



# ROYERSFORD BOROUGH ACTIVE TRANSPORTATION PLAN

September 2022



Prepared by:

**Pennoni**



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Figure 1. Pedestrian, Bicycle, and Transit

# EXECUTIVE SUMMARY





# EXECUTIVE SUMMARY

## INTRODUCTION

This chapter describes the planning process, defines active transportation, provides an overview of proposed projects, and highlights priority projects.

### WHAT IS ACTIVE TRANSPORTATION AND WHY IS IT IMPORTANT?

Active transportation is an umbrella term for all the ways people can get around without using a motor vehicle – walking or biking, using mobility assistance devices (such as wheelchairs and scooters), skating or skateboarding, and more. In short, active transportation is human-powered travel. Active transportation represents fundamental transportation modes for many Pennsylvanians to access transit, work, school, retail stores or any number of destinations in urban, suburban, and rural settings. Active transportation can provide many community benefits beyond personal mobility, such as improved public health, economic development, greater quality of life, and enhanced environmental quality.

Active transportation planning involves community engagement specific to the needs of people who walk and bicycle and outlines the vision, goals, and strategies needed to support safe, convenient, and accessible active transportation options. It is important and beneficial to meet the needs of people walking and biking by planning for and directing investments in infrastructure and programs that support active transportation options.

## Benefits of Active Transportation

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### Physical Health

Increased opportunity for recreation and destination-oriented trips using active modes of travel are key to increasing daily physical activity and reducing the risk for developing preventable, chronic diseases.

### Mental Health

Physical activity reduces depression, can improve the quality of sleep, and has been shown to improve cognitive function for older adults.<sup>1</sup> Active transportation can also improve social conditions in communities, which contributes to positive mental well-being among residents.

### Economic Development

There is broad consensus across the country, and in Pennsylvania, that investing in active transportation produces a positive return on investment for host communities. This is especially true when it comes to trails, which serve as major regional attractions for recreational riders. Interconnected networks without an extended trail are also great for economic development, but they are less likely to be readily available.

### Quality of Life

Comfortable and accessible options for biking and walking provide a host of quality of life benefits. They increase the number of travel options for everyone and can lead to greater independence for older residents, young people, and others who cannot or choose not to drive. Providing a high-quality active transportation network is especially important for the mobility of community members who do not have access to a private motor vehicle.

### Environmental Quality

Shifting motorized vehicle trips to biking and walking trips and concentrating development in dense walkable and bikeable communities can reduce transportation-based emissions and sprawling land use that impacts the natural environment.<sup>2</sup>

1. U.S. Department of Health and Human Services. 2008 PHYSICAL ACTIVITY GUIDELINES FOR AMERICANS. Washington, DC: U.S. Dept of Health and Human Services; 2008. <http://health.gov/paguidelines/pdf/paguide.pdf>

2. Federal Highway Administration, National Bicycling and Walking Study, "Case Study No. 15 The Environmental Benefits Of Bicycling And Walking," 1993 [http://safety.fhwa.dot.gov/ped\\_bike/docs/case15.pdf](http://safety.fhwa.dot.gov/ped_bike/docs/case15.pdf)

## PROJECT TIMELINE

The active transportation plan (ATP) was created under the leadership of a project steering committee, which ensured that it represented the variety of interests and stakeholders in Royersford Borough. The process to develop the ATP began with an assessment of existing conditions and a review of other relevant plans and studies. Public input and a technical analysis provided a foundation for proposed projects and prioritization of those recommendations. The final chapter includes guidance for implementation (see Figure 2 for a project timeline). This document summarizes the findings of the planning process and is organized into the following sections:

- » Executive Summary
- » Vision and Goals
- » Community Engagement
- » Existing Conditions
- » Proposed Projects and Programs
- » Priority Projects
- » Implementation

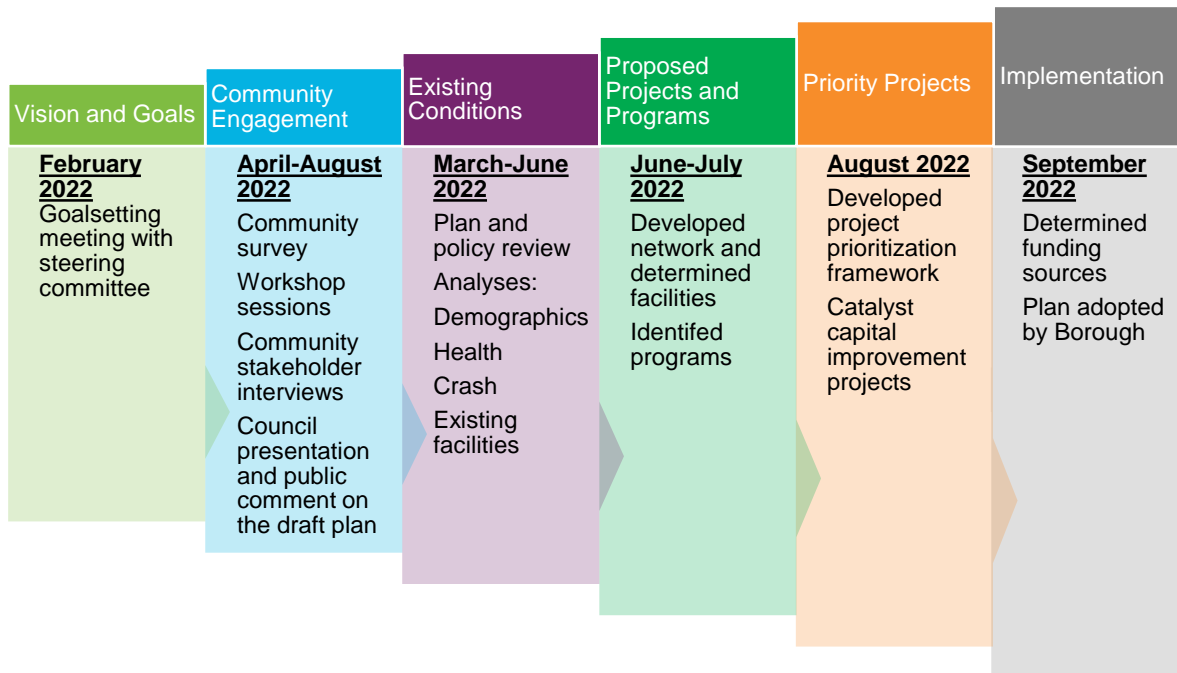


Figure 2. Project Timeline

## VISION AND GOALS

### COMMUNITY VISION AND GOALS

Royersford Borough is dedicated to a healthy environment that is conducive to walking and biking, clean and safe streets, convenient public transit options, and connections to active and passive open space.



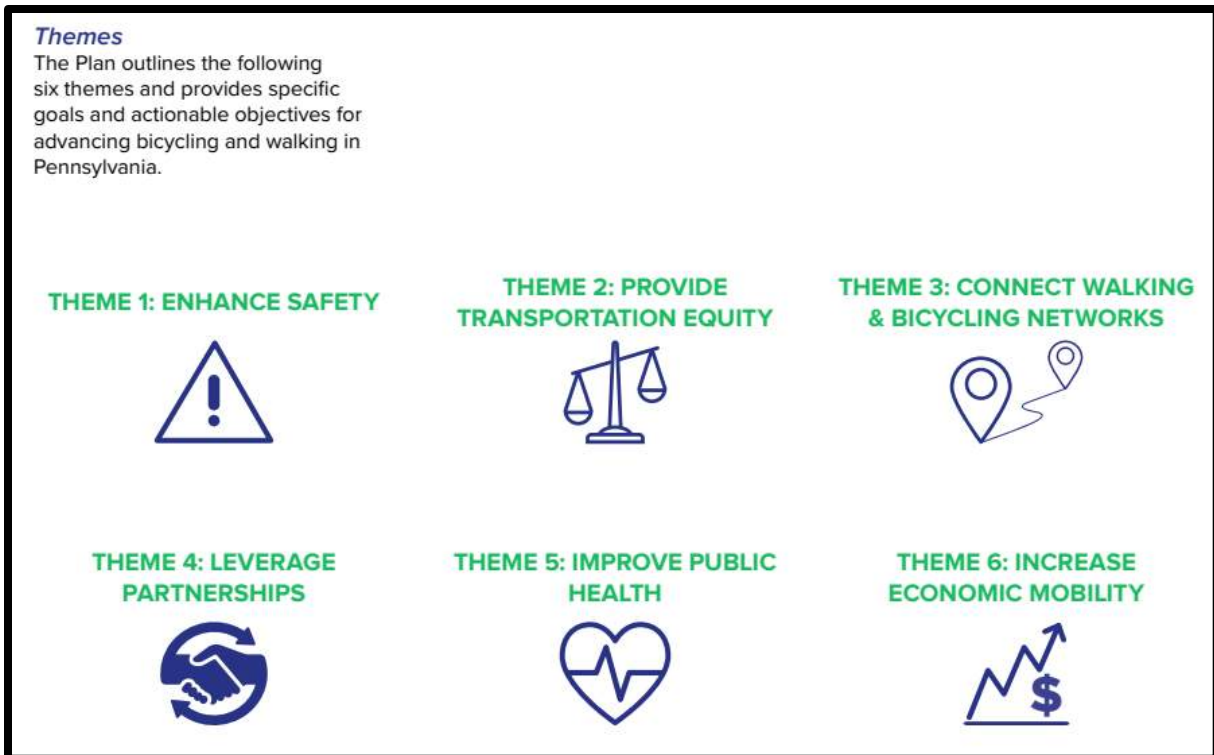


Figure 3. Active Transportation Plan Themes from PennDOT’s Plan

## ENGAGEMENT EFFORTS

### KEY TAKEAWAYS

The project team collected community input through several strategies including: project steering committee (3 meetings), community survey (online and paper form), in-person public workshop sessions (morning and evening sessions), community stakeholder interviews, and a council presentation/public comment on the draft plan. Early engagement identified key barriers to walking and biking, which defined areas of focus for the planning process. These focus areas included improving pedestrian access and mobility, encouraging and promoting biking, reducing the speeds of motor vehicles within school zones, and reducing exposure for nonmotorized users at parks. See the Community Engagement section for a summary of all engagement efforts.

## EXISTING CONDITIONS

### KEY TAKEAWAYS

The project team completed an existing conditions analysis to understand the current transportation system and where improvements could be made for people walking and biking. There was a total of 8 reportable crashes involving pedestrians and bicycles from 2017 – 2021 within the Borough. In addition, the project team reviewed existing gaps in the sidewalk network as well as the current level of traffic stress for the existing bicycle network. The existing sidewalk network has very few gaps, but there are some

concerns related to maintenance as well as pedestrian crossings. There are currently no bicycle facilities within the Borough, and streets currently serving as key routes for biking are considered either high or extreme traffic stress for bicyclists.

## PROPOSED PROJECTS AND PROGRAMS

The existing conditions analysis, public input, steering committee, and key stakeholders led to the final overall active transportation network. Infrastructure recommendations include the following categories:

- » Implement pedestrian crossing upgrades
- » Close sidewalk gaps
- » Develop a bicycle route
- » Improve safety in school zones
- » Address gaps and uncontrolled crossings within parks
- » Upgrade SEPTA Bus Route 139

The plan also proposes establishing programs and policies such as a traffic calming policy, complete streets policy, vision zero policy, and other educational programs to support active transportation. The Borough should consider an Active Transportation Committee (ATC) moving forward to address the action items.

<b>Program/Policy</b>	<b>Action Items</b>	<b>Responsible Party</b>	<b>Key Partners</b>	<b>Timeframe</b>	<b>Status</b>
<b>Traffic Calming Policy</b>	<i>Develop a traffic calming policy to set community thresholds for speed/volume.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>New</i>
			<i>Planning Commission</i>		
			<i>Emergency Services</i>		
<b>ADA Transition Plan</b>	<i>Develop an ADA transition plan to identify accessibility needs and solutions.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Medium-term</i>	<i>New</i>
			<i>Planning Commission</i>		
			<i>Code Enforcement</i>		
<b>Complete Streets Policy</b>	<i>Develop a complete streets policy to improve safety and mobility for all road users.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>New</i>
			<i>Planning Commission</i>		
			<i>Public Works</i>		
<b>Vision Zero Policy</b>	<i>Make a commitment to eliminate all serious injuries and fatalities.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>New</i>
			<i>Mayor</i>		
			<i>Planning Commission</i>		
<b>Municipal Ordinances</b>	<i>Update/adopt ordinances if necessary to promote active transportation.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Long-term</i>	<i>Ongoing</i>
			<i>Solicitor</i>		
			<i>Borough Council</i>		
<b>Educational Programs</b>	<i>Walk/bike to school/work day</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>Ongoing</i>
	<i>Block parties/free street events/street closures</i>		<i>Parks and Rec</i>		
	<i>Public art installations</i>		<i>Local orgs</i>		

# VISION AND GOALS





# VISION AND GOALS

## COMMUNITY VISION STATEMENT

Royersford Borough is dedicated to a healthy environment that is conducive to walking and biking, clean and safe streets, convenient public transit options, and connections to active and passive open space.

## COMMUNITY GOALS

- » Manage streets to improve traffic safety, promote use of public transit, provide for pedestrian and bicycle travel, and moderate traffic speeds while also providing room for trees and greenery.
  - Make Royersford more bicycle and pedestrian-friendly and seek safe connections to stores, schools, parks, and trails within Royersford and neighboring municipalities.
  - Promote expanded use, availability, and frequency of service of public transit.
- » Maintain an attractive and walkable historic “small town” character throughout Royersford.
  - Ensure that new developments have similar scale and setbacks to existing older developments while at the same time being flexible to need and change to incorporate increasing density.
- » Protect and enhance important natural features, particularly including the Schuylkill River corridor.
  - Promote street tree plantings and the establishment of a tree canopy over open areas in the Borough.
  - Promote tree canopy extension on private property.
- » Ensure the system accommodates users of all ages, abilities, and incomes.
- » Improve the quality of life for all within the Borough.

# COMMUNITY ENGAGEMENT

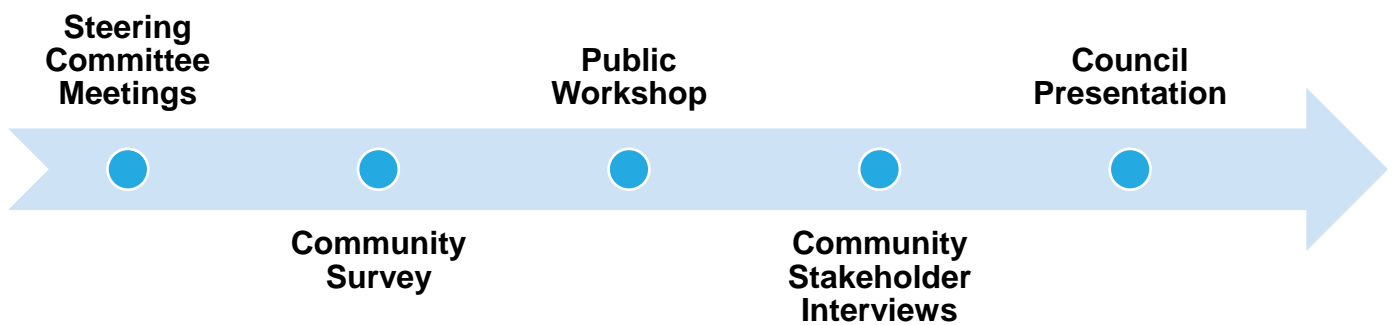




## COMMUNITY ENGAGEMENT

Community engagement was an essential tool in the plan development process. Involving the public builds trust in the plan and improves the overall quality of the findings. The project team used several strategies to collect public input including: project steering committee (3 meetings), community survey (online and paper form), in-person public workshop sessions (morning and evening sessions), community stakeholder interviews, and a council presentation/public comment on the draft plan.

### ENGAGEMENT TIMELINE (MILESTONE TOUCHPOINTS)



# STRATEGIES

## Steering Committee Meetings

The steering committee, comprised of both Borough and County staff, guided the development of the Royersford Borough ATP. Steering committee members are listed under Acknowledgments at the beginning of this document. The steering committee met 3 times over the course of the plan development.

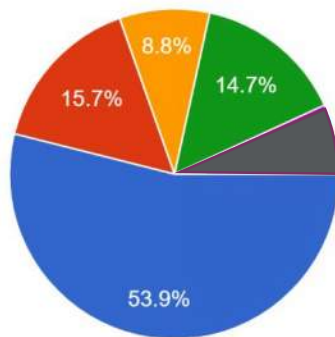
- » **Meeting One** was held on February 10, 2022 and kicked off the planning process by identifying key issues within the Borough and establishing a vision with goals to address these issues.
- » **Meeting Two** was held on April 28, 2022 and focused on a review and discussion of potential countermeasures within the active transportation toolbox that can be used to counter the key issues.
- » **Meeting Three** was held on June 15, 2022 and included a review of the revised network (especially biking) and project priorities discussion, including the catalyst capital improvement projects.

## Community Survey

A survey was developed to gather public input on transportation-related safety concerns, including challenges to walking and biking, preferred walking and biking solutions for safety and comfort, preferred modes of transportation for short intra-Borough travel, etc. The survey was launched at the beginning of April 2022 and closed mid-May 2022. The survey was available online and in paper form and advertised Borough-wide. The survey received 102 responses within the Borough, and some of the results can be seen below:

What is your biggest transportation safety concern in the Borough?

102 responses



**Blue** = Pedestrian Safety

**Red** = Bicycle Safety

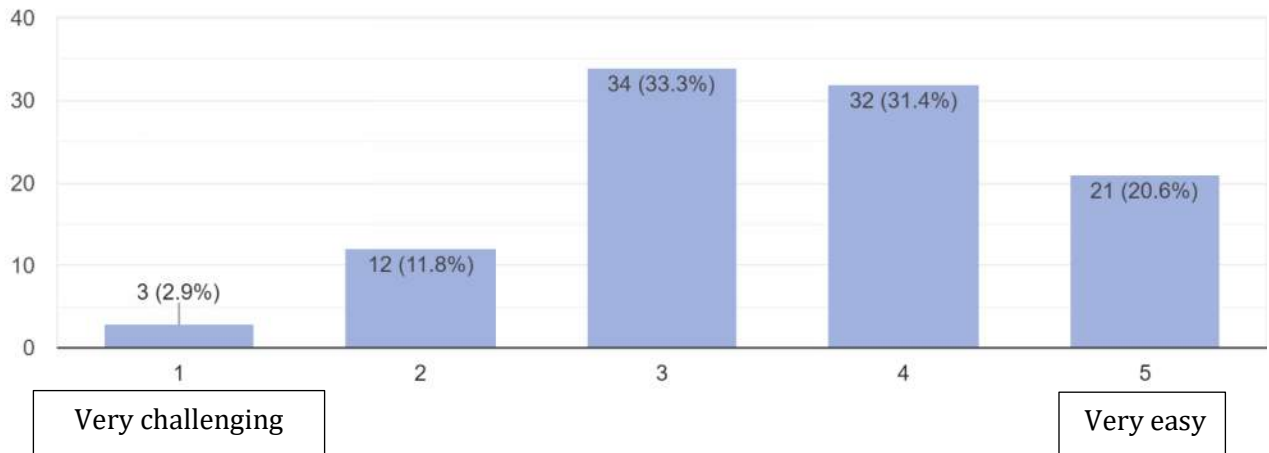
**Green** = School Zones

**Orange** = Parks/Trails

**Gray** = Other

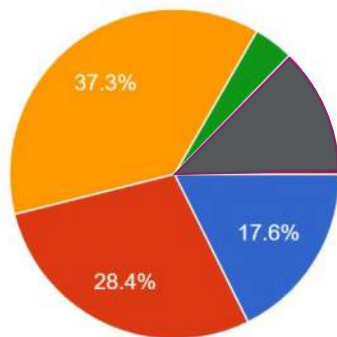
How easy or challenging is it to walk, push a stroller, or use a wheelchair in the Borough?

102 responses



Which of these changes would most improve your experience as a pedestrian in the Borough?

102 responses



**Orange** = Better enforcement of traffic laws

**Red** = Better maintenance of pedestrian facilities

**Blue** = More pedestrian facilities

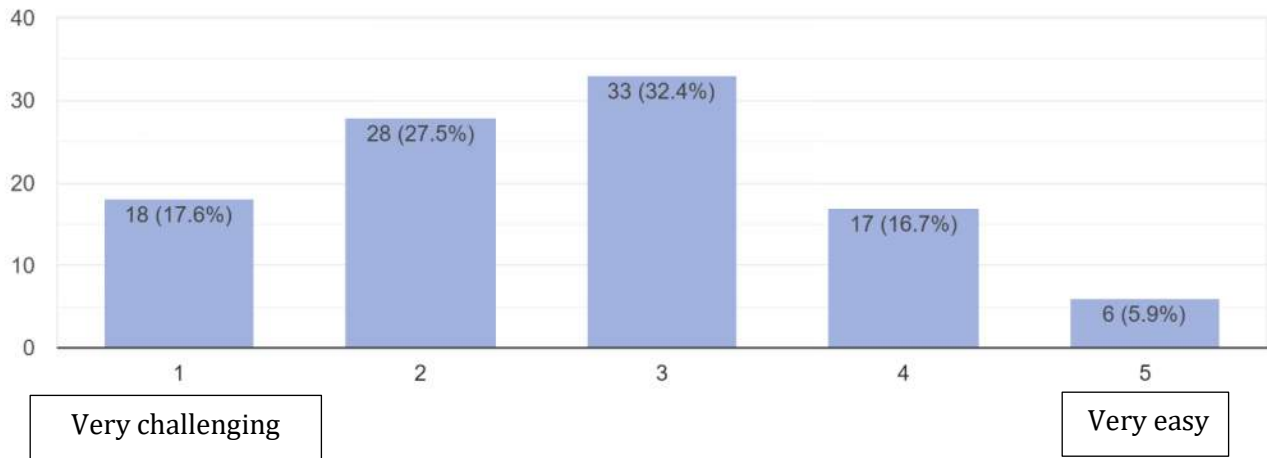
**Green** = More accessible pedestrian facilities

**Gray** = Other



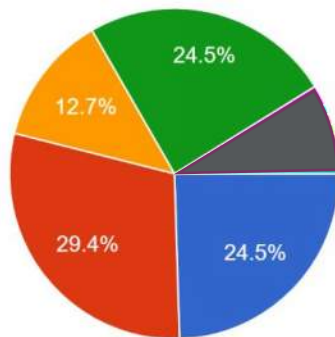
### How easy or challenging is it to bike in the Borough?

102 responses



### Which of the following would make you want to bike more frequently in the Borough?

102 responses



**Red** = Protected bike lanes  
**Blue** = Bike lanes  
**Green** = Designated bike routes with signage  
**Orange** = Bikeshare programs  
**Gray** = Other

### Public Workshop

The project team held a public workshop at Borough Hall on June 7, 2022. The workshop was split into 2 sessions to provide people multiple opportunities throughout the day to attend: 1 session in the morning (9am – 11am) and 1 session in the evening (4pm – 6pm). The purpose of the public workshop was two-fold: to gather information about existing walking and biking conditions and to share preliminary recommendations with the public.

### Community Stakeholder Interviews

As selected by the project steering committee, the project team conducted one-on-one interviews with key stakeholders representing various organizations. The interviews focused on discussing the key issues and recommendations that they may have pertaining to their specific focus area. The community stakeholders are listed under Acknowledgements at the beginning of this document.

# KEY TAKEAWAYS

The different community engagement methods helped determine popular destinations, barriers to walking and biking in Royersford Borough, and key streets that people are currently using to walk or bicycle.

## Destinations

- » Downtown (Main Street)
- » Parks
  - Victory Park
  - Chestnut Street Park
  - Riverfront Park
    - Schuylkill River Trail East
    - Royersford Boat Launch
- » Schools
  - Royersford Elementary School
  - Spring-Ford 8<sup>th</sup> Grade Center
- » Spring-Ford Area Historical Society Museum
- » Royersford Free Public Library
- » Golden Age Manor
- » Freedom House
- » Others (neighboring municipalities, grocery stores, restaurants, etc.)

## Top barriers to walking

- » Sidewalk irregularities (trip hazards) and curb ramps
- » High speeds and low yield rates

## Top barriers to biking

- » Lack of bicycle facilities
- » High speeds and high volumes
- » Disregard for traffic laws and disrespect for bicycles (bicycles are vehicles)

## Streets currently serving as key routes for walking/biking

- » Main Street
- » Lewis Road
- » Walnut Street
- » 2<sup>nd</sup> Avenue

Feedback from the steering committee and public lead to the revision of some key routes including:

- » Church Street
- » Washington Street
- » Main Street (short section)
- » 6<sup>th</sup> Avenue
- » 3<sup>rd</sup> Avenue

# EXISTING CONDITIONS





## EXISTING CONDITIONS

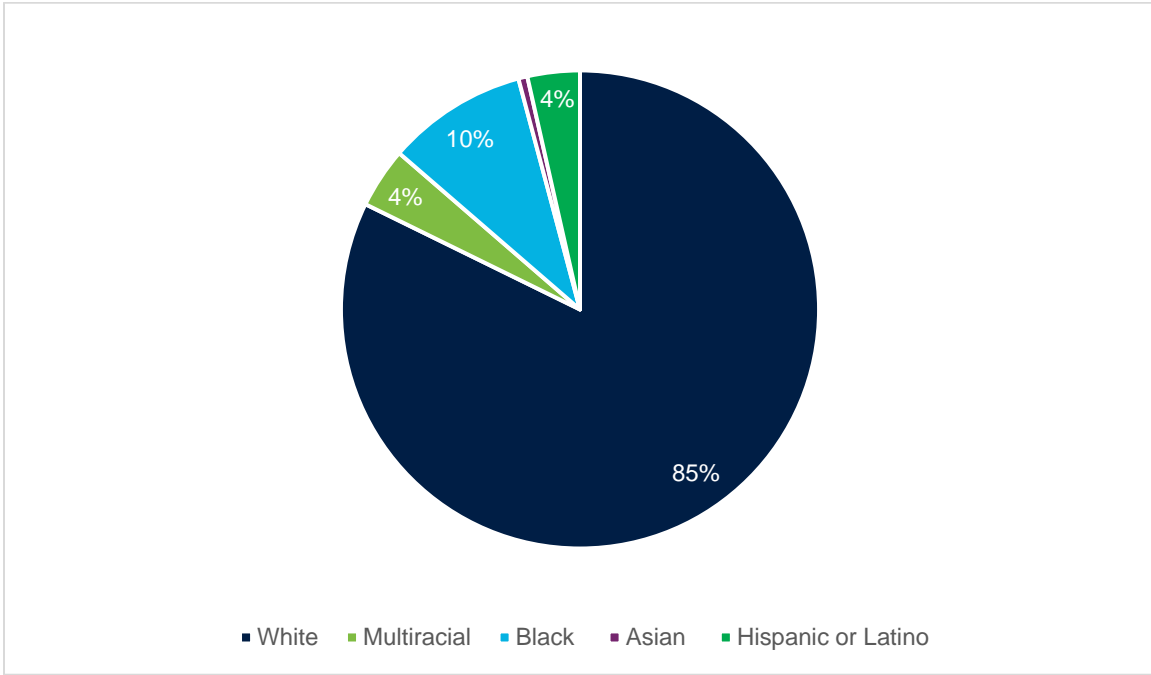
This chapter examines several elements of Royersford Borough’s transportation system. It presents a demographic profile of Royersford Borough, and a plan and policy review summarizing existing active transportation and related efforts to date, framing the current planning process as a logical next step in Royersford Borough’ active transportation evolution. This chapter also summarizes existing programs that support active transportation. A set of analyses that examines the active transportation system from various perspectives (e.g. equity, safety, connectivity) is also included.

## DEMOGRAPHIC PROFILE

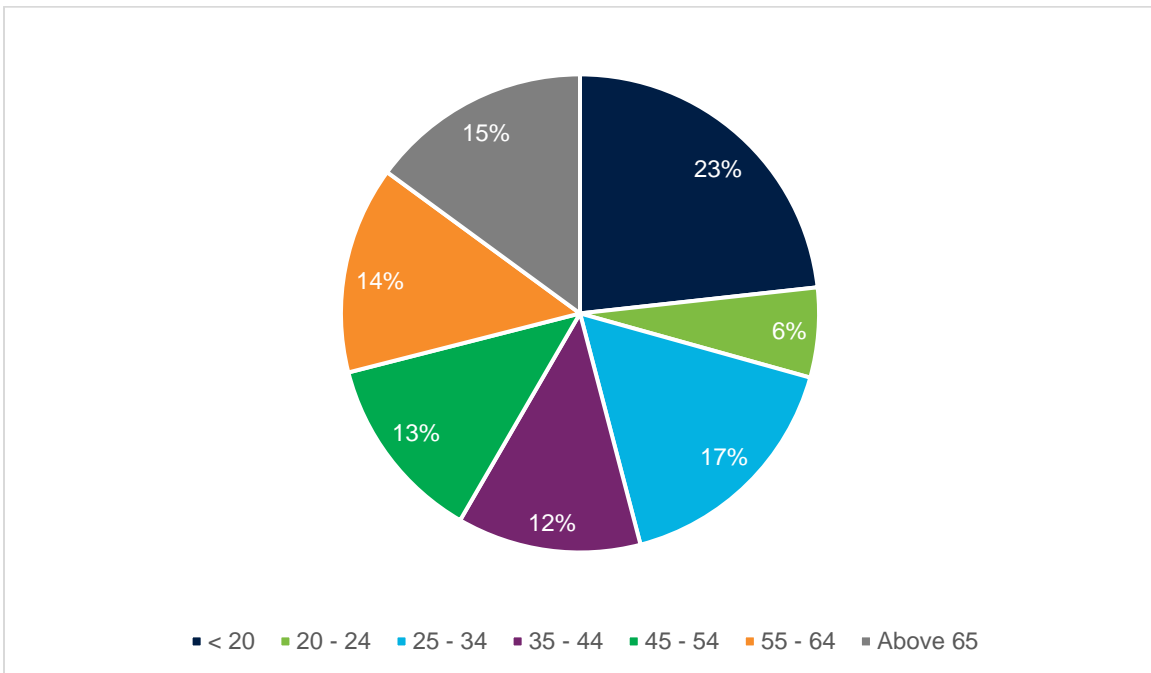
Royersford Borough is home to 4,760 people with the majority being white (85%) according to the U.S. Census Bureau as of 2020. The Borough has a resident median age of 38.4 years. The largest employment sectors are educational services, health care and social assistance, retail trade, and manufacturing with a mean household income of \$69,776. When it comes to active transportation, there are challenges that Royersford Borough will need to overcome especially with the more vulnerable users within the Borough:

- » Majority of the population consist of children (<20) with seniors (>65) coming in third.
- » Students attending Spring-Ford Area School District are not provided bus service, so they are required to rely on other modes of transportation such as walking, biking, and car pick-up/drop-off.
  - Increases vehicle conflicts with pedestrians and bicyclists
  - Increases traffic on neighborhood streets
- » 14% of the population is dependent on transit, walking, and other modes for work commute.
- » 7% of households have limited proficiency in English.
- » 9% of the population (aged 5 years and over) is below the poverty line.
- » 14% of the population have some type of disability.
  - Cognitive difficulty (9%)

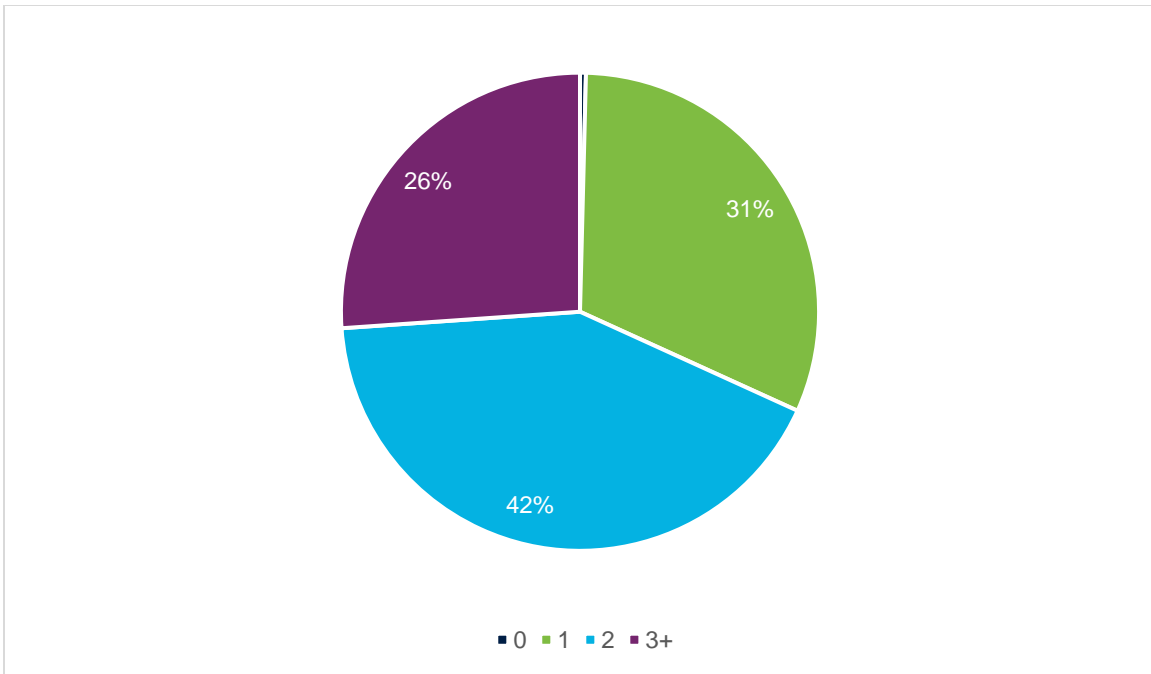
- Independent living difficulty (8%)
- Ambulatory difficulty (6%)
- » 29.2% of adults in the Lower Perkiomen Valley are considered obese.
- » 7.5% of the population in the Lower Perkiomen Valley have diabetes.
- » 17.9% of the population in the Lower Perkiomen Valley are considered physically inactive.



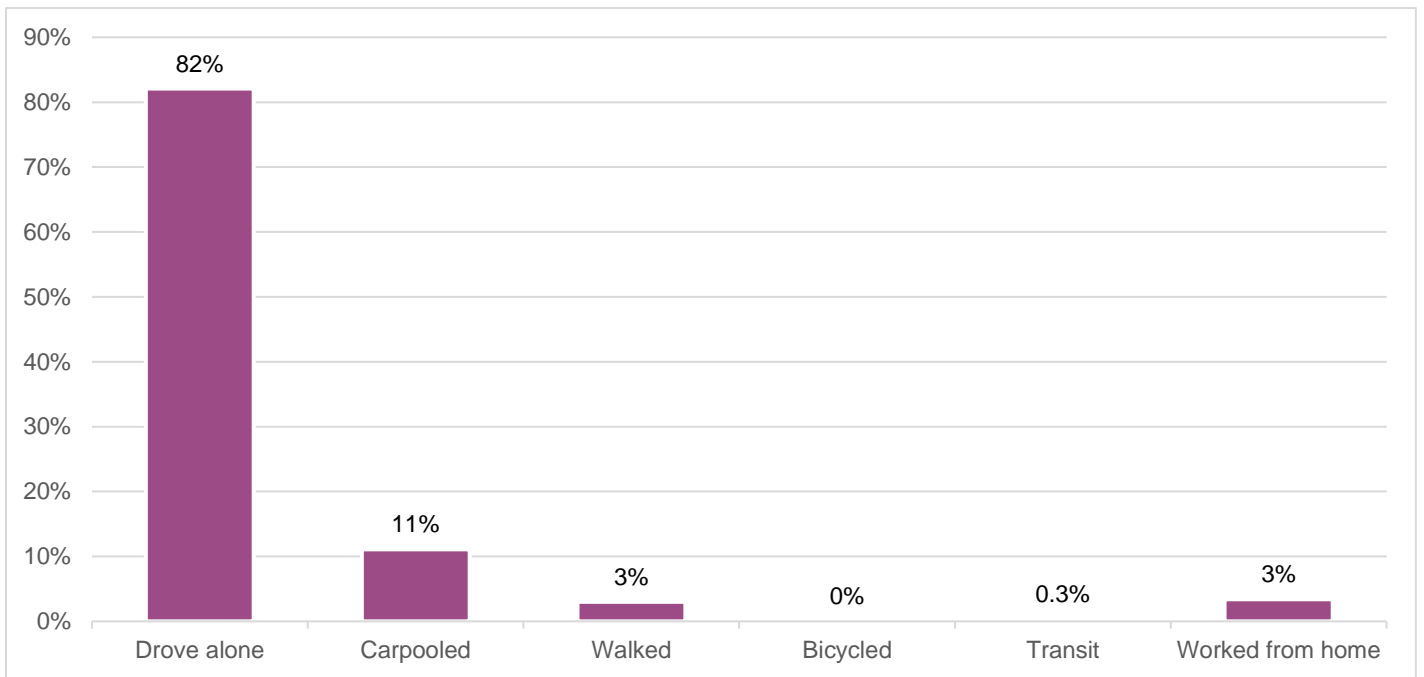
**Figure 4. Royersford Borough Race**



**Figure 5. Royersford Borough Age**



**Figure 6. Royersford Borough Car Ownership by Household**



**Figure 7. Royersford Borough Commute Mode Share**



# EXISTING PLANS, POLICIES, AND SUPPORTIVE PROGRAMS

This plan builds on prior plans and initiatives developed by entities within Royersford Borough, Montgomery County, and Pennsylvania. It looks to these plans for existing conditions data, issue identification, and recommendation support.

**Table 1. Existing Plans and Policies**

<i>Plan/Policy</i>	<i>Lead Agency</i>	<i>Year Completed</i>	<i>Key Takeaways</i>
<i>Walk Montco</i>	Montgomery County	2016	This study highlights several major factors that have pushed the Borough toward developing an ATP such as a reduction in walking and biking to work and school. It is recommended that each municipality update its comprehensive plan.
<i>Community Health Needs Assessment Report</i>	Abington Hospital – Jefferson Health	2016	Lists chronic disease management (obesity in particular) as the #1 priority health need, chronic disease management of diabetes, stroke, heart disease, and asthma as the #6 priority, and access to social services as the #7 priority in the 2016 assessment.
<i>Borough Comprehensive Plan</i>	Royersford Borough	2017	Maintain an attractive and walkable historic “small town” character, manage streets to improve traffic safety, promote use of public transit, provide for pedestrian and bicycle travel, moderate traffic speeds, make Royersford more pedestrian and bicycle-friendly.
<i>Bike MontCo</i>	Montgomery County	2018	Expand the bicycle network to connect important destinations, support biking as a legitimate travel mode, integrate the bicycle network with transit, increase bicycle use for commuting to work, school, and shopping, promote biking as a healthy and sustainable way to travel.
<i>Community Health Needs Assessment</i>	Southeastern Pennsylvania Hospitals and Health Systems	2019	Prioritizes healthcare and health resources accessibility by providing info regarding available transportation services, chronic disease prevention by creating opportunities for physical activity, socioeconomic disadvantages by establishing systems for linkage to community resources and improving connectivity of alternative transportation infrastructure.

**Table 2. Existing Supportive Programs**

<i>Program Name</i>	<i>Program lead (organization)</i>	<i>Target Audience</i>	<i>Key Takeaways (how does this program support active transportation?)</i>
<i>Royersford Community Day</i>	Royersford Business Association	Community	Main Street closure for the yearly event encouraging community members to come out and walk through Main Street free of vehicular traffic.
<i>Yoga in the Park</i>	Parks and Recreation Commission	Community	Seasonal free yoga at Victory Park on the weekends promoting both mental and physical health.
<i>Victory Park Opening Day</i>	Parks and Recreation Commission	Community	Yearly event at Victory Park promoting more walking and biking within the park.

## BASE MAP (EXISTING TRANSPORTATION SYSTEM)

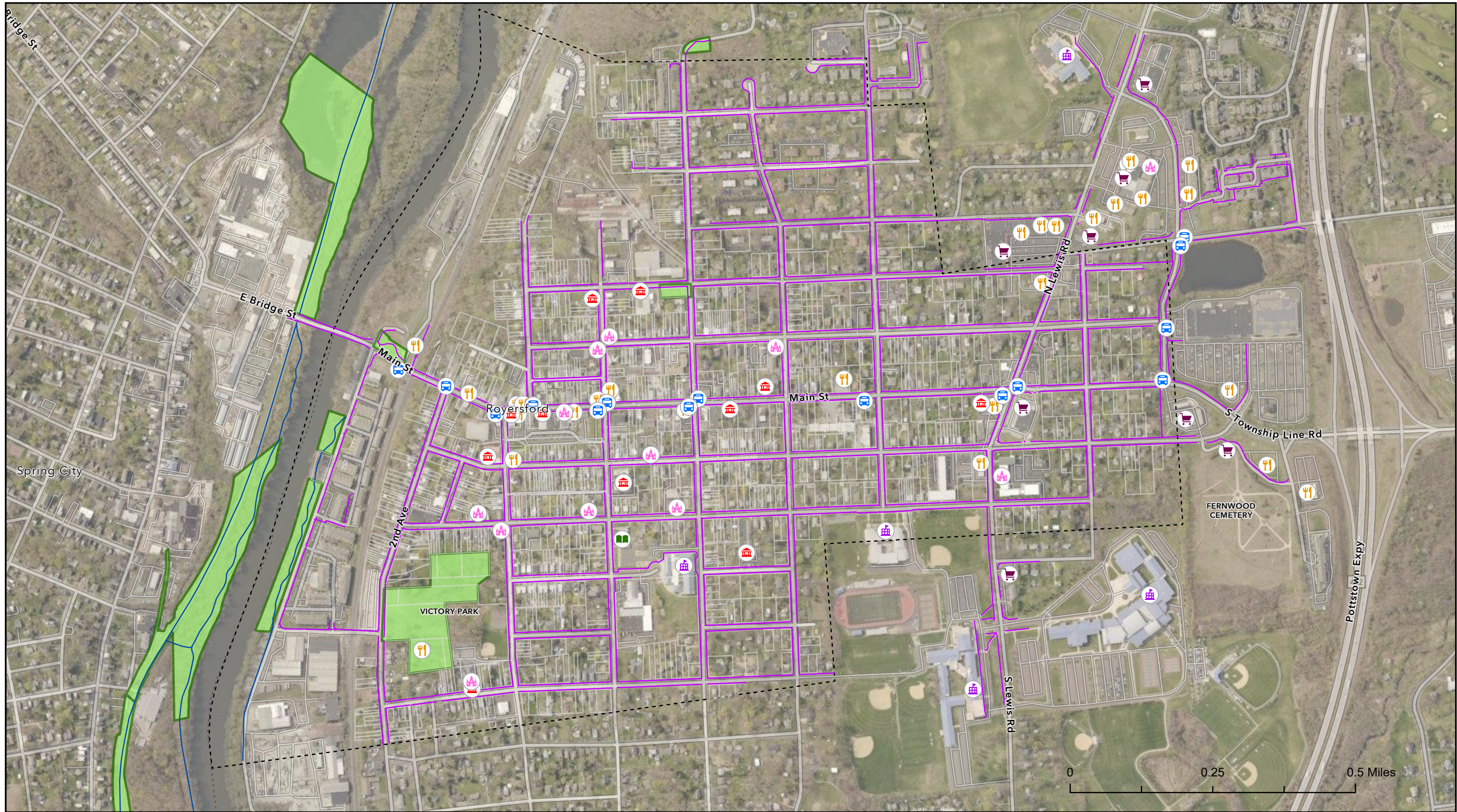
Royersford Borough is a suburb of Philadelphia located in Montgomery County on the northern banks of the Schuylkill River and south of US Route 422 at an elevation of 239 feet. On the other side of the Schuylkill River is Spring City Borough, Chester County. Limerick Township borders the Borough to the west, and Upper Providence Township borders the Borough to the east. The Borough has a total area of 0.8 square miles of land and 0.04 square miles of water. Main thoroughfares within the Borough include Main Street and Lewis Road (SR 4048). All Borough roads are posted at 25 MPH (including Main Street). Lewis Road through the Borough is posted at 35 MPH. There are no restrictions to walking or biking within the Borough. The Southeastern Pennsylvania Transportation Authority (SEPTA) Bus Route 139 from Limerick to King of Prussia services Royersford Borough.

**Walking** – Royersford Borough for the most part is walkable with very few sidewalk gaps and crosswalks marked at most intersections. Sidewalks connect pedestrians to all major destinations within and some without the Borough. Other existing pedestrian facilities include the Schuylkill River Trail East at Riverfront Park and various trails/paths at Victory Park serving both pedestrians and bicyclists. Although the Borough has a good sidewalk network, there are some maintenance issues, including some existing curb ramps, that are barriers to walking. Other barriers to walking include the safe crossing of higher speed and higher volume thoroughfares such as Main Street and Lewis Road and the gaps in the sidewalk network to other key destinations outside of the Borough.

**Biking** – Biking is permitted on all roads within the Borough. However, there are no existing off-road or on-road bicycle facilities. Although biking is permitted and bicyclists were observed, the lack of any type of bicycle facility or accommodation is a major barrier to biking within the Borough. High speeds and volumes on major thoroughfares are also barriers to biking as well as steep grades on some roads (Main Street).

**Public Transit** – SEPTA Bus Route 139 from Limerick to King of Prussia services Royersford Borough during the week and weekend along Main Street. The bus route is accessible and accommodates bicycles as well. Fare payment options include cash or the SEPTA Key Card. Barriers to public transit include lack of public transit amenities at some stops, low service frequency, and limited service on the weekend (including no service on Sundays). Also, the re-establishment of rail service in the region, such as the proposed Amtrak service expansion from Philadelphia to Reading, could provide opportunities for new transportation patterns providing connections to larger networks per the Amtrak Connects US Plan.





### Royersford Active Transportation

Existing Conditions  
August 24, 2022



- |           |                    |                  |           |                       |
|-----------|--------------------|------------------|-----------|-----------------------|
| Bus Stops | Convenience Stores | Public Buildings | Schools   | Parcels               |
| Churches  | Libraries          | Restaurants      | Sidewalks | Parks and Open Spaces |
|           |                    |                  | Trails    | Municipal Boundary    |

# ANALYSES

After mapping the existing transportation system, the project team performed several analyses to better understand the equity of the network, its connectivity, use of walking and biking facilities, safety, and infrastructure conditions. The following section provides a summary of each existing conditions analysis.

## EQUITY

### Incorporating Equity in Active Transportation Planning

Active transportation options contribute to a more equitable transportation system by reducing barriers for people who do not use a motor vehicle. Many people do not drive because of ability, income, age, or a combination of these factors. The cost of owning and maintaining a vehicle can be a major burden, especially on low-income families. 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.

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.<sup>1</sup> Active transportation investments in areas with a high concentration of vulnerable populations could help alleviate a broader range of issues (access to jobs, education, and healthcare).

1. Pennsylvania Department of Transportation. (2020), *Pennsylvania Active Transportation Plan*. <https://www.dot.state.pa.us/public/PubsForms/Publications/PUB%20787.pdf>

### Equity analysis

As part of the active transportation plan development, an active transportation needs analysis was performed for Royersford Borough. As defined by PennDOT's *Pennsylvania Active Transportation Plan*, vulnerable populations with the Borough include:

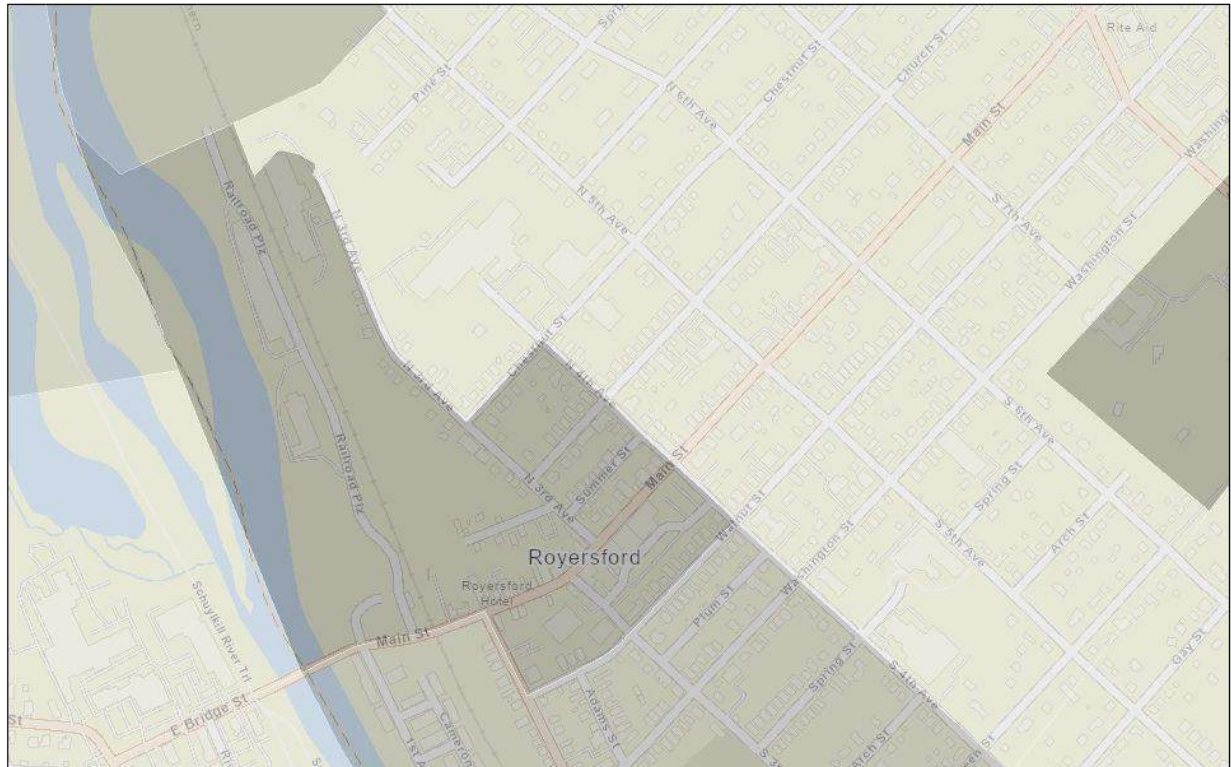
- » 15% non-white population
- » 23% under 20 years of age
- » 15% over 65 years of age
- » 12% no high school diploma
- » 7% limited English-speaking households
- » 12% households below poverty level
- » 15% households with disability
- » 0.4% no car households

Based on these vulnerability factors, Royersford Borough has a social vulnerability index (SVI) of 0.4642 indicating a low to moderate level of vulnerability per the Centers for Disease Control and Prevention

(CDC). A score of 0 represents the lowest vulnerability, and a score of 1 represents the highest vulnerability. The SVI represents the potential negative effects on communities due to stresses from natural or human-caused disasters.

Areas of high need and high demand should be prioritized for bicycle and pedestrian improvements because residents in these areas likely rely more heavily on active transportation options for getting around. High demand areas in Royersford Borough include:

### People of Color



# Low Income



7/27/2022

EJSCREEN\_StatePct

Data not available

Less than 50 percentile

50 - 60 percentile

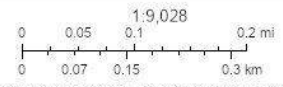
60 - 70 percentile

70 - 80 percentile

80 - 90 percentile

90 - 95 percentile

95 - 100 percentile



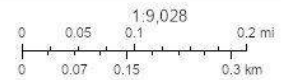
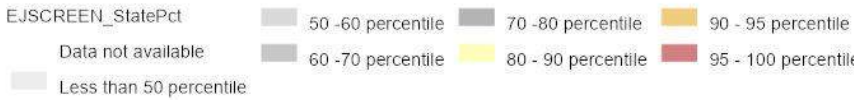
Esri Community Maps Contributors, County of Chester, data.pa.gov, New Jersey Office of GIS, © OpenStreetMap, Microsoft, Esri, HERE, Garmin.

# Linguistically Isolated



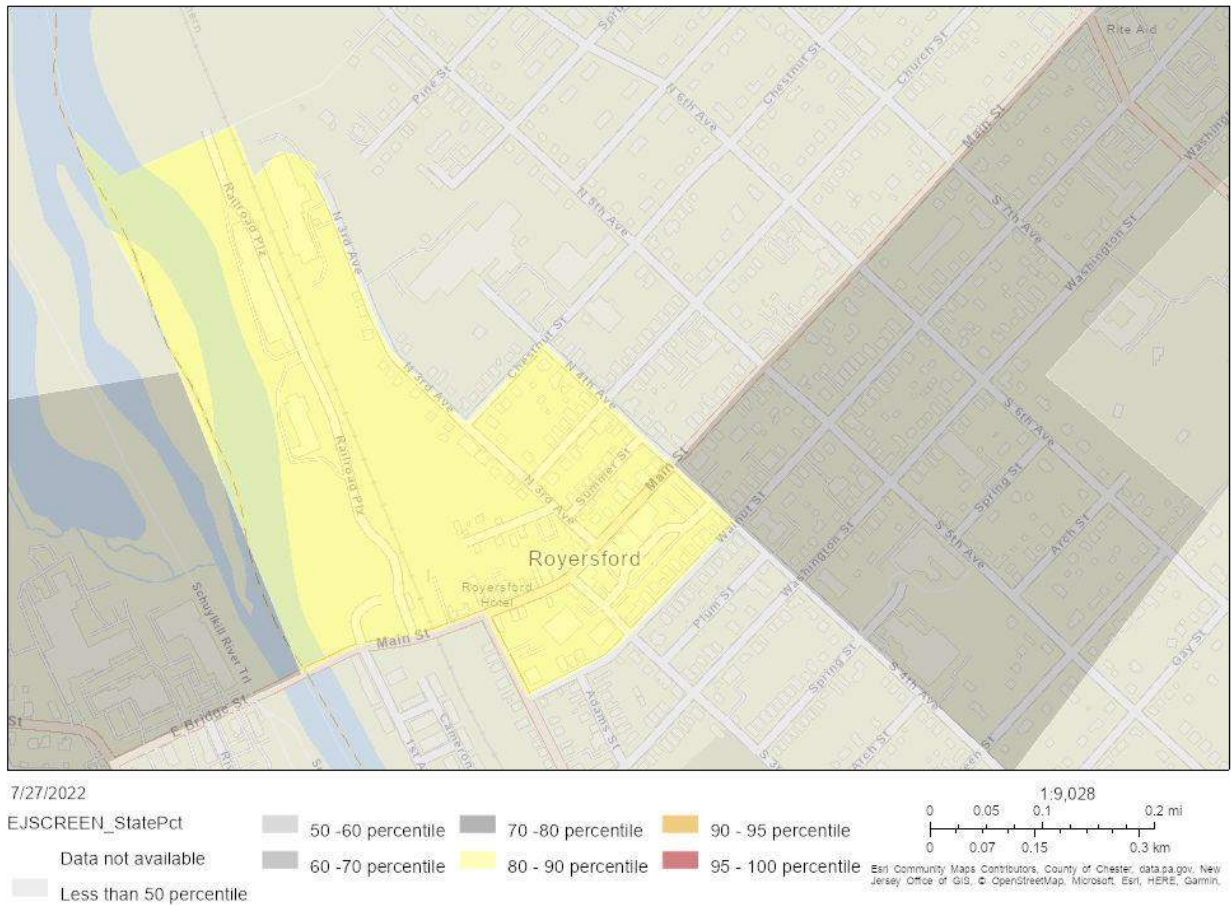
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Esri Community Maps Contributors, County of Chester, data.pa.gov, New Jersey Office of GIS, © OpenStreetMap, Microsoft, Esri, HERE, Garmin.

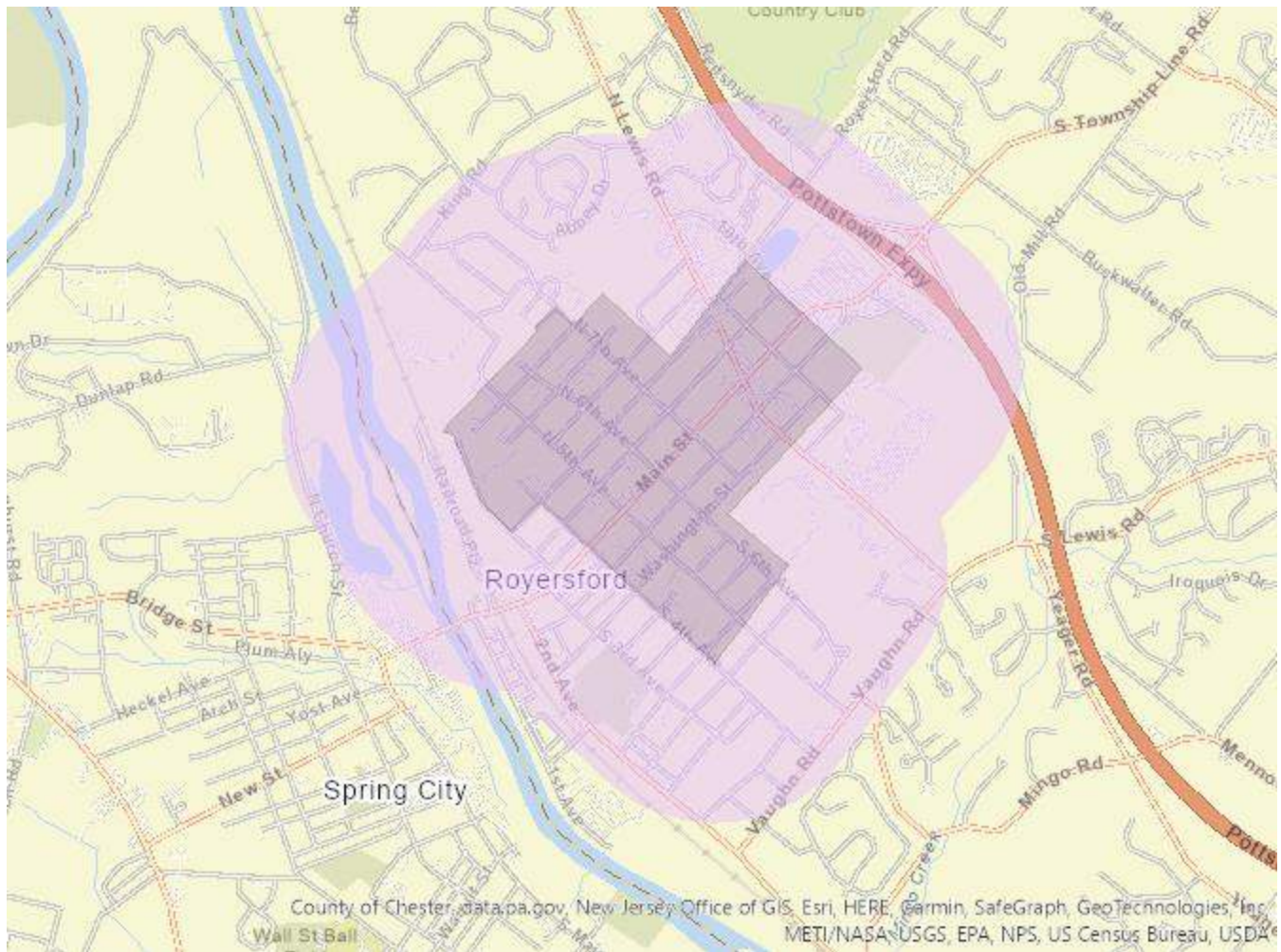
## Less Than High School Education



An environmental justice assessment was also performed as part of the equity analysis as seen in Figure 9. According to the U.S. Environmental Protection Agency (EPA), “environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” Per EPA, this is achievable when everyone within the community has:

- » The same degree of protection from environmental and health hazards
- » Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.<sup>2</sup>

2. U.S. Environmental Protection Agency. (2022), *Environmental Justice*.  
<https://www.epa.gov/environmentaljustice>



**Figure 9: Environmental Justice Assessment**

The Pennsylvania Department of Environmental Protection (DEP) considers any census tract (purple) or census block group (pink) an Environmental Justice Area if 20% or more of individuals live in poverty and/or 30% or more of the population identifies as minority. From the assessment, 20% of individuals in Royersford Borough live in poverty, and 9% of the population identifies as minority.

## NETWORK UTILIZATION

### Level of walking and biking activity in Royersford Borough

Network utilization describes who is walking and biking, where, and how often. Several factors impact network usage, including land use and development patterns, the presence or absence of active transportation facilities, proximity of destinations, safety concerns, and socioeconomic need. Determining the level of walking and biking activity in Royersford Borough provides an understanding of where people are already walking and biking and where there may be a lack of infrastructure because there are low levels of walking and biking activity.

#### Walking and biking activity

The project team used Strava to analyze levels of walking and biking (Figure 10 and Figure 11) and better understand where and when walking and biking activity is currently occurring within Royersford Borough. Based on the analysis, the following areas have high levels of walking and biking:

- » Walking activity:
  - Main Street
  - Washington Avenue
  - Lewis Road
  - 7<sup>th</sup> Avenue
  - 6<sup>th</sup> Avenue
  - 1<sup>st</sup> Avenue
  
- » Biking activity:
  - Main Street
  - 5<sup>th</sup> Avenue
  - 2<sup>nd</sup> Avenue
  - 1<sup>st</sup> Avenue

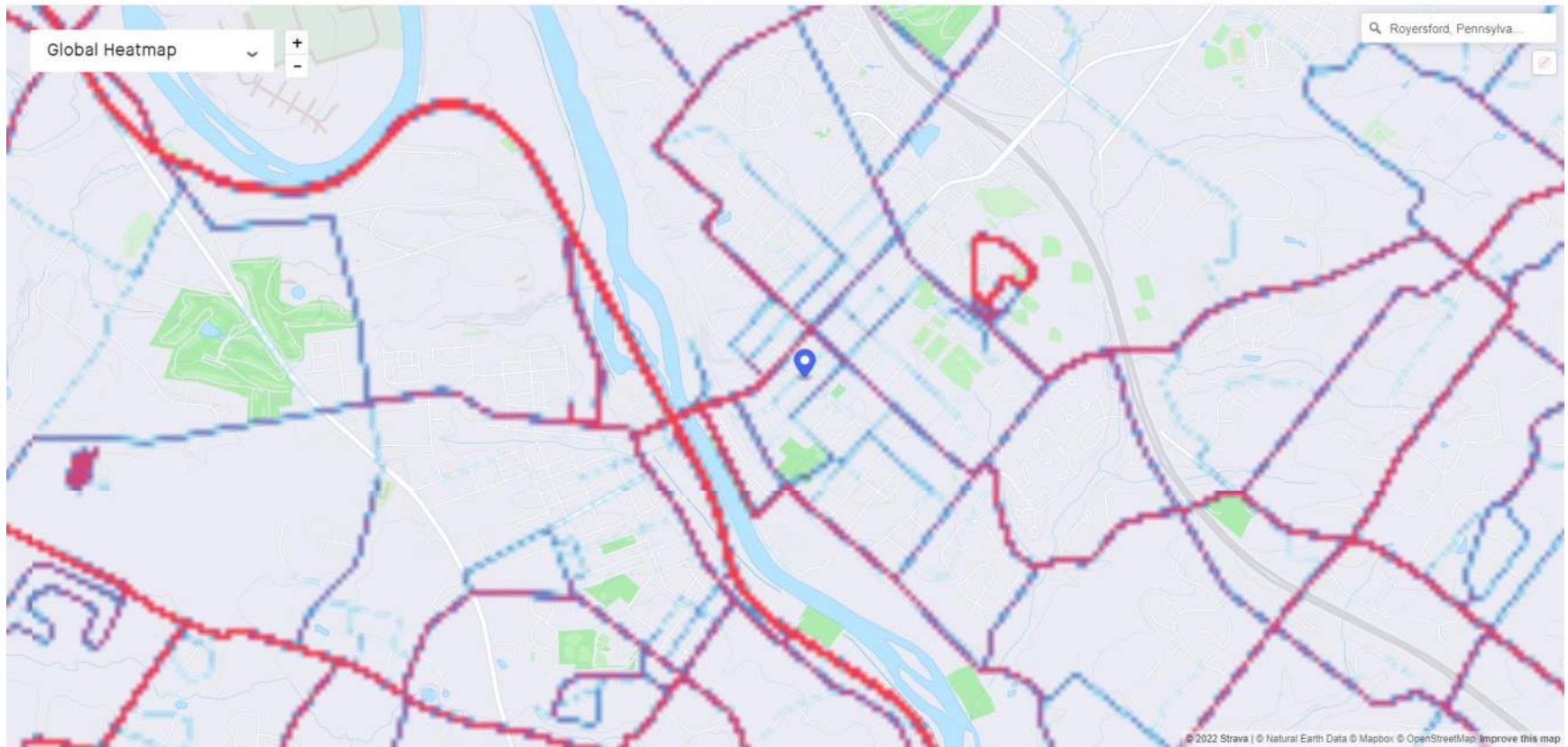






**Figure 10. Strava Walking Activity Map**





**Figure 11. Strava Biking Activity Map**



# NETWORK CONNECTIVITY

## Completeness of active transportation system

Active transportation facilities that connect people to jobs, schools, parks, and other destinations form a complete network. Filling in missing connections expands access and mobility for people walking and biking, and providing multiple route options accommodates people of all ages and abilities. Evaluating network connectivity provides an understanding of where gaps in the network exist and whether low comfort or high comfort walking and biking facilities exist.

### Pedestrian facilities

The project team conducted a digital inventory of existing sidewalks and marked crosswalks using the Sidewalk Gap Analysis Explorer from the Delaware Valley Regional Planning Commission (DVRPC). Walkability was also assessed within the Borough using Walk Score.

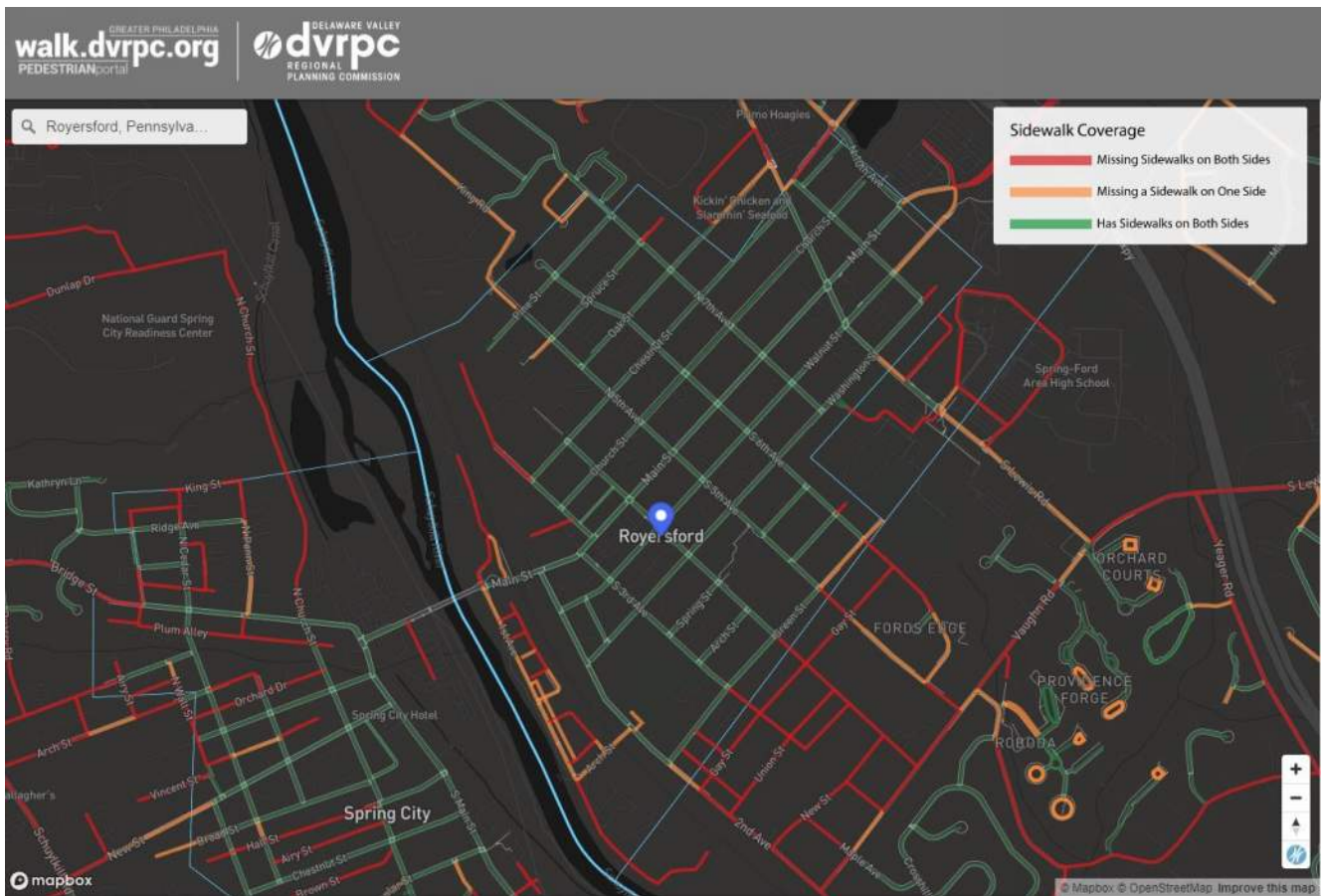


Figure 12: DVRPC Sidewalk Gap Analysis

From the sidewalk gap analysis in Figure 12, most of Royersford Borough has sidewalks on both sides of the road with few gaps within the sidewalk network. Based on the existing sidewalk network, the Borough received a “somewhat walkable” score (62/100) meaning some errands can be accomplished on foot.



Figure 13: Royersford Borough Walk Score

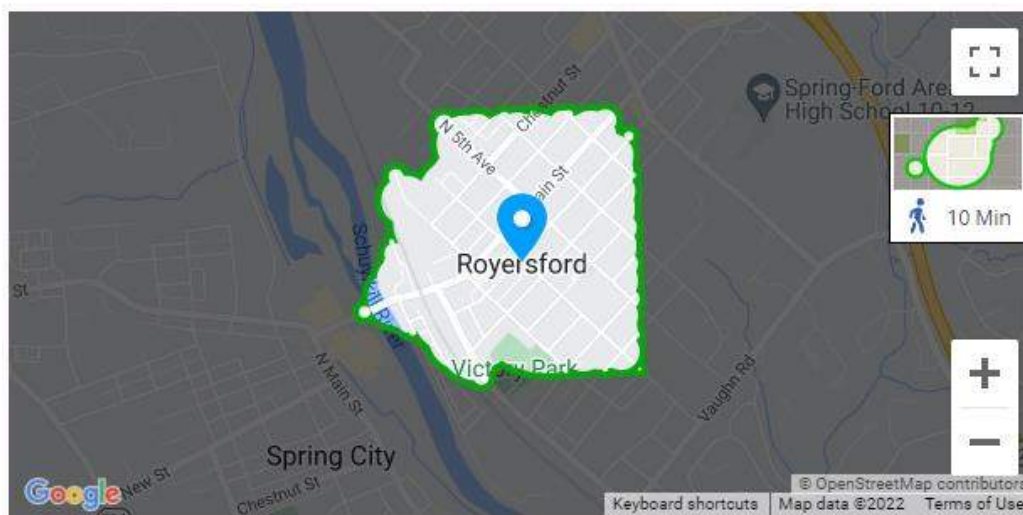


Figure 14: Walking Travel Time Map (10 Minutes)

Gaps in the current sidewalk network within Royersford Borough include:

- » 1st Avenue from Rogerson Court to Main Street where the trail discontinues (one side)
- » 3rd Avenue near the industrial park at the edge of the Borough (both sides)
- » Summer Street (both sides)

In addition to the existing sidewalk network, trails within the Borough include the Schuylkill River Trail East at Riverfront Park and various trails/paths at Victory Park serving both pedestrians and bicyclists.

### Bicycle facilities

Although the Borough currently does not have any existing bicycle facilities, the project team assessed the current bicycle level of traffic stress (LTS) using DVRPC's Bicycle LTS and Connectivity Analysis to determine how comfortable bicyclists would feel on Borough road segments based on the different user types seen in Figure 15.

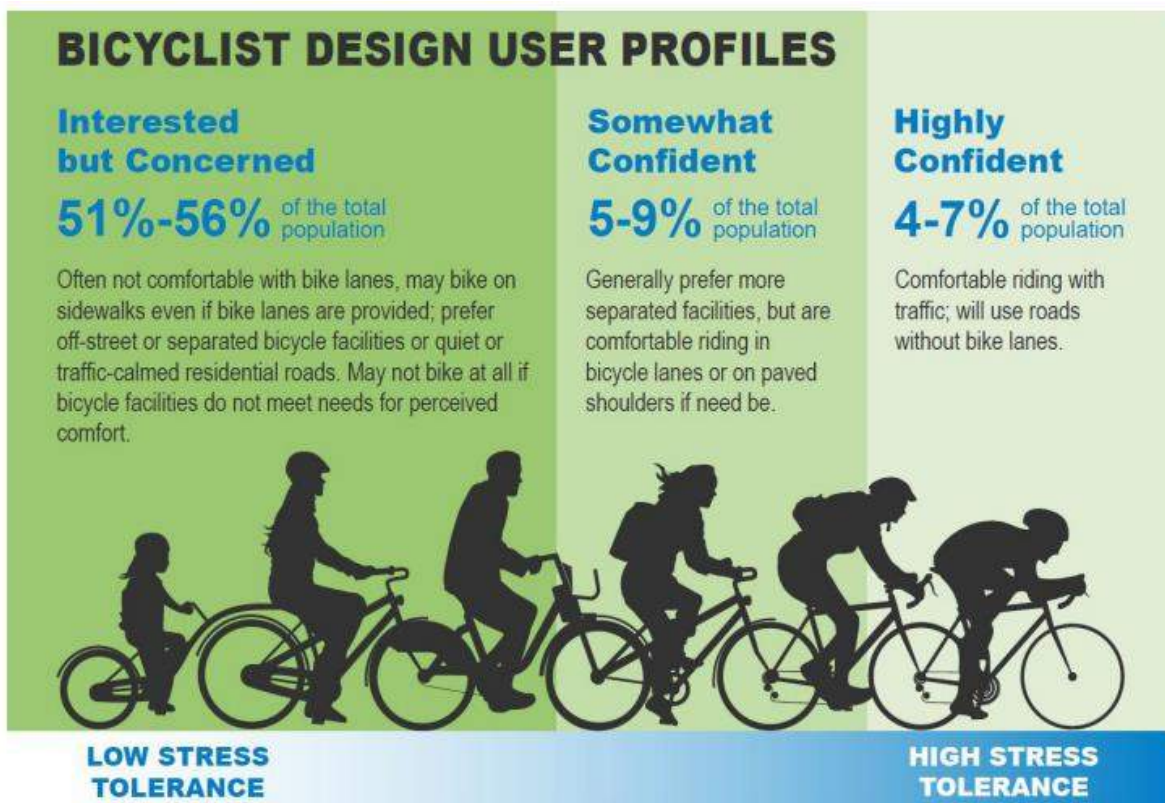


Figure 15: FHWA Bicyclist Design User Profiles

The LTS ratings are:

- » LTS 1: Low Traffic Stress: Bikeway comfortable for Interested but Concerned Bicyclists
- » LTS 2: Moderate Traffic Stress: Bikeway comfortable for Somewhat Confident Bicyclists
- » LTS 3: High Traffic Stress: Bikeway comfortable for Highly Confident Bicyclists
- » LTS 4: Extreme Traffic Stress: Bikeway that is not comfortable for most bicyclists

Per the Federal Highway Administration's *Bikeway Selection Guide*, "a bikeway that is LTS 1 is appropriate and comfortable for all user types and is known as an all ages and abilities bikeway."



Figure 16: DVRPC LTS Analysis

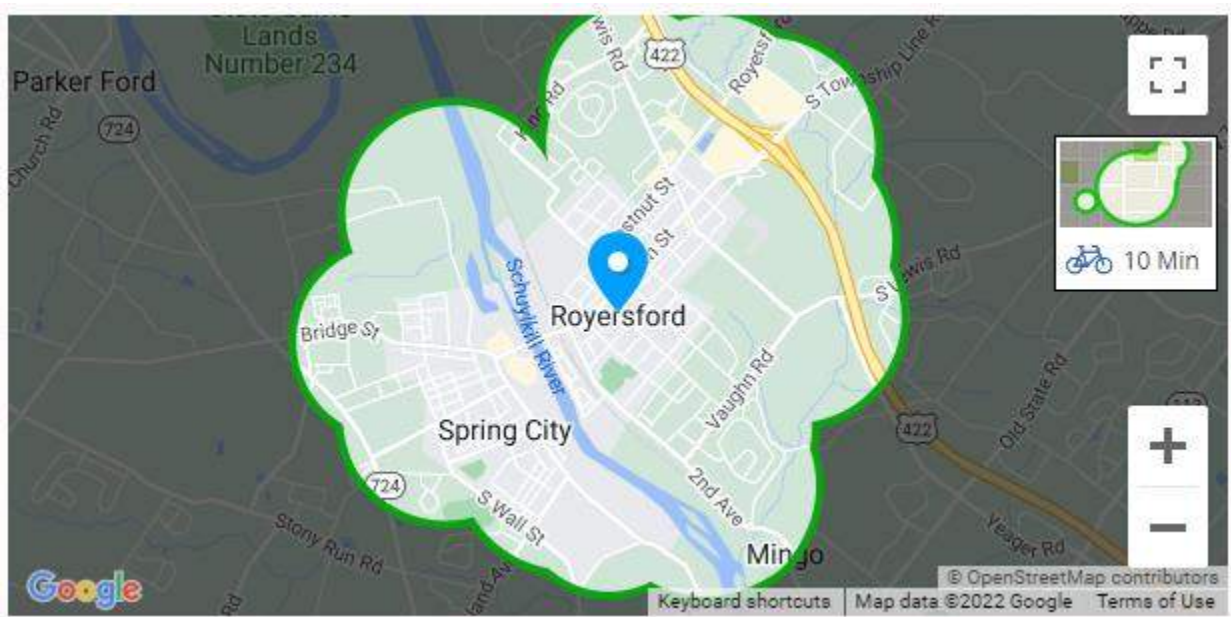


Figure 17: Biking Travel Time Map (10 Minutes)

LTS levels for streets currently serving as key routes for biking:

- » Main Street – LTS 3
- » Lewis Road – LTS 4
- » Walnut Street – LTS 3
- » 2<sup>nd</sup> Avenue – LTS 4

### Transit facilities

SEPTA Bus Route 139 from Limerick to King of Prussia is the only transit line that runs through Royersford Borough. The route provides connections to the King of Prussia Mall, Valley Forge Casino, Phoenixville, Limerick, and the shopping centers located along the route. The route has a long and indirect alignment resulting in low ridership. Route 139 is 19.7 miles long one way.

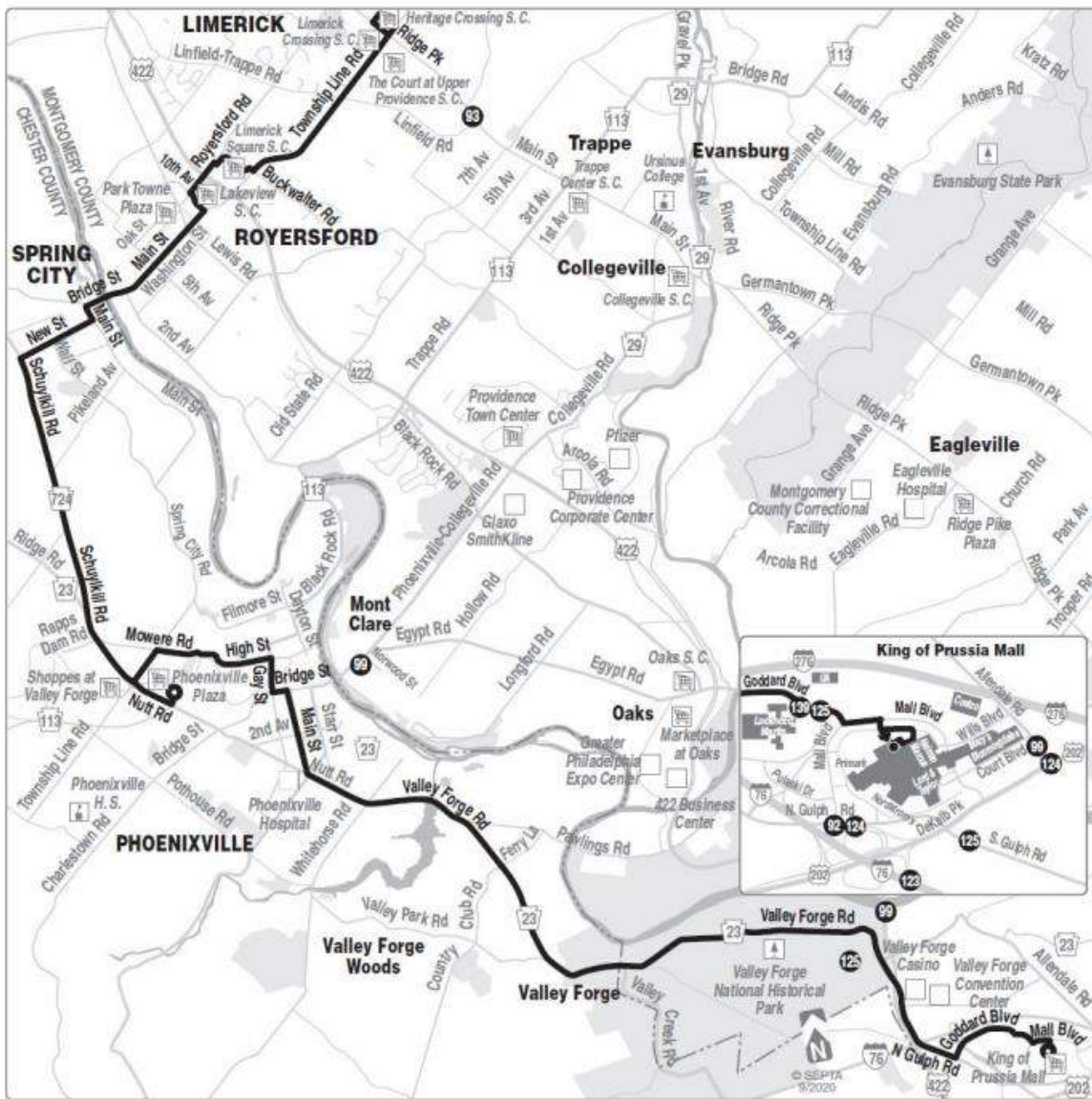


Figure 18: SEPTA Bus Route 139

Route 139 operates from 5:03am – 11:08pm during the weekdays with an average frequency of 65 minutes during peak hours and 70 minutes during the midday and evening. On Saturdays, average frequencies are between 92 and 95 minutes.

**Table 3: Schedule and Frequency**

Service Day	Span Of Service	Frequency (Range)	Frequency (Average)
<b>Weekdays</b>	4:00 AM to 12:18 AM		
Early AM	4:00 AM to 5:59 AM	15-60	57
AM Peak	6:00 AM to 8:59 AM	52-81	66
Midday	9:00 AM to 2:59 PM	30-93	70
PM Peak	3:00 PM to 5:59 PM	60-72	65
Evening	6:00 PM to 9:59 PM	47-93	71
Late Night	10:00 PM to 11:59 PM	62-66	64
Owl	Midnight to 3:59 AM		
<b>Saturdays</b>	8:00 AM to 7:59 AM		
Day	8:00 AM to 5:59 PM	71-121	92
Night	5:59 PM to 7:59 AM	83-124	95

*Note: Span of service reflects the time the first bus begins service until the time the last bus finishes service.*

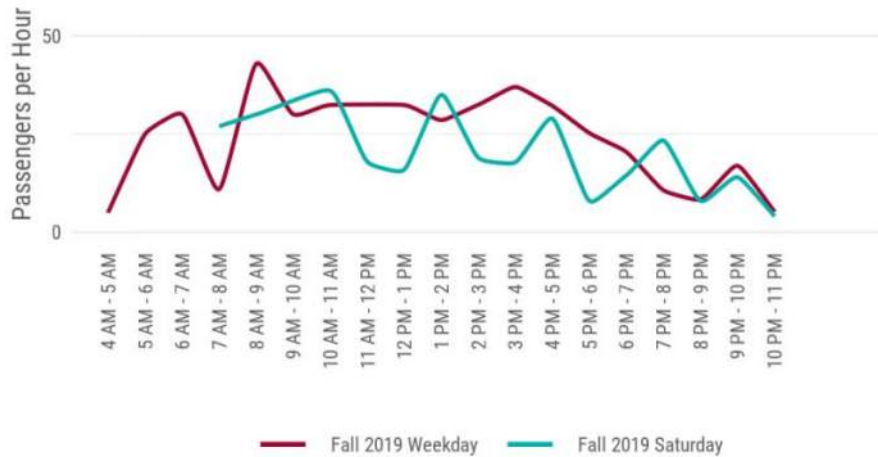
There are four service patterns: two eastbound and two westbound patterns. The primary pattern operates the full alignment between Limerick and the King of Prussia Mall, and the short-turn pattern only operates between the Limerick Square Shopping Center and the Plaza at King of Prussia.

**Table 4: Service Patterns**

Pattern	Origin	Destination	Unique Feature	Unique Stops	Trips Per Day		
					Wkd	Sat	Sun
<b>Westbound</b>							
230799	Plaza at King of Prussia	Township Line Rd & Ridge Pike - FS	Primary Pattern		14	9	0
230800	Plaza at King of Prussia	Limerick Square Shopping Center	Short-Turn	0	1	1	0
<b>Eastbound</b>							
230801	Township Line Rd & Ridge Pike	Plaza at King of Prussia	Primary Pattern		15	10	0
230802	Limerick Square Shopping Center	Plaza at King of Prussia	Short-Turn	0	2	1	0

Prior to the pandemic, in the fall of 2019, Route 139 carried 433 passengers on weekdays and 301 on Saturdays making it one of the least productive routes in SEPTA’s system. There were 25 and 45 passengers per hour between 5am – 7pm during the weekdays with 8am having the strongest ridership and the evening having the lowest. Saturdays saw fluctuating ridership declining after 11am. In the spring of 2022, the maximum number of riders that boarded/alighted was 8 within the Borough (269 total riders).





**Figure 19: Fall 2019 Ridership by Hour**

Route 139 stops in Royersford Borough:

- » Main Street and Lewis Road – Eastbound and Westbound
- » Main Street and 7<sup>th</sup> Avenue – Westbound
- » Main Street and 5<sup>th</sup> Avenue – Eastbound and Westbound
- » Main Street and 4<sup>th</sup> Avenue – Eastbound and Westbound
- » Main Street and 3<sup>rd</sup> Avenue – Eastbound and Westbound
- » Main Street and 2<sup>nd</sup> Avenue – Eastbound
- » Main Street and 1<sup>st</sup> Avenue – Westbound



Some of the transit stops have amenities as seen in Figure 20.



**Figure 20: Main Street and 3rd Avenue Transit Stop**

# SAFETY

## Evaluating crash trends and patterns

Evaluating crash trends and patterns identifies where crashes are currently occurring and provides a better understanding of what factors may be contributing to crashes. Understanding these crashes can lead to projects that have the greatest likelihood of improving safety for pedestrians and bicyclists. These analyses are especially important because America and Pennsylvania are not trending in the right direction for pedestrian and bicyclist safety.

### Crash analysis

Five years of pedestrian and bicycle crash data were reviewed and mapped using PennDOT's Crash Information Tool (PCIT); this exercise identified problem locations for people walking and biking. During the time period reviewed (2017-2021), there were 8 crashes involving pedestrians (6) and bicyclists (2) in Royersford Borough out of 116 total crashes.

A summary of the 6 pedestrian crashes can be seen in Figure 21. All 6 pedestrian crashes resulted in injuries due primarily to vehicles either proceeding without clearance or making an improper/careless turn. Most of the pedestrian crashes occurred during clear weather conditions during hours of darkness (streetlights, dark, or dawn). A location map of the pedestrian crashes can be seen in Figure 22.

**Pennsylvania Crash Information Tool**

**5-Year Pedestrian Crash Data**

Date Range: 01/01/2017 to 12/31/2021 USER ID / QUERY ID:  
b-mata / 0320220816354

MONTH OF YEAR								DAY OF WEEK					
	MAR	APR	MAY	SEP	OCT	DEC	TOTAL		MON	TUE	THR	SAT	TOTAL
CRASHES	1	1	1	1	1	1	6	CRASHES	2	1	2	1	6
PCT	17%	17%	17%	17%	17%	17%	100%	PCT	33%	17%	33%	17%	100%

HOUR OF DAY						
	06	07	13	17	20	TOTAL
CRASHES	2	1	1	1	1	6
PCT	33%	17%	17%	17%	17%	100%

YEAR	CRASHES	PCT
2018	1	17%
2019	1	17%
2020	3	50%
2021	1	17%
TOTAL	6	100%

COLLISION TYPE		
	CRASHES	PCT
PEDESTRIAN	6	100%
TOTAL	6	100%

CRASH SEVERITY LEVEL		
	CRASHES	PCT
SUSP SERIOUS	2	33%
UNK SEVERITY	4	67%
TOTAL	6	100%

SEVERITY COUNT		
	PERSONS	
FATALITIES	0	
SUSPECTED SERIOUS	2	
SUSPECTED MINOR	1	
POSSIBLE INJURY	0	
UNK SEVERITY	4	
UNK IF INJURED	0	

DRIVER ACTIONS		
	ACTIONS	PCT
IMPROPER/CARELESS TURN	2	33%
NO CONTRIBUTING ACTION	2	33%
PROCEED W/O CLEARANCE	2	33%
TOTAL	6	100%

VEHICLE TYPE		
	VEHICLES	PCT
AUTOMOBILE	4	31%
SUV	2	15%
TOTAL	6	46%

ROAD CONDITION		
	CRASHES	PCT
DRY	6	100%
TOTAL	6	100%

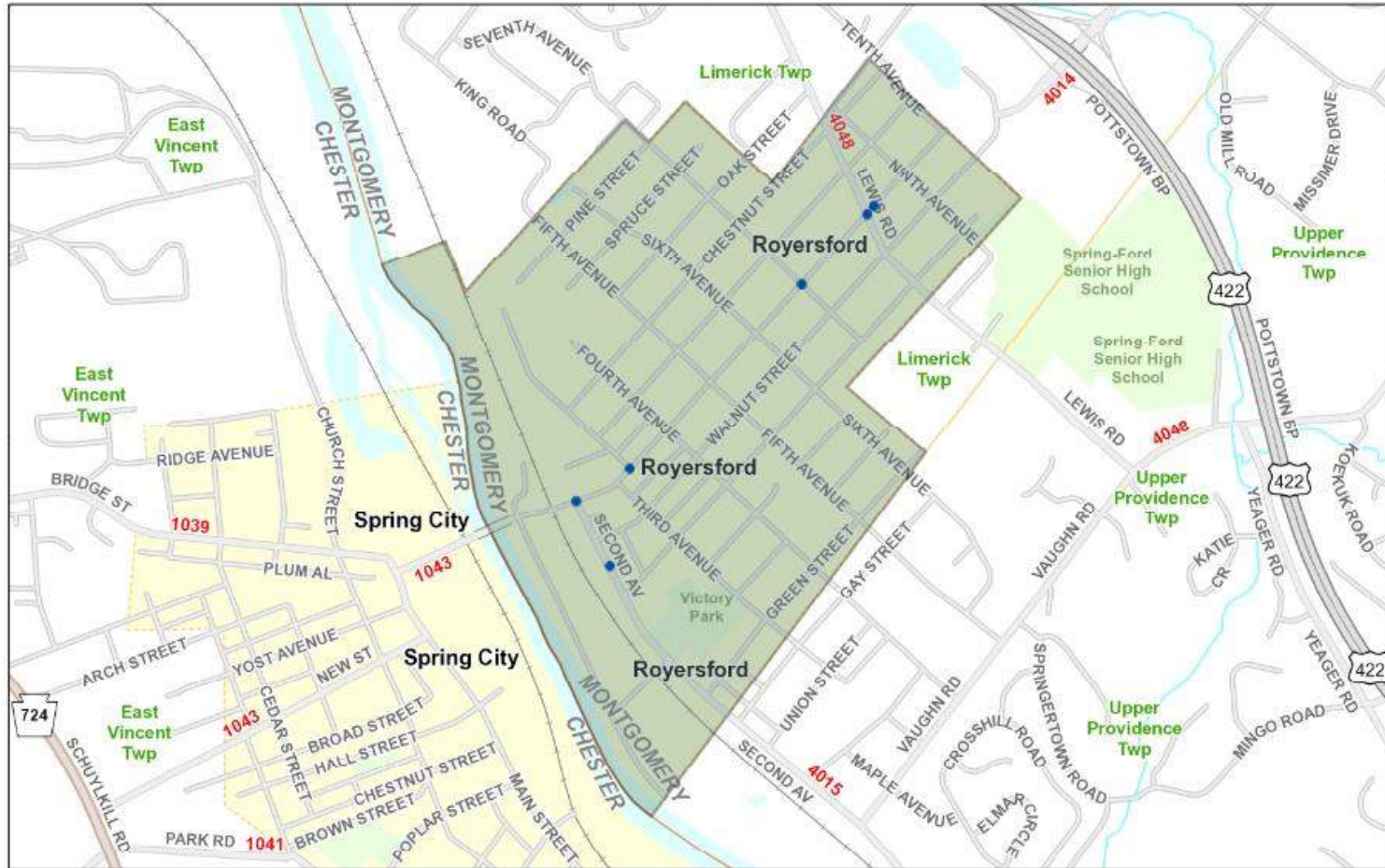
ILLUMINATION		
	CRASHES	PCT
DAYLIGHT	2	33%
STREET LIGHTS	2	33%
DARK	1	17%
DAWN	1	17%
TOTAL	6	100%

WEATHER		
	CRASHES	PCT
CLEAR	5	83%
FOG	1	17%
TOTAL	6	100%

ENVIR/ROADWAY FACTORS		
	FACTORS	PCT
NONE	4	67%
OTHER ENVIR FACTOR	1	17%
OTHER WEATHER COND	1	17%
TOTAL	6	100%

Figure 21: Pedestrian Crash Data Summary

### 5-Year PCIT Pedestrian Point Map



August 16, 2022

- Fatal Injury
- Injury Crash
- Unknown
- Property damage Only
- ▭ County
- ▭ MUNICIPALITY: ROYERSFORD



MVT  
PennDOT

**Figure 22: Pedestrian Point Map**

Figure 23 developed by the Federal Highway Administration (FHWA) shows the correlation between impact speed and pedestrian injury severity. On roads with volumes near 15,000 vehicles per day and speeds over 35 MPH, research shows that many motorists may not yield to pedestrians properly. Pedestrian behavior can also be a concern in waiting for appropriate gaps in traffic.

A summary of the 2 bicycle crashes can be seen in Figure 24. Both bicycle crashes resulted in injuries with one crash due to the motor vehicle tailgating. One crash occurred during clear weather conditions during the day. The other crash occurred during cloudy weather conditions at night (streetlights). Both bicycle crashes were recent occurring in 2021. A location map of bicycle crashes can be seen in Figure 25.



Figure 23: FHWA Vehicle Speed and Pedestrian Injury

Pennsylvania Crash Information Tool

5-Year Bicycle Crash Data

Date Range: 01/01/2017 to 12/31/2021

USER ID / QUERY ID:  
b-mata / 0320220816349



MONTH OF YEAR			DAY OF WEEK		
	JAN	AUG	TOTAL	MON	TOTAL
CRASHES	1	1	2	2	2
PCT	50%	50%	100%	100%	100%

HOUR OF DAY			
	16	17	TOTAL
CRASHES	1	1	2
PCT	50%	50%	100%

YEAR	CRASHES	PCT
2021	2	100%
TOTAL	2	100%

COLLISION TYPE		
	CRASHES	PCT
PEDESTRIAN	1	50%
REAR END	1	50%
TOTAL	2	100%

CRASH SEVERITY LEVEL		
	CRASHES	PCT
SUSP MINOR	1	50%
UNK SEVERITY	1	50%
TOTAL	2	100%

SEVERITY COUNT	
	PERSONS
FATALITIES	0
SUSPECTED SERIOUS	0
SUSPECTED MINOR	1
POSSIBLE INJURY	0
UNK SEVERITY	1
UNK IF INJURED	1

DRIVER ACTIONS		
	ACTIONS	PCT
NO CONTRIBUTING ACTION	2	50%
TAILGATING	1	25%
UNKNOWN	1	25%
TOTAL	4	100%

VEHICLE TYPE		
	VEHICLES	PCT
PEDALCYCLE	2	50%
AUTOMOBILE	1	25%
SUV	1	25%
TOTAL	4	100%

ROAD CONDITION		
	CRASHES	PCT
DRY	2	100%
TOTAL	2	100%

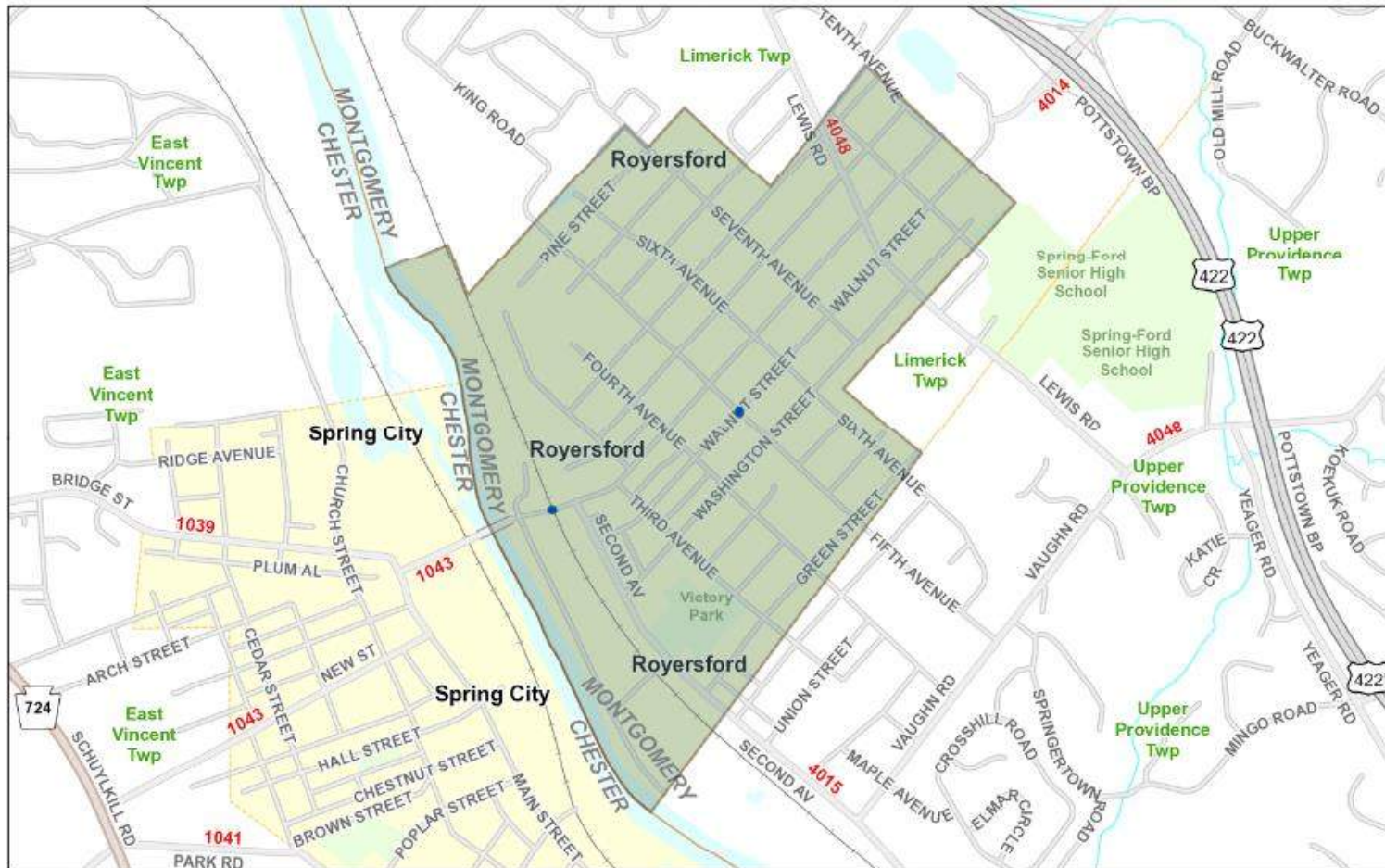
ILLUMINATION		
	CRASHES	PCT
DAYLIGHT	1	50%
STREET LIGHTS	1	50%
TOTAL	2	100%

WEATHER		
	CRASHES	PCT
CLEAR	1	50%
CLOUDY	1	50%
TOTAL	2	100%

ENVIR/ROADWAY FACTORS		
	FACTORS	PCT
NONE	2	100%
TOTAL	2	100%

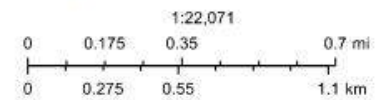
Figure 24: Bicycle Crash Data Summary

### 5-Year PCIT Bicycle Point Map



August 16, 2022

- Fatal Injury
- Injury/Crash
- Unknown
- Property damage Only
- County
- MUNICIPALITY: ROYERSFORD



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MVT  
PennDOT

Figure 25: Bicycle Point Map

## LIVABILITY

### Understanding Montgomery County's quality of life

Livability is the sum of the factors that add up to a community's quality of life. Factors include the natural and built environments, social conditions, economic conditions, and public health. Montgomery County is one of the healthiest counties in the state (#4). However, 76% of the County drives alone to work. This is due in part to the lack of adequate options for walking and biking for both transportation and physical activity. In addition, auto-oriented lifestyles increase emissions and harm air quality. Finally, transportation costs can be a burden to individuals; replacing automobile trips with walking and biking trips creates more economic stability for families. Active transportation networks provide greater choices and positively impact quality of life.

### Community health assessment (CHA)

Montgomery County, specifically the Lower Perkiomen Valley where Royersford Borough is located, completed their most recent CHA in 2022. The CHA evaluated health status and issues impacting Montgomery County. The CHA outlined the following challenges and strategies that address health priorities and are related to active transportation.

#### Challenges:

- » Heart disease, diabetes, asthma, and obesity are prevalent throughout the County
- » Communities lack sufficient walkability, bicycle lanes, and public transit routes
- » Lack of physical activity and healthy eating, and the associated increased risk of childhood obesity
- » Social isolation has been worsened by lack of affordable transportation options, making it difficult for homebound adults to access essential services, such as groceries and health care
- » Needs of immigrant communities living in the County, especially those who lack English proficiency

#### Strategies:

- » Increase affordable transportation options for older adults and create a way to regularly check in on those who are socially isolated
  - Free or inexpensive transportation options are needed to help older adults get to and from medical appointments and other community services
- » Improve access to healthy food and safe places for physical activity for youth and adults
  - Opening farmers markets and food co-ops, increasing public safety on trails and other open space, and providing more free or affordable access to recreation centers
- » Provide more support services for older adults who wish to age in place
  - Provide exercise coaches who visit older adults in their homes to encourage physical activity
- » Increase community health education prevention programs to encourage healthy lifestyles for youth and adults
  - More education in schools

A summary of the health measures in the Lower Perkiomen Valley can be seen below.

summary health measures		Lower Perkiomen Valley		Montgomery County	
		Pre-2020 Estimate*	2020 Estimate*	Pre-2020 Estimate*	2020 Estimate*
<b>General</b>	All-cause mortality rate (per 100,000)	675.9	750.8	939.0	1,072.8
	Life expectancy: Female (in years)	81.7	80.5	83.1	81.7
	Life expectancy: Male (in years)	78.8	77.9	78.3	77.0
	Years of potential life lost before 75	2,894	3,367	41,424	45,416
<b>COVID-19</b>	COVID-related emergency department utilization (per 100,000)	N/A	461.6	N/A	853.5
	COVID-related hospitalization rate (per 100,000)	N/A	298.2	N/A	394.6
<b>Chronic Disease &amp; Health Behaviors</b>	Adult obesity prevalence	29.2%		29.1%	
	Diabetes prevalence	7.5%		8.9%	
	Diabetes-related hospitalization rate (per 100,000)	116.9	83.9	124.6	113.0
	Hypertension prevalence	24.4%		27.7%	
	Hypertension-related hospitalization rate (per 100,000)	296.7	286.2	380.9	328.6
	Potentially preventable hospitalization rate (per 100,000)	791.3	678.9	979.3	763.1
	Premature cardiovascular disease mortality rate (per 100,000)	28.5	25.5	26.3	30.1
	Major cancer incidence rate (per 100,000)	236.8		286.1	
	Major cancer mortality rate (per 100,000)	62.9		85.2	
	Colorectal cancer screening	71.2%		71.3%	
	Mammography screening	77.4%		77.4%	
		Physical inactivity (leisure time) prevalence	17.9%		19.6%
<b>Infant &amp; Child Health</b>	Asthma hospitalization rate <18 years (per 100,000 <18)	--	--	10.0	2.9
	Infant mortality rate (per 1,000 live births)	--	--	4.1	2.7
	Percent low birthweight births out of live births	6.6%	4.9%	7.2%	6.9%
	Percent preterm births out of live births	6.4%	5.9%	8.7%	8.0%
<b>Behavioral Health</b>	Adult binge drinking	21.3%		18.8%	
	Adult smoking	15.0%		14.4%	
	Drug overdose mortality rate (per 100,000)	15.0	21.0	24.3	23.7
	Opioid-related hospitalization rate (per 100,000)	37.5	--	43.6	34.2
	Substance-related hospitalization rate (per 100,000)	251.8	178.3	265.9	223.8
	Poor mental health for 14+ days in past 30 days	12.8%		12.5%	
	Suicide mortality rate (per 100,000)	18.0	21.0	13.4	12.7
<b>Injuries</b>	Fall-related hospitalization rate (per 100,000)	9,348.3	8,887.4	3,146.4	3,083.5
	Gun-related emergency department utilization (per 100,000)	--	--	9.4	9.9
	Homicide mortality rate (per 100,000)	--	--	2.5	2.5
<b>Access to Care</b>	Adults 19-64 years with Medicaid	6.9%		8.0%	
	Children <19 years with public insurance	16.3%		21.5%	
	Population without insurance	2.4%		3.6%	
	Children <19 years without insurance	1.7%		2.3%	
	Emergency department utilization (per 100,000)	11,948.9	13,545.7	19,958.7	16,419.9
	High emergency department utilization (per 100,000)	165.7	156.8	319.9	247.5
<b>Social &amp; Economic Conditions</b>	Population in poverty	4.0%		5.8%	
	Children <18 years in poverty	3.9%		6.9%	
	Adults 19-64 years unemployed	2.0%		2.0%	
	Householders living alone who are 65+ years	37.2%		43.5%	
	Households receiving SNAP benefits	4.4%		5.1%	
	Households that are housing cost-burdened	8.9%		12.7%	
	Housing with potential lead risk	26.4%		55.4%	
	Vacant housing units	3.4%		5.0%	

Based on the different health measures, from the American Association of Retired Persons (AARP), Royersford Borough has a livability index score of 64 putting it in the top half of U.S. communities.

# PRESERVATION

## Royersford Borough transportation system's state of repair

Local governments are responsible for maintaining their transportation networks, including walkways and bikeways. The lack of maintenance dollars and resources are some of the primary barriers for agencies wanting to build active transportation facilities due to liquid fuels allocations from the state and a limited Borough tax base. A proactive approach to preservation starts with understanding the transportation system's current state of repair and having a clear division of roles and responsibilities for maintaining what facilities and how often.

### Asset condition inventory

Although most of Royersford Borough has sidewalks on both sides of the road with few gaps within the sidewalk network, from field visits and community input, walking can still be improved within the Borough by having better maintenance of the existing sidewalk network. Maintenance issues include surface deterioration, surface stability/slip resistant, elevation differences, and curb ramps.



### Surface Deterioration

*"Spalled sidewalks make for dangerous walking, biking, strollers." – Survey*

### Curb Ramps

*"Some handicap ramps are not in the center and off to the side out of the crosswalk." – Survey*





Royersford Borough currently does not have any bicycle facilities. However, that does not mean there are no presence of bicyclists or interest in biking. As noted in the bicycle LTS analysis, most of the roads that currently serve as main bicycle routes are either LTS 3 (high traffic stress) or LTS 4 (extreme traffic stress) due to high volume and speeds.



**High volume**

*"I would love to see designated bike lanes. It is almost impossible to safely ride down Main Street because of the traffic and parked cars." – Survey*

**Lack of facilities**

*"The creation of bike lanes through logical corridors would be beneficial not only for existing cyclists but for the purpose of promoting bicycle usage." – Survey*



# PROPOSED PROJECTS AND PROGRAMS





## PROPOSED PROJECTS AND PROGRAMS

This plan makes recommendations that will promote and support active transportation through a combination of infrastructure projects, policies, and programs. Infrastructure recommendations refer to physical, built projects that will change how roadways are configured to provide space for all users. Policy and program recommendations aim to re-prioritize walking and biking and to change the culture and institutional attitudes toward active transportation and help increase its use through engagement, education, encouragement, and evaluation.

### INFRASTRUCTURE PROJECTS

The overall active transportation network is based on the existing conditions analysis, steering committee meetings, and public input. The network includes critical connections to Downtown, parks, schools, etc. The network also identifies multiple intersections that should be improved to make walking and biking safer along major roads, such as Main Street and Lewis Road.

#### **Pedestrian**

Royersford Borough has already begun implementation of pedestrian crossing upgrades such as installing rectangular rapid flashing beacons (RRFBs) along Main Street and curb ramp updates in many locations throughout the Borough. However, there are still some uncontrolled crossing locations that could be improved such as the intersection of Washington Street and Lewis Road as seen in Figure 26. The recommendations shown are for one intersection as an example, but the countermeasures can be applied using a systemic approach for all uncontrolled crossings in the Borough prioritizing uncontrolled crossings across Lewis Road, Main Street, and 2<sup>nd</sup> Avenue. Although there are pedestrian safety concerns at controlled intersections, such as signalized or stop-controlled, most pedestrian crashes occur at uncontrolled intersections due to higher speeds approaching these intersections.



**Figure 26: Uncontrolled Intersection of Washington Street and Lewis Road**

FHWA, PennDOT, and other states have pedestrian safety resources that are helpful guides in determining crosswalk markings and delineation. The first step is to assess the viability of marking the crosswalk using Table 5 developed from FHWA research.

**Table 5: Marking Crosswalks Recommendation Lewis Road**

Roadway Configuration	Roadway ADT and Speed Limit																
	1,500 to 9,000 VPD				9,000 to 12,000 VPD				12,000 to 15,000 VPD				More than 15,000 VPD				
	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH	
2 Lanes (undivided two-way street or two-lane one-way street)	A	A	B	B	A	A	B	B	A	A	B	B	B	B	B	B	C
3 Lanes with refuge island OR 2 Lanes with raised median*	A	A	B	B	A	B	B	B	A	A	B	B	B	B	B	B	C
3 Lanes (center turn lane)	A	A	B	B	A	B	B	B	A	B	B	C	B	C	C	C	C
4 Lanes (two-way street with no median)	A	B	C	C	B	B	C	C	B	C	C	D	C	C	C	C	D
5 Lanes with refuge island OR 4 lanes with raised median*	A	A	B	B	A	B	B	C	B	B	C	C	B	B	C	C	D
5 Lanes (center turn lane)	A	B	C	C	B	B	C	C	C	C	C	D	C	C	C	C	D
6 Lanes (two-way street with* or without median)	A	B	D	D	B	B	D	D	D	D	D	D	D	D	D	D	D

**Condition A – Candidate site for marked crosswalk alone.**

**Condition B – Potential candidate site for marked crosswalk.**

**Condition C – Marked crosswalks alone are insufficient.**

**Condition D – Marked crosswalks shall not be installed.**

Lewis Road (SR 4013) is uncontrolled at the intersection with Washington Street. Using the posted speed limit of 35 MPH, an average daily traffic (ADT) of 9,113 vehicles per day (vpd) from PennDOT’s Traffic Information Repository (TIRe), and two lanes, the existing crosswalks across Lewis Road are rated as Condition A – Candidate site for marked crosswalk, so the crosswalks can be marked.

The next step is to determine the countermeasures to supplement the crosswalk markings using Table 6 from FHWA.

**Table 6: Pedestrian Countermeasure Selection Lewis Road**

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	① 2 4 5 6	① 7 9	① 5 6 7 9	① 4 5 6	① 5 6 7 9	① 5 6 7 9	① 4 5 6	① 5 6 7 9	① 5 6 7 9
3 lanes with raised median (1 lane in each direction)	① 2 3 4 5	① ③ 5 6 7 9	① ③ 5 6 7 9	① 3 4 5 6	① ③ 5 6 7 9	① ③ 5 6 7 9	① ③ 4 5 6	① ③ 5 6 7 9	① ③ 5 6 7 9
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 7 9	① 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 7 9	① ③ 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 7 9
4+ lanes with raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9
4+ lanes w/o raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.\*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

- 1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Rectangular Rapid-Flashing Beacon (RRFB)\*\*
- 8 Road Diet
- 9 Pedestrian Hybrid Beacon (PHB) Not PA approved

Based on the posted speed limit of 35 MPH, an ADT of 9,113 vpd, and two lanes, the recommended countermeasures to supplement the crosswalks are:

- » High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs (should always be considered, recommended)
- » Curb extension (candidate treatment, optional)
- » Pedestrian refuge island (candidate treatment, optional)
- » RRFB (candidate treatment, optional)

The crosswalks across Lewis Road were also assessed using the FHWA PEDSAFE countermeasure selection tool as seen in Figure 27.

**PEDSAFE** Pedestrian Safety Guide and Countermeasure Selection System

Guide: Background | Statistics | Analysis | Implementation | Countermeasures: List | Tool | Matrices | Case Studies | Resources

### Countermeasure Selection Tool

**Name of location:** Washington Street and Lewis Road Royersford Borough Montgomery County  
**Your Performance Objective:** Improve Safety at Uncontrolled Crossings  
**Site Description Answers:**  
**Roadway Configuration:** 2 lanes (1 lane in each direction)  
**Average Annual Daily Traffic (AADT):** 9,000 - 15,000  
**Posted Speed Limit:** 35 mph

Based upon your input, the following countermeasures were found:

**Should Always Be Considered**  
Marked Crosswalks  
Lighting and Illumination  
Parking Restrictions (at Crossing Locations)

**Should Be Considered**  
Curb Extensions  
Crossing Islands  
Rectangular Rapid-Flashing Beacon (RRFB)  
Pedestrian Hybrid Beacon (PHB)

U.S. Department of Transportation  
**Federal Highway Administration**

Figure 27: PEDSAFE Countermeasure Selection Tool Lewis Road

Short-Term

- » Install PennDOT Type C – Perpendicular crosswalk markings.



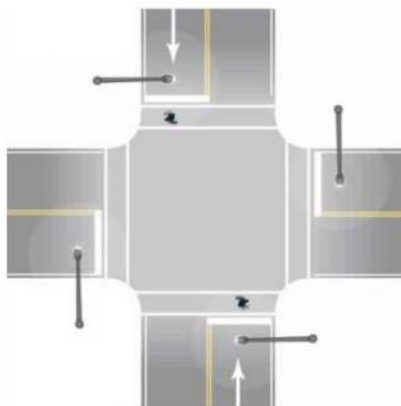
- » Install fluorescent yellow-green (FYG) Pedestrian Signs (W11-2) supplemented with FYG Diagonal Downward Pointing Arrow Plaques (W16-7P) at the crosswalks in both directions at a minimum height of 7 feet from the ground to the bottom of the last sign per PennDOT's *Traffic Control-Pavement Markings and Signing Standards*, Publication 111 (Pub. 111).



- » Install FYG Pedestrian Signs (W11-2) supplemented with FYG Ahead Plaques (W16-9P) at least 100 feet in advance of the crosswalks in both directions per the *Manual on Uniform Traffic Control Devices*, (MUTCD) Section 2C.05 (7 feet from the ground to the bottom of the last sign per Pub. 111).



- » Assess the existing nighttime lighting levels per the *FHWA Lighting Handbook*.



Long-Term

- » Install curb extensions to improve visibility for both pedestrians and motor vehicles at the intersection as well as decrease approach speeds per PennDOT's *Traffic Calming Handbook*, Publication 383 (Pub. 383).



- » Install a pedestrian refuge island to shorten crossing distances for pedestrians and decrease approach speeds per Pub. 383.



- » Install RRFBs with active (pushbutton) or passive activation to help alert motorists of the presence of pedestrians.

From the Transportation Research Board's (TRB) *Highway Capacity Manual*, different countermeasures applied in conjunction with marking an uncontrolled crosswalk will have different driver yield rates. Having just the marked crosswalk alone only has a 33% yield rate. In addition to these countermeasures, the deployment of speed minders temporarily can help the Borough with speed management.

Crossing Treatment	Yield Rate (%)		Sample Size (sites)
	Average	Range	
No treatment (unmarked)	24	0-100	37
Crosswalk markings only (any type)	33	0-95	58
Crosswalk markings, plus:			
Pedestal-mounted flashing beacon	26	0-52	2
Overhead sign	35	12-57	2
Overhead flashing beacon (push-button activation)	51	13-91	14
Overhead flashing beacon (passive activation)	73	61-76	29
In-roadway warning lights	58	53-65	11
Median refuge island	60	0-100	21
Pedestrian crossing flags	74	72-80	6
In-street pedestrian crossing signs	76	35-88	20
Rectangular rapid-flashing beacon (RFFB)	82	31-100	64
School crossing guard	86	—	1
School crossing guard and RFFB	92	—	1
Pedestrian hybrid beacon (HAWK)	91	73-99	37
Mid-block crossing signals, half signals	98	94-100	13



### Sidewalk Gaps

Within Royersford Borough, gaps within the sidewalk network can be found on 1<sup>st</sup> Avenue, 3<sup>rd</sup> Avenue, and Summer Street. 1<sup>st</sup> Avenue has sidewalks on the east side of the road with the Schuylkill River Trail East running along the west side of the road. However, the Schuylkill River Trail East ends starting at Rogerson Court traveling northbound forcing trail users into the roadway. The Borough is expected to complete the trail and close the trail gaps. In addition to completing the Schuylkill River Trail East, the Borough also has plans to rehabilitate the Trestle Bridge to include as part of the trail network by providing a connection to the Schuylkill River Trail West in Spring City Borough.



In the interim, the Borough can consider implementing visually separated facilities, such as a paved shoulder, to accommodate all trail users. The Borough can also consider using a contrasting color for the shoulder to distinguish it from the travel lane and enhance motorists' awareness of the presence of pedestrians and bicycles in the roadway as seen in Figure 28.



Figure 28: Contrasting Color in Shoulder

The majority of 3<sup>rd</sup> Avenue has sidewalks on both sides of the roadway. However, there is a short section of houses that do not have sidewalks traveling northbound towards the industrial park at the edge of the Borough. Per FHWA guidance, since 3<sup>rd</sup> Avenue is a local residential street, sidewalks on both sides are required if there are 4 dwelling units per acre as seen in Table 7. Even through industrial areas, sidewalks are preferred with the requirement to at least provide shoulders. Summer Street has no sidewalks.

**Table 7: FHWA Guidance for Sidewalk Gaps**

Roadway Classification and Land Use	Sidewalk/Walkway	Future Phasing Requirements
Rural Highways (< 400 ADT)	Shoulders preferred, with minimum of 0.9 m (3 ft).	Secure/preserve right-of-way (ROW) for future sidewalks.
Rural Highways (400 to 2,000 ADT)	1.5-m (5-ft) shoulders preferred, minimum of 1.2 m (4 ft) required.	Secure/preserve ROW for future sidewalks.
Rural/Suburban Highway (ADT > 2,000 and less than 1 dwelling unit (d.u.) / .4 hectares (ha) [1 d.u. / acre])	Sidewalks or side paths preferred, minimum of 1.8-m (6-ft) shoulders required.	Secure/preserve ROW for future sidewalks.
Suburban Highway (1 to 4 d.u. / .4 ha [1 to 4 d.u. / acre])	Sidewalks on both sides required.	
Major Arterial (residential)	Sidewalks on both sides required.	
Urban Collector and Minor Arterial (residential)	Sidewalks on both sides required.	
Urban Local Street (residential – less than 1 d.u. / .4 ha [1 d.u. / acre])	Sidewalks on both sides preferred. Minimum of 1.5-m (5-ft) shoulders required.	Secure/preserve ROW for future sidewalks.
Urban Local Street (residential – 1 to 4 d.u. / .4 ha [1 to 4 d.u. / acre])	Both sides preferred.	Second side required if density becomes greater than 4 d.u. / .4 ha (4 d.u. / acre) or if schools, bus stops, etc. are added.
Local Street (residential – more than 4 d.u. / .4 ha [4 d.u. / acre])	Sidewalks on both sides required.	
All Commercial Urban Streets	Sidewalks on both sides required.	
All Streets in Industrial Areas	Sidewalks on both sides preferred. Minimum of 1.5-m (5-ft) shoulders required.	

1 acre=0.4 hectares (ha)

In the interim, the Borough can consider shoulders or pedestrian lanes to provide separation for pedestrians from motor vehicles.



Safety Benefits:

**Sidewalks**  
**65-89%**  
 reduction in crashes involving pedestrians walking along roadways.<sup>3</sup>

**Paved Shoulders**  
**71%**  
 reduction in crashes involving pedestrians walking along roadways.<sup>3</sup>

## Bicycle

Currently, the streets that serve as key routes for biking (Main Street, Lewis Road, Walnut Street, and 2<sup>nd</sup> Avenue) are either LTS 3 or LTS 4 with no designated bicycle facilities. Based on recommendations from the steering committee, key stakeholders, and public input, five streets were identified to create a bicycle network in the Borough: Church Street (LTS 1), Washington Street (LTS 1), short section of Main Street (LTS 3), 6<sup>th</sup> Avenue (LTS 1), and 3<sup>rd</sup> Avenue (LTS 1). Selecting a design user profile is often the first step in assessing a street's compatibility for biking. Understanding which types of bicyclists feel comfortable using a given facility is key to building a safe, convenient, and well-used network.

### Design User Profiles

#### Highly Confident Bicyclist (~4-7%)

- » Smallest group.
- » Prefer direct routes and will operate in mixed traffic, even on roadways with higher motor vehicle operating speeds and volumes.
- » Many also enjoy separated bikeways.
- » May avoid bikeways perceived to be less safe, too crowded with slower moving users, or requiring deviation from their preferred route.

#### Somewhat Confident Bicyclist (~5-9%)

- » Comfortable on most types of facilities.
- » Lower tolerance for traffic stress, prefer striped or separated bicycle lanes on major streets and low-volume residential streets.
- » Willing to tolerate higher levels of traffic stress for short distances.

#### Interested but Concerned Bicyclist (~51-56%)

- » Largest group.
- » Lowest tolerance for traffic stress.
- » Avoid biking except with access to networks of separated bikeways or very low-volume streets with safe roadway crossings.
- » Tend to bicycle for recreation but not transportation.
- » Generally, the recommended design user profile to maximize potential for biking.

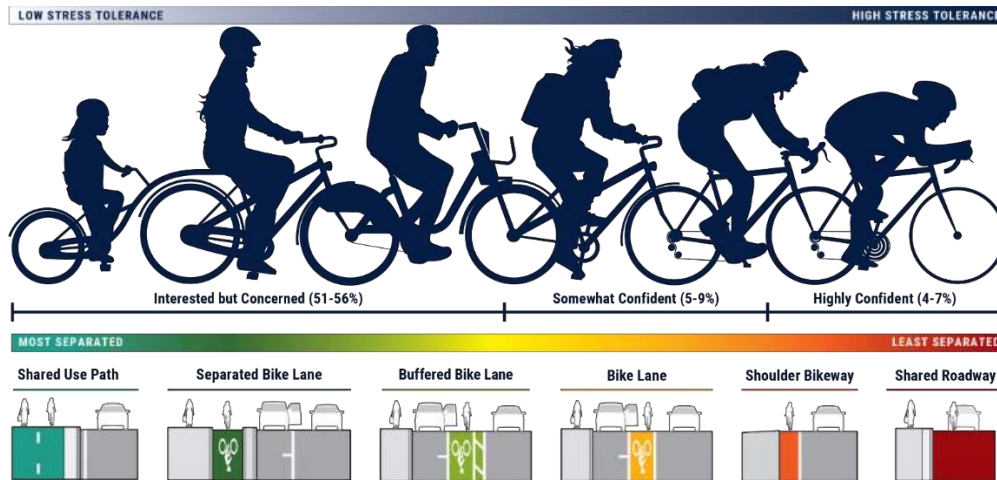
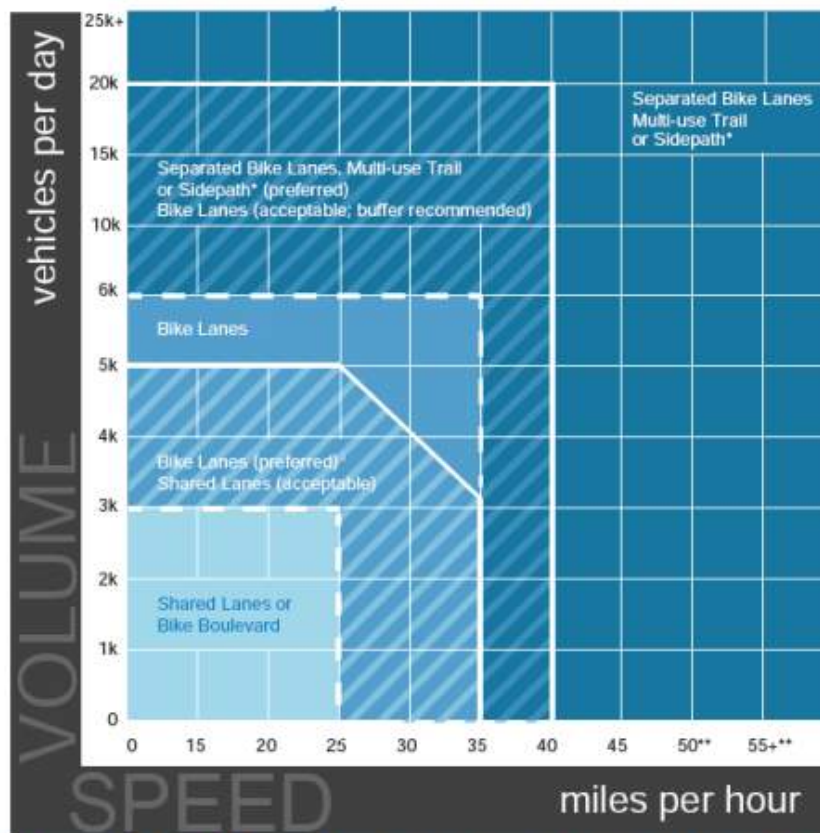


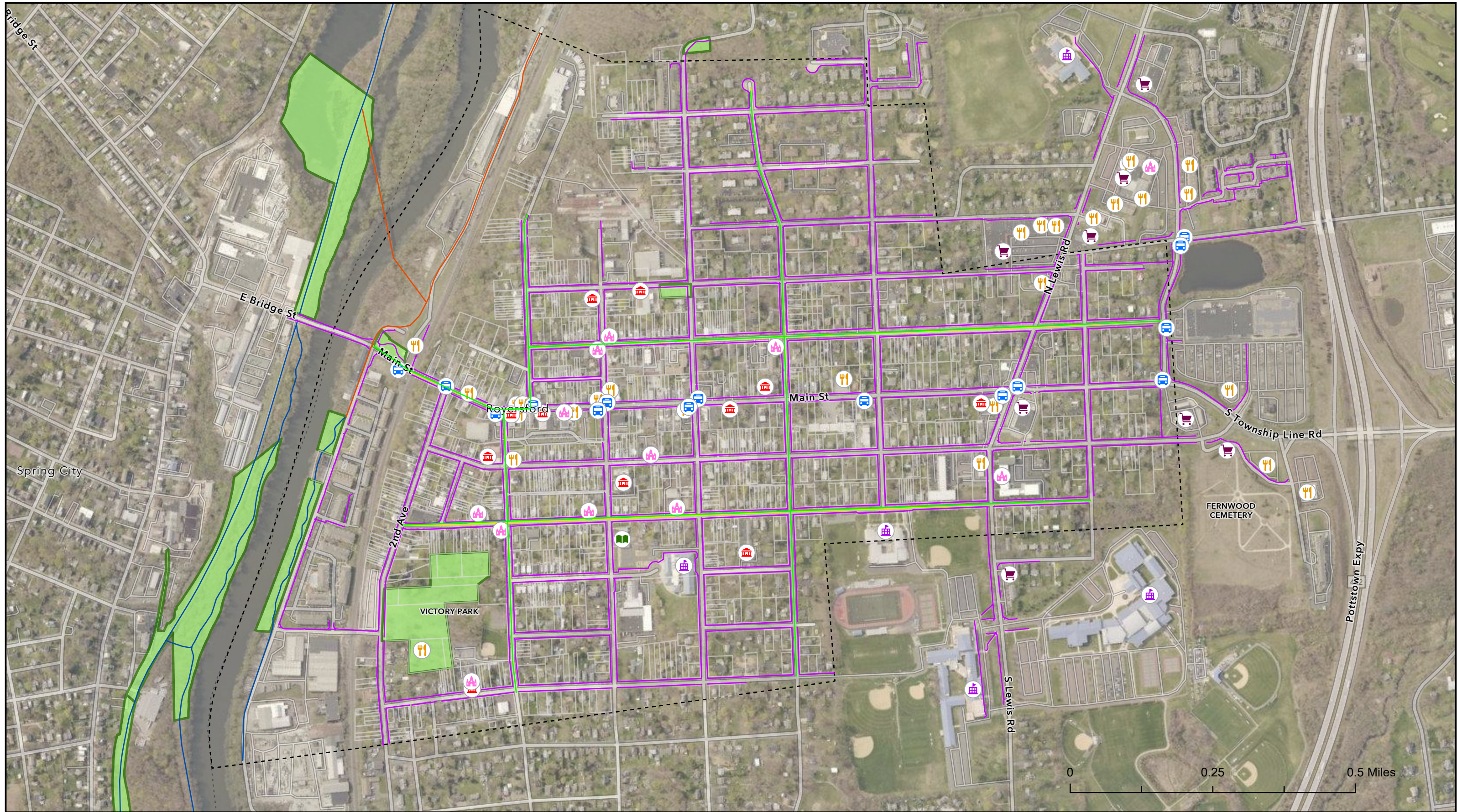
Figure 29: Types of Bicyclists from Toole Design

From public input, the majority of the bicyclists within Royersford Borough are “interested but concerned” (design user). PennDOT’s *Design Manual Part 2 – Contextual Roadway Design*, Publication 13 (Pub. 13) can be used to help determine the best facility for the roadways based on context, speed, and volume as well as the relevant design user type of “interested but concerned.”



- ◆ To determine whether to provide a multi-use trail/sidepath or separated bike lane, consider pedestrian and bicycle volumes or, in the absence of volume, consider land use.
- ◆◆ Speeds 50 mph or greater in urban areas are typically found in urban/rural transition areas.

Figure 30: PennDOT Facility Selection Matrix (Urban and Suburban)
















# Royersford Active Transportation

Proposed Conditions

August 24, 2022



-  Bus Stops
-  Convenience Stores
-  Public Buildings
-  Schools
-  Sidewalks
-  Parks and Open Spaces
-  Churches
-  Libraries
-  Restaurants
-  Proposed Bike Routes
-  Municipal Boundary
-  Parcels
-  Proposed Trails

### Church Street (LTS 1)

Church Street is a residential Borough road with no pavement markings and sidewalks on both sides of the road. There are some religious institutions and businesses too. Church Street also provides connections to Downtown and Chestnut Street Park. The road width ranges between 32 – 49 feet from curb to curb. Per PennDOT’s Type 5B Map, the road is 0.80 miles long. The road is posted at 25 MPH. Per PennDOT’s TIRe, Church Street has an ADT of approximately 300 vpd. Due to speeding concerns, the Borough has implemented traffic calming measures on Church Street: speed humps between 6<sup>th</sup> Avenue and Lewis Road, a grass median between 5<sup>th</sup> Avenue and 6<sup>th</sup> Avenue, and on-street parking on both sides of the road.

Using PennDOT’s selection matrix, the recommended bicycle facility for Church Street is a shared lane/shared roadway. Due to the low volume and low speed of motor vehicles, Church Street can operate as a shared roadway with additional pavement markings and signs to prioritize bicyclists. Sharrows can be used to indicate the shared roadway condition to motor vehicles as well as assist bicyclists with their lateral positioning in the shared roadway.

Signage can be used to identify the bicycle network to all road users and identify the shared roadway condition.



The Bicycles May Use Full Lane Sign (R4-11) is a black and white regulatory sign that may be used on roadways where no bicycle lanes or adjacent usable shoulders are present. The Share The Road Sign (W16-101) is a black and yellow warning sign that may be used on highways where available lateral clearances make it likely that bicyclists will travel on the roadway. The Bike Route Sign (D11-1) is a green and white guide sign that shall be authorized for use to guide bicyclists on a predetermined bicycle route.

Another option the Borough can consider for Church Street is to use visually separated bicycle lanes. Sections of Church Street are wide enough to accommodate both bicycle lanes and parking lanes.

Implementing bicycle lanes is more desirable for the design user of “interested but concerned” bicyclists. The bicycle lanes would also complement the existing traffic calming measures by taking away more asphalt and further slowing down speeds on Church Street. Where Church Street narrows, the bicycle lane can transition into an advisory shoulder to allow motor vehicles to use the bicycle space for passing.



Figure 32: Bicycle Lane



Figure 33: Advisory Shoulder

Washington Street (LTS 1)

Washington Street is another residential Borough road with no pavement markings and sidewalks on both sides of the road. There are a few religious institutions, businesses, and the Spring-Ford 8<sup>th</sup> Grade Center. Washington Street also provides connections to the Royersford Elementary School, the Royersford Free Public Library, Golden Age Manor, Freedom House, and Victory Park. The road width ranges between 32 – 39 feet from curb to curb with parking on both sides. Per PennDOT’s Type 5B Map, the road is 0.86 miles long. The road is posted at 25 MPH and has an established 15 MPH school speed limit. Per PennDOT’s TIRE, Washington Street has an ADT of approximately 300 vpd.

Using PennDOT’s selection matrix, the recommended bicycle facility for Washington Street is a shared lane/shared roadway due to the low volume and low speed of motor vehicles. The shared roadway can be created on Washington Street with additional pavement markings and signs similar to Church Street. In some sections where Washington Street is wider, the Borough should consider more visually separated facilities like bicycle lanes due to the higher presence of vulnerable road users (children and seniors). Similar to Church Street, advisory shoulders can be paired with the bicycle lanes where Washington Street begins to narrow. The Borough should also consider door zones and provide buffers if space permits.

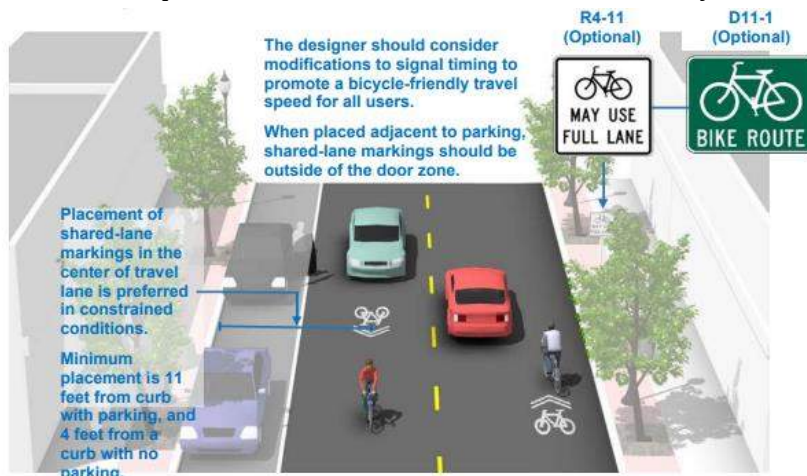
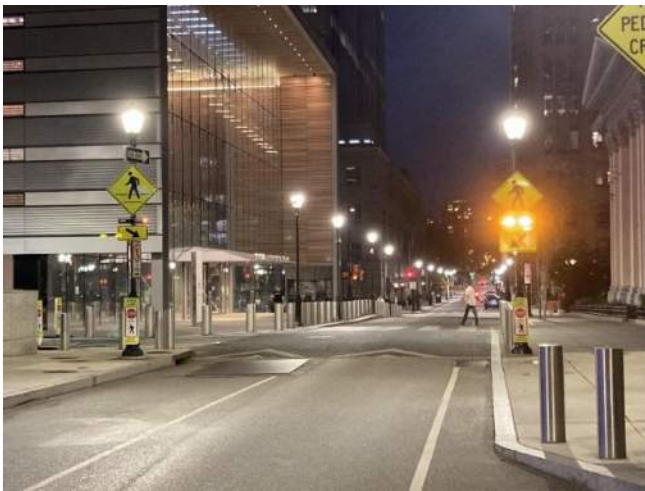


Figure 34: Sharrow Concept with Signage from Pub. 13

### Main Street (LTS 3)

Main Street is a principal arterial Borough road with center line pavement markings. There are also marked parking spaces. There are a lot of businesses, transit stops, and Borough Hall on Main Street. The road width is approximately 38 feet curb to curb. The road is posted at 25 MPH and has an ADT of 23,655 vpd per PennDOT's TIRe. A short section of Main Street is included in the bicycle network from 3<sup>rd</sup> Avenue to 1<sup>st</sup> Avenue to provide connections to the Borough's Downtown and the Riverfront Park. This would also provide bicyclists a connection to the Schuylkill River Trail West in Spring City Borough until the Trestle Bridge is rehabilitated.

Using PennDOT's selection matrix, the recommended bicycle facility for this short section of Main Street is a separated bicycle lane. However, due to the existing parking lanes on both sides of the road as well as the desire to maintain parking and other geometric constraints, a separated bicycle lane would not fit within the existing parameters. The Borough can create a shared roadway for this section of Main Street using sharrows and signs similar to Church Street. The pavement markings and signs should be accommodated with traffic calming measures to ensure slow speeds through this section of Main Street to increase comfort for bicyclists. Traffic calming measures can include raised crosswalks at the intersections, speed cushions, and bulb-outs (similar to some intersections along Main Street) per Pub. 383. These devices would not only help to promote more biking through this section of Main Street but also more walking.



**Figure 35: Raised Crosswalk with RRFB**



**Figure 36: Temporary Speed Cushions**

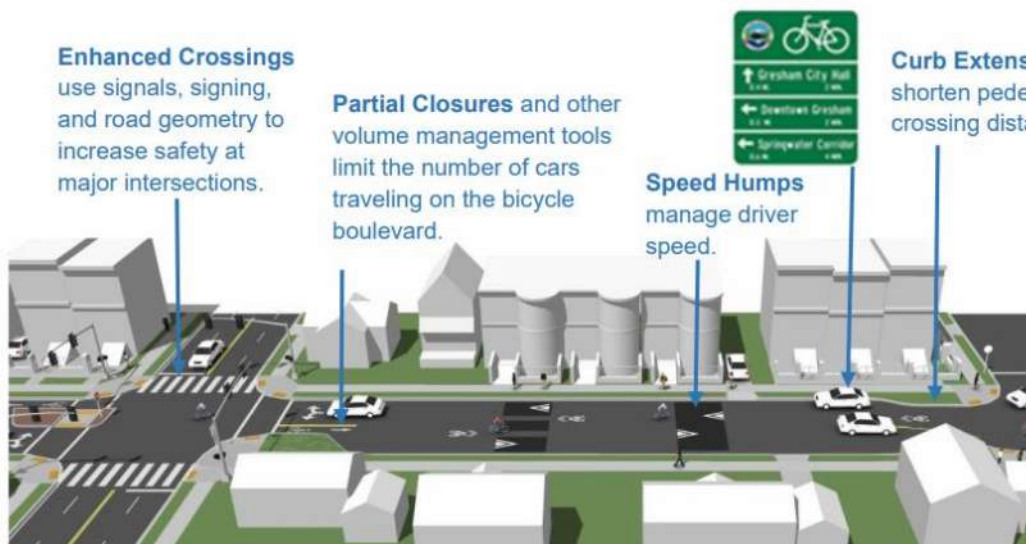
Both the raised crosswalk and speed cushions have the same effect as speed humps. The speed cushions are designed with gaps in them for both bicyclists and emergency vehicles. As seen with the speed cushions as well as the bulb-outs, traffic calming devices can be tried first on a temporary basis prior to permanent installation. Note that Main Street is still considered "high traffic stress" due to the high volume and speed, so it is not recommended to designate this section of Main Street as part of the bicycle route without the supplemental traffic calming devices.





**Figure 37: Painted/Temporary Bulb-Out**

An example of the application of sharrows and bicycle signage combined with traffic calming devices (speed cushions and bulb-outs) can be seen in Figure 38 from Pub. 13. Although Main Street has an ADT of 23,655 vpd making it not as ideal for bicycles, note that Main Street is only being used as a short distance connector within the bicycle route leading to other lower stress roads.



**Figure 38: Combination of Treatments from Pub. 13**

**6<sup>th</sup> Avenue (LTS 1)**

6<sup>th</sup> Avenue is a residential Borough road with no pavement markings and sidewalks on both sides of the road. The road provides connections to Downtown, Spring-Ford 8<sup>th</sup> Grade Center, and Royersford Elementary School. The road width is approximately 33 feet from curb to curb with parking on both sides. Per PennDOT's Type 5B Map, the road is 0.75 miles long. The road is posted at 25 MPH and has an ADT of approximately 300 vpd per PennDOT's TIRe.

Using PennDOT’s selection matrix, the recommended bicycle facility for 6<sup>th</sup> Avenue is a shared lane/shared roadway due to the low volume and low speed of motor vehicles. The shared roadway can be created on 6<sup>th</sup> Avenue with additional pavement markings and signs similar to Church Street. Additional bicycle guidance signs may also be used to show key destinations such as Downtown and the schools.



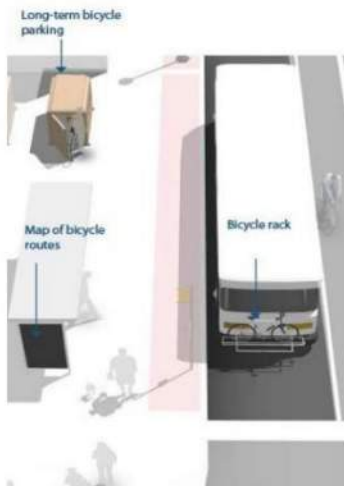
3<sup>rd</sup> Avenue (LTS 1)

3<sup>rd</sup> Avenue is a residential Borough road with no pavement markings and sidewalks on both sides of the road. There is an industrial section of the road traveling northbound towards the edge of the Borough with no sidewalks on either side. The road provides connections to Downtown and Victory Park. The road width ranges between 23 – 33 feet from edge-of-road to edge-of-road with parking on both sides. Per PennDOT’s Type 5B Map, the road is 0.84 miles long. The road is posted at 25 MPH and has an ADT of approximately 300 vpd per PennDOT’s TIRE.

Using PennDOT’s selection matrix, the recommended bicycle facility for 3<sup>rd</sup> Avenue is a shared lane/shared roadway due to the low volume and low speed of motor vehicles. The shared roadway can be created on 3<sup>rd</sup> Avenue with additional pavement markings and signs similar to Church Street. Additional bicycle guidance signs may also be used to show key destinations such as Downtown and Victory Park.

Bicycle Amenities

To promote more biking in Royersford Borough, the Borough should consider additional amenities installed with the bicycle facilities such as bicycle parking, bicycle maps, bicycle share programs, bicycle racks (including buses), bicycle repair stations, etc.

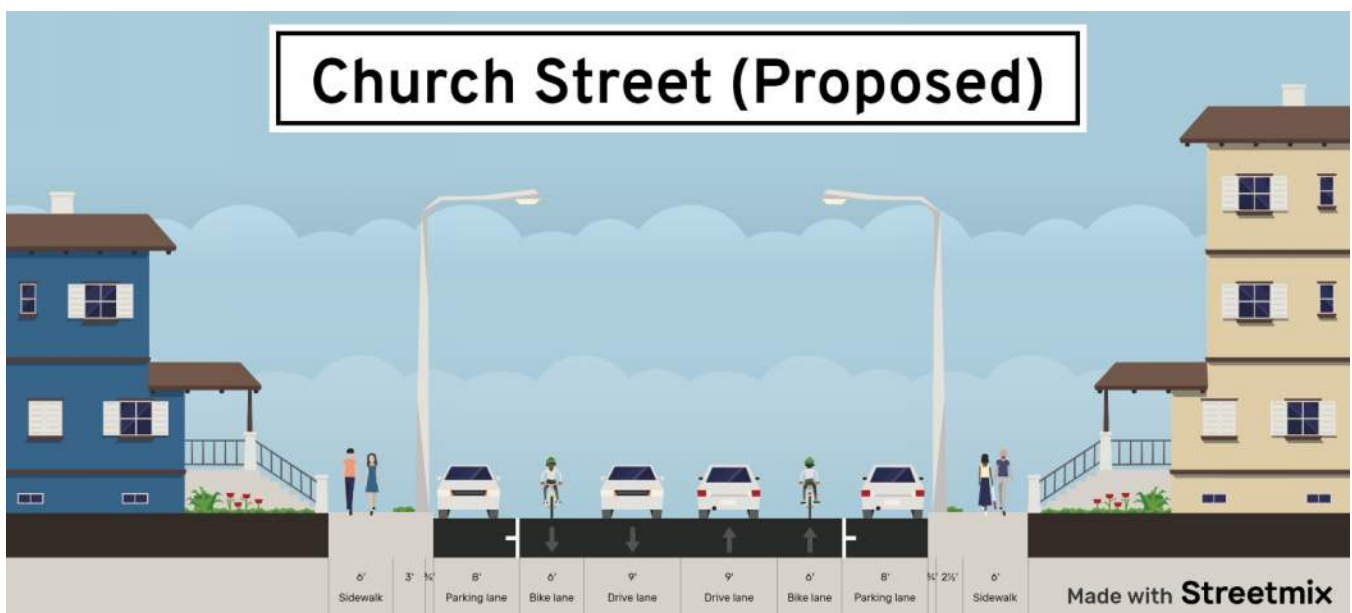


**Figure 39: Bicycle Repair Station with Parking**

Example Proposed Bicycle Conditions



**Figure 40: Church Street Existing Conditions**



**Figure 41: Church Street Proposed Conditions**

From PennDOT’s *Design Manual Part 2 – Highway Design*, Publication 13M (Pub. 13M), lane widths on local neighborhood roads can be as narrow as 9 feet. As mentioned earlier, some sections of Church Street can be as wide as 49 feet from curb-to-curb, which contributes to the speeding problems the Borough mentioned that Church Street was experiencing. Adding bicycle lanes not only provides a designated space for bicyclists, but it can also act as a form of traffic calming to help decrease speeds on Church Street as well as increase pedestrian comfort by adding another buffer for pedestrians. Note that sidewalk widths are wider, which could increase installation costs. The widths proposed are flexible as long as minimum widths are met per PennDOT. Buffers to reduce dooring for bicycles should be considered too where space permits.

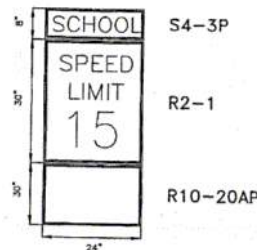
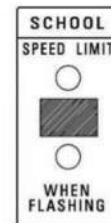
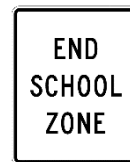
## Schools

Spring-Ford Area School District has two schools within Royersford Borough: Royersford Elementary School on 5<sup>th</sup> Avenue and Spring-Ford 8<sup>th</sup> Grade Center on Washington Avenue. Both schools have established 15 MPH school zones with School Speed Limit When Flashing Signs with blank-out “15” and flashers (Type II). Both school zones should be maintained per the existing permit. Any changes to the permit will require PennDOT approval per the Pennsylvania Code, Title 67, Section 212.5. Also note that all school warning signs shall be fluorescent yellow-green per the MUTCD, Section 7B.07. This assessment will be for Royersford Elementary School due to the presence of more vulnerable pedestrians (younger children) and no school police presence compared to Spring-Ford 8<sup>th</sup> Grade Center. However, the same methodology can be applied to determine countermeasures for the Spring-Ford 8<sup>th</sup> Grade Center.

### Royersford Elementary School

According to the existing school zone permit issued by PennDOT, the school zone is between Walnut Street and Green Street (~1,275 feet) and should have the following signs:

- » 4 End School Zone Signs (S5-2)
  - 2 on either end of 5<sup>th</sup> Avenue within the school zone
  - 1 on Spring Street
  - 1 on Arch Street
- » 4 School Signs (S1-1)
  - 1 pair at the crosswalk across 5<sup>th</sup> Avenue at Spring Street
  - 1 pair at the crosswalk across 5<sup>th</sup> Avenue at Arch Street
- » 3 School Signs (S1-1)
  - 1 on 5<sup>th</sup> Avenue in advance of the Arch Street intersection
  - 1 on 5<sup>th</sup> Avenue in advance of the Washington Street intersection
  - 1 on Washington Street in advance of the 5<sup>th</sup> Avenue intersection
- » 2 Type II School Speed Limit Flashing Assemblies
  - 1 on 5<sup>th</sup> Avenue ahead of the Arch Street intersection
  - 1 on 5<sup>th</sup> Avenue after the Washington Street intersection
- » 2 School Speed Limit Sign Assemblies
  - 1 on Arch Street approaching 5<sup>th</sup> Avenue
  - 1 on Spring Street approaching 5<sup>th</sup> Avenue
  - Restricted Hours Plaque (R10-20AP)
    - 8:15am – 9am
    - 11:30am – 12:10pm
    - 12:30pm – 1:10pm
    - 3:15pm – 4pm



The school zone on 5<sup>th</sup> Avenue can benefit from additional pavement markings and signs. To determine the appropriate pavement markings and signs for the 5<sup>th</sup> Avenue uncontrolled crosswalks, the pedestrian crossing analysis was applied using the typical posted speed limit of 25 MPH, an approximate ADT of 300 vpd from PennDOT’s TIRe, and two lanes. From Table 8, the crosswalks across 5<sup>th</sup> Avenue are Condition A – Candidate site for marked crosswalk alone.

Table 8: Marking Crosswalks Recommendation 5<sup>th</sup> Avenue

Roadway Configuration	Roadway ADT and Speed Limit															
	1,500 to 9,000 VPD				9,000 to 12,000 VPD				12,000 to 15,000 VPD				More than 15,000 VPD			
	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH	≤ 30 MPH	35 MPH	40 MPH	≥ 45 MPH
2 Lanes (undivided two-way street or two-lane one-way street)	A	A	B	B	A	A	B	B	A	A	B	B	B	B	B	C
3 Lanes with refuge island OR 2 Lanes with raised median*	A	A	B	B	A	B	B	B	A	A	B	B	B	B	B	C
3 Lanes (center turn lane)	A	A	B	B	A	B	B	B	A	B	B	C	B	C	C	C
4 Lanes (two-way street with no median)	A	B	C	C	B	B	C	C	B	C	C	D	C	C	C	D
5 Lanes with refuge island OR 4 lanes with raised median*	A	A	B	B	A	B	B	C	B	B	C	C	B	B	C	D
5 Lanes (center turn lane)	A	B	C	C	B	B	C	C	C	C	C	D	C	C	C	D
6 Lanes (two-way street with* or without median)	A	B	D	D	B	B	D	D	D	D	D	D	D	D	D	D

After verifying that the crosswalks on 5<sup>th</sup> Avenue can be marked, the next step is to determine the appropriate countermeasures to supplement the crosswalk markings using Table 9.

Table 9: Pedestrian Countermeasure Selection 5<sup>th</sup> Avenue

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000-15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	1 2 4 5 6	1 7 9	1 5 6 7 9	1 4 5 6	1 5 6 7 9	1 5 6 7 9	1 4 5 6	1 5 6 7 9	1 5 6 7 9
3 lanes with raised median (1 lane in each direction)	1 2 3 4 5	1 5	1 5	1 3 4 5	1 5	1 5	1 3 4 5	1 5	1 5
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	1 2 3 4 5 6 7 9	1 5 6 7 9	1 5 6 7 9	1 3 4 5 6 7 9	1 5 6 7 9	1 5 6 7 9	1 3 4 5 6 7 9	1 5 6 7 9	1 5 6 7 9
4+ lanes with raised median (2 or more lanes in each direction)	1 3 5 7 8 9	1 5 7 8 9	1 5 7 8 9	1 3 5 7 8 9	1 5 7 8 9	1 5 7 8 9	1 3 5 7 8 9	1 5 7 8 9	1 5 7 8 9
4+ lanes w/o raised median (2 or more lanes in each direction)	1 3 5 6 7 8 9	1 5 6 7 8 9	1 5 6 7 8 9	1 3 5 6 7 8 9	1 5 6 7 8 9	1 5 6 7 8 9	1 3 5 6 7 8 9	1 5 6 7 8 9	1 5 6 7 8 9

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.\*

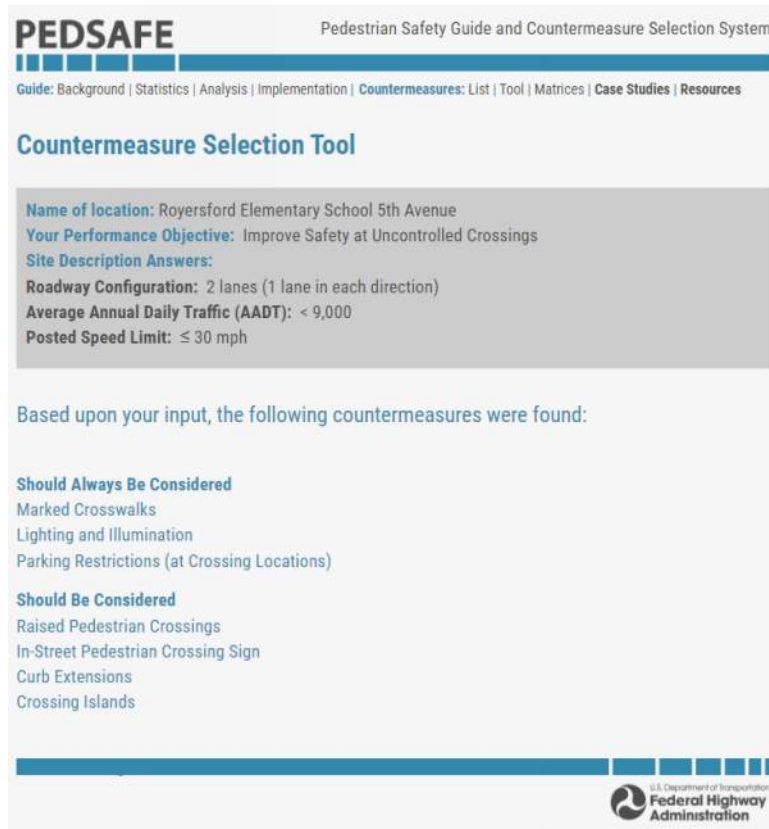
The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

- 1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Rectangular Rapid-Flashing Beacon (RRFB)\*\*
- 8 Road Diet
- 9 Pedestrian Hybrid Beacon (PHB)\*\*

Based on the posted speed limit of 25 MPH, an ADT of 300 vpd, and two lanes, the recommended countermeasures to supplement the crosswalks are:

- » High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs (should always be considered, recommended)
- » Raised crosswalk (candidate treatment, optional)
- » In-Street Pedestrian Crossing Sign (candidate treatment, optional)
- » Curb extension (candidate treatment, optional)
- » Pedestrian refuge island (candidate treatment, optional)

The uncontrolled crosswalks on 5<sup>th</sup> Avenue were also assessed using the FHWA PEDSAFE countermeasure selection tool as seen in Figure 42.



**Figure 42: PEDSAFE Countermeasure Selection Tool 5<sup>th</sup> Avenue**

From the analysis, the Borough should:

- » Change the existing uncontrolled markings to PennDOT Type C – Perpendicular markings.
- » Update the existing School Signs at the crosswalks to fluorescent yellow-green and supplement them with Diagonal Downward Pointing Arrow Plaques (W16-7P). Ensure the signs are installed at the crosswalk location.
- » Ensure all warning signs used within the school zone are fluorescent yellow-green.
- » Relocate existing 25 MPH Speed Limit Signs outside of the school zone to prevent confusion during time of operation.
- » Ensure sign messages do not conflict with each other (warning and regulatory) as seen in Figure 43.
- » Ensure school sign placement are appropriate as seen in Figure 44 and Figure 45.



Figure 43: Conflicting Sign Message

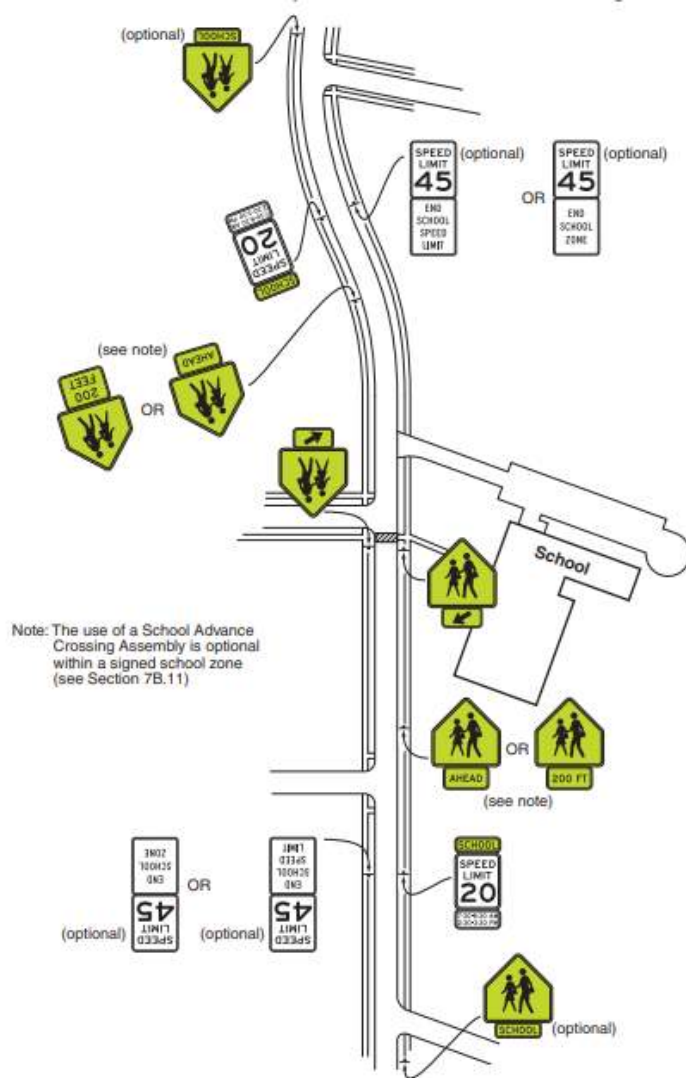


Figure 44: Example School Zone from MUTCD

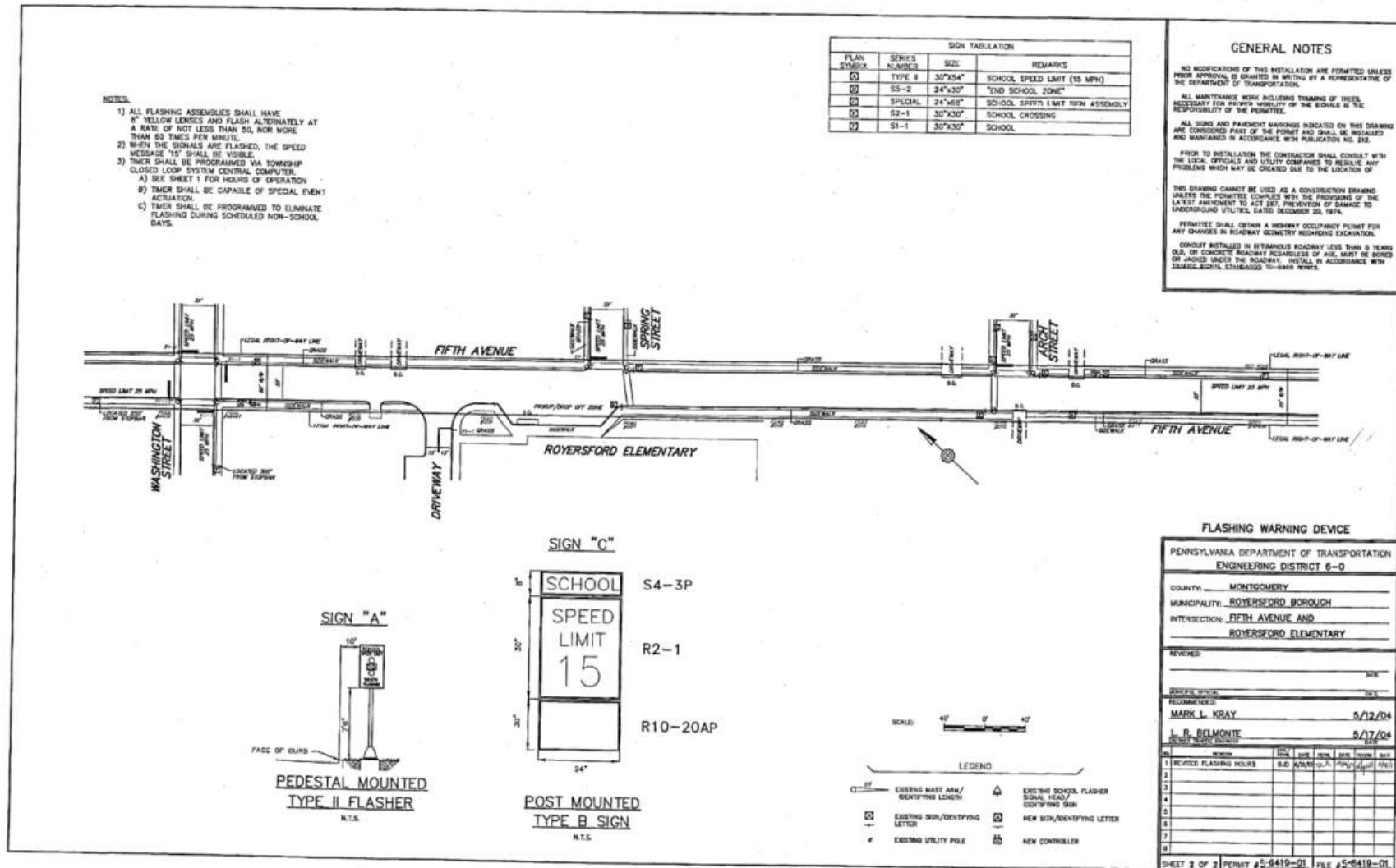


Figure 45: Royersford Elementary School Zone Permit



## Parks

There are three parks in Royersford Borough: Victory Park, Riverfront Park, and Chestnut Street Park. Concerns with Victory Park include an uncontrolled pedestrian crossing on 2<sup>nd</sup> Avenue at the intersection with Arch Street. There is also a speed hump to the west of this intersection. To improve this uncontrolled pedestrian crossing with the appropriate countermeasures, a pedestrian analysis can be performed as outlined in the Pedestrian Section. Note that the Borough has plans to install RRFBs at this crossing in Fall 2022.

Concerns with Riverfront Park include a gap in the Schuylkill River Trail East traveling northbound towards Main Street forcing trail users onto 1<sup>st</sup> Avenue. However, the Borough has plans to complete this section of the Schuylkill River Trail East while also rehabilitating the Trestle Bridge to provide a connection to the Schuylkill River Trail West in Spring City Borough. Plus, a series of raised pedestrian crossings along 1<sup>st</sup> Avenue helps to slow motor vehicles through here making it a little more comfortable for trail users to be in the roadway. Interim measures for the trail gap are discussed in the Pedestrian Section.

The last park, Chestnut Street Park, is a park with a playground located on Chestnut Street at the intersection with 5<sup>th</sup> Avenue. Existing traffic control devices for the park include “SLOW” pavement markings as seen in Figure 49. Concerns with Chestnut Street Park include high speeds, especially with the presence of more vulnerable pedestrians (children) as seen in Figure 50.



Figure 46: Victory Park



Figure 47: Riverfront Park



Figure 48: Chestnut Street Park



**Figure 49: "SLOW" Pavement Markings**



**Figure 50: Young Bicyclist Biking Towards Park**

The "SLOW" pavement markings should continue to be maintained per PennDOT's Pub. 111. However, placement of the pavement markings should be for each travel lane approaching the park rather than having one placed in the middle of the road. The "SLOW" pavement markings should be installed to supplement the fluorescent yellow-green Playground Signs (W15-1) in both directions, which are authorized for use to mark playgrounds located adjacent to roadways per PennDOT's *Handbook of Approved Signs*, Publication 236 (Pub. 236.).

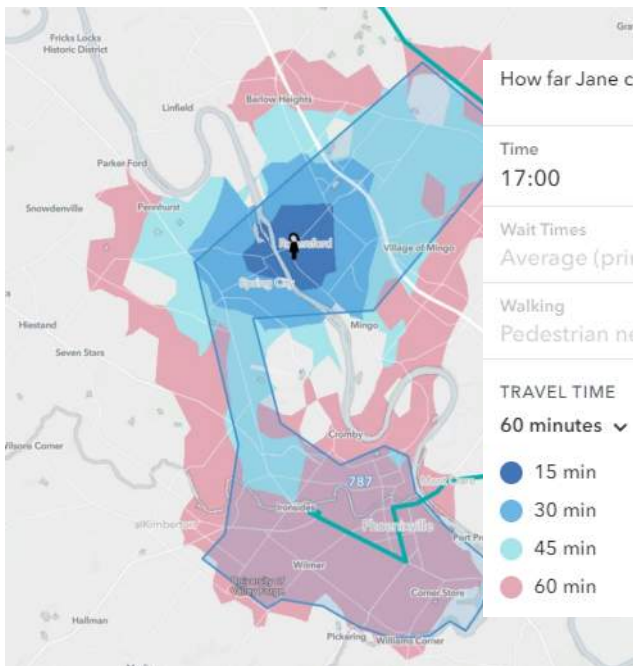
The Borough can also consider just delineating parking/painting edge lines near the park to further emphasize the use of the park as well as to visually narrow this section of Chestnut Street as seen in Figure 51.



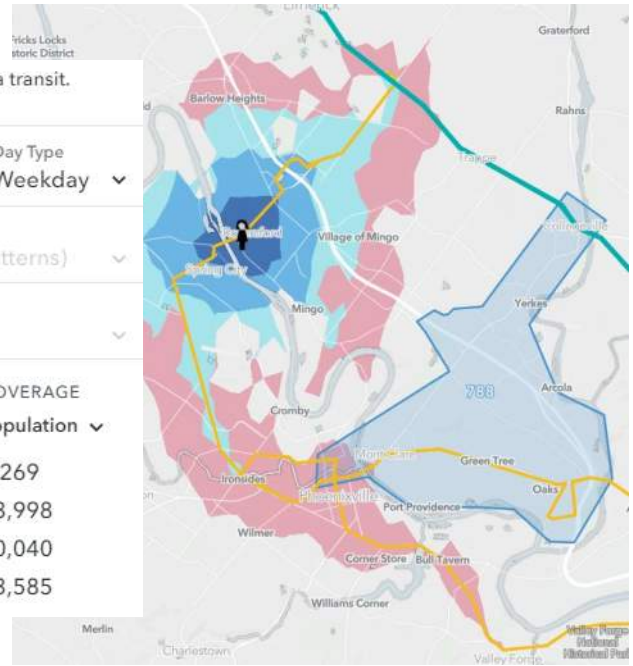
**Figure 51: Example of Parking Delineation for a Specific Section of Road**

## Transit

SEPTA Bus Route 139 from Limerick to King of Prussia currently serves Royersford Borough providing key connections to the King of Prussia Mall, Valley Forge Casino, Phoenixville, Limerick, and other shopping and employment centers along the route. However, the current bus route suffers from limited service, long wait times, and low ridership. To address issues like these system-wide, SEPTA launched the Bus Revolution in 2020 to improve service and increase ridership in the region. As part of this project, two network options are being proposed for Royersford Borough: 1. Microtransit Zone and 2. Revised Bus Route from King of Prussia to Limerick. Both options expand transit services for Royersford Borough and includes Sunday services as compared to the current bus route.



**Figure 52: Network Option 1**



**Figure 53: Network Option 2**




Network Option 1 proposes a microtransit zone for Royersford Borough that connects to two main bus lines from Norristown to Pottstown (Ridge Pike) and King of Prussia to Phoenixville. Per SEPTA, microtransit is a flexible, on-demand transit service that allows riders to request a trip when they want to travel and be picked up within a specified wait time. Therefore, riders within a microtransit zone would request a ride through a mobile app or calling rather than waiting for a bus. Riders are able to travel anywhere within the microtransit zone, which connects them to key bus routes.

Network Option 2 proposes a fixed bus route through Royersford Borough from King of Prussia to Limerick. The revised bus route would run from 4am – 12am on the weekdays every hour and run from 6am – 12am on the weekends also every hour. Draft recommendations are expected to be released in Fall 2022 with the recommendations to be finalized in Winter 2022/2023. Implementation is expected to begin in Spring 2023. In the interim, the Borough should work with SEPTA to try and improve the existing bus stops within the Borough to increase comfort and safety for the existing riders.



## Active Transportation Toolbox

A range of different facilities were presented to address some of the concerns raised by the community related to walking, biking, schools, parks, and transit. The facilities can be classified based on how much separation they provide from motor vehicles. The least amount of separation is known as mixed traffic facilities – all road users in the same space. The next level of separation is visually separated facilities – separation through paint. The most amount of separation is physically separated facilities – separation through vertical elements. Note that although some of the facilities have not been discussed, they are still viable solutions for some situations.





**Table 10. Active Transportation Toolbox (Mixed Traffic Facilities)**

	Yield Roadway	Bicycle Boulevard	Advisory Shoulder
			
<i>Description</i>	A yield roadway is designed to serve pedestrians, bicyclists, and motor vehicle traffic in the same slow-speed travel area. Yield roadways serve bidirectional motor vehicle traffic without lane markings in the roadway travel area.	A bicycle boulevard is a low-stress shared roadway bicycle facility designed to offer priority for bicyclists operating within a roadway shared with motor vehicle traffic.	Advisory shoulders create usable shoulders for bicyclists on a roadway that is otherwise too narrow to accommodate one. The shoulder is delineated by pavement marking and optional pavement color.
<i>Intended Users</i>	All	Bicyclists	Bicyclists
<i>Speed</i>	20 MPH or lower (preferred) 30 MPH (potential)	20 MPH or lower (preferred) 25 MPH (potential)	25 MPH or lower (preferred) 35 MPH (potential)
<i>Motor Vehicle Traffic Volume</i>	500 ADT or lower (preferred)	1,500 ADT or lower (preferred)	3,000 ADT or lower (preferred)
<i>Other Considerations</i>	No markings are necessary. Use signs to warn road users of the special characteristics of the street. Total traveled way width may vary from 12-20 feet.	Use markings to encourage motorists to pass bicyclists at a safe distance. Route wayfinding is critical on bicycle boulevards on local routes.	The preferred width of the advisory shoulder space is 6 feet. The minimum width is 4 feet when no curb and gutter is present. Consider using contrasting paving materials.

**Table 11. Active Transportation Toolbox (Visually Separated Facilities)**

	Paved Shoulder	Bicycle Lane
		
<i>Description</i>	Paved shoulders on the edge of roadways can be enhanced to serve as a functional space for bicyclists and pedestrians to travel in the absence of other facilities with more separation.	Bicycle lanes designate an exclusive space for bicyclists through the use of pavement markings and optional signs. A bicycle lane is located directly adjacent to motor vehicle travel lanes and follows the same direction as traffic.
<i>Intended Users</i>	Pedestrians and Bicyclists	Bicyclists
<i>Speed</i>	25+ MPH (preferred)	40 MPH or less (preferred)
<i>Motor Vehicle Traffic Volume</i>	2,000+ ADT (preferred)	9,000 ADT or less (preferred)
<i>Other Considerations</i>	Any amount of clear paved shoulder can benefit pedestrians and bicyclists. However, provide a minimum width of 4 feet adjacent to a road edge or curb.	The preferred minimum width of a bicycle lane is 6.5 feet to allow for side-by-side riding and passing. The minimum lane width is 5 feet when adjacent to curbs.

**Table 10. Active Transportation Toolbox (Physically Separated Facilities)**

	Shared Use Path	Sidepath	Sidewalk	Separated Bicycle Lane
				
<i>Description</i>	A shared use path provides a travel area separate from motorized traffic for bicyclists, pedestrians, skaters, wheelchair users, joggers, and other users. Shared use paths can provide a low-stress experience for a variety of users using the network for transportation or recreation.	A sidepath is a bidirectional shared use path located immediately adjacent and parallel to a roadway. Sidepaths can offer a high-quality experience for users of all ages and abilities as compared to on-roadway facilities in heavy traffic environments.	Sidewalks provide dedicated space intended for use by pedestrians that is safe, comfortable, and accessible to all. Sidewalks are physically separated from the roadway by a curb or unpaved buffer space.	A separated bicycle lane is a facility for exclusive use by bicyclists that is located within or directly adjacent to the roadway and is physically separated from motor vehicle traffic with a vertical element.
<i>Intended Users</i>	Pedestrians and Bicyclists	Pedestrians and Bicyclists	Pedestrians	Bicyclists
<i>Speed</i>	Any	10+ MPH (preferred)	10+ MPH (preferred)	10+ MPH (preferred)
<i>Motor Vehicle Traffic Volume</i>	Any	Any	Any	Any
<i>Other Considerations</i>	10 feet width is recommended in most situations. 8 feet is the minimum allowed width for a 2-way bicycle path and is only recommended for low traffic situations or short segments. 12-14 feet width is recommended for heavy use situations.	Minimum recommended pathway width is 10 feet. In low-volume situations and constrained conditions, the minimum width is 8 feet. Provide a minimum of 2 feet clearance to sign posts or vertical elements.	The minimum sidewalk width to allow 2 wheelchairs to pass is 5 feet. Sidewalks are usually constructed with concrete, but asphalt, crushed stone, or other stabilized surfaces may be appropriate. Sidewalks serve multiple functions and should be designed with distinct zones.	Preferred minimum width of a 1-way separated bicycle lane is 7 feet allowing for side-by-side riding and passing. The minimum width is 5 feet. Preferred buffer width is 3 feet. A buffer width of 1 foot may be possible with a mountable or vertical curb.

\*For more information on facility selection and design see the [FHWA Small Town and Rural Multimodal Networks Guide](#).

## PROGRAMS AND POLICIES

Establishing safe and convenient active transportation infrastructure is critical to improving walking and biking conditions. However, without programs and policies in place to support active transportation, infrastructure projects can only go so far. A variety of non-infrastructure tools can increase pedestrians' and bicyclists' safety by establishing a culture of walking and biking and creating a friendly regulatory and policy environment for active transportation.

Programs and policies can typically be implemented relatively quickly and inexpensively. Programs can be easily scaled to a wide audience, such as elementary school students, transit riders, or business owners or they can target specific groups for programming, like speeding motorists in school zones. Individual programs and events can increase walking and biking in specific circumstances and locations but should be coordinated with policy development to ensure lasting change. Some activities combine programming and policy, for example, having mandatory trainings for local officials, municipal employees, transit drivers, school district employees, and local law enforcement. See Table 12 for a list of proposed programs and policies. These proposed programs and policies aim to accomplish the following goals:

- » **Foster culture change:** shift community members' mindset so that walking and biking are normal and expected.
- » **Maintain momentum:** help maintain momentum and excitement around active transportation while infrastructure projects are in development.
- » **Build support:** encourage new people to try active transportation and help community partners recognize the value of increased active transportation options.
- » **Support efficient operations and maintenance:** help institutionalize best practices in active transportation operations and maintenance.

The timeframes outlined in Table 12 are defined as follows:

- » **Short-term:** One year
- » **Medium-term:** Two to three years
- » **Long-term:** Three years or more

The status of programs and policies should be assessed and updated each time the overall plan is updated. Status is defined as:

- » **New:** A program or policy that is proposed in this plan.
- » **Ongoing:** An existing program or policy that will be continued.
- » **On-hold:** A program or policy that has been stalled or deferred.
- » **Completed:** When regularly updating the plan, update the program or policy status to complete when applicable to help track progress.

The Borough should consider the development of an Active Transportation Committee (ATC) moving forward to help with addressing the action items. The ATC would also help with ensuring that the active transportation plan progresses as well as making any updates to the plan as necessary.

**Table 12. Program and Policy Recommendations**

<b>Program/Policy</b>	<b>Action Items</b>	<b>Responsible Party</b>	<b>Key Partners</b>	<b>Timeframe</b>	<b>Status</b>
<b>Traffic Calming Policy</b>	<i>Develop a traffic calming policy to set community thresholds for speed/volume.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>New</i>
			<i>Planning Commission</i>		
			<i>Emergency Services</i>		
<b>ADA Transition Plan</b>	<i>Develop an ADA transition plan to identify accessibility needs and solutions.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Medium-term</i>	<i>New</i>
			<i>Planning Commission</i>		
			<i>Code Enforcement</i>		
<b>Complete Streets Policy</b>	<i>Develop a complete streets policy to increase safety and mobility for all road users.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>New</i>
			<i>Planning Commission</i>		
			<i>Public Works</i>		
<b>Vision Zero Policy</b>	<i>Make a commitment to eliminate all serious injuries and fatalities.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>New</i>
			<i>Mayor</i>		
			<i>Planning Commission</i>		
<b>Municipal Ordinances</b>	<i>Update/adopt ordinances if necessary to promote active transportation.</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Long-term</i>	<i>Ongoing</i>
			<i>Solicitor</i>		
			<i>Borough Council</i>		
<b>Educational Programs</b>	<i>Walk/bike to school/work day</i>	<i>Borough (ATC)</i>	<i>Community</i>	<i>Short-term</i>	<i>Ongoing</i>
	<i>Block parties/free street events/street closures</i>		<i>Parks and Rec</i>		
	<i>Public art installations</i>		<i>Local orgs</i>		



# PRIORITY PROJECTS





# PRIORITY PROJECTS

The infrastructure recommendations in the previous chapter are conceptual routes, meant to show the potential of a comprehensive active transportation system promoting more walking, biking, and transit use within Royersford Borough. The recommendations are planning level in scope and are not necessarily constrained by existing challenges. Funding, land use, property rights, terrain, and other project specific factors may make certain recommendations less practicable than others.

## PRIORITIZED INFRASTRUCTURE PROJECT LIST

Implementing this plan will take time, money, and significant effort. The following table identifies short-, medium-, and long-term plan priorities. Implementation will require working with a larger number of partners, as well as building public support for priority projects. Whenever possible, recommendations in this plan should be incorporated into other roadway projects. Every year Royersford Borough should re-evaluate the priority list to track which projects have been implemented and to make adjustments as needed.

**Table 13. Prioritized Infrastructure Project List**

	<b>Project Type</b>	<b>Facility Type</b>	<b>Location</b>	<b>Description</b>
<i>Short-term (6 months - 1 year)</i>	<i>Pedestrian</i>	<i>Crossing upgrades</i>	<i>Uncontrolled crossing locations</i>	<i>Implement short-term solutions such as signs and markings per assessment.</i>
	<i>Bicycle</i>	<i>Bicycle route</i>	<i>LTS 1 streets</i>	<i>Identify and implement a designated bicycle route through signs and markings.</i>

	<b>Project Type</b>	<b>Facility Type</b>	<b>Location</b>	<b>Description</b>
	<i>Bicycle</i>	<i>Amenities</i>	<i>Along identified bicycle route and key destinations</i>	<i>Install bicycle amenities such as bicycle racks, repair stations, etc.</i>
	<i>Schools</i>	<i>School zones</i>	<i>Royersford Elementary and 8<sup>th</sup> Grade Center</i>	<i>Update/install signs and pavement markings per permit and standards. Coordinate with PennDOT.</i>
	<i>Parks</i>	<i>Park</i>	<i>Chestnut Street Park</i>	<i>Install signs and markings to emphasize users.</i>
	<i>Parks</i>	<i>Crossing upgrades</i>	<i>Victory Park (2<sup>nd</sup> Avenue)</i>	<i>Assess uncontrolled crossing and implement countermeasures per assessment.</i>
<b>Medium-term (1-2 years)</b>	<i>Bicycle</i>	<i>Bicycle lanes</i>	<i>Identified bicycle route</i>	<i>Implement more visually separated facilities.</i>
	<i>Transit</i>	<i>Bus Route</i>	<i>Main Street/Borough-wide</i>	<i>Coordinate with SEPTA on Bus Revolution/additional amenities.</i>
<b>Long-term (2+ years)</b>	<i>Pedestrian</i>	<i>Crossing upgrades</i>	<i>Uncontrolled crossing locations</i>	<i>Implement long-term solutions such as lights and physical features per assessment.</i>
	<i>Pedestrian</i>	<i>Sidewalks</i>	<i>Borough-wide</i>	<i>Address sidewalk maintenance and ADA issues.</i>
	<i>Pedestrian/Bicycle</i>	<i>Sidewalks/Trails</i>	<i>3<sup>rd</sup> Avenue and 1<sup>st</sup> Avenue</i>	<i>Address gaps within the sidewalk/trail network.</i>
	<i>Pedestrian/Bicycle</i>	<i>Trail</i>	<i>Trestle Bridge</i>	<i>Connect the 2 Schuylkill River Trails through the rehab of the bridge.</i>
	<i>Bicycle</i>	<i>Separated Bicycle Lanes</i>	<i>Identified bicycle route</i>	<i>Implement more physically separated facilities including traffic calming devices.</i>
	<i>Schools</i>	<i>School zones</i>	<i>Royersford Elementary and 8<sup>th</sup> Grade Center</i>	<i>Implement more physical countermeasures per analysis. Coordinate with PennDOT.</i>
	<i>Parks</i>	<i>Park</i>	<i>Chestnut Street Park</i>	<i>Implement more physical features as necessary to control speeds.</i>

# COST ESTIMATES

This table from FHWA is intended to provide meaningful estimates of infrastructure costs for bicycle and pedestrian treatments from states and cities across the country. Actual costs will vary depending on the combination of staff and resources for project delivery phases including planning, preliminary engineering, final design, and construction.

**Table 14: Cost Estimates from FHWA**

<b>Infrastructure</b>	<b>Description</b>	<b>Average Cost</b>	<b>Cost Unit</b>
<b>Bicycle</b>	Bicycle Rack	\$660	Each
<b>Bicycle</b>	Bicycle Lane	\$133,170	Mile
<b>Bicycle</b>	Signed Bicycle Route	\$25,070	Mile
<b>Bicycle</b>	Shared Lane Marking	\$180	Each
<b>Traffic Calming</b>	Curb Extension	\$13,000	Each
<b>Traffic Calming</b>	Raised Crosswalk	\$8,170	Each
<b>Traffic Calming</b>	Speed Hump	\$2,640	Each
<b>Traffic Calming</b>	Median Island	\$10	Square Foot
<b>ADA</b>	Detectable Warning Surface (DWS)	\$42	Square Foot
<b>ADA</b>	Curb Ramp	\$810	Each
<b>Lighting</b>	Streetlight	\$4,880	Each
<b>Pedestrian</b>	High Visibility Crosswalk (Type C)	\$2,540	Each
<b>Pedestrian</b>	Striped Crosswalk (Type A)	\$770	Each
<b>Pedestrian/Bicycle</b>	Asphalt Paved Shoulder	\$5.56	Square Foot
<b>Pedestrian</b>	Concrete Sidewalk and Curb	\$150	Linear Foot
<b>Path</b>	Multi-Use Trail – Paved	\$481,140	Mile
<b>Path</b>	Multi-Use Trail – Unpaved	\$121,390	Mile
<b>Flashing Beacon</b>	Flashing Beacon	\$10,010	Each
<b>Flashing Beacon</b>	RRFB	\$22,250	Each
<b>Flashing Beacon</b>	Pushbutton	\$350	Each
<b>Speed Trailer</b>	Speed Trailer	\$9,510	Each
<b>Signs</b>	Signs	\$300	Each
<b>Street Furniture</b>	Street Trees	\$430	Each
<b>Street Furniture</b>	Bench	\$1,550	Each
<b>Street Furniture</b>	Bus Shelter	\$11,560	Each
<b>Street Furniture</b>	Trash/Recycling Receptacle	\$1,420	Each

# IMPLEMENTATION





# IMPLEMENTATION

## FUNDING STRATEGIES

Active transportation projects comprise a fraction of overall transportation network construction and maintenance. While pedestrian and bicycle infrastructure generally does not serve as many users as highways, bridges, and other critical infrastructure in America, it can have a substantial positive effect on local economies. Also, based on the goal of serving the “interested but concerned” audience, who in many cases does not currently try to walk and bike for transportation, this is nevertheless infrastructure that is designed in support of a majority of the population. Furthermore, more than half of all journeys in the US are under 3 miles in length, meaning that if safe, accessible, and inviting facilities were available, people could choose to walk or bicycle to accomplish them instead. However, mode shift away from private vehicle use cannot happen until those facilities are put into place.

Additionally, providing opportunities for active living promotes public health and may reduce the burden on tax-payer funded healthcare systems over time. In this light, active transportation infrastructure is a critical component of a complete transportation network and results in a positive return on investment for communities that fund such projects.

Several state and federal funding sources can be used to supplement local funding sources to build out the active transportation network and fund related programming efforts. Table 15 lists the primary funding sources for active transportation projects in Pennsylvania.

**Table 15. Primary Active Transportation Funds in Pennsylvania**

<b>Funding Source</b>	<b>Distributed by</b>	<b>Eligible Projects</b>	<b>Match</b>
<b>Transportation Alternatives Set Aside</b>	PennDOT	Bicycle, pedestrian, traffic calming	Match requires funding all pre-construction activities.
<b>Multimodal Transportation Fund</b>	CFA/DCED	Bicycle, pedestrian, streetscape, traffic calming, transit	30% match
<b>Multimodal Transportation Fund</b>	PennDOT	Bicycle, pedestrian, streetscape, traffic calming, transit	30% match
<b>Automated Red-Light Enforcement Program</b>	PennDOT	Bicycle, pedestrian	None
<b>Greenways, Trails, and Recreation Program</b>	CFA/DCED/DCNR	Bicycle, pedestrian (trails)	15% match
<b>Community Conservation Partnerships Program</b>	DCNR	Bicycle, pedestrian (trails), policies	Varies
<b>Community Development Block Grant</b>	DCED	Streetscape, policies	None
<b>Municipal Assistance Program</b>	DCED	Policies	50% match
<b>WalkWorks Program</b>	PA Downtown Center	Policies	None
<b>Community Challenge Grant</b>	AARP	Bicycle, pedestrian, streetscape, traffic calming, transit	None
<b>Smart Growth Grant</b>	NAR	Policies	None
<b>Placemaking Grant</b>	NAR	Bicycle, pedestrian, streetscape, traffic calming, transit	None

# ON-GOING MONITORING AND EVALUATION

Measuring the performance of active transportation networks is essential to ongoing success. Bicycle and pedestrian counts, crash records, and other data contribute to a business case for continued improvement of and investment in multimodal infrastructure. As recommendations are implemented, Royersford Borough must be able to measure whether these investments are paying active transportation dividends (i.e., more people walking and biking). An affirmative answer reinforces this plan’s legitimacy and provides evidence that future investments will also yield positive results. The performance measures in Table 16 will chart progress towards making walking and biking safe, connected, and comfortable. The Borough should establish baseline targets and revisit these metrics as new plans and priorities occur. Data on these measures should be documented and published for public review annually. A robust performance measures program includes establishing baseline measurements, performance targets, data collection frequency, and data collection and analysis responsibility.

**Table 16: Performance Measures**

<b>Topic</b>	<b>Performance Measure</b>	<b>Goals</b>	<b>Responsibility</b>
<b>Obesity</b>	Reduce the % of people who are obese	Enhance Health	Borough
	Reduce the % of people with diabetes		
	Reduce the % of inactive people		
<b>Crashes/Fatalities</b>	Reduce the # of pedestrian/bicycle crashes	Enhance Health	Borough
	Eliminate fatalities and serious injuries	Increase Safety	
<b>Walkability</b>	Increase Walk Score	Improve Access and Connectivity	Borough
	Increase % of roads with sidewalks	Enhance Health	
	Increase % of sidewalk repairs	Protect Environment	
	Reduce daily vehicle miles traveled	Increase Safety	
<b>Bikability</b>	Increase miles of on-road bicycle facilities	Improve Access and Connectivity	Borough
	Reduce level of traffic stress	Enhance Health	
	Increase usage	Protect Environment	
	Reduce daily vehicle miles traveled	Increase Safety	
<b>SEPTA Ridership</b>	Increase ridership	Improve Access and Connectivity	SEPTA
	Increase service frequency		
	Reduce daily vehicle miles traveled		
	Reduce wait time		