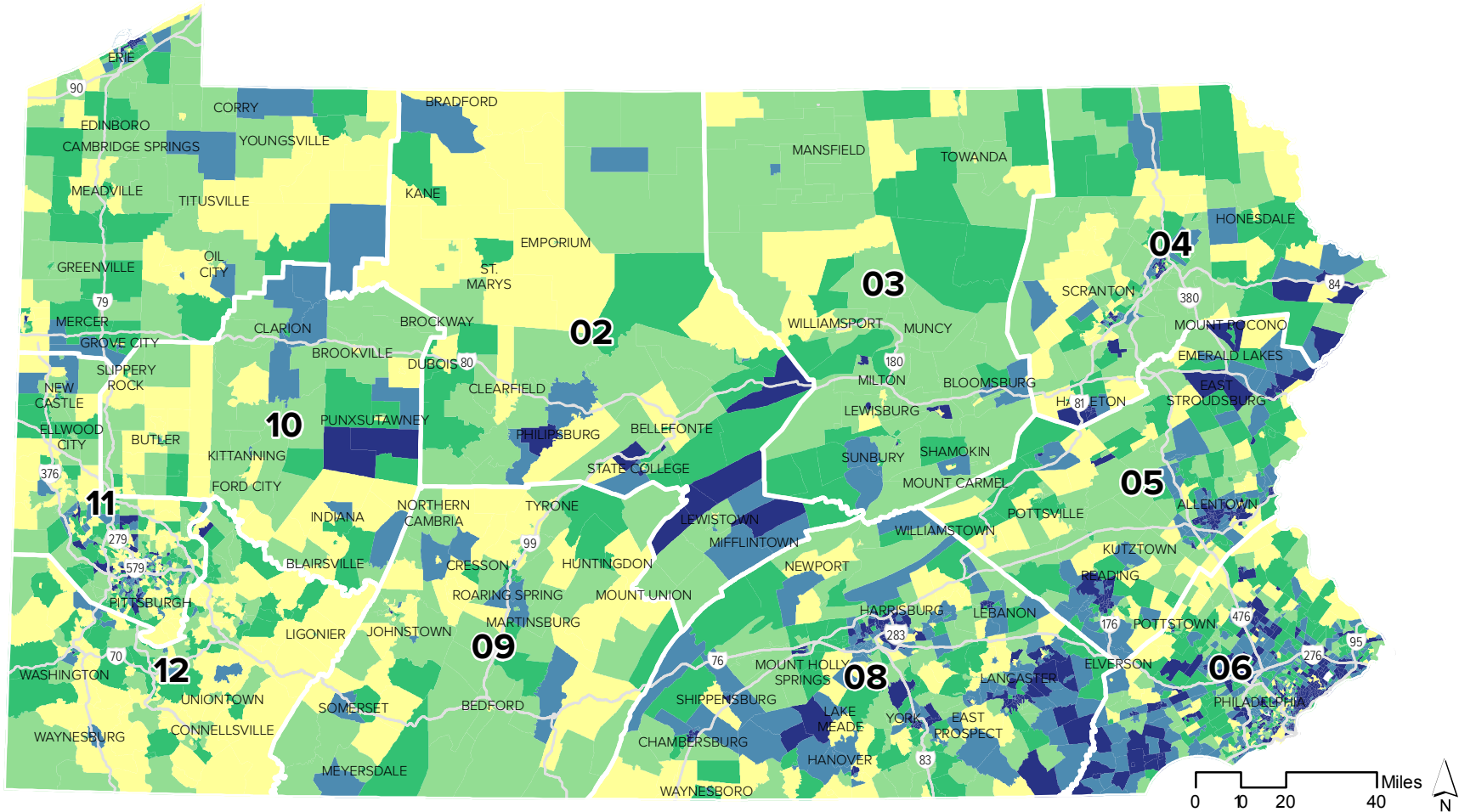


Concentration of Vulnerable Populations

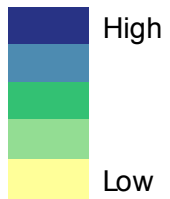


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Limited English Proficiency

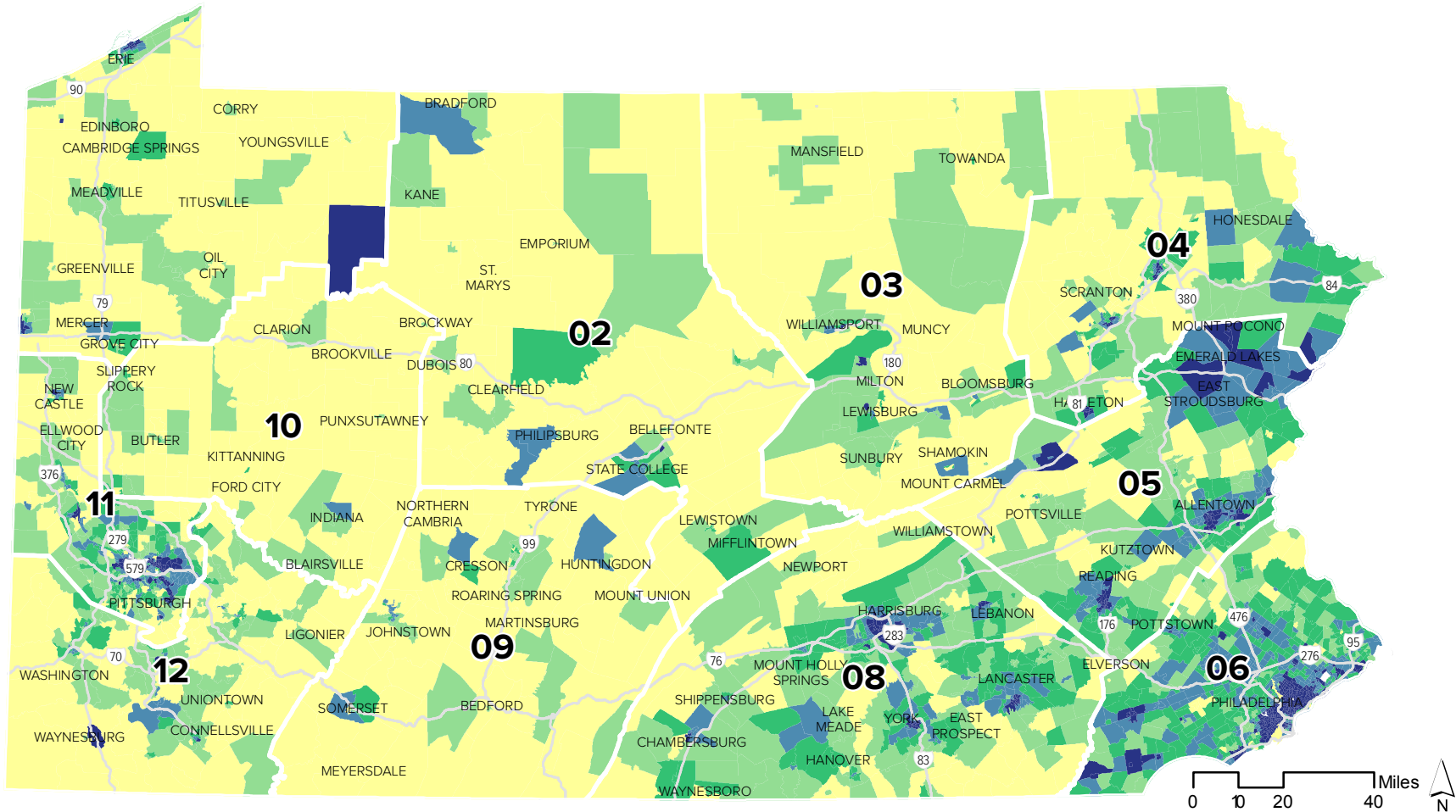


Concentration of Vulnerable Populations

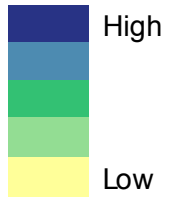


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Race

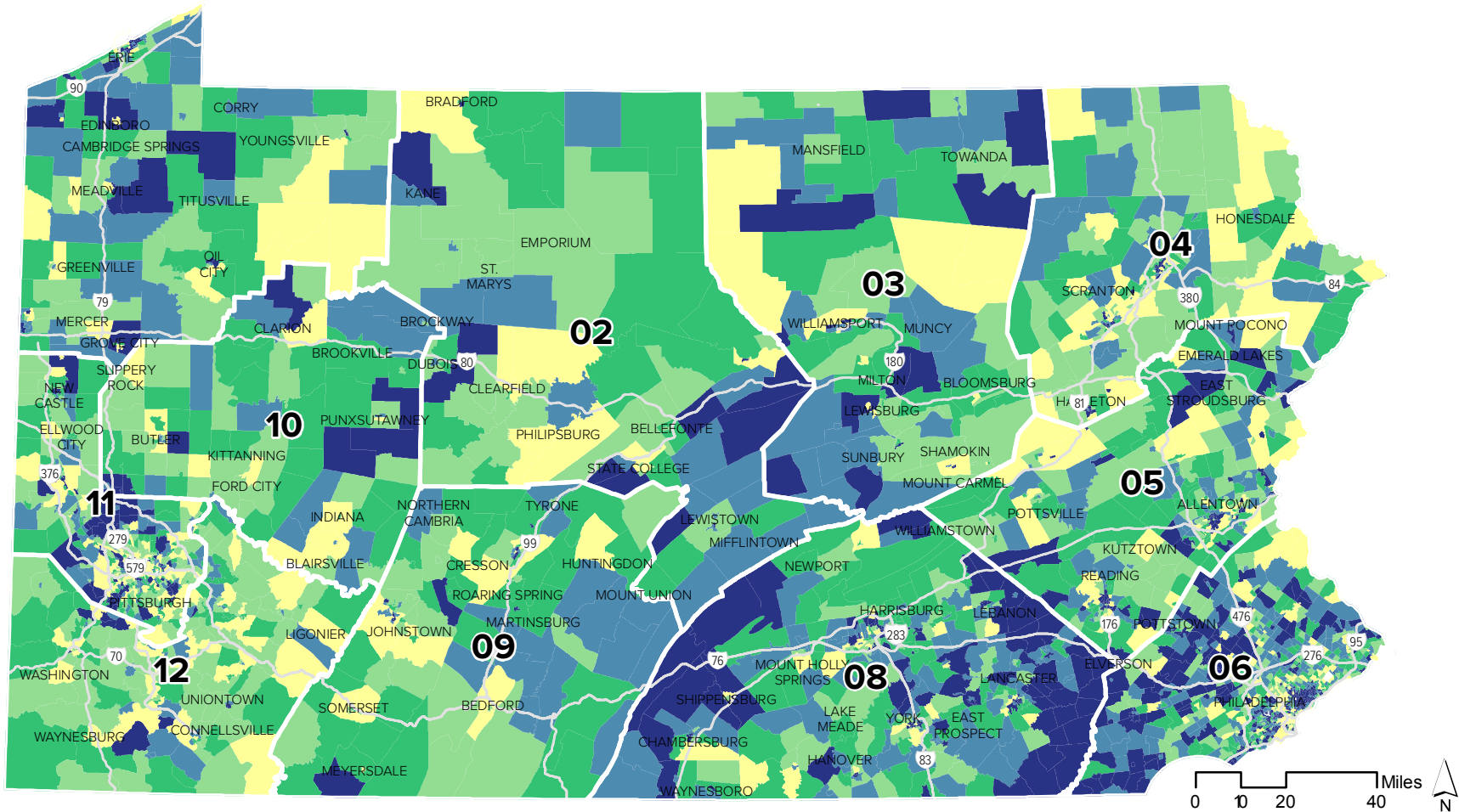


Concentration of Vulnerable Populations

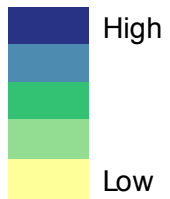


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Age

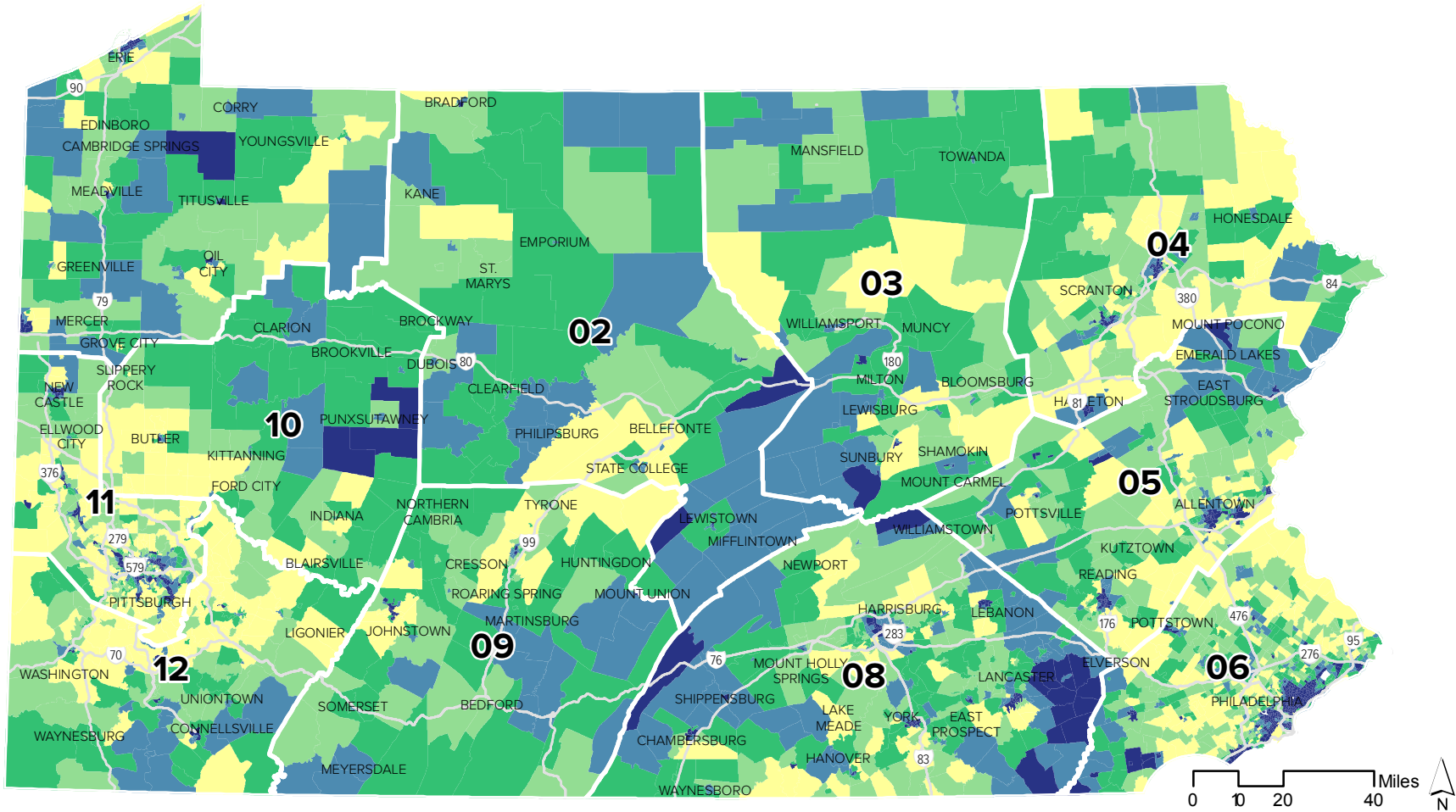


Concentration of Vulnerable Populations

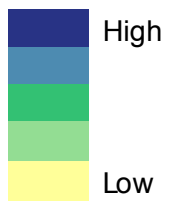


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Equity Score - Composite Equity Score



Concentration of Vulnerable Populations



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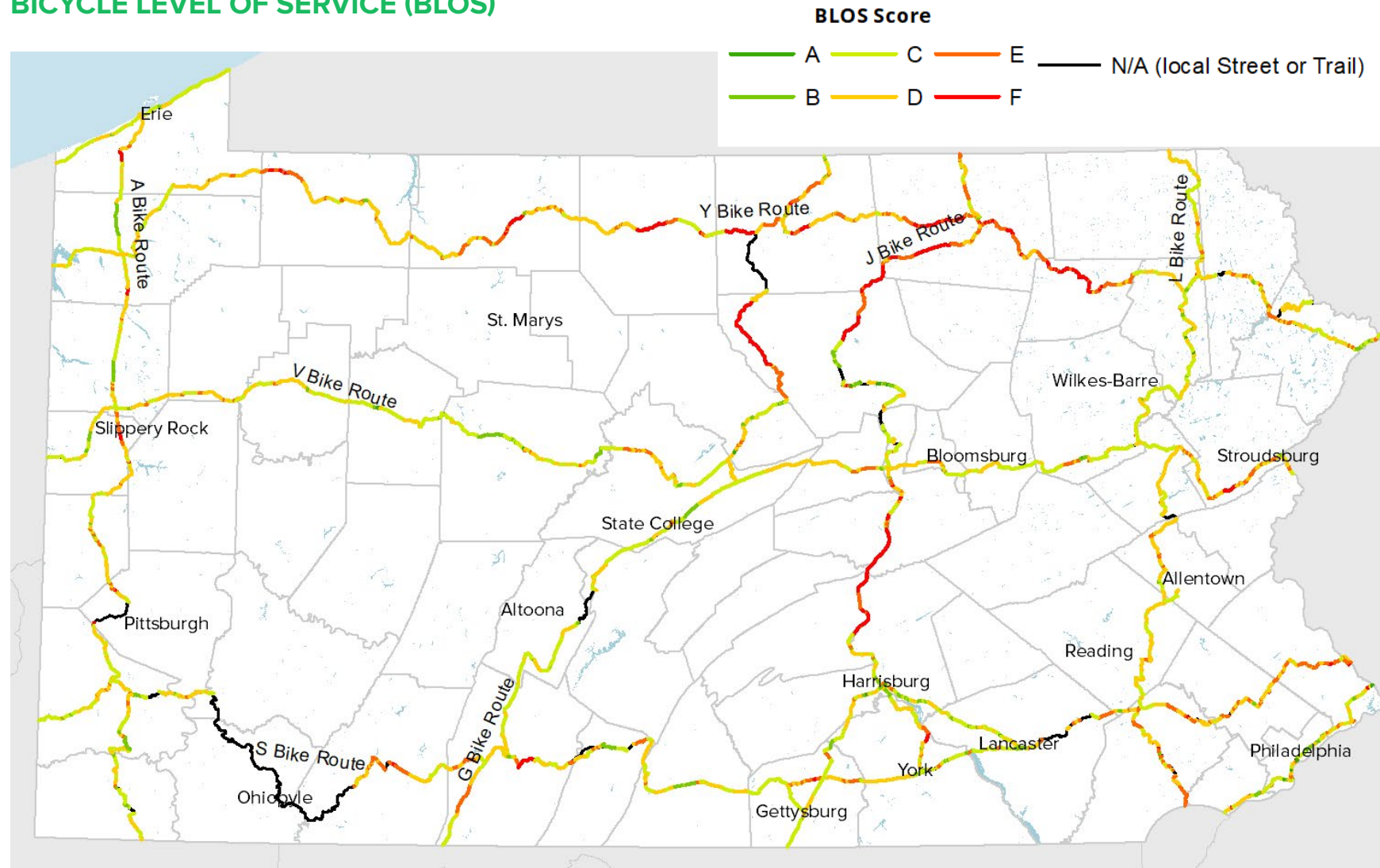
ASB

PENNSYLVANIA BIKE ROUTES



PENNSYLVANIA BIKE ROUTES

BICYCLE LEVEL OF SERVICE (BLOS)



The Bicycle Level of Service Model has been applied to all bicycle routes on state roads. This model rates segments from A (best) through F (worst) and uses the following factors to rate: **traffic volumes, truck volumes, speed limit, number of lanes, and width of outside lane + shoulder width**. The vast majority of Pennsylvania Bike Routes received a BLOS score of 'C' or 'D', and less than 6% of routes received an 'A' or 'B'. Primary factors contributing to low BLOS scores include high traffic speeds and lack of dedicated bicycling facilities on the roadway. To view an interactive map of all detailed bicycle routes, traffic volumes, and speed limits, see [PennDOT's Pennsylvania Bicycle Routes Map](#).



A4

STRATEGIES & IMPLEMENTATION



STRATEGIES & IMPLEMENTATION: METHODOLOGY

RESEARCH

The project team compiled the listed strategies and implementation plan based on a variety of sources of information including the results of the Pennsylvania Active Transportation Plan Public Survey, existing PennDOT plans and policies, other statewide plans, Federal and national active transportation planning guidance, and input from stakeholders, the Project Advisory Group, and the general public.

The following lists all the existing plans and policies that were reviewed for consideration in this implementation plan:

PennDOT Plans and Policies

- 2007 PennDOT Bicycle and Pedestrian Plan, PennDOT (2007)
- PA on Track – PA’s Long Range Transportation and Comprehensive Freight Movement Plan, PennDOT (August 2016)
- Bicycle and Pedestrian Policy Study, Pennsylvania Transportation Advisory Committee / PennDOT (May 2016)
- PennDOT Connects Policy, PennDOT (December 2016)
- 2017 Visioning Team Report - Bicycle and Pedestrian Policy Study Update, Pennsylvania Transportation Advisory Committee / PennDOT (2017)
- Pennsylvania Strategic Highway Safety Plan, PennDOT (2017)

Other Statewide Plans

- Pennsylvania State Health Improvement Plan 2015-2020, Pennsylvania Department of Health (May 2016)
- The State of Health Equity in Pennsylvania, Office of Health Equity (January 2019)
- Pennsylvania’s Statewide Comprehensive Outdoor Recreation Plan – Natural Connections 2014-2019, Pennsylvania Department of Conservation and Natural Resources (2014)

Federal and National Active Transportation Planning Guidance

- Statewide Pedestrian and Bicycle Planning Handbook, U.S. Department of Transportation Office of Planning Federal Highway Administration (September 2014)
- 2017 Bicycle Friendly State Report Cards - Pennsylvania, League of American Bicyclists (2018)

