# Southern Chester County Circuit Trail Feasibility Study

PREPARED BY Chester County Planning Commission

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Prepared by the Chester County Planning Commission

June 2021



Implementing the **CONNECT** goal

Partial funding for this project comes from the Regional Trails program, administered by the Delaware Valley Regional Planning Commission with funding from the William Penn Foundation.



**Chester County Board of Commissioners** 

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# Executive Summary

#### Purpose

The goal of this project is to determine the feasibility of a multi-use trail that would connect the communities in southern Chester County situated along the US 1 corridor to the Circuit, the Greater Philadelphia area's network of interconnected multi-use trails. Until recently, an active freight rail corridor that spans southern Chester County from Chadds Ford to Nottingham known as the Octoraro line was shown as a trail on the Circuit Trail Map. Because of the rail corridor's active status and narrow width, the Octoraro line is not an available option. This project seeks to identify an alternative trail alignment to the Octoraro line.



## Context

The project study area encompasses approximately a one-mile radius around Baltimore Pike, a road that passes through each population center from Chadds Ford to Oxford and on to East and West Nottingham. Input received throughout the study revealed a significant need for better, more connected active transportation facilities across the entire study area, as well as a strong desire for a regional multi-use trail for recreation purposes. As the "World Capital of the Mushroom Industry", southern Chester Countyparticularly the area surrounding Kennett Square - has a significant population of Central Americans and Mexicans who were drawn to the area because of work opportunities. Many of these residents lack access to reliable transportation and therefore walk to their destinations in locations where no pedestrian facilities exist. As for recreation, there are a number of high-quality parks and nature preserves throughout the study area - many of which feature trails - but there is no regional multi-use facility, leaving those who may not be comfortable walking, running or biking on the road with few places to recreate.

# **Inventory and Analysis**

Over the course of the study, the project team assessed nearly 130 miles of potential trail alignments for their suitability to become a regional multi-use trail. Potential alignments were identified through GIS review, field views, and through extensive public engagement process that included meetings with a Project Advisory Committee, two online public meetings, a public survey, key person interviews, and focus group discussions. The lack of an eastwest utility or inactive rail corridor coupled with a lack of connected tracts of public property makes the establishment of such an alignment challenging. Two main alignment options emerged through the study- an alignment along Baltimore Pike and an alignment along the US1 Expressway. The study revealed that although both routes would have some value for both transportation and for recreation, the Baltimore Pike route would have the most value as a transportation route and the US1 route would have more recreation value.

# **Findings and Recommendations**

After a thorough analysis of these two primary options, the project team determined it would not be feasible to develop a continuous multi-use trail along the entirety of either of these corridors. The most significant constraints leading to this determination are the extensive impacts on private property the proposed alignments would require and high development costs. However, a multi-use trail may be feasible to develop along portions of these corridors where it would be most valuable. The Recommendations section within this report shares locations where multi-use trails are recommended along both of these corridors, as well as other projects that were identified throughout the course of the study that would have significant value to the overall trail network in southern Chester County.



Baltimore Pike spans the entire study area and provides a direct connection between the population centers. A multi-use trail will not fit within the right-of-way, but other facility types that would enhance multi-modal connectivity are recommended.



The US 1 Expressway at PA-272. The entire expressway will be reconstructed by PennDOT within the decade, and including a trail within some sections of the reconstruction project could be possible.





#### **Project Recommendations:**

#### Baltimore Pike Bikeway

Develop a variety of bicycle and/ or pedestrian improvements along the entirety of Baltimore Pike from Schoolhouse Rd. in East Marlborough Township to PA 272 in Nottingham (approximately 23 miles)

# Multi-use trails paralleling the US 1 Expressway

- Develop a multi-use trail paralleling the US 1 Expressway from Schoolhouse Rd. in East Marlborough Township to Bancroft Rd. in New Garden Township (3.4 miles)
- Develop a multi-use trail paralleling the US 1 Expressway from PA 472 in Oxford to the Maryland line (5.3 miles), as well as a 0.7-mile multi-use trail along PA 472 to connect into Oxford Borough

#### Circuit trail connectors

Develop one of two options to connect the proposed Baltimore Pike Bikeway with the Brandywine Creek Trail, the nearest planned Circuit Trail on the eastern side of the Brandywine Creek.

#### Other trail connections

Various other trails were identified that would enhance bicycle and pedestrian connectivity within the region.

# Introduction

This study examines the feasibility of establishing a multi-use trail that connects the boroughs and villages along the US 1 corridor in southern Chester County to the regional Circuit Trail Network. This introduction explains the purpose of the study, describes the study area's context, and notes organizations and previous plans related to trails and active transportation in the study area.



# Purpose

This ambitious study sought to determine if it is feasible to develop a continuous multi-use trail that connects the boroughs and villages along the US 1 corridor in southern Chester County to the Circuit trail network in the Chadds Ford area, a distance of approximately 21 miles as the crow flies.

The Chester County Planning Commission obtained funding through DVRPC's Regional Trails Program to conduct a study to determine if such a route is feasible.



# **The Circuit**

The Circuit is the Greater Philadelphia area's network of both planned and existing multi-use trails that connect the urban, suburban and rural communities within our region. Nearly half of this 800+ mile network is complete; once connected, the Circuit Trails will make our region stronger by providing a place for healthy transportation and recreation, connecting our communities to green space, and making our neighborhoods more attractive places to live and work.



Map credit: Delaware Valley Regional Planning Commission

#### Introduction | 1

## Landscapes3

The Circuit Trails Policy Map in Chester County's Comprehensive Plan, Landscapes3, documents that finishing the multi-use trail network of the Circuit is a priority of the county and partners. The Map also identifies the intention to connect the growth areas in southern Chester County to the Circuit.



#### Circuit Trails Existing

Trails currently open for use, as of 2015. Proposed

Actively under study, or design, or in the acquisition or funding stage.

 Potential addition
Potential opportunity for multi-use trail network expansion; additional planning recommended.

Generalized trail connections
Potential opportunity for a local trail connection

to the regional network; additional planning recommended.

#### Landscapes3

Growth areas

Rural resource areas

# **Octoraro Rail Corridor**

The Octoraro line, a single-track active freight rail corridor, owned and operated by East Penn Railways, Inc., passes through all of the boroughs and villages along the US 1 corridor. About a decade ago rail service to the area declined and was expected to be discontinued. Recognizing the corridor as an opportunity, trail advocates mobilized and added the rail corridor to the Circuit Trails map as a potential regional trail. Today, freight rail service continues to operate on the corridor. It is highly valued by the many industries in the area that use it and will likely operate for the foreseeable future.

#### Not Feasible for Trail Use

Since the corridor is only wide enough to accommodate either rail service or a trail, the corridor was recently removed from the Circuit trail map. This project seeks to identify whether a feasible alternative route to this rail corridor exists to put southern Chester County back on the Circuit.



The Octoraro rail line in Avondale.

## Scope

Trails designated as part of the Circuit are to be built to a multi-use standard as defined by the American Association of State Highway Transportation Officials (AASHTO). Such trails are designed to serve the recreation and transportation needs of bicyclists and pedestrians. They are also ADA-accessible and are separated from vehicular traffic to accommodate a wide range of users from children to the elderly and those with varying abilities.

This study identified significant need throughout the study area for a facility that serves both recreation and transportation needs. Few multi-use trails exist within the study area. Runners, walkers, and cyclists in the region often reported using roads that felt unsafe. Furthermore, southern Chester County is the world capital of the mushroom growing industry and many workers at mushroom farms lack reliable access to transportation. This study sought to identify a route for a trail that provided regional connectivity, recreational value, and safe, convenient access to major destinations and employment centers.





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# **Study Area**

To center the study's geographic focus on the population centers in southern Chester County, the study area's boundary was loosely defined within a one-mile buffer of Baltimore Pike, a road that passes through the center of each borough and village. The US 1 Expressway served as the northern boundary of the study area since it would serve as a major barrier between the population centers and a proposed trail facility north of the expressway. Early in the planning process the project team identified interest in studying potential connections between Oxford and Nottingham County Park as well as a connection to a potential future rail-trail in Cecil County, MD. The study area was then expanded to include these destinations.

This study sought to identify a route for a trail that provided regional connectivity, recreational value, and safe, convenient access to major destinations and employment centers.

#### Study Area



The study area encompasses ten Chester County Townships and four boroughs.

# **Regional Connectivity**

In addition to being part of the Circuit- the Greater Philadelphia area's regional trail network - the project team considered the larger context in which this project could be relevant. The East Coast Greenway (ECG)- a planned trail network that spans the entire East Coast from Maine to Florida- passes through Philadelphia and Wilmington before heading west through Maryland. The trail through Delaware is mostly complete, but the Maryland portion is only conceptual, and will require a crossing of the Susquehanna River.

A Circuit Trail through southern Chester County along the US 1 corridor headed south into Cecil County, Maryland could potentially become an internal loop or spur within the ECG and could open up alternative locations for crossing the Susquehanna.

Additionally, significant work has been done in northern Delaware to plan and implement an interconnected trail network. Shoulders on PA-52 will soon be widened to continue the bikeway in Delaware along this route that connects to the Northern Delaware Greenway Trail and to the East Cost Greenway.



#### Introduction | 1



# **Relevant Planning Documents**

Designation as a Circuit Trail comes with an added level of importance and a strong case for funding. The project team sought to identify a network of existing or planned municipal trails and/or bicycle and pedestrian improvements that could be strung together to create a regional trail system, allowing municipalities to leverage Circuit Trail designation to facilitate development of their individual trail projects.

The need for a quality recreational trail as well as enhanced bicycle and pedestrian circulation is well-documented in southern Chester County. The project team conducted an inventory of previous planning documents to identify municipal trails- both existing and planned- that could potentially be included in this network. The results of the inventory were mapped in Chester County's Active Transportation GIS database, which catalogs existing and planned bicycle and pedestrian improvements throughout the county including sidewalks, trails, and on-road bicycle facilities. A more detailed description of relevant findings from each plan can be found in Appendix A.

Plans reviewed	Key recommendations
Pennsbury Township Comprehensive Plan (2011)	Recommends expanding sidewalks and enhancing safety on roads for bicyclists. Includes a trail map.
Pennsbury Township Route 1 Corridor Improvement Plan (2001)	Recommends sidewalks on both sides of US 1 in commercial areas.
East Marlborough Township Open Space, Recreation, and Environmental Resources Plan (2021)	Recommends development of a central trail spine along Route 82 to link the parks and other interconnected facilities to link to the spine trail.
East Marlborough Township Comprehensive Plan (2011)	Includes goals for both recreational and transportation-oriented bicycle and pedestrian facilities. Identifies Route 82 between 926 and the roundabout as a priority for bike lanes and sidewalks.
Kennett Square Borough Comprehensive Plan (2013)	Strongly supports increasing active transportation and trails for recreation and transportation.
Kennett Square/Kennett Township Active Transportation Plan (2017)	Includes an analysis of where demand is for active transportation and identifies critical connections given this demand.
Kennett Township's Kennett Greenway Shared Use Pathway and Trail System Master Plan (2019)	Recommends an alignment for the Kennett Greenway.
Kennett Township Open Space, Parks and Trails Master Plan and Needs Assessment (2019)	Identifies priority areas for open space and trail connections and overlays this with catalyst projects identified within the 2017 Active Transportation Plan.
New Garden Township Trail Prioritization Plan (2019)	Takes recommendations from the 2008 Greenways Plan and prioritizes three of the 20 trails recommended in that plan.
New Garden Township Official Map (2019)	Identifies existing trails and sidewalks and potential trail easements.
New Garden Township Comprehensive Plan (2018)	Designates 2008 Greenways map as official trail plan. Also recommends bike lanes and sidewalks in various locations.
Comprehensive Plan for Avondale Borough (2019)	Includes a comprehensive bicycle and pedestrian component with goals for sidewalk improvements and new multi-use trails.

Plans reviewed	Key recommendations
London Grove Township Comprehensive Plan (2011)	Includes a township-wide trail map and recommendations to develop the trail system.
London Grove Trail Map (Dec. 2019)	Shows an interconnected network of existing and planned trails throughout the township.
West Grove Borough Comprehensive Plan (2003)	Recommends implementing a regional bikeway and trail system for recreation and commuting purposes.
West Grove Borough Revitalization Plan (2003)	Recommends improving linkages between the borough and the Downtown.
Multimodal Connectivity Feasibility Study for the Village of Jennersville (2015)	Recommended expanding bicycle and pedestrian facilities throughout the village.
Penn Township Comprehensive Plan (2013)	Supports efforts to expand sidewalks within Jennersville.
West Nottingham Township: Nottingham Village Circulation, Streets, and Identity Composite Map (2007)	Shows proposed pedestrian routes and trails connecting destinations within and outside of the village.
West Nottingham Township Comprehensive Plan (2006)	Emphasizes the planning and development of trails along scenic routes.
Oxford Region Comprehensive Plan (2012)	Comprehensive plan for East and West Nottingham Townships, Upper and Lower Oxford Townships, and Oxford Borough. Recommends a loop trail around Oxford Borough, recreational bikeways, and the Octorara and Mason Dixon Greenways.
Baltimore Pike for Everyone (2015)	Recommends both holistic and targeted improvements along Baltimore Pike between Oxford and Kennett Square to enhance bicycle and pedestrian mobility, including upgrades to bus stops.
Village of Chadds Ford Master Plan (2015)	Recommends a trail on the south side of US 1/Baltimore Pike from Station Way Rd. to Fairville Rd.

# **Organizational Inventory**

Although this Feasibility Study was conducted by Chester County, the resulting recommended infrastructure was not intended to be owned and operated by the county. Therefore, knowing the capacity and interest of the municipalities and other organizations to develop a regional trail is important to determining what is feasible.

Municipal governments lead the majority of planning and development for bicycle and pedestrian infrastructure within the study area. Some municipalities have designated Trails committees, and other organizations exist that could support the development and programming of a regional trail.

The **Wilmington Trail Club** has over 700 members and maintains the Brandywine Trail, a 36-mile trail through private property and along roads that spans the Brandywine Valley between Brandywine Creek State Park and Ludwig's Corner. Only portions of the trail are open to the public.

Kennett Township has a **Trails and Sidewalks Committee** that meets regularly to propose projects and make recommendations to the Board of Supervisors. The Trails and Sidewalks Committee was instrumental in the development of Kennett Township's many trail plans.

The **Kennett Trails Alliance** is a non-profit organization whose major focus is to develop the Kennett Greenway, a 14-mile multi-use loop around Kennett Township.



The Kennett Greenway is a proposed 14 plus mile trail loop through five municipalities that provide access to 10 plus parks and preserves. The Greenway is a multi-municipal initiative of Kennett Square Borough and Kennett Township and is managed by the Kennett Trails Alliance. Image courtesy of Kennett Trails Alliance.

#### The Kennett Area Regional Trails Committee

is led by the Executive Director of the non-profit Kennett Trails Alliance and is composed of representatives from Kennett Square Borough, Kennett Township, East Marlborough Township, New Garden Township, and Chester County. The Committee's goal is to serve as a venue for coordination and collaboration on multimunicipal bicycle and pedestrian circulation projects that enhance regional connectivity.

The **Kennett Area Recreation Board** is a nonprofit that operates Herb Pennock Park and offers programming for children and families including summer camps and sports leagues.

**Bike Kennett** is an affiliate group of the Bicycle Coalition of Greater Philadelphia and Bike Chester County. The group advocates for bicycle and pedestrian infrastructure to promote safety for vulnerable road users and meets socially for group rides.

**Friends of New Garden Trails** is a committee that meets regularly to propose projects and make recommendations to the Board of Supervisors related to the Township's trail network. They identify potential trails, coordinate the acquisition of easements, and play a central role in trail planning.

London Grove Township has successfully developed many paved trails in the past several years. Trail development is spearheaded by the Township Manager and carried out by the Public Works department, whose investment in paving equipment has enabled them to develop trails much more quickly than the traditional process of applying for grants and hiring a contractor to do the work.



The Land Conservancy for Southern Chester County has preserved over 1,500 acres in the southern part of the county and operates several nature preserves that are open to the public.



Goddard Park is the centerpiece of London Grove Township's Park and Trail system. It is well-used by residents of adjacent municipalities and features an ADA-accessible walking path as well as hiking trails through the woods. **Oxford Area Recreation Authority** owns and operates a park on the outskirts of Oxford Borough, while also running sports leagues. They also own additional land that may one day be developed into a park.

The Land Conservancy for Southern Chester County owns and operates multiple nature preserves in the Kennett Area and is involved with planning efforts for the Kennett Greenway.

**PennDOT Connects**, a recent initiative of the State's Department of Transportation, aims to include municipalities in the planning process for state roadway improvements to ensure PennDOT's plans take municipal plans into account. Part of this initiative includes the Bicycle-Friendly Resurfacing Program, which allows municipalities the opportunity to request striping for bike lanes or shared roadways be included in the state's road resurfacing work.

**Delaware Greenways** is a non-profit organization that plans and advocates for the development of an interconnected network of trails within the state of Delaware. A focus area is on northern Delaware Greenways.

**The Circuit Coalition** is a partnership of public, private and non-profit members who coordinate to complete the Circuit Trail Network, the greater Philadelphia area's network of planned and existing multi-use trails.

The **East Coast Greenway Alliance** is a nonprofit that leads the development of the East Coast Greenway, a 3,000-mile biking and walking trail that stretches from Maine to Florida.



The Brandywine Trail in Delaware is a popular multi-use trail and part of the Northern Delaware Greenways.



Operated by the Oxford Area Recreation Authority, the Oxford Area Regional Park provides recreation facilities for the residents of East Nottingham Township, West Nottingham Township, Elk Township, Lower Oxford Township, and the Borough of Oxford.

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# Inventory

A number of natural and man-made characteristics impact where a trail can be developed and can determine which type of trail facility is feasible. The project team used geographic information systems (GIS) to study the important features relevant to trail development and to identify potential routes for the trail. A general discussion of these features and their impact on multi-use trail development follows.



# Topography

Because the slope of multi-use trails should not exceed 5%, topography is one of the most important factors in determining where a multiuse trail can be developed. In general, southern Chester County's topography is characterized by rolling hills; however, many of the streams and creeks lie within deeply incised valleys, most notably the Brandywine Creek and the creeks closer to the state line. The freight rail corridor which spans the study area is situated on a primarily flat area, with the exception of the area between Lincoln University and Oxford, where it is cut into the landscape. Aside from the stream valleys of the Octoraro Creek the topography between Oxford and the Maryland Line is relatively flat.



Inventory | 2



# Hydrology

Stream-side trails make for a scenic and memorable trail experience, but developing along a stream or its adjacent floodplain and/or wetlands can also present additional permitting challenges and can reduce stream health. Stream crossings require bridges, which increase project development costs. With few exceptions, the main branches of the study area waterways - the Brandywine, White Clay, Red Clay, and Big Elk Creek- are oriented roughly north-south. All of these creeks, as well as most of their tributaries, were classified as "impaired" by the Pennsylvania Department of Environmental Protection in 2018, according to mapping from the Chester County Water Resources Authority. Two east-west stream corridors in Pennsbury Township- Ring Run and Bennett's Run- were classified as attaining streams.



#### Inventory | 2



# **Natural Areas**

Like water features, sensitive natural areas are both an opportunity and a constraint to trail development. They can be points of interest along a trail system but can also be negatively impacted by trail development. The core of the project study area includes mostly developed and industrial areas with few sensitive natural areas. The map (right) displays the significant natural areas in the region, which include stream corridors, floodplains, wetlands, forested areas, and special terrestrial resources. To the south of the study area along the Maryland and Delaware line, a trove of serpentine barrens dot the landscape and form a rare and sensitive ecology. Many of these serpentine outcroppings are within parks or on protected land like Nottingham County Park, a National Natural Landmark. Aside from serpentine barrens, other sensitive natural areas- some of which are home to rare or endangered species- occur along stream corridors throughout the study area.





# **Linear Corridors**

Planning for a long-distance regional trail often starts with an inventory of existing linear infrastructure corridors that could potentially be used for a trail, such as gas pipelines, electric transmission lines, and railroads. There are no east-west oriented gas pipelines within the study area. One overhead transmission corridor parallels the US1 Expressway to the north on the western end of the study area. One eastwest rail corridor - the Octoraro Line - exists within the study area, and it is in use for freight service from the Brandywine Creek to just south of the Herr's factory in West Nottingham Township. This single track corridor is narrow and cannot accommodate a parallel trail within its right-of-way. Therefore, it serves more as a constraint to trail development since crossing the tracks can only occur at existing roadway at-grade intersections.



#### Inventory | 2



# Roads

Roads are another type of linear corridor that can be assessed for trail development. The width of the right-of-way, slope of the roadway, vehicular speeds, and traffic volume all play a role in the road's suitability for a parallel multiuse trail, or sidepath.

The only road that spans the entire study area is Baltimore Pike. Baltimore Pike has wide shoulders, and bike legends appear within the shoulder in select locations between West Grove and Toughkenamon.

The US 1 Expressway begins at Schoolhouse Road in East Marlborough Township and ends near the Maryland line. PennDOT is planning to reconstruct the US 1 Expressway within the next ten years. The reconstruction project is split into four sections: Maryland line to Route 472; PA 472 to PA 896; PA 896 to PA 41; and PA 41 to Schoolhouse Road. As of December 2020, the middle two segments were entering final design and the easternmost and westernmost sections had not begun preliminary engineering. A statewide policy change to loosen the prohibition against bicyclists and pedestrians within limited access rights of way is forthcoming.

Though not an east-west route, PA 52 between US 1 and the Delaware border will soon be improved to include bike lanes to facilitate connections with trails in northern Delaware. The Brandywine Valley National Scenic byway is also located in the study area along Route 52.





# **Existing and Planned Trails**

Stringing together existing trails to form a regional trail is far less costly and timeconsuming than developing a new trail. Additionally, much planning work for future trails has already been done by the study area municipalities. Co-locating a regional trail with planned local trails leverages the local knowledge that went into previous planning processes and brings added significance to local trail networks, enhancing their ability to attract funding. There are many existing trails in London Grove Township, though not all are built to a multi-use standard. The Kennett Greenway- a 14-mile loop around Kennett Township consisting of both existing and planned trails- is a multi-municipal initiative with significant support and capacity. Few trails exist- multi-use or otherwise- west of West Grove, though most municipal parks feature walking trails.

The Brandywine Trail, the Circuit-designated trail to which this study intends to connect, currently exists as a semi-private hiking trail along the Brandywine Creek between Ludwig's Corner and Brandywine Creek State Park in Delaware. The long-term vision for the Brandywine Trail includes realigning the trail in many locations, widening it to 8', and opening it to the public. The part of the trail within the study area follows the west side of the creek but is planned to be relocated to the east side.



Inventory 2



# **Demographics**

#### **Mushroom Workforce**

The demographics and land use of southern Chester County is unique within the context of the county. The world capital of the mushroom growing industry, hundreds of mushroom houses- a hybrid between an agricultural and an industrial use- are scattered throughout the study area. The mushroom industry attracts a workforce that hails predominantly from Central America and Mexico. The production employees of the mushroom industry are 98% Latino, and the majority speak Spanish as their primary language.

#### **Population Centers**

The study area's population centers- places where population density is greatest- are located predominantly south of the US 1 corridor. Residents within the study area's population centers are much more racially and ethnically diverse and have lower median income than Chester County as a whole. Many lack consistent access to a car and face transportation challenges due to limited public transportation service. Bicycle and pedestrian facilities are also limited beyond borough boundaries.

		Median household	Percent of individuals below 20% of	Percent Hispanic or	Percent of households with 1 or no vehicles
Municipality	Population*	income*	poverty level**	Latino***	available***
Chester County	524,989	\$100,214	15.4%	7.4%	32%
Pennsbury Township	3,650	\$126,594	7.6%	0.9%	26%
Kennett Township	8,305	\$114,821	16.3%	13.3%	26%
East Marlborough Township	7,548	\$124,079	5.5%	3.3%	21%
Kennett Square Borough	6,202	\$77,404	18.8%	39.1%	38%
New Garden Township	12,206	\$116,875	16.2%	28.1%	19%
Avondale Borough	1,400	\$74,007	43.4%	61.6%	34%
London Grove Township	8,829	\$111,957	18.8%	17.6%	23%
West Grove Borough	2,839	\$64,479	21.3%	43.9%	27%
Penn Township	5,515	\$75,512	25.5%	16.5%	39%
Lower Oxford Township	5,079	\$88,940	20.8%	10.1%	27%
Upper Oxford Township	2,538	\$88,750	24.6%	10.8%	19%
Oxford Borough	5,581	\$55,380	39 <mark>.0</mark> %	35.0%	53%
East Nottingham Township	9,085	\$107,058	13.7%	9.0%	21%
West Nottingham Township	2,709	\$62,991	23.6%	20.6%	32%

# **Employment and Commuting**

In thinking of the potential trail as a commuting facility, the project team developed an inventory of the largest employers in the study area where a trail linkage could serve the greatest number of employees. The largest employers in the area include Longwood Gardens, Lincoln University, Genesis Health, Walmart (two locations), Jennersville Regional Hospital, Herr Foods, Exelon, and Giorgio Fresh Co., to name a few. Employing approximately 8,600 people according to the American Mushroom Institute, the mushroom industry as a whole is the largest employer in Southern Chester County, though employees are dispersed between many different facilities.

Additionally, an analysis was conducted using OnTheMap US Census data visualization to understand general commuting trends between population centers. An employee who lives 20 miles away from their employer is not likely to walk or bike to work, so the project team analyzed where the greatest number of employees traveled under ten miles within the study area to get to work. This revealed locations where a trail could be a feasible commuting option for many residents. The areas shown to have the greatest number of residents with short commutes within the study area are between Kennett Square and Avondale, between Oxford and Jennersville, and between Jennersville and West Grove.

Number of workers living in each population center that commute to each other population center within 10 miles of their home

		WORK LOCATION						
HOME	Nottingham	Oxford	Lincoln U	Jennersville	West Grove	Avondale	Toughkenamon	Kennett
Nottingham								
Oxford	100-150	151-200	1-50	1-50	1-50			
Lincoln U		1-50	1-50		1-50			
Jennersville	51-100	151-200	51-100	51-100	151-200	51-100		
West Grove		1-50	1-50		51-100	1-50		1-50
Avondale					51-100	51-100	1-50	100-150
Toughkenamon				1-50	100-150	1-50	1-50	100-150
Kennett				1-50	100-150	151-200	151-200	301-500
	1-50 jobs 51-100 jobs							
	100-150 jobs 151-200 jobs							

301-500 jobs

within 1/2 mile of the Borough.



Priority 3: Avondale to West Grove (3.1 miles) Oxford to Nottingham (3.8 miles)

# Destinations and Points of Interest

Trails that connect people to the places they want to go can attract visitors to the region, can serve as a transportation route, and can enhance the trail user experience. The Project Advisory Committee identified potential destinations and points of interest along the trail, and this input was supplemented by additional feedback from the public. Over 100 distinct locations were identified as destinations throughout the planning process, but a few were mentioned consistently by most who offered feedback and are pictured in the map below. Not all of the most commonly suggested destinations are within the study area.

#### **Destinations and Points of Interest**



## **Major Historic Themes**

Although a historic/cultural interpretation plan was outside the scope of this project, planning a trail that connects to significant cultural resources can make for a rich trail experience and draw visitors to the region. Chester County's Comprehensive Plan, Landscapes3, identifies the following themes as being relevant to the US 1/Baltimore Pike corridor: Quaker history and the Underground Railroad; the American Revolution; agriculture; and colonial road corridors. The most significant historic and cultural resources in the study area are found around Lincoln University, Longwood Gardens, and in Oxford, though there are resources spread throughout the study area.



#### Agriculture

A moderate climate, rich soils, and strong work ethic have made agriculture a strong and diverse industry since the county's founding. The agricultural industry remains an economic force that continues to adapt, while farms enrich our scenic viewsheds and sense of place.



#### × × × × × × × ×

#### American Revolution

The Philadelphia Campaign of 1777 involved multiple conflicts and troop movements across a broad area impacting local residents and the nation's founding. Preservation and interpretation efforts retain stories, features, and landscapes that draw visitors and are valued by residents.





#### Quaker

In 1682, William Penn established three counties—Philadelphia, Bucks, and Chester—to foster Quaker principles in the new world. The meetinghouses and residences of Quaker settlers remain in use today, representing a legacy that includes the Underground Railroad and women's rights. Preservation and interpretation efforts inspire advocacy and support tourism.



......

#### Transportation

The county's rich transportation history includes Native American paths, routes used by colonial travelers and drovers, and railroad lines that continue to spur development. Our transportation network continues to play a significant role in the patterns and extent of development.

# Land Ownership

Easement or property acquisition is perhaps the single largest constraint when developing a regional trail. Public agencies, land trusts or utility companies are typically more open to providing trail access on their property than private land owners. The project team identified and mapped all such property, as well as large swaths of private property with a single land owner, as negotiating with one land owner for an easement for one mile of trail can make the project more feasible than negotiating with 50 individual land owners for the same length of trail.




## Inventory KEY TAKE-AWAYS

## No available linear corridors span the study area wholly or partially.

- The rail corridor is ideal, but unavailable. The active freight rail corridor that passes through each of the boroughs and villages in the study area is flat, owned by one entity, and has direct access to population and employment centers. Rail service is active, and the corridor is not wide enough to accommodate both a trail and rail service.
- A proposed trail would cross several streams. The trail corridor being studied will run east-west, and most waterways in the study area run north-south. Two streams in Pennsbury Township run east-west.
- No usable linear utility corridors exist.

## US 1 and Baltimore Pike are roadway trail opportunities.

 The two roads that traverse nearly the entire study area are the US 1 Expressway and Baltimore Pike. A trail paralleling the roadway within the road right-of-way could reduce impacts to private property.

## There are opportunities to connect to existing trails.

- Few trails exist in the study area outside of township parks, with the exception of New Garden, Kennett, and London Grove Townships. East-west trails that have been suggested in previously prepared documents include trails along the rail corridor, US 1/Baltimore Pike, Hillendale Road, Pemberton Road, and Oxford Road.
- A trail could connect residents to employers
- Many residents in the study area lack reliable transportation, which serves as a major barrier to obtaining and keeping a job, particularly for those working in the mushroom industry.
- Those with transportation challenges typically live in one of the population centers.
- Most major employers in the study area are located along Baltimore Pike.
- The areas with the highest employment density and employees who live within a short commute distance are:

Kennett Square to Avondale (4 miles)

Oxford to Jennersville (7 miles)

Jennersville to West Grove (2.5 miles)

## The trail should connect key destinations.

 There is public consensus around the major destinations that a trail should connect, including Longwood Gardens, the "downtown" of each borough, and Lincoln University.

# 3

# Public Outreach

The chapter provides an overview of the project's public engagement components and a summary of the public's input on planning for this regional trail. **PAC** meetings PAC workshop **public** meetings surveys **Focus Group Meetings** key person interviews **Presentations Coordination PAC** meetings PAC workshop **public** meetings surveys **Focus Group Meetings** key person interviews **Presentations** 

#### **Engagement Components**

Through previous planning work in southern Chester County, input from the Project Advisory Committee (PAC), and demographics analysis, the project team identified a need for an intentional and strategic approach for seeking public input. The large, diverse study area includes a number of traditionally hardto-reach populations, including non-English speakers and those with economic challenges and multiple jobs. Additionally, because of the long-term nature of trail projects, learning the preferences of young people was also a goal. The ongoing public health crisis complicated public engagement, although moving to a virtual platform reduced barriers to participation for some.



## **4** PAC meetings

### **1** PAC workshop

The Project Advisory Committee (PAC) consisted of municipal representatives, leaders of organizations with interest in a regional trail including the Transportation Management Association of Chester County (TMACC), the Kennett Trails Alliance, Bike Kennett, the land trusts active within the study area, La Communidad Hispana, and others.



## 2 public meetings

Public meetings were held online via Zoom on July 14 and October 22, 2020. Approximately 150 people participated in the first meeting and 50 in the second. Despite the virtual platform, the meetings included small group discussions and utilized interactive maps to collect feedback.



## 1,300 surveys

A survey in both English and Spanish was posted online and was administered in-person. The survey was open from February 20 through July 31, 2020. The English version of the survey received 1,220 responses and the Spanish version received 100. Complete results of the survey can be found in Appendix B.

JUNE

2020



#### Public Outreach | 3



#### Key person interviews

- · PennDOT
- Community organizations and leaders

AUGUST

· ACOLA

JULY

2020

- East Coast Greenway
- DelCo Planning
- American Mushroom Institute
- Brandywine Conservancy



#### Focus Group Meetings

- 2 meetings with mushroom farm managers and supervisors (convened by the American Mushroom Institute)
- 2 meetings with Oxford Regional Planning Commission
- 1 meeting with attendees of a Spanish-language digital learning training



#### Presentations

Presentation to and feedback from:

- West Grove Borough Council (7/1)
- West Nottingham Planning Commission (12/1)
- Oxford Borough Council (12/7
- 2 groups of Avon Grove High School students



#### Coordination

- Provided regular project updates to the Kennett Area Regional Trails Committee
- Met with Lincoln University's Director of Community Relations to discuss the project and understand the University's interests and capacity for involvement;
- Discussed the project with Bennett's Run Watershed Restoration Plan Steering Committee.
- Discussions with Latino community including representatives from Kennett Square's Advisory Commission on Latino Affairs and Casa Guanajuato



## Public Outreach KEY TAKE-AWAYS

The following statements represent findings from the public outreach process as a whole.

#### Public attitudes toward trails

- If a trail were built, people would use it.
- About 1/5 of residents surveyed currently walk or bike for transportation purposes, but nearly 4/5 would be more willing to if a safe facility existed.
- Most residents surveyed would use a trail system that included some on-road facilities like bike lanes.
- There is more interest in using a trail to travel within the study area than to Philadelphia and other destinations on the Circuit.

#### Noteworthy differences in preferences between English speaking and Spanish speaking survey participants.

 Although the English version of the survey received over ten times the number of responses as the Spanish version, noteworthy differences were found between the preferences of higher income English-speakers and lower income Spanish-speakers. Residents in the former group placed the most value on a regional multi-use trail, whereas lower income, Spanish-speaking and younger residents valued extending the sidewalk system. In general, responses to the Spanish survey indicated more interest in transportation and health, whereas responses to the English survey indicated more interest in recreation.

#### Transportation-related findings

- A trail that would best serve transportation needs would be located along Baltimore Pike or the rail corridor. A trail along the US 1 Expressway would have little utility as an active transportation corridor.
- There is more interest in using a trail to travel within the study area than to Philadelphia and other destinations on the Circuit.
- A trail between Lincoln University and Oxford would be valuable for both Lincoln students and Oxford businesses.
- Lack of transportation is the mushroom industry's biggest challenge for retaining employees.
- Mushroom industry employees leave for work early in the morning and would need lighting and a highly visible route to feel safe.
- There is significant need for safe pedestrian connections from population centers to nearby grocery stores.

#### **Cultural trail-related considerations**

- In order to encourage trail use by the Latino community, trusted organizations may need to "invite" their constituents to use a trail.
- The western part of the study area is home to Amish and other plain sect populations. A trail open to buggy traffic could be valuable.
- A regional trail could offer opportunities for interpreting southern Chester County's role in the Underground Railroad and African American history.

A trail that would best serve transportation needs would be located along Baltimore Pike or the rail corridor. A trail along the US 1 Expressway would have little utility as an active transportation corridor.

# 4

# Alternative Evaluations

The previous chapter described how trail alignment options were identified, as well as the public's needs and desires for this regional trail. This chapter synthesizes that data, explains the methodology by which the numerous alignment options were evaluated, and evaluates the feasibility of developing a multi-use trail along the alignments that gained the most traction over the course of the study.



## Methodology

The goal of this study is to determine whether a feasible alignment exists for a continuous multi-use trail that connects the population centers from Oxford to Chadds Ford to the Circuit Trail network. Alignment alternatives were identified using various sources of input:

- Desktop analysis using GIS, NearMap aerial imagery, and Google Street View
- Review and mapping of proposed trails within previous planning documents
- Workshop with Project Advisory Committee to identify potential alignments and important destinations (see Appendix C for results of this workshop)
- Small group discussions at two public meetings that gathered input on potential alignments, destinations, and trail access points
- Multiple field views to verify field conditions
- · Interviews with various stakeholders

Alignment options developed through the planning process were evaluated and compared to one another using the following criteria:

- 1. Physical Feasibility for Multi-Use Trail Development
- 2. Private Property Impacts
- 3. Safety
- 4. Connectivity
- 5. User Experience
- 6. Environmental Impacts
- 7. Public Support

#### 1. Physical Feasibility for Multi-Use Trail Development

Given the goal of the study, the primary consideration was whether the alignment could physically be developed as a multi-use trail. Multi-use trails are a minimum of 10' wide (although 8' may be acceptable for short distances); have a maximum slope of 5%; must be separated from vehicular traffic by a minimum of 5' or by a physical barrier, such as a curb; and are constructed of materials compliant with ADA Accessibility Guidelines, such as asphalt or stone dust.

Most of the alignments studied parallel roadways, so the project team assessed the width and slope of the rights-of-way to determine if these design standards could be achieved. Conditions along the roadway, such as adjacent steep embankments, utility poles, and other physical barriers that would impact trail development were also considered.

TRAVEL LANE

CENTER LINE STRIPING



WHITE LINE

STRIPING, TYP

This section shows a typical sidepath, a type of multi-use trail that parallels a roadway.



Right-of-way Status Of All Trail Alignments Studied

Many of the potential trail alignments studied would require the acquisition of significant amounts of private property, reducing their overall feasibility.

#### 2. Private Property Impacts

Many of the proposed alignment alternatives would potentially impact privately-owned properties. The more private property impacts, the less feasible an alignment becomes due to the time-consuming, costly, and politically challenging nature of right-of-way acquisition. Contacting individual property owners to determine their support for the trail was outside the scope of this project; however, trail alignment alternatives were adjusted wherever possible to minimize privacy impacts and maintain the desired multi-use trail standard.

#### 3. Safety

Alignments were evaluated for safety based on:

- The degree to which trail users would be separated from vehicular traffic;
- The number of at-grade street crossings; and,
- Visibility and sight distance considerations.

In addition to being less safe, alignments with more bicycle/pedestrian conflicts with vehicular traffic require installation of more safety measures, thus increasing trail development costs.

#### 4. Connectivity

Alignments that directly connect to the Circuit and other major destinations identified through the planning process are most favorable. Trails that are circuitous or do not offer direct routes to key destinations may not only deter trail use, but also result in additional trail development costs due to increased length. Trails with limited connectivity can require trail users to deviate from the trail and use routes that are less safe for pedestrian and bicycle traffic. Routes that provide safe connections to "downtown" areas offer the potential for trail-related economic development. These connections are an attraction to most users of regional trails.



The environment through which a trail passes contributes to the user's experience.

#### 5. User Experience

Pleasant scenery, low stress, and placemaking all contribute to the ultimate success of a trail by creating a positive and memorable user experience. A trail that is noisy, has negative views, or feels unsafe or stressful may exclude recreational users and families. Alignments that efficiently and safely create direct routes to key destinations are considered to be more favorable, as are routes that traverse the most scenic environments.

#### 6. Environmental Impacts

Although trails along stream corridors or woodlands are scenic and pleasant, the construction of multi-use trails can be impactful to the environment. The project team weighed these considerations and measured alignments with higher environmental impacts against other alternative alignments.

#### 7. Public Support

Because many of the alignments studied occur on private property, substantial public support would be needed for these alignments to move forward. Attendees of the two public meetings held for the project were asked to identify potential trail segments that they would find most valuable. Segments that were not selected were ruled out unless they were necessary for connecting two other segments identified as valuable.

### Identifying Trail Alignment Alternatives

The planning process resulted in a number of alignment alternatives across the study area. Although the intent was to identify a corridor for a continuous multi-use trail, the project team included shorter segments of other facility types in the analysis to provide connections where a multi-use trail was not possible.

The team shared a first round of alignment alternatives with the Project Advisory Committee (PAC), and after refining the alignments based on the PAC's feedback, the team sought feedback from the public at the first public meeting.

The Chester County Planning Commission used this feedback, combined with further analysis and additional stakeholder outreach, to refine the trail alignment alternatives. Based on the criteria cited in the Methodology section above, the two primary trail alignments that remained as possibilities were a trail along Baltimore Pike and a trail along the US 1 Expressway. Overall, the PAC favored a trail along Baltimore Pike, though they agreed that if PennDOT would construct a trail along US1 as part of their reconstruction project, that option should also be pursued. The revised alignments reflecting the PAC's comments were presented to the public at a second public meeting. At that time, Chester County Planning Commission had conceptual support from PennDOT for including a trail in their US 1 reconstruction project, so this alignment remained an option for consideration. The public did not express a strong preference between the two main alignment options presented; rather, many acknowledged that each alignment would be valuable for different reasons.

Based on feedback from the PAC and the public, the project team decided to pursue both the Baltimore Pike option and the US 1 Expressway option. Each route was analyzed in further detail using the methodology previously described. The public did not express a strong preference between the two main alignment options presented; rather, many acknowledged that each alignment would be valuable for different reasons.



The planning process resulted in two primary alternatives for further analysis. East of Kennett Square, alignment options were less clear.

The analysis for each route began assuming a continuous multi-use trail, and in some cases, alternative facility types were analyzed when it was clear that constraints to developing a multi use trail outweighed the potential benefits. Other facility types considered include:

- Multi-Use Trail
- Multi-Use Sidepath
- Signed Bike Route
- Buffered/Separated Bike Lane
- Split-mode



#### Multi-Use Sidepath Section



**Signed Bike Route Section** 



#### Buffered/Separated Bike Lanes Section



#### **Split-mode Section**



### Evaluation

#### EVALUATION Baltimore Pike Trail Alignment

A more detailed analysis revealed that a multiuse trail will likely not fit entirely within the 50' Baltimore Pike right-of-way. Because of the amount of truck traffic on this road, the travel lanes cannot be narrowed to allow more room. The project team evaluated several options for enhancing bicycle and pedestrian connectivity on Baltimore Pike: **Curbed multi-use sidepath.** A multi-use trail must have 5' of separation from vehicular traffic or a vertical barrier, such as a curb. A curbed multi-use trail immediately adjacent to the Baltimore Pike cartway would fit within the right-of-way, but given traffic volume and speed, this would feel unsafe and stressful for trail users.

A narrower path within the right-of-way. A 6' wide path may fit within the right-of-way; however, a narrower path does not meet the standard width necessary for both bicycle and pedestrian use which would create unsafe conditions for users. This option is not recommended given the potential volume of trail users and proximity to vehicular traffic.

**Sidewalks and Bike Lanes.** Previous plans have recommended a combination of sidewalks and bike lanes along Baltimore Pike. These improvements would both fit within the right-of-way; however, because the majority of Baltimore Pike is not curbed it will significantly impact drainage patterns and be very costly to implement. Additionally, in the western half of the study area most destinations are not within walking distance from one another so pedestrian facilities may not be warranted. **Buffered and Separated Bike Lanes.** Buffered bike lanes are 5' wide lanes designated for cyclists that are separated from the adjacent travel lane by a striped buffer area. Separated bike lanes also feature a physical barrier between the bike lane and travel lane. These bike lanes are possible the entire length of the road (with the exception of the boroughs of Oxford, West Grove, and Kennett Square), and in some areas the existing shoulders are already wide enough to accommodate them.

Acquire additional right-of-way for a multiuse sidepath. The entity responsible for implementing the trail would need to acquire or gain access to a narrow strip of land from each property owner fronting along Baltimore Pike. It is safe to say that this is not a feasible option for all 23 miles of Baltimore Pike from Chadds Ford to Oxford. Although challenging, this approach may be warranted in select locations where there is demonstrated need for bicycle and pedestrian connectivity and where high traffic volume and vehicular speeds make bike lanes and sidewalks unsafe.



#### Baltimore Pike Trail Alignment - Facility Types Evaluated

#### **Findings**

Using the commuting potential analysis shown on page 33, anecdotal and observational data collected, as well as traffic volume and speed analysis of the corridor, the project team determined that a multi-use trail may be warranted along Baltimore Pike from Schoolhouse Road to PA-41, with the exception of Kennett Square Borough where there are reduced vehicle speeds and existing sidewalks. East of Schoolhouse Road traffic volumes are high, various physical constraints (structures close to the roadway, utility poles and steep embankments) exist within the right-of-way, and long-steep hills would make construction of multi-use trail challenging, costly and undesirable. This section of Baltimore Pike was not included in the evaluation for these reasons and other alternatives are discussed and evaluated in the Circuit Connection section later in this chapter. West of PA-41 the project team evaluated an alignment comprised primarily of buffered bike lanes and shared roadways. The findings of this evaluation are quantified in the tables in Appendix E and are segmented to match PennDOT's US 1 Expressway sections so the two alignments can be compared. The Baltimore Pike alignment overlaps with the US 1 Expressway alignment between the Maryland line and PA-272.

#### EVALUATION US 1 Expressway Trail Alignment

PennDOT's engineering consultants conducted a cursory analysis of the impacts to the expressway reconstruction project that could result from adding a 12' wide multi-use trail. They assessed impacts to private property, wetlands, and structures like stream culverts and road bridges. Ultimately, the impacts they identified were found to be more significant than the project team initially expected, would increase the cost of the reconstruction project and cause some back-tracking in the engineering and permitting process. Because the consultants had not yet begun engineering for the section of roadway between PA-41 and Schoolhouse Roadthe easternmost segment- analysis was instead conducted by the project team. The results of this analysis can be found in Appendix E. The four sections studied correspond with the sections of the US 1 reconstruction project.

#### US1 Trail Expressway Trail Alignment - Facility Types Evaluated



#### EVALUATION Circuit Trail Connection

Multiple alignment alternatives were studied between the eastern terminus of the US 1 Expressway and the Brandywine Creek. This segment is critical to connecting to the Circuit network via either the Brandywine Trail or the Octoraro Trail. The two alignments studied that garnered the most public support were: **Bennett's Run Option:** An alignment along Schoolhouse Rd., Longwood Rd., Baltimore Pike, and then following Bennett's Run stream corridor to Brinton's Bridge Rd. The portion of this alignment along Bennett's Run would likely need to be an elevated boardwalk or other low-impact construction method. This alignment would require a bridge over the Brandywine Creek to access the future location of the Brandywine Trail. **Railroad Corridor Option:** An alignment along Baltimore Pike to Route 52, then south on Route 52 to the active freight rail corridor. The trail would follow the south side of the rail corridor on private property to Fairville Rd. and connect back to Baltimore Pike. Although East Penn Railways chose not participate in this study, it is assumed that they would not permit a trail within their property.

#### **Circuit Trail Connection - Facility Types Evaluated**



# Alignment Alternatives **KEY TAKE-AWAYS**

A feasible alignment for a continuous multi-use trail between Chadds Ford and Oxford was not identified.

#### Nearly all of the multi-use trail alignments studied would impact private property.

• Developing such a trail at a regional scale is likely not feasible, but may be feasible for shorter segments. This will depend on public support for the project, landowner support, funding for acquisition, and the capacity of the entity developing the trail.

## A trail along road corridors would not be as simple as initially expected.

- A multi-use trail along Baltimore Pike will not fit within the right-of-way and will require private property acquisition or easements.
- A trail along the US 1 Expressway would create additional impacts to private property and wetlands, increasing the project cost and elongating the highway reconstruction project timeline for sections already in development. Developing a trail in some sections would be less impactful than in others.

#### In some areas a multi-use trail may be worth the trouble.

• Given the current bicycle and pedestrian activity between Avondale and the commercial area east of Kennett Square, a multi-use trail along Baltimore Pike in this area would be valuable.

## A preferred connection to the Circuit was not identified.

- A connection to the Circuit may be the most challenging segment to develop.
- It is not clear whether there is public support for a trail east of Kennett Square.

# Feasibility Determination

5

Using all the information gathered and analyzed from various sources, this chapter discusses the feasibility of the trail alignments studied.



#### **Trail Alignment Determination**

After analysis of many alignment alternatives, Baltimore Pike and the US 1 Expressway emerged as the most promising trail options with the most public support.

While there is a documented need for improved bicycle and pedestrian facilities along the entire 23 mile-long Baltimore Pike corridor in southern Chester County, developing a continuous multi-use trail along the road for the entire length is not feasible. As the analysis and evaluation revealed, this would involve overcoming sustained steep slopes in Pennsbury Township; acquiring easements from hundreds of private land owners; and numerous and frequent at-grade road crossings. Although some segments of the roadway may warrant the challenge and cost associated with developing a multiuse trail, other facility types may be more appropriate along other segments.

Including a trail within PennDOT's US 1 Expressway reconstruction project - also a distance of 23 miles- could add around \$50 million to the cost of the \$360 million reconstruction project. Infrastructure funding at the federal level is near crisis, with exponentially more construction and rehabilitation projects pending than funding will allow for implementation. In addition, PennDOT believes the trail would not fit within the right-of-way in many locations, requiring significantly more property acquisition than what is needed for the roadway project. Lastly, the trail would have to cross all roads intersecting with the expressway as well as interchange ramps at-grade. After evaluating the alignment and its various impacts, a continuous multi-use trail along US 1 Expressway would be roughly as complex as other options that offer better connectivity.

Considering the vast challenges associated with both of these options, the project team does not believe either are feasible routes that meet this study's objective of identifying a continuous multi-use trail that would connect the communities along the US 1 corridor in southern Chester County to the Circuit trail network in Chadds Ford.

Although the planning process did not identify a feasible route for a continuous multi-use trail, it did find a number of improvements that would address the well-documented demand for safe active transportation infrastructure and for regional recreational trails. The following chapter describes a vision for an overall network and outlines new facilities and improvements that would benefit southern Chester County communities.

#### **Octoraro Rail Corridor Potential**

This study found that the Octoraro rail corridor may one day be a feasible location for a regional multi-use trail. However, three primary challenges make this option currently not feasible:

- 1. The corridor is actively used for freight rail service that serves the many distribution and manufacturing facilities in southern Chester County;
- 2. The owner of the corridor is not open to inviting bicycle and pedestrian traffic onto the property; and
- 3. The corridor is not wide enough to accommodate both the existing track and a multi-use trail.

At some point in the future if any of these conditions change the corridor should be considered for trail use.



The active rail corridor south of Oxford. The corridor would make a scenic, low-stress trail with excellent connectivity to the population centers if rail service ceases in the future.

# 6

# Recommendations

Although an alignment for a continuous multi-use trail from Chadds Ford to Oxford may not be feasible, this study identified several projects that would provide significant value for bicyclists and pedestrians. This chapter explains these recommended projects.



#### **Recommended Projects**

Although this study did not result in a feasible continuous multi-use trail alignment, the process did identify other potential projects that offer alternative solutions to the transportation challenges, lack of regional connection, and desire for recreational trails that inspired this study.

#### Study Area

#### **Recommended Projects**

Baltimore Pike Bikeway

Multi-use trails along US1 Expressway • Schoolhouse Road to Bancroft Road • Maryland Line to PA-472 • Oxford Connector Trail – PA-472

#### Circuit connection options

• Bennett's Run Trail • Railroad Trail

#### Other trail projects

Avondale Nature Trail
Jennersville Loop Trail
Nottingham Park Connector Trail

#### Other trail projects (conceptual)

Harriet Tubman Underground Railroad Byway and Pilgrimage Route
 Serpentine Trail



#### Recommendations | 6



**RECOMMENDED PROJECT** 

## Baltimore Pike Bikeway

This study documented a corridor-wide need and desire for improving Baltimore Pike as a truly multi-modal transportation corridor.

The resulting concept is the Baltimore Pike Bikeway: a continuous route for bicyclists with pedestrian facilities where appropriate with visible branding and wayfinding elements that carry through the entire corridor. The character of Baltimore Pike and its surrounding landscape transitions from suburban in the eastern end to rural at the western end. Active transportation improvements should transition according to what is necessary, appropriate and desirable within the context of each area. Planning, designing, constructing and maintaining a variety of facility types in a cohesive, intentional way will increase visibility and use of the facilities, improve safety, and promote placemaking. This continuous facility can provide regional connectivity, serve as the spine for a multi-modal transportation network, and provide recreational value for a variety of user types.





#### **Design Standards**

Although constructing a multi-use trail for the entirety of the corridor is not feasible, a combination of facility types could be used to provide a safe, continuous bicycle and/or pedestrian facility between Chadds Ford and Oxford/Nottingham Village. Execution of a consistent streetscape improvement strategy, including unified site furnishings, lighting (where appropriate), plantings, and thoughtful wayfinding and interpretive signage would unify multiple facility types and provide a cohesive experience for the length of the corridor. Careful design consideration should be given to transitions between facility types during the engineering process.

#### **Facility Types**

The following facility types can be used where appropriate across the corridor. Further study of the corridor may identify additional or substitute facility types.

- Multi-Use Sidepath
- Buffered and Separated Bike Lanes
- Split Mode



**Multi-Use Sidepath** The Chester Valley Trail, a multi-use Circuit Trail, parallels Matthews Rd. in Great Valley.



**Buffered/Separated Bike Lanes** This bike lane on Delaware Avenue in Philadelphia is buffered from vehicular traffic by striping and flexible delineators.



Split Mode

Shared road bicycle legends, also known as 'sharrows", are painted on Main St. in Spring City, PA, making this street that parallels the Schuylkill River Trail more friendly to cyclists. Pedestrians use existing sidewalks.

#### Multi-Use Sidepath

A side path is a multi-use path that parallels a roadway. They are used in lieu of bike lanes and/or sidewalks when a higher degree of separation from vehicular traffic is needed due to traffic volume and/or speeds. Multi-use sidepaths are recommended in areas of the Bikeway with high commuting potential and should therefore be designed with the needs of commuters in mind. Those commuting to mushroom production facilities leave for work in the pre-dawn hours, and those working a regular 9-5 shift would be commuting home in the dark. Lighting should be considered as an integral element to the branding/placemaking strategy along the trail.





The Baltimore Pike Bikeway could be comprised of a variety of facility types including a multi-use sidepath as shown in this photosimulation.

#### **Buffered or Separated Bike Lanes**

Buffered bike lanes are 5' wide lanes designated for cyclists that are separated from the adjacent travel lane by a striped buffer area. Separated bike lanes also feature a physical barrier between the bike lane and travel lane. These bike lanes are possible the entire length of Baltimore Pike west of Schoolhouse Road (with the exception of the boroughs of Oxford, West Grove, and Kennett Square), and in some areas the existing shoulders are already wide enough to accommodate them. This design treatment is recommended in areas with little expected demand for pedestrian circulation or where sidewalks exist and space on the roadway allows. West of Route 41 Amish buggies commonly travel on Baltimore Pike. Physical barriers between the bike lane and travel lane should not be used in this area to allow buggy traffic to move in and out of the bike lane.





The Baltimore Pike Bikeway would a provide continuous safe route for cyclists between Kennett Square and Nottingham, and would provide for pedestrian circulation where needed and appropriate. Comprised of a variety of facility types, including buffered bike lanes, as shown in this photosimulation, the bikeway would be designed for visual consistency from one end to the other to make it recognizable, visible, and safe.

#### Split Mode

Some worry that shared use of the roadway between cyclists and motorists is dangerous and should not be encouraged where traffic volumes are high and streets are narrow. Conditions like these actually make for safer riding conditions for cyclists as they force vehicular traffic to slow down. Additionally, adding more cyclists to road traffic elevates the visibility of cyclists, and motorists come to expect and look out for them. Adding "Bicyclists May Use Full Lane" signage and shared road striping (also called "sharrows") can also enhance visibility. This type of treatment is appropriate in "downtown" areas where space is constrained and speed limits are 35 mph or less. Pedestrians following this route would use adjacent sidewalks.





A split-mode facility, where bicyclists share the road and pedestrians use existing sidewalks, is the recommended facility in developed areas like Oxford and Kennett Square.

#### Matching Facility Types to Locations

Chester County's Multi-Modal Handbook and the Federal Highway Safety Administration's Bicycle Facilities Selection Guide offer guidance on selecting appropriate facilities given roadway conditions and the surrounding context. The factors that contributed to the recommended facility type in each location include:

- **Safety.** The primary variables considered when selecting a bicycle/pedestrian facility adjacent to a roadway are annual average daily traffic volume and vehicular speeds.
- **Potential demand for active transportation.** This was determined through a Commuting Potential analysis using OnTheMap, a web application for visualizing Census data, (see page 33), and corroborated with anecdotal data received from stakeholder interviews and other public input.
- **Potential demand for pedestrian circulation.** This takes into consideration the distance between major destinations identified through the planning process. Other destinations along the route that could produce demand for pedestrian circulation like grocery stores, parks, and schools were also considered.
- **Private property impacts.** Because a multiuse trail will not fit within the Baltimore Pike Right-of-Way use of this facility type must be limited to where it is most necessary to avoid an unrealistic number of private property impacts.

• **Change in elevation.** An analysis of elevation change along the Baltimore Pike corridor was also conducted, but given the gently rolling topography, elevation was not determined to be a constraint that would impact the type of facility possible.

#### **Recommended Facility Type**

Based on the findings from this study, the diagram on pages 60-61 shows the recommended facility type in each part of the corridor determined using the aforementioned criteria. Because of the large scope of this project, generating concept plans, recommending specific improvements for at-grade crossings, and other details is beyond the scope of this project. However, the project team's detailed feasibility assessment for each segment can be found in Appendix E.



Chester County's Multi-Modal Handbook



Federal Highway Safety Administration's Bicycle Facilities Selection Guide

#### Implementation

A highly collaborative approach for implementing any and all parts of the network will result in the most successful overall network. The proposed Bikeway spans twelve municipalities, so at a minimum it is recommended that the municipalities form a working committee that meets regularly to ensure forward and coordinated progress of the Bikeway. If desired, the Chester County Planning Commission could play a role as a convener of this group and could offer technical assistance where needed. The Bikeway will be most valuable as a whole, so municipalities have a stake in segments of the Bikeway being completed beyond their municipal boundaries.

The roles and responsibilities of such a committee would include but not be limited to:

- engaging in collaborative planning and engineering projects; design and coordination of wayfinding and interpretive signage and branding elements;
- coordinating grant applications among municipalities; and
- coordinating public outreach.

Multi-municipal projects- especially those that are well-organized and involve an entire regionmake compelling cases for grant funding.

Once segments of the Bikeway are completed, the needs will shift toward collaborative maintenance, management, and promotion of the Bikeway. A new organizational structure for shared management should be revisited at such a time. A central interpretive theme that carries through the Bikeway in the form of design elements, interpretation, and art would enhance user experience and could draw more users from outside the region. It also presents an opportunity to expand and diversify the management responsibilities of the Bikeway. An organization focused on the interpretive theme could become a key partner in implementing, funding, managing, and promoting the Bikeway. Themes that were identified through this planning process as being relevant/valuable related to the area's rich Quaker and Underground Railroad history, US 1's status as one of the original colonial roads, and of course, the Mushroom Capital of the World.

#### Phasing

Although the implementation of the Bikeway as described in this chapter is a long-term project, small, low-cost improvements are possible in the short-term that would have positive impacts on bicycle and pedestrian mobility. The shoulder of several sections of Baltimore Pike between West Grove and Toughkenamon is currently striped as bike lanes. This treatment is possible in many additional areas along Baltimore Pike without additional widening. Widening in select areas to accommodate bike lanes might be possible to incorporate as part of PennDOT's regular resurfacing work, but funding to cover the cost of widening would likely be required. The municipalities through which these bike lanes pass should commit to maintaining them regularly to ensure they remain safe for cyclists. Such maintenance

activities include keeping the lane clear of vegetation and debris and restriping as needed.

In conjunction with planning for and executing short-term improvements, a master plan for the Bikeway should be undertaken by the multimunicipal committee as an early action item. This process will:

- Recommend potential management
   structures
- · Identify interpretive themes
- Recommend specific improvements
- Discuss the branding and identity of the Bikeway
- · Identify priority projects
- Recommend next steps

Chester County should monitor PennDOT's resurfacing program and coordinate the striping of bike lanes with PennDOT's regularly scheduled resurfacing of Baltimore Pike.

New Garden Township and Kennett Township should pursue an advanced feasibility study for establishing a multi-use trail between Route 41 and Scarlet Rd., and between Ways Lane and Schoolhouse Rd. A major component of this study should be outreach to landowners to determine the level of support for constructing this trail on private property and to gauge potential easement/acquisition costs. For Kennett's portion of the project, a portion of the route (north of Macfarlan Rd.) is included in PennDOT's future reconstruction of the US 1 Expressway. Chester County and Kennett Township should coordinate with PennDOT to incorporate the trail into the reconstruction project if feasible.

The municipalities along Baltimore Pike should meet, along with Chester County representatives, to discuss the results of this report and the interest of each municipality in advancing the concept.

#### NEXT

#### **Baltimore Pike Bikeway**

- Form a working committee, meet regularly
- Invite partner organizations to join committee, including private employers
- · Commission a master plan for the Bikeway
- Monitor PennDOT's resurfacing program to ensure any segments of Baltimore Pike to be resurfaced are re-striped with bike lanes
- Pursue an advanced feasibility study for establishing a multi-use trail between Route 41 and Scarlet Rd., and between Ways Ln. and Schoolhouse Rd. Study should include significant emphasis on landowner outreach.
- Coordinate with PennDOT to incorporate a multi-use trail into the reconstruction of US 1 between Macfarlan Rd. and Schoolhouse Rd.

**RECOMMENDED PROJECT** 

## Multi-use Trails along US 1 Expressway

The original reasoning for studying the US 1 Expressway corridor as a potential trail route was based on the assumption designing and constructing the trail would require coordination with only one landowner-PennDOT- and could be incorporated into their current project to reconstruct the entire 23mile Expressway for a fraction of the project's total cost. Normally a trail project of this magnitude would take decades to complete, so the idea of a trail being constructed within the next decade emerged as an attractive option, regardless of the alignment's shortcomings.

PennDOT's reconstruction of the Expressway is divided into four sections, which are each at different stages in the engineering process. See map next page: the section that is farthest along is section 100, which as of December 2020 is entering final design and has already completed the environmental clearance process.



Looking north along the US1 Corridor in Oxford at the PA 472 overpass.

PennDOT's consultants for the reconstruction project performed conceptual analyses on the Expressway between the Maryland Line and PA-41 to understand the impacts including a 12' wide multi-use trail within the US 1 rightof-way would have. Because engineering has not yet begun for the easternmost segment, the Chester County Planning Commission performed an analysis for this segment. PennDOT's consultants and the Chester County Planning Commission identified locations where the trail would likely not fit within PennDOT's right-of-way given topographical and other physical constraints; locations where adding a trail would impact wetlands that otherwise would not have been impacted by the reconstruction project; and where a trail would impact structures like overpass bridges and stream culverts that otherwise would not have

been impacted. The results of those impacts were more significant than initially assumed. Incorporating a trail within the two sections that are farthest along in the engineering process would require back-tracking, resulting in project delays. Additionally, constructing the trail would add significant cost to the reconstruction project, which already is expected to cost about 40% more than the amount of funding currently allocated.

PennDOT conceptually supports the project and would be willing to include a trail within their reconstruction project if funding were available; however, obtaining outside funding in time for the trail to be included in the reconstruction project may be challenging.

Although a trail along the entirety of the US 1 expressway may be cost-prohibitive, a trail

in certain areas with significant community support may be worthwhile to pursue. This planning process identified two key locations along the Expressway where a multi-use trail could be particularly valuable. Chester County Planning Commission will continue coordinating with PennDOT and local stakeholders regarding potential inclusion of these trails within the overall reconstruction project.

This planning process identified two key locations along the Expressway where a multi-use trail could be particularly valuable. Chester County Planning Commission will continue coordinating with PennDOT and local stakeholders regarding potential inclusion of these trails within the overall reconstruction project.

PennDOT US1 Expressway Reconstruction Sections



#### US1 Expressway Trail Segment

## Schoolhouse Road to Bancroft Road

This 3.28 mile-long segment would serve as a meaningful stand-alone facility with high recreational value and would help advance several key projects documented in previous plans:

- **The Kennett Greenway**, a major multimunicipal initiative, proposes to occupy the US 1 right-of-way for approximately 1 mile from Mill Road to Anson B. Nixon Park.
- **Multiple local plans** have indicated a desire for a bicycle and pedestrian connection from Kennett Square Borough to Bancroft Elementary School, which would be challenging to develop along Pemberton Road and/or Bancroft Road - the two main roads that access the school.

Additionally, this route would connect with the proposed Baltimore Pike Bikeway, expanding connectivity between Kennett Square Borough and the shopping centers just east of the Borough.

Because of challenging topography and the close proximity of homes adjacent to the right-ofway, a significant amount of retaining wall may be needed to achieve a multi-use standard and maintain adequate privacy. This segment also proposes to use and improve a portion of the existing trail network within Anson B. Nixon Park.

To enhance connectivity, New Garden Township should pursue bicycle/pedestrian connections between Bancroft Elementary School, nearby housing developments east of Bancroft Road, and the proposed Baltimore Pike Bikeway.

#### NEXT

#### Schoolhouse Road to Bancroft Road

• Coordinate with PennDOT to incorporate a multi-use trail into the reconstruction of US 1 between Schoolhouse Rd. and Bancroft Rd.



This abandoned road bed lies partially within the US 1 right-of-way and extends east from Bancroft Road for approx. 1,000 feet.



US1 Expressway Trail Segment - Schoolhouse Road to Bancroft Road

#### US1 Expressway Trail Segment

#### Maryland Line to PA-472

This planning process revealed a need for transportation alternatives for those without access to a car in the Oxford area. Many who live in Oxford work close by at the Herr's factory, the Tasty Baking plant, Sunny Dell Foods, and others, and a safe bicycle and pedestrian route would provide transportation options. Farther south, West Nottingham Township noted that their needs are related more to recreation. Nottingham County Park is located in West Nottingham Township, but bicycles are not permitted on paths within the park, and there is no bicycle and pedestrian friendly route to access the park. Additionally, a multi-use trail could be designed to serve Amish buggy traffic, providing an off-road corridor for these vehicles.

This segment of trail could open the door to regional trail connections in the future. Cecil County, Maryland abuts the study area to the south. In 1983 that county acquired an 8.8-mile long portion of the Octoraro rail corridor for use as a multi-use trail but has not yet developed it (see Appendix D). This trail could be developed in the future and may become more of a priority if there were an existing trail to which it could connect.

Although it will require further study, over half of this 5.31-mile proposed trail could exist on private property, including a 1-mile portion of the active but unused Octoraro rail corridor south of the Herr's Factory. It would require a mid-block crossing of Forge Road that may PennDOT may not permit without improvements given the current roadway speed limit of 40 mph.



Looking south along the proposed trail corridor and the US 1 Expressway from the park-and-ride at PA-472.

#### NEXT STEPS

#### Maryland Line to PA-472

- Coordinate with PennDOT to incorporate a multi-use trail into the reconstruction of US 1 between PA 472 and the MD line
- Pursue an advanced feasibility study for establishing a multi-use trail between PA 472 and the MD line with emphasis on landowner outreach
#### Maryland Line to PA-472

Total Mileage: 5.31 miles

Recommended Facility Type: 12' wide multi-use trail (wider if designed for buggies)

Private property impacts: 22 distinct parcels and 17 different property owners

Significant At-Grade Crossings: 7

Stream Crossings: 3

0.5

0

Goat Hill

erpentine

Barrens

Anticipated wetland impacts: 2,850 linear feet



Maryland Line to PA-472

Bar

US1 Expressway Trail Segment

# Oxford Connector Trail – PA-472

#### **Connection to Downtown Oxford**

To connect this trail into Oxford Borough, a multi-use trail is proposed on the south side of PA-472 from the parking lot of Oxford Memorial Park to the proposed trail along the south side of US 1. This would not only provide a safe connection for Oxford residents to access the trail, but also would provide easy access for out-of-town trail users to visit downtown Oxford.

Although no survey has been conducted, it appears that a multi-use trail could be located within the right-of-way of PA-472 with minimal impacts to private property. A multi-use trail is recommended over simply extending the existing sidewalks because the traffic volume and speeds on PA-472 would make on-road cycling too stressful for some users, including children. There is an existing park-and-ride facility adjacent to the US 1 on-ramp which could potentially be expanded for trail parking.



Looking east toward downtown Oxford on PA 472. The proposed trail would be along the south side of PA 472.

# NEXT

## Oxford Connector Trail – PA-472

• Pursue an engineering study for a multiuse trail along PA 472 to connect a US 1 Expressway trail to downtown Oxford. CCPC should facilitate further coordination between PennDOT and Oxford Borough to determine which entity should manage this project.



Oxford Connector Trail – PA-472

#### **RECOMMENDED PROJECT**

# **Circuit Connection**

The Baltimore Pike Bikeway concept terminates at Schoolhouse Road in Kennett Township where the US1 Expressway begins. East of this point on Baltimore Pike traffic volumes double. Given the speeds, traffic volume, and topography of Baltimore Pike between the Expressway and the Delaware County Line, bike lanes without a significant physical barrier are not appropriate, and constructing a continuous multi-use trail is not feasible given private property and physical constraints. Furthermore, there is little public support for a bicycle/pedestrian facility in this location. This leaves a 5-mile gap between the Bikeway and the nearest planned Circuit Trails on the eastern side of the Brandywine Creek. This segment represents a critical gap as it would create a connection from the Circuit to Longwood Gardens, a major regional destination.

The project team studied multiple routes to make this connection. The following pages highlight the two routes determined to be most feasible that garnered the most public support during the planning process.



Bennett's Run, a high quality stream that flows through Pennsbury Township.

#### **Circuit Connection**

## **Bennett's Run Trail**

This alternative provides a relatively direct route to the Brandywine Trail and connects major points of interest and population centers like Longwood Gardens, the Hamorton historic district, and the Kendall at Longwood retirement community. This trail would parallel the scenic Bennett's Run for about 1.5 miles which would require low-impact construction methods and materials for environmental sensitivity. A crossing of both the Brandywine Creek and of an active rail corridor would be required.

This route would also include about an approximately 1 mile long section along the low volume Brinton's Bridge Road where no bicycle or pedestrian facility would be provided aside from signage and striping. During the final public comment period for this report, several major stakeholders expressed concern about this alignment option for its potential impacts to private property and natural resources. As a result, two additional alignment options were generated and can be found in Appendix E.



Brinton's Bridge Road is narrow and already sees significant use from recreational cyclists.



Bennett's Run Trail Option

## **Circuit Connection**

# **Railroad Trail**

This alignment would provide connections to the many commercial uses along Baltimore Pike. It would also utilize about a mile of the soon-to-be Kennett Bikeway – bike lanes along Route 52. The alignment would follow along the south side of the rail corridor outside of the railroad's property, and would use the existing US 1 bridge to cross the Brandywine Creek.

Both this route and the Bennet's Run Option would be challenging to implement. Furthermore, it is unclear whether there is local support for such a trail in Pennsbury Township, where a majority of the residential private property impacts would occur.

Further study is needed for this important and challenging segment. Pennsbury, Kennett, and East Marlborough Townships should collaboratively undertake a study that uses the findings from this study as a starting point to further clarify an optimal route for connecting the proposed Baltimore Pike Bikeway, Kennett Square, and Longwood Gardens to the Circuit. This study should include a robust public participation component to understand the level of public support that exists for such a project.

#### **Funding Opportunities**

There are multiple funding sources for which the recommended planning study would be eligible.

- The Chester County Vision Partnership Program is a reimbursement grant that provides 70% of the costs for planning studies that are consistent with the goals in the County's comprehensive plan, Landscapes3.
- Brandywine Creek Greenway partner municipalities could have access to funding through the Brandywine Creek Greenway and the Brandywine Conservancy to advance planning for this segment.
- The National Park Service's Rivers, Trails and Conservation Assistance Program offers technical assistance grants to conduct planning studies and community engagement processes for conservation and recreationrelated projects.



The Octoraro rail line at the intersection of PA-52. The proposed trail would be on the right (south) side of the corridor.



PA Route 52 will be widened in 2021 to accommodate bike lanes between US 1 and the Delaware Line, providing a bicycle connection to trails in northern Delaware.



The existing US1 Bridge over the Brandywine Creek. Future improvements to the bridge could include accommodations for bicycles and pedestrians.



#### **RECOMMENDED PROJECT**

# Other Trail Projects

Through this planning process, a number of other trail opportunities were identified that generated significant public interest. Some of these projects would serve to provide greater connectivity to destinations along the Baltimore Pike Bikeway, and others would not directly connect to the Bikeway but would serve as regional cultural and recreation assets. **Other Trail Projects** 

# **Avondale Nature Trail**

An approximately 0.9 mile trail is possible through Avondale from State Street along Pomeroy Avenue predominantly through property owned by the Borough. This would provide a scenic, lower stress "bypass" for pedestrians and bicyclists passing through Avondale on the Baltimore Pike Bikeway. It would be an amenity for the adjacent Avonwheel Estates community, creating a direct connection to a park, playground and community garden. This area is highly subject to flooding, so trail engineering must be sensitive to such conditions. Further study would be needed to determine a safe bicycle/ pedestrian connection to Baltimore Pike on the north side of Avondale.



The proposed trail route would connect to and enhance visibility of a new community garden that is currently tucked away in Avondale.



#### **Avondale Nature Trail**

- Conduct public outreach about the potential trail
- Commission a preliminary engineering study to solidify a trail an alignment, and determine the likely associated costs, permits required, and connections to Baltimore Pike.



The proposed trail would parallel or potentially share Pomeroy Ave., a low-volume, dead-end street in Avondale that connects to a park and playground.

#### **Proposed Avondale Nature Trail**



**Other Trail Projects** 

## Jennersville Loop Trail

Penn Township supports expanding the trail and sidewalk system in the Jennersville area and is actively working to do so. The proposed 2.25 mile loop trail would follow Baltimore Pike, Pusey Mill Road, pass through the YMCA property, follow the US-1 Expressway and PA-796, utilizing Township-owned property and connecting to the Township's new park north of the Expressway. As the portion of the trail along the US1 right-of-way comprises a small part of the overall project, this portion could be pursued as an easement from PennDOT rather than requesting PennDOT build the trail as part of their Expressway reconstruction project. Additional recommendations in Jennersville to create better connectivity between the proposed Baltimore Pike Bikeway, loop trail, and new Township park include a connector trail along the west side of PA-796 over US 1, a multi-use connection between the Bikeway to the future high school along 796 and the future school entrance, enabling Jennersville residents to more safely walk or bike to school. These improvements would offer significant health benefits to those who used them, and therefore could attract local health-related project sponsors.



Looking north on PA 796 toward Baltimore Pike. The existing sidewalk ends at the entrance to the Shoppes at Jenners Village. The future entrance to the Avon Grove High School will be located across from the intersection pictured here. A multi-use trail along the future driveway will allow students to safely walk or bike to school.

An engineering study is needed to determine how to best provide safe bicycle and pedestrian passage through Jennersville. Such a study could determine if buffered bike lanes are possible through Jennersville, sidewalks would be appropriate. However, if bike lanes are not possible, a multi-use trail is recommended so bike traffic can safely pass through.

# NEXT

#### Jennersville Loop Trail

- Determine what type of bicycle facilities are possible along Baltimore Pike through Jennersville. This can be accomplished as part of Penn Township's upcoming sidewalk study.
- Approach YMCA about the loop trail
- Coordinate with PennDOT re: a trail paralleling US 1, possibly within the right-of-way
- Continue coordinating with PennDOT re: a trail along PA-796 to connect to future sports park
- Conduct other landowner outreach as required, and begin preliminary engineering

Proposed Jennersville Loop Trail



**Other Trail Projects** 

## Nottingham Park Connector Trail

West Nottingham Township's adopted planning documents seek a connection from Nottingham Village to Nottingham County Park. The connection depicted follows PA-272 from the southern terminus of the proposed Baltimore Pike Bikeway across an overpass of US1 that is slated to be replaced as part of the US-1 reconstruction project. This new bridge could be designed to accommodate bicycle and pedestrian traffic to aid this connection. The route passes through a farm expected to become a major development in future years and indicates a desire for a trail to be incorporated into the future development. The route would connect to Nottingham County Park via a signed bike route on Park Road, a low-volume, low-speed rural road.



Park Rd. is a low-volume, low-speed roadway that is appropriate for on-road walking and cycling for most ages and abilities.



#### **Nottingham Park Connector Trail**

- Evaluate ordinances to ensure requirements exist for trails/sidewalks withing the land development process
- Coordinate with PennDOT to ensure bike/ped facilities are incorporated into replacement of PA-272 bridge over US 1.

Proposed Nottingham Park Connector Trail



**Other Trail Projects** 

## Harriet Tubman Underground Railroad Byway and Pilgrimage Route

The Harriet Tubman Underground Railroad Byway is an interpretive driving route from the Eastern shore of Maryland to Philadelphia that passes by sites important to interpreting Harriet Tubman's legacy and the Underground Railroad. The byway route passes into Pennsylvania on Route 52 and then continues east to Philadelphia on US 1, but offers no interpretation between the Delaware border and Philadelphia. An alternative route that offers more interpretive value has already been established from Longwood to Philadelphia, but has not been adopted as part of the official route. Recently, an unofficial pilgrimage in tribute to Harriet Tubman's contributions and legacy has been established that roughly follows the route of the byway, and could be memorialized through further planning.





# NEXT

## Harriet Tubman Underground Railroad Byway and Pilgrimage Route

- Map the walking route taken through recent pilgrimages and recommend roadway safety improvements and interpretation opportunities along the way
- Determine a path forward for extending the Harriet Tubman Underground Railroad Byway into Pennsylvania

Omitted as a destination along the Harriet Tubman Byway, the Longwood Progressive Friends Meetinghouse, now home to the Brandywine Valley Visitor's Bureau, is considered a spiritual destination of a pilgrimage route that follows the route of slaves fleeing the south to freedom. The Meetinghouse was founded to advance the abolition of slavery, served as a stop on the Underground Raliroad, and had many prominent members who spoke out against slavery.



Proposed Harriet Tubman Underground Railroad Byway and Pilgrimage Route Study

## **Other Trail Projects**

## **Serpentine Trail**

During this planning process, a common sentiment expressed was a desire for a trail that connected the plentiful natural areas found along the state line like Goat Hill Serpentine Preserve, Nottingham Park, the Chrome Barrens, Peacedale Preserve, Fair Hill Natural Resources Management Area, White Clay Creek Preserve and Auburn Valley State Park. These natural areas are outside of this project's study area, but given the amount of interest, a future study is warranted to determine if a trail could connect some or all of these assets.



#### **Serpentine Trail**

• When undertaking county-wide or multimunicipal trail planning projects, consider the feasibility of developing a hiking trail that connects the significant natural areas along the state line.



Serpentine barrens in Nottingham Park in West Nottingham Township. Nottingham Park is designated as a National Natural Landmark.



#### Proposed Serpentine Trail Planning Study

Multi-Use Trails along US 1

Other Trail Projects

Other Trail Projects (Conceptual)

## **Implementation Guide**

Recommended project	Action	Primary organization	Supporting organizations	Short term	Medium term	Long term
Baltimore Pike Bikeway	Form a working committee, meet regularly	Chester County Planning Commission, municipalities, partner agencies		short		
	Invite partner organizations to join committee, including private employers	Chester County Planning Commission, municipalities, partner agencies		short		
	Commission a master plan for the Bikeway	Working committee (Chester County Planning Commission, municipalities, partner agencies)		short		
	Monitor PennDOT's resurfacing program to ensure any segments of Baltimore Pike to be resurfaced are re-striped with bike lanes	Chester County Planning Commission	Working Committee	short	medium	
	Pursue an advanced feasibility study for establishing a multi-use trail between Route 41 and Scarlet Rd., and between Ways Ln. and Schoolhouse Rd. Study should include significant emphasis on landowner outreach.	Kennett Township, New Garden Township	Working Committee		medium	
	Coordinate with PennDOT to incorporate a multi- use trail into the reconstruction of US 1 between Macfarlan Rd. and Schoolhouse Rd.	Chester County Planning Commission	East Marlborough, Kennett and New Garden Townships	short	medium	long
Circuit Connection	Undertake a feasibility study to identify a feasible route from Schoolhouse Rd. to the Circuit Trail network. Study should emphasize public participation to learn whether the public values this project.	Pennsbury Township, Kennett Township, East Marlborough Township	Chester County Planning Commission	short		
US 1 Expressway Trails	Coordinate with PennDOT to incorporate a multi- use trail into the reconstruction of US1 between Schoolhouse Rd. and Bancroft Rd.	Chester County Planning Commission	East Marlborough, Kennett, and New Garden Townships	short	medium	long
	Coordinate with PennDOT to incorporate a multi- use trail into the reconstruction of US1 between PA 472 and the MD line	Chester County Planning Commission	Oxford Borough, Lower Oxford, East Nottingham, and West Nottingham Townships and PennDOT	short	medium	long
	Pursue an advanced feasibility study for establishing a multi-use trail between PA 472 and the MD line with emphasis on landowner outreach	Oxgord Region municipalities	Chester County Planning Commission , PennDOT	short	medium	
	Pursue an engineering study for a multi-use trail along PA 472 to connect a US 1 Expressway trail to downtown Oxford	Oxford Borough, PennDOT	Chester County Planning Commission, Oxford Mainstreet		medium	

# Implementation Guide (continued)

Recommended project	Action	<b>P</b> rimary organization	Supporting organizations	Short term	Medium term	Long term
Avondale Nature Trail	Conduct public outreach about the potential trail	Avondale Borough, London Grove Township		short		
	Commission a preliminary engineering study to solidify a trail an alignment, and determine the likely associated costs, permits required, and connections to Baltimore Pike.	Avondale Borough, London Grove Township			medium	
Jennersville Loop Trail	Determine what type of bicycle facilities are possible along Baltimore Pike through Jennersville. This can be accomplished as part of Penn Township's upcoming sidewalk study.	Penn Township	Chester County Planning Commission	short		
	Approach YMCA about the loop trail	Penn Township			medium	
	Coordinate with PennDOT re: a trail paralleling US 1	Penn Township	Chester County Planning Commission, PennDOT		medium	
	Continue coordinating with PennDOT re: a trail along PA-796 to connect to future sports park	Penn Township		short		
	Conduct other landowner outreach as required, and begin preliminary engineering	Penn Township			medium	
Nottingham Park Connector	Evaluate ordinances to ensure requirements exist for trails/sidewalks withing the land development process	West Nottingham Township	Chester County Planning Commission	short		
	Coordinate with PennDOT to ensure bike/ped facilities are incorporated into replacement of PA-272 bridge over US 1.	West Nottingham Township	Chester County Planning Commission	short	medium	
Harriet Tubman Underground Railroad Byway	Map the walking route taken through recent pilgrimages and recommend roadway safety improvements and interpretation opportunities along the way	Chester County Planning Commission	Partner organizations, Kennett Township, Kennett Square Borough, East Marlborough Township	short		
	Determine a path forward for extending the Harriet Tubman Underground Railroad Byway into Pennsylvania	Chester County Planning Commission, Delaware County	PennDOT, Brandywine Valley Scenic Byway Association	short	medium	
Serpentine Trail	When undertaking county-wide or multi-municipal trail planning projects, consider the feasibility of developing a hiking trail that connects the significant natural areas along the state line.	Chester County Planning Commission, West Nottingham, Elk, New London, London Britain, Franklin, New Garden, and Kennett Townships	The Nature Conservancy, Cecil Co., MD, New Castle Co., DE, Delaware Greenways, and other partner agencies	short	medium	long

Appendix A: Relevant Findings from Municipal Plans and Studies

# BALTIMORE PIKE FOR EVERYONE (2015)

- Sidewalks recommended along the entirety of Baltimore Pike between Oxford and Kennett
- Bus shelters recommended for any SCCOOT stop with more than five boards per day
- On road cycling improvements recommended for much of the corridor
- Streetscaping/bus shelters/pedestrian improvements recommend at Lincoln University: Baltimore Pike @ University Rd.

#### Jennersville:

- Stripe bike lanes
- Multiuse path along southern side of Baltimore Pike from Shoppes at Jennersville west to Lewis Rd.
- Improve SCOOT bus stops

West Grove:

- Relocate bus stops from Baltimore Pike to Railroad Ave.
- Bike lane ends just east of West Grovecontinue west as sharrows onto Evergreen (insufficient width for full bike lane)

Avondale:

- Baltimore Pike between 41 and Avondale borough identified as hazardous to all users due to volume, speeds, and steep roadway grade

- Gateway (center median for traffic calming) recommended @ Baltimore Pike and Glen Willow Rd.
- Clearly define a safe bicycle path through the intersection of Baltimore Pike and 41
- Lane diet through the borough
- Bumpouts at each intersection

#### Toughkenamon:

- Bike lanes end at Newark Rd. and Baltimore Pike
- Off-road multiuse trail recommended along Baltimore Pike to Kennett Square (too narrow to continue bike lanes)

# East side of Kennett Square to Kennett Township

- Remove pedestrians/cyclists from busy, fourlane roadway via a sidepath
- There are plans to construct a sidewalk along Baltimore Pike/Cypress St. between the borough and Scarlet Rd.
- PennDOT will construct sidewalks when they widen US 1 to 6 lanes in East Marlborough (report indicates this, though PennDOT is not going to build the sidewalks but will rather grade and provide ROW for future sidewalks to be built)

# OXFORD REGIONAL COMPREHENSIVE PLAN (2012)

• Figure 15-O: Oxford Region Trail and Bicycle Plan – This plan map identifies the Oxford Loop Trail, trail destinations, proposed recreational bikeways, and the Octorara and Mason Dixon Greenway.

## **AVONDALE BOROUGH**

#### Comprehensive Plan (2019)

Very comprehensive planned bike/ped system. Priority bike/ped recommendations include (in order of priority):

- Improve sidewalks, crosswalks, and pedestrian signage along Pennsylvania Avenue.
- Pedestrian improvements on West State St.
- Multi-use loop trail around former quarry and adjoining parcels
- Improve all borough Sidewalks
- Connect to London Grove trail network via sidewalks/paths along Indian Run Road and Clay Creek Road
- Install a perimeter loop trail around the borough Park.
- Establish a multi-use loop trail along the East Branch White Clay Creek
- Connect Carillon neighborhood to Pennsylvania Avenue w/ a bike/pedestrian only bridge over White Clay Creek.

#### EAST MARLBOROUGH TOWNSHIP

Comprehensive Plan (2011)

- 4-A. Develop greenways as a means for future hiking, biking, walking, and horseback riding, while also providing for wildlife corridors. (Pg. 2-4 – Open Space, Parks, & Recreation)
- Goal 7: Provide for safe, environmentally positive, and scenic vehicular and non-vehicular circulation systems. (Pg. 2-6)
- 7-C. Recognize walking and biking as viable methods of transportation to reduce reliance on automobiles throughout the region and encourage links between communities when practical. (Transportation & Circulation Pg. 2-6)
- 7-E. Coordinate transportation planning efforts to link vehicular, pedestrian, biking, and public transportation opportunities where possible. (Transportation & Circulation Pg. 2-6)
- Pedestrian and Bicycle Facilities Efforts are underway to make the area more bicycle friendly for all users with the design of bike lanes along Route 82. Construction of the bike lanes is not yet funded; however, the project is planned to include continuous bike lanes from Route 926 to the roundabout on Route 82, along with the extension of an existing sidewalk near Charles F. Patton Middle School. This program is part of the approved 2013-2014 Transportation Improvement Program (TIP) for Pennsylvania, as approved by DVRPC. (Pg. 10-11)

Open Space, Recreation, and Environmental Resources Plan (2021) Recommended trail network includes:

- A central trail spine along 82 linking the two community parks, Unionville Park with the New Park. South of 926 is recommended to be on-road bike facilities, and north of 926 is recommended to be sidewalk/multi-use trail.
- Pedestrian-oriented connections, connecting neighborhoods and recreational amenities to the central trail spine
- Bicycle-oriented connections, linking arts and culture destinations and recreational amenities to the central trail spine
- Bicycle-oriented connections, linking recreational amenities outside East Marlborough Township, to the central trail spine
- Pedestrian-oriented connections, linking arts and culture destinations with nearby residences and businesses

#### **EAST NOTTINGHAM TOWNSHIP**

Oxford Regional Comprehensive Plan (2012)

See Multi-Municipal section

Kennett Square Borough Comprehensive Plan (2013)

- Comp plan strongly supports increasing Active Trans and trails for recreation and transportation. Addresses need for more amenities to make active transportation easier, including trail heads, signage, bike racks, etc.
- CP Objective Pg. 2-5: Transportation. Maintain, improve, and enhance safe pedestrian and bicycle access within and between the commercial core areas, neighborhoods, parks, schools, and other destinations and provide connections within the surrounding region.
- CP Goal Pg. 2-8: Parks and Recreation Objective. Cooperate with surrounding municipalities to establish a region wide network of greenways, sidewalks, trails, paths, and bike routes which link recreation destinations with neighborhoods, employment centers, shopping areas, and public schools
- CP Pg. 11-30. PR-9. Work with neighboring communities to establish multi-use trails which link residential areas to public schools, playgrounds, employment centers, and commercial areas.

### **KENNETT TOWNSHIP**

Kennett Greenway Shared Use Pathway and Trail System (2020)

• Shows the recommended alignment of the greenway, including on-road short-term connectors to create connectivity while ROW is acquired through several key parcels

Kennett Active Transportation Plan (2017)

- Includes an analysis of where demand is for active transportation, critical connections given this demand
- Key findings include: The need for safe pedestrian connections to Anson B. Nixon Park; A desire to safely bike or walk to Longwood Gardens; The need to provide safe walking routes for mushroom farm employees; A desire to walk and bike to school with children; The importance of safe crossings in Kennett Square, near schools, and near the YMCA; Overall enthusiasm for improving the active transportation network and connecting with places like Greenville, DE
- Conducted a demonstration project- a bike ride along one of the proposed routes
- Kennett Greenway listed as a "catalyst project"
- "Park to Park" multimodal on-road connector connects Anson Nixon to Pennock Parkanother "catalyst project", this is fully funded through TA-set aside

• Last catalyst project is complete street treatments on Birch, State and Cypress Streets

Comprehensive Plan (2015)

Includes Active Transportation map

Open Space, Trails, & Parks Master Plan and Needs Assessment (2019)

- Includes list of destinations
- The KTA is developing and promoting a trail and sidewalk plan to create a network that links major open spaces, parks, public facilities, and neighborhoods in the Township and beyond. This Plan supports the Kennett Trails Alliance (KTA) initiatives, and advocates linkages and connections to Parks, and Recreational Areas and Open Spaces.
- Survey results indicated residents want the focus of trails and open space to be on their needs as opposed to outsiders or future residents; preserving the rural character, improving the trail network with additional linkages (especially to parks), partnering with other agencies to meet active recreational needs
- Identifies priority areas for open space and trail connections and overlays this with catalyst projects identified in Active Trans. Plan. Priority areas seem to be identified based on input at a public meeting- is this representative of the whole?
- Township's goal- add another 10% of its land area into open space

## LONDON GROVE TOWNSHIP

Comprehensive Plan (2011)

- Includes trail system map
- Consider promoting....the creation of a local system of trails
- Encourage priority projects that expand upon the township, as identified in the Trail System Map (p. 3-2-5).
- Work with neighboring municipalities to implement the White Clay Creek Corridor plan (p. 3-2-6).
- Mentions utilizing Octoraro line as a trail if it were no longer in service
- The Township should consider supporting lowcost physical improvements to new roads and roads undergoing upgrading to accommodate bicyclists (p. 3-2-6).

Trail Map (December 2019)

- Shows fairly significant interconnected trail network in southern part of the township (south of West Grove and Avondale)
- Two proposed east-west trails shown north of the US1 Expressway
- Three crossings of the US 1 Expressway shown: one underneath @ stream crossing west of Guernsey Rd., one underneath @ Guernsey Rd., and underneath @ Glen Willow Rd.

### LOWER OXFORD TOWNSHIP

Oxford Regional Comprehensive Plan (2012)

See Multi-Municipal section

## **NEW GARDEN TOWNSHIP**

**Trail Prioritization Plan (2019)** 

2008 Greenways Plan identified over 20 potential new trails. Prioritization plan used analysis and public input to prioritize three of them. The three priorities that emerged were:

- Central East Homeowners Association (HOAK) trail connections to The Land Conservancy for Southern Chester County (TLC) lands and Kennett Township;
- St. Anthonys/Township/Schools (STATS) trail system; and
- White Clay Creek trail system

**Trail Plan for Phelps property** 

• Makes recommendations for greenways and trail network in Phelps property. These recommendations are incorporated into the 2018 Comprehensive Plan.

Comprehensive Plan (2018)

- Includes conceptual greenways corridors map- from 2009 Greenways plan
- Recommends creating a Village Residential district in Toughkenamon that would have sidewalks and trail connections

• Recommends provision of sidewalks and bike routes along Route 41 (not in all places) in accordance with the Greenways and Trails Plan

### Official Map (2019)

- Shows existing trails and sidewalks, as well as proposed trail easements
- Proposed trail easements are opposite Newark Rd. from the Airport and in Landenberg to connect/extend the existing hiking trails

## **OXFORD BOROUGH**

Oxford Regional Comprehensive Plan (2012)

See Multi-Municipal section

Urban Centers Revitalization Plan

Reviewed, nothing relevant

## **PENN TOWNSHIP**

Comprehensive Plan (2013)

• Continue efforts to expand sidewalks within the Jennersville village area and along Baltimore Pike, and require sidewalks in new developments within this area. Multimodal Connectivity Feasibility Study, Village of Jennersville (2015)

- Add bicycle lanes to Baltimore Pike corridor and Route 796
- Explore potential sidewalk connections around the Baltimore Pike/796 intersection.
- Pedestrian improvements at Baltimore Pike/ Jenner's Pond Road, Baltimore Pike/Lewis Road.
- Develop trail from Jenner's Pond to the former Lewis Road

## PENNSBURY TOWNSHIP

Comprehensive Plan (2011)

- Extend or install sidewalks, paths, trails, and bike lanes in appropriate areas as opportunities arise.
- Explore the creation of bicycle friendly roads.
- Trail map shows existing and proposed trails, including one that would provide a N-S connection between the Brandywine Trail and Hillendale Rd. through the township

# Route 1 Corridor Improvement Plan (2000)

• Sidewalks are recommended within the commercial core area on both the north and south sides of US 1. The sidewalks should extend to the rear property lines of these parcels to provide for opportunities for pedestrian circulation between these commercial areas

#### **UPPER OXFORD TOWNSHIP**

Oxford Regional Comprehensive Plan (2012)

See Multi-Municipal section

#### **WEST GROVE**

Comprehensive Plan (2003)

- The Borough should work with the County to implement a regional bikeway and trail system for recreation and commuting purposes.
- Coordinate with the Kennett Area Region and the County in initiating the County-wide Bicycle Circulation Plan.

#### **Revitalization Plan (2003)**

- Borough-wide Revitalization. Elements of the development vision include: Investment in enhanced linkages between the borough and the Downtown, including an improved sidewalk system and other pedestrian trails.
- Includes a map with existing and proposed sidewalks, as well as one proposed (short) trail

## **WEST NOTTINGHAM**

Comprehensive Plan (2006)

- Explore the creation of hiking, bicycling and/ or equestrian trails along scenic routes to link recreational and conservation areas within the Township.
- Objective 6: Link land development purposes with transportation needs of all Township residents, particularly the pedestrian and bicycling needs of children and the elderly.
- Investigate the use of utility rights-of-way to develop a recreational trail system.
- Investigate the use of easements along scenic routes, through floodplains, or in woodlands to create a trail system enforcing the conservation of scenic rural landscapes.
- Includes a Transportation Plan map that shows a potential trail to Nottingham County Park and Octorara Creek

Nottingham Village Circulation, Streets, and Identity Composite Map (2007)

- Shows trail connecting the Village to Nottingham Park along 272 and then through Kimble Farm
- Potential trails along Stoney Lane, Old Baltimore Pike, Herr Drive, 272, and Park Rd.

## **CHADDS FORD TOWNSHIP**

Village of Chadds Ford Master Plan (2015)

- Reduce lane widths on US 1/Baltimore Pike from 14' to 11'
- Multi-use trail on south side of US 1/Baltimore Pike from Ring Rd. to S. Creek Rd.
- 5' walkway on south side of US 1/Baltimore Pike from Ring Rd. to Station Way Rd.
- Bridge over Brandywine Creek shift and narrow travel lanes, creating a 10' wide lane on S. side of bridge, separated from traffic by a masonry wall
- Walkway/trail on S. side of US 1/Baltimore Pike to the intersection of Fairville Rd.

Appendix B: Public Survey Results



# Q1 What type of trail(s) do you use? (select all that apply)

ANSWER CHOICES	RESPONSES	
Paved trails	83.77%	1,022
Unpaved, hiking/mountain bike/equestrian trails	80.08%	977
I don't use trails	3.77%	46
Total Respondents: 1,220		

# Q2 When you use trails, do you (select all that apply):



ANSWER CHOICES	RESPONSES	
Walk/run/hike	90.97%	1,108
Bike	60.43%	736
Ride a horse	3.94%	48
I don't use trails	2.22%	27
Other (please specify)	4.27%	52
Total Respondents: 1,218		

#	OTHER (PLEASE SPECIFY)	DATE
1	rollerblade	7/18/2020 8:55 AM

2	With may toddler in her stroller	7/17/2020 2:02 PM
3	inline skate	7/10/2020 6:01 PM
4	XC Ski, Skate	7/10/2020 3:28 PM
5	Stroller, scooter	7/10/2020 9:39 AM
6	Walk/run/hike with dogs, scooter with dogs (scooter on unpaved only)	7/10/2020 9:23 AM
7	Think	7/10/2020 7:47 AM
8	push a stroller or wagon for my kids	7/4/2020 3:05 PM
9	dog friendly	6/30/2020 4:01 PM
10	Inline Skate	6/29/2020 5:35 PM
11	Mt bike	6/28/2020 5:50 PM
12	Push a stroller	6/27/2020 11:45 AM
13	ATV	6/27/2020 9:43 AM
14	Roller blade	6/26/2020 9:25 PM
15	none	6/25/2020 9:21 AM
16	Walk dogs	6/23/2020 9:22 AM
17	walk a dog	6/22/2020 3:12 PM
18	Trikke (http://www.trikke.com/fitness/)	6/22/2020 12:55 PM
19	dog walk, bird	6/22/2020 12:41 PM
20	walk dog	5/16/2020 1:21 PM
21	Dog walking	5/15/2020 10:00 PM
22	access fishing areas	5/14/2020 3:01 PM
23	Walk the dog	5/14/2020 2:14 PM
24	In our family we have both able hikers and disabled and elderly trail users	5/14/2020 2:13 PM
25	Walk my son in a stroller	5/14/2020 6:33 AM
26	Stroller	5/13/2020 1:53 PM
27	NO HORSES ON PEOPLE TRAILS	5/13/2020 1:34 PM
28	Push stroller	5/13/2020 1:03 PM
29	Cross Country ski	5/13/2020 11:06 AM

30	Walk dog	5/12/2020 2:08 PM
31	Usually a road bike	4/28/2020 9:09 AM
32	wheelchair	4/21/2020 7:39 PM
33	Walk the dog	4/1/2020 3:24 PM
34	I also sometimes need to use a wheelchair	3/28/2020 12:38 PM
35	Hike with dogs as well.	3/28/2020 11:09 AM
36	XC Ski and skate	3/28/2020 11:01 AM
37	Push strollers	3/13/2020 9:17 PM
38	NO HORSES	3/13/2020 11:33 AM
39	Walk a dog on leash	3/13/2020 10:21 AM
40	PWalking/running with a jogging stroller	3/12/2020 7:41 PM
41	walk dog	3/12/2020 5:47 PM
42	Dog Walk	3/12/2020 5:28 PM
43	Physical leg limitations.	3/12/2020 3:56 PM
44	Use strollers and kids bikes	3/12/2020 2:22 PM
45	Backpacking	3/11/2020 8:31 PM
46	Dirtbike / like harsh treading	3/11/2020 12:07 PM
47	For ATV/UTV off - road riding	3/10/2020 10:04 PM
48	Do not use them	3/10/2020 10:03 PM
49	Walk my dog	3/10/2020 9:36 PM
50	"Small Wheels" (Trikke, in-line skates). Also consider baby carriages/strollers.	3/10/2020 4:21 PM
51	Dog walking	3/10/2020 2:07 PM
52	Trikke	3/7/2020 8:37 AM



# Q3 How far do you typically travel to use trails?

ANSWER CHOICES	RESPONSES
I do not travel to use trails.	3.79% 46
Less than 2 miles	11.77% 143
2-5 miles	31.85% 387
5-10 miles	30.45% 370
More than 10 miles	22.14% 269
TOTAL	1,215



# Q4 How often do you use trails?

ANSWER CHOICES	RESPONSES	
Daily	18.39% 22	24
Weekly	49.59% 60	)4
Monthly	17.82% 21	17
A few times a year	10.02% 12	22
Rarely	2.05%	25
Never	2.13%	26
TOTAL	1,21	L8

# Q5 How often do you walk or bicycle for transportation purposes (meaning to run an errand, get to work or school, etc.)?



ANSWER CHOICES	RESPONSES	
Daily	6.16%	75
Weekly	11.75%	143
Monthly	6.24%	76
A few times a year	10.85%	132
Rarely	27.94%	340
Never (If you answer "Never", please skip to question #7)	37.06%	451
TOTAL		1,217
## Q6 If you walk or bicycle for transportation purposes, do you feel the existing facilities (sidewalks, bike lanes, etc.) are adequate?



ANSWER CHOICES	RESPONSES	
Yes	5.09%	38
Somewhat adequate	19.01% 14	42
No	75.90% 56	57
TOTAL	74	47

# Q7 If you do NOT currently walk or bicycle for transportation purposes, would you be more likely to if there were safe bicycle/pedestrian infrastructure in place?



ANSWER CHOICES	RESPONSES
Yes	78.37% 866
No	10.77% 119
I'm not sure	10.86% 120
TOTAL	1,105

Q8 Please rank the importance to you and your family of developing or improving the following types of bicycle and pedestrian infrastructure, with 1 being the most important and 4 being the least important:





1 2 3 4

	1	2	3	4	TOTAL	WEIGHTED AVERAGE
Developing a regional multi-use (bicycle, pedestrian, equestrian) trail to which other local trails could connect	63.39% 561	18.87% 167	7.34% 65	10.40% 92	885	1.65
Improving the conditions and continuity of existing sidewalk networks	7.79% 67	24.19% 208	36.63% 315	31.40% 270	860	2.92
Expanding the sidewalk network to connect to more destinations beyond the center of town like grocery stores and major employers.	17.89% 170	31.58% 300	34.00% 323	16.53% 157	950	2.49
Improving on-road safety for bicyclists through widening shoulders, adding new bike lanes or making it safer for cyclists to share the road.	28.31% 325	25.87% 297	16.20% 186	29.62% 340	1,148	2.47

Q9 On a scale of 1-5 (1 being highly valuable and 5 being not valuable), how valuable to you and your family would each of the following trail types be:





	1 (HIGHLY VALUABLE)	2	3	4	5 (NOT VALUABLE)	TOTAL	WEIGHTED AVERAGE
A paved, off-road trail that parallels a roadway that connects residential developments, community centers, restaurants, stores, and places of employment	37.46% 336	35.34% 317	17.95% 161	4.68% 42	4.57% 41	897	2.04
A paved scenic trail that connects parks and nature preserves	56.13% 577	31.32% 322	7.00% 72	3.02% 31	2.53% 26	1,028	1.64
A paved trail that connects to Philadelphia and beyond	13.07% 140	14.01% 150	42.86% 459	14.85% 159	15.22% 163	1,071	3.05



### Q10 Would you use a trail system that included bike lanes and/or sidewalks as part of the route?

ANSWER CHOICES	RESPONSES	
I would likely use this trail system, including the bike lanes/sidewalks.	71.03%	863
I would likely use this trail system, but only the off-road portions.	23.79%	289
I would likely not use this trail system.	5.19%	63
TOTAL		1,215

115



## Q11 Please select your age range:

ANSWER CHOICES	RESPONSES	
18 and under	2.57%	31
19-25	1.66%	20
26-34	10.95%	132
35-50	36.68%	442
51-64	31.37%	378
65+	16.76%	202
TOTAL		1,205

## Q12 What is your zip code?

Answered: 1,197 Skipped: 23

#	RESPONSES	DATE
1	19348	8/1/2020 12:35 AM
2	19348	7/30/2020 11:37 AM
3	19348	7/30/2020 9:41 AM
4	19348	7/28/2020 7:40 AM
5	19352	7/28/2020 12:00 AM
6	19348	7/27/2020 3:47 PM
7	19348	7/27/2020 8:49 AM
8	19348	7/27/2020 7:04 AM
9	19348	7/27/2020 12:29 AM
10	19348	7/26/2020 9:03 PM
11	19348	7/26/2020 8:42 PM
12	19317	7/26/2020 8:36 PM
13	19348	7/26/2020 8:05 PM
14	19390	7/26/2020 5:35 PM
15	19348	7/26/2020 5:30 PM
16	19330	7/25/2020 2:02 PM
17	19352	7/24/2020 5:33 PM
18	19348	7/23/2020 4:37 PM
19	19363	7/23/2020 11:38 AM
20	19382	7/23/2020 11:38 AM
21	19382	7/23/2020 11:28 AM
22	19348	7/23/2020 11:20 AM

23	19352	7/23/2020 11:17 AM
24	19311	7/22/2020 11:37 AM
25	19348	7/22/2020 11:36 AM
26	19061	7/22/2020 9:53 AM
27	19363	7/21/2020 11:46 AM
28	19348	7/21/2020 9:40 AM
29	19311	7/21/2020 9:39 AM
30	19438	7/21/2020 9:36 AM
31	19348	7/21/2020 9:33 AM
32	19348	7/21/2020 8:11 AM
33	19363	7/20/2020 4:30 PM
34	19390	7/20/2020 3:20 PM
35	19390	7/20/2020 2:38 PM
36	19713	7/20/2020 10:45 AM
37	19348	7/20/2020 9:29 AM
38	19348	7/19/2020 10:38 PM
39	19348	7/19/2020 4:39 PM
40	19103	7/19/2020 4:18 PM
41	19363	7/19/2020 10:57 AM
42	19317	7/19/2020 7:50 AM
43	19317	7/18/2020 11:08 PM
44	19348	7/18/2020 8:17 PM
45	19350	7/18/2020 7:13 PM
46	19311	7/18/2020 5:52 PM
47	19352	7/18/2020 4:28 PM
48	19348	7/18/2020 3:36 PM
49	19390	7/18/2020 1:08 PM
50	19352	7/18/2020 12:15 PM

51	19363	7/18/2020 12:09 PM
52	19348	7/18/2020 9:43 AM
53	19320-4174	7/18/2020 9:31 AM
54	19348	7/18/2020 9:23 AM
55	19390	7/18/2020 8:57 AM
56	19350	7/18/2020 8:56 AM
57	19390	7/18/2020 8:53 AM
58	19348	7/18/2020 8:40 AM
59	19348	7/18/2020 8:37 AM
60	19350	7/18/2020 8:31 AM
61	19311	7/18/2020 7:52 AM
62	19352	7/18/2020 7:52 AM
63	19348	7/18/2020 7:40 AM
64	19390	7/18/2020 7:35 AM
65	19382	7/18/2020 7:29 AM
66	19363	7/18/2020 7:18 AM
67	19348	7/18/2020 7:08 AM
68	19301	7/17/2020 2:02 PM
69	19363	7/17/2020 1:07 PM
70	19363	7/17/2020 12:53 PM
71	19311	7/17/2020 8:37 AM
72	19317	7/16/2020 9:39 PM
73	19390	7/16/2020 6:20 PM
74	19335	7/16/2020 3:36 PM
75	19363	7/16/2020 11:59 AM
76	19348	7/16/2020 8:46 AM
77	19348	7/16/2020 8:38 AM
78	19348	7/15/2020 11:35 PM

79	19348	7/15/2020 2:37 PM
80	19363	7/15/2020 11:37 AM
81	19320	7/15/2020 11:09 AM
82	19333	7/15/2020 2:05 AM
83	19317	7/14/2020 9:08 PM
84	19363	7/14/2020 7:56 PM
85	19363	7/14/2020 7:45 PM
86	19390	7/14/2020 7:19 PM
87	19426	7/14/2020 7:09 PM
88	19317	7/14/2020 5:51 PM
89	19348	7/14/2020 5:36 PM
90	19348	7/14/2020 4:48 PM
91	19702	7/14/2020 11:15 AM
92	19390	7/14/2020 8:33 AM
93	19348	7/14/2020 8:20 AM
94	19382	7/14/2020 8:13 AM
95	19348	7/14/2020 7:52 AM
96	19317	7/14/2020 7:02 AM
97	19348	7/13/2020 10:11 PM
98	19348	7/13/2020 10:06 PM
99	19317	7/13/2020 8:34 PM
100	19348	7/13/2020 8:18 PM
101	19317	7/13/2020 6:15 PM
102	19317	7/13/2020 6:02 PM
103	19348	7/13/2020 5:36 PM
104	19317	7/13/2020 5:35 PM
105	19465	7/13/2020 1:16 PM
106	19468	7/13/2020 10:56 AM

107	19352	7/13/2020 9:15 AM
108	19382	7/13/2020 9:01 AM
109	19380	7/13/2020 8:41 AM
110	19350	7/13/2020 8:10 AM
111	19390	7/13/2020 7:49 AM
112	19335	7/13/2020 7:47 AM
113	19348	7/13/2020 5:56 AM
114	19382	7/12/2020 5:24 PM
115	19382	7/12/2020 1:28 PM
116	19711	7/12/2020 1:04 PM
117	19311	7/12/2020 10:00 AM
118	19380	7/12/2020 7:30 AM
119	19360	7/12/2020 7:20 AM
120	19380	7/11/2020 6:44 PM
121	19348	7/11/2020 5:33 PM
122	19390	7/11/2020 12:52 PM
123	19352	7/11/2020 12:22 PM
124	19311	7/11/2020 12:08 PM
125	19073	7/11/2020 12:05 PM
126	19352	7/11/2020 12:00 PM
127	19341	7/11/2020 12:00 PM
128	19348	7/11/2020 11:22 AM
129	19341	7/11/2020 9:23 AM
130	19350	7/11/2020 9:21 AM
131	19348	7/11/2020 8:40 AM
132	19311	7/11/2020 8:01 AM
133	19382	7/11/2020 5:44 AM
134	19348	7/11/2020 2:52 AM

135	19382	7/11/2020 2:27 AM
136	19330	7/11/2020 12:14 AM
137	19317	7/10/2020 11:58 PM
138	19380	7/10/2020 11:41 PM
139	19390	7/10/2020 7:48 PM
140	19320	7/10/2020 7:12 PM
141	19355	7/10/2020 7:06 PM
142	19317	7/10/2020 6:02 PM
143	19355	7/10/2020 5:46 PM
144	19352	7/10/2020 5:35 PM
145	19350	7/10/2020 5:33 PM
146	19352	7/10/2020 5:11 PM
147	19350	7/10/2020 5:09 PM
148	19382	7/10/2020 4:38 PM
149	19362	7/10/2020 3:47 PM
150	19330	7/10/2020 3:29 PM
151	19063	7/10/2020 3:28 PM
152	19352	7/10/2020 2:40 PM
153	19348	7/10/2020 2:36 PM
154	19390	7/10/2020 2:30 PM
155	19335	7/10/2020 2:12 PM
156	19380	7/10/2020 2:04 PM
157	19468	7/10/2020 1:43 PM
158	19335	7/10/2020 1:19 PM
159	19380	7/10/2020 12:54 PM
160	19348	7/10/2020 12:22 PM
161	19317	7/10/2020 11:46 AM
162	19317	7/10/2020 11:29 AM

163	19390	7/10/2020 10:41 AM
164	19460	7/10/2020 9:57 AM
165	19348	7/10/2020 9:40 AM
166	19343	7/10/2020 9:23 AM
167	19382	7/10/2020 8:46 AM
168	19348	7/10/2020 8:39 AM
169	19382	7/10/2020 8:14 AM
170	19380	7/10/2020 7:48 AM
171	19363	7/10/2020 7:47 AM
172	19317	7/10/2020 7:24 AM
173	19317	7/10/2020 6:46 AM
174	19390	7/10/2020 12:45 AM
175	19363	7/10/2020 12:12 AM
176	19382	7/9/2020 10:19 PM
177	19380	7/9/2020 8:58 PM
178	19390	7/9/2020 8:35 PM
179	19380	7/9/2020 7:28 PM
180	19311	7/9/2020 7:16 PM
181	19373	7/9/2020 6:18 PM
182	19380	7/9/2020 5:22 PM
183	19382	7/9/2020 3:56 PM
184	19363	7/9/2020 3:46 PM
185	19335	7/9/2020 3:25 PM
186	19363	7/9/2020 3:20 PM
187	19317	7/9/2020 3:08 PM
188	19382	7/9/2020 2:50 PM
189	19073	7/9/2020 2:08 PM
190	19355	7/9/2020 1:58 PM

191	19441	7/9/2020 1:50 PM
192	19352	7/9/2020 12:12 PM
193	19318	7/9/2020 11:49 AM
194	19343	7/9/2020 10:23 AM
195	19348	7/9/2020 10:09 AM
196	19341	7/9/2020 9:54 AM
197	19348	7/8/2020 10:42 PM
198	19363	7/8/2020 4:16 PM
199	19363	7/8/2020 3:37 PM
200	19390	7/8/2020 2:22 PM
201	19317	7/8/2020 12:19 PM
202	19348	7/8/2020 10:14 AM
203	19348	7/8/2020 9:18 AM
204	19348	7/8/2020 8:05 AM
205	19348	7/8/2020 4:31 AM
206	19311	7/7/2020 11:09 PM
207	19330	7/7/2020 10:51 PM
208	19348	7/7/2020 10:41 PM
209	19350	7/7/2020 10:32 PM
210	19348	7/7/2020 9:32 PM
211	19348	7/7/2020 9:22 PM
212	19348	7/7/2020 9:05 PM
213	19348	7/7/2020 8:27 PM
214	19348	7/7/2020 8:12 PM
215	19317	7/7/2020 7:46 PM
216	19348	7/7/2020 6:12 PM
217	19390	7/7/2020 3:22 PM
218	19390	7/7/2020 11:52 AM

219	19348	7/7/2020 11:49 AM
220	19382	7/7/2020 11:20 AM
221	19348	7/7/2020 11:10 AM
222	19348	7/7/2020 11:03 AM
223	19348	7/7/2020 11:02 AM
224	19312	7/7/2020 10:57 AM
225	19320	7/7/2020 10:03 AM
226	19002	7/7/2020 4:00 AM
227	19374	7/6/2020 10:54 PM
228	19406	7/6/2020 5:29 PM
229	19311	7/6/2020 3:24 PM
230	19442	7/6/2020 3:18 PM
231	19348	7/6/2020 3:11 PM
232	19355	7/6/2020 2:39 PM
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237	19348	7/6/2020 12:47 PM
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239	19355	7/6/2020 12:44 PM
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242	19335	7/6/2020 11:33 AM
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257	19348	7/4/2020 10:12 AM
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260	19348	7/4/2020 8:38 AM
261	19311	7/4/2020 8:01 AM
262	19390	7/4/2020 6:23 AM
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264	19311	7/3/2020 9:36 PM
265	19348	7/3/2020 9:27 PM
266	19352	7/3/2020 6:23 PM
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268	19390	7/2/2020 6:41 PM
269	19363	7/2/2020 1:46 PM
270	19363	7/2/2020 12:31 PM
271	19363	7/2/2020 12:10 PM
272	19390	7/2/2020 10:35 AM
273	19352	7/2/2020 9:38 AM
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275	19348	7/1/2020 1:54 PM
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277	19348	7/1/2020 1:15 PM
278	19350	7/1/2020 12:01 PM
279	19390	7/1/2020 8:02 AM
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288	19317	6/30/2020 2:05 PM
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366	19382	6/23/2020 9:32 AM
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381	19311	6/22/2020 9:00 PM
382	19311	6/22/2020 8:17 PM
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385	19350	6/22/2020 7:02 PM
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393	10375	6/22/2020 4:35 PM
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395	19350	6/22/2020 4:19 PM
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436	19348		6/22/2020 11:21 AM
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438	19363		6/8/2020 12:12 PM
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547	19352	5/14/2020 7:04 AM
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588	19390	5/13/2020 9:28 PM
589	19352	5/13/2020 9:27 PM
590	19352	5/13/2020 9:26 PM
591	19352	5/13/2020 9:26 PM
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605	19352	5/13/2020 6:37 PM
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736	19317	4/2/2020 10:12 AM
737	19317	4/2/2020 9:50 AM
738	19311	4/2/2020 9:20 AM
739	19320	4/2/2020 9:12 AM
740	19390	4/2/2020 9:05 AM
741	19807	4/2/2020 9:03 AM
742	19348	4/2/2020 8:56 AM
743	19320	4/2/2020 8:56 AM
744	19355	4/2/2020 8:55 AM
745	19311	4/2/2020 8:49 AM
746	19348	4/2/2020 8:43 AM
747	19311	4/2/2020 8:38 AM
748	19348	4/2/2020 8:35 AM
749	19374	4/2/2020 8:35 AM
750	19348	4/2/2020 8:17 AM
751	19348	4/2/2020 8:12 AM
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753	19348	4/2/2020 7:40 AM
754	19348	4/2/2020 7:31 AM
755	19320	4/2/2020 7:22 AM
756	19348	4/1/2020 7:26 PM
757	19348	4/1/2020 6:46 PM
758	19350	4/1/2020 6:00 PM
759	19350	4/1/2020 5:33 PM
760	19350	4/1/2020 5:25 PM
761	19311	4/1/2020 3:25 PM
762	19363	4/1/2020 8:31 AM
763	19390	4/1/2020 7:35 AM
764	19348	4/1/2020 6:59 AM
765	19803	3/31/2020 12:26 PM
766	19382	3/30/2020 7:16 PM
767	19611	3/30/2020 5:06 PM
768	19311	3/30/2020 2:53 PM
769	19810	3/30/2020 2:05 PM
770	19311	3/30/2020 1:06 PM
771	19390	3/30/2020 12:46 PM
772	19348	3/30/2020 11:15 AM
773	19707	3/30/2020 10:22 AM
774	19335	3/30/2020 9:37 AM
775	19382	3/29/2020 11:00 PM
776	19808	3/29/2020 10:03 PM
777	19803	3/29/2020 6:03 PM
778	19701	3/29/2020 5:00 PM

779	19350	3/29/2020 3:19 PM
780	19060	3/29/2020 1:37 PM
781	18235	3/29/2020 1:20 PM
782	19711	3/29/2020 12:42 PM
783	19350	3/29/2020 12:26 PM
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785	19355	3/29/2020 12:01 PM
786	19808	3/29/2020 11:49 AM
787	19804	3/29/2020 11:41 AM
788	19317	3/29/2020 10:55 AM
789	19734	3/29/2020 9:52 AM
790	19348	3/29/2020 9:34 AM
791	19807	3/29/2020 9:29 AM
792	19801	3/29/2020 9:07 AM
793	19702	3/29/2020 8:36 AM
794	19342	3/29/2020 3:27 AM
795	19702	3/28/2020 8:39 PM
796	19311	3/28/2020 8:34 PM
797	21044	3/28/2020 6:49 PM
798	21921	3/28/2020 6:40 PM
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805	19808	3/28/2020 3:45 PM
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817	19063	3/28/2020 11:01 AM
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823	19901	3/28/2020 10:19 AM
824	19804	3/28/2020 10:16 AM
825	19807	3/28/2020 9:47 AM
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827	19720	3/28/2020 9:06 AM
828	19350	3/28/2020 8:44 AM
829	19720	3/28/2020 8:42 AM
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833	19350	3/28/2020 7:42 AM
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858	17579	3/23/2020 8:29 PM
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860	19425	3/23/2020 6:43 PM
861	19341	3/23/2020 5:38 PM
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863	19341	3/23/2020 4:31 PM
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865	19335	3/23/2020 3:03 PM
866	19425	3/23/2020 2:58 PM
867	19348	3/23/2020 2:06 PM
868	19438	3/23/2020 1:59 PM
869	19320	3/23/2020 1:46 PM
870	19348	3/23/2020 1:44 PM
871	19426	3/23/2020 1:22 PM
872	19380	3/23/2020 1:21 PM
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879	19320	3/23/2020 10:28 AM
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886	19382	3/23/2020 9:29 AM
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893	19380	3/23/2020 9:14 AM
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897	19363	3/22/2020 2:33 PM
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902	19348	3/22/2020 11:17 AM
903	19348	3/22/2020 11:04 AM
904	19348	3/22/2020 10:35 AM
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907	19348	3/21/2020 6:43 PM
908	19317	3/21/2020 6:37 PM
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922	19301	3/16/2020 2:42 PM
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929	19348	3/15/2020 9:22 AM
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937	19348	3/14/2020 2:10 PM
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988	19363	3/12/2020 11:18 PM
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998	19348	3/12/2020 9:59 PM
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1002	19348	3/12/2020 9:30 PM

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1005	19390	3/12/2020 9:09 PM
1006	19348	3/12/2020 9:03 PM
1007	19390	3/12/2020 8:37 PM
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1060	19348	3/12/2020 4:08 PM
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1062	19352	3/12/2020 4:04 PM
1063	19390	3/12/2020 4:03 PM
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1082	19352	3/12/2020 3:17 PM
1083	19311	3/12/2020 3:14 PM
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1107	19350	3/11/2020 10:06 AM
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1152	19363	3/10/2020 1:21 PM
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1154	19363	3/10/2020 1:07 PM
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1170	19351	3/10/2020 9:53 AM

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1193	19311	3/9/2020 4:00 PM
1194	19350	3/7/2020 8:38 AM
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1196	19350	3/6/2020 3:56 PM
1197	19363	3/6/2020 1:19 PM



## Q13 What is your approximate household income?

ANSWER CHOICES	RESPONSES
Less than \$30,000/year	2.41% 27
\$30,000-60,000	9.63% 108
\$60,001-\$90,000	15.69% 176
\$90,001-\$120,000	23.17% 260
Over \$120,000	49.11% 551
TOTAL	1,122



## Q14 How do you describe yourself? (select all that apply)

ANSWER CHOICES	RESPONSES
Asian	0.94% 11
Black/African American	0.85% 10
Latino/a	2.99% 35
White/Caucasian	94.19% 1,103
Other (please specify)	2.22% 26
Total Respondents: 1,171	

#	OTHER (PLEASE SPECIFY)	DATE
1	Peaceful	7/26/2020 8:36 PM

Southern Cheste	r County	<b>Circuit Trail</b>	Feasibility	Study
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3	Anti-racist	7/18/2020 7:29 AM
4	no	7/17/2020 12:53 PM
5	American	7/10/2020 5:11 PM
6	Mestizo	7/10/2020 11:46 AM
7	Italian	7/10/2020 7:24 AM
8	American	7/9/2020 10:19 PM
9	American	7/9/2020 8:58 PM
10	Decline to answer	7/9/2020 5:22 PM
11	N-a	7/7/2020 11:03 AM
12	Mexican	6/22/2020 9:34 PM
13	Pacific Islander	6/22/2020 2:07 PM
14	American	6/22/2020 1:12 PM
15	Italian American	5/19/2020 7:58 AM
16	No	5/9/2020 11:29 AM
17	Human	4/28/2020 11:59 AM
18	Italian/American	3/28/2020 10:16 AM
19	what does it matter what race I am or how much money I make	3/28/2020 9:47 AM
20	Native American - Cherokee	3/28/2020 7:39 AM
21	Native American	3/14/2020 10:24 PM
22	Italian	3/13/2020 4:22 PM
23	Hindu	3/13/2020 11:37 AM
24	Mexican	3/12/2020 5:12 PM
25	American	3/10/2020 12:46 PM
26	Human	3/10/2020 12:35 PM

#### Answered: 91 Skipped: 9 Senderos pavimentado Senderos no pavimentados. No uso ningún sendero 0% 10% 30% 50% 70% 80% 90% 100% 20% 40% 60%

## Q1 ¿Qué tipo(s) de sendero(s) utiliza usted? (marcar todos que apliquen)

ANSWER CHOICES	RESPONSES	
Senderos pavimentados	76.92%	70
Senderos no pavimentados para excursionismo a pie/ciclismo de montaña/montar caballo	24.18%	22
No uso ningún sendero	9.89%	9
Total Respondents: 91		



## Q2 Cuando utiliza senderos, usted... (marcar todos que apliquen):

ANSWER CHOICES	RESPONSES	
¿Camina/Corre/Hace excursión a pie?	88.30%	83
¿Monta bicicleta?	14.89%	14
¿Monta caballo?	1.06%	1
No uso los senderos	8.51%	8
Otro uso:	0.00%	0
Total Respondents: 94		

#	OTRO USO:	DATE
	There are no responses.	



## Q3 ¿Cuánta distancia viaja típicamente para utilizar senderos?

ANSWER CHOICES	RESPONSES
No viajo para utilizar senderos	8.25% 8
Menos de 2 millas	43.30% 42
2-5 millas	28.87% 28
5-10 millas	11.34% 11
Más de 10 millas	8.25% 8
TOTAL	97



## Q4 ¿Qué tan a menudo utiliza senderos?

ANSWER CHOICES	RESPONSES	
A diario	45.26%	43
Una vez por semana	36.84%	35
Una vez por mes	4.21%	4
2 o 3 veces por año	4.21%	4
Raramente	6.32%	6
Nunca	3.16%	3
TOTAL	ç	95

# Q5 ¿Qué tan a menudo camina o usa bicicleta como transportación (es decir, para ir a la tienda, al trabajo, a la escuela, etc.)?



ANSWER CHOICES	RESPONSES	
A diario	35.48%	33
Una vez por semana	27.96%	26
Una vez por mes	5.38%	5
2 o 3 veces por año	3.23%	3
Raramente	13.98%	13
Nunca (Se contesto "Nunca", favor de saetar a la pregunta #7)	13.98%	13
TOTAL		93

# Q6 Si camina o usa bicicleta como transportación, ¿usted siente que las instalaciones como banquetas o ciclovías son adecuadas?



ANSWER CHOICES	RESPONSES	
Sí	43.18%	38
Más o menos	37.50%	33
No	19.32%	17
TOTAL		88

# Q7 Si NO camina o usa bicicleta como transportación, ¿estaría más dispuesto a hacerlo si hubiera una infraestructura segura para los peatones/ciclistas?



ANSWER CHOICES	RESPONSES	
Sí	75.00%	72
No	8.33%	8
No estoy seguro	16.67%	16
TOTAL	ç	96

Q8 Favor de marcar en orden de importancia para usted y su familia las siguientes ideas para mejorar o desarrollar la infraestructura para peatones o ciclistas, con "1" al lado de lo más importante, hasta "4" al lado de lo menos importante:





1 (mas importante) 2 3 4 (menos importante)

	1 (MAS IMPORTANTE)	2	3	4 (MENOS IMPORTANTE)	TOTAL	WEIGHTED AVERAGE
Desarrollar un sendero regional multiuso (para bicicleta, peatones, caballos) que se conecta con otros senderos locales	46.15% 18	12.82% 5	20.51% 8	20.51% 8	39	2.15
Mejorar las condiciones y continuaciones de conexiones entre banquetas existentes	38.89% 14	38.89% 14	16.67% 6	5.56% 2	36	1.89
Expandir la red de banquetas para conectarlas con más destinos más aya del centro del pueblo, como supermercados y centros de empleo	10.26% 4	33.33% 13	46.15% 18	10.26% 4	39	2.56
Mejorar la seguridad para los ciclistas en la carretera, haciendo más ancho a los acotamientos de autopistas, agregando nuevas ciclovías, o poniendo más señales en el pavimiento y letreros de "compartir la carretera a ciclistas"	28.57% 12	11.90% 5	9.52% 4	50.00% 21	42	2.81

Q9 En una escala de 1-5 (1 siendo el más valorado y 5 el menos valorado), ¿cuál es el valor para usted y su familia de los siguientes tipos de senderos?:





5 (Menos valorado)

2 3 4

1 (Muy valorado)

	1 (MUY VALORADO)	2	3	4	5 (MENOS VALORADO)	TOTAL	WEIGHTED AVERAGE
Un sendero pavimentado, fuera pero paralelo a la carretera, que conecta las zonas residenciales con centros comunitarios, restaurantes, tiendas, y lugares de empleo	72.73% 8	9.09% 1	0.00% 0	9.09% 1	9.09% 1	11	1.73
Un sendero panorámico pavimentado que conecta parques y reservas naturales	61.54% 8	15.38% 2	15.38% 2	0.00% 0	7.69% 1	13	1.77
Un sendero pavimentado que conecta con Filadelfia y más allá.	18.18% 2	18.18% 2	18.18% 2	18.18% 2	27.27% 3	11	3.18

# Q10 ¿Usted usaría un sistema de senderos que incluye carriles para bicicletas y / o aceras como parte de la ruta?



ANSWER CHOICES	RESPONSES	
Probablemente usaría cualquier sistema de senderos, incluidos los carriles para bicicletas / aceras.	74.16%	66
Probablemente usaría este sistema de senderos, pero solo los que están fuera de la carretera No muy probable	20.22%	18
Probablemente no usaría ningún sistema de senderos.	5.62%	5
TOTAL		89



## Q11 Favor de escoger su rango de edad:

ANSWER CHOICES	RESPONSES	
18 o menor	0.00%	0
19-25	13.54%	13
26-34	37.50%	36
35-50	32.29%	31
51-64	10.42%	10
65+	6.25%	6
TOTAL		96

## Q12 ¿Cuál es su código postal?

Answered: 93 Skipped: 7
#	RESPONSES	DATE
1	19348	7/22/2020 11:33 AM
2	19348	7/22/2020 11:32 AM
3	19348	7/22/2020 11:31 AM
4	19348	7/22/2020 11:29 AM
5	19348	7/22/2020 11:27 AM
6	19348	7/22/2020 11:13 AM
7	19350	7/22/2020 11:11 AM
8	19348	7/22/2020 11:10 AM
9	19348	7/22/2020 11:08 AM
10	19348	7/22/2020 10:50 AM
11	19348	7/22/2020 10:47 AM
12	19348	7/22/2020 10:43 AM
13	19348	7/22/2020 10:42 AM
14	19390	7/22/2020 10:41 AM
15	19348	7/22/2020 10:39 AM
16	19348	7/22/2020 10:37 AM
17	19348	7/22/2020 10:36 AM
18	19348	7/22/2020 10:34 AM
19	19310	7/22/2020 10:33 AM
20	19348	7/22/2020 10:32 AM
21	19348	7/22/2020 10:30 AM
22	19348	7/22/2020 10:27 AM
23	19348	7/22/2020 10:26 AM
24	19348	7/22/2020 10:24 AM
25	19348	7/22/2020 10:22 AM
26	19348	7/22/2020 10:21 AM
27	19348	7/22/2020 9:54 AM

28	19348	7/22/2020 9:52 AM
29	19310	7/22/2020 9:43 AM
30	19348	7/22/2020 9:39 AM
31	19311	7/22/2020 9:38 AM
32	19348	7/22/2020 9:36 AM
33	19363	7/22/2020 9:31 AM
34	19348	7/22/2020 9:27 AM
35	19348	7/22/2020 9:25 AM
36	19808	7/22/2020 9:22 AM
37	19348	7/22/2020 9:13 AM
38	19390	7/21/2020 3:00 PM
39	19390	7/21/2020 2:18 PM
40	19311	7/21/2020 12:30 PM
41	19311	7/21/2020 12:28 PM
42	19348	7/21/2020 12:26 PM
43	19390	7/21/2020 12:24 PM
44	19311	7/21/2020 12:22 PM
45	19390	7/21/2020 12:19 PM
46	19380	7/21/2020 12:18 PM
47	19348	7/21/2020 12:15 PM
48	19348	7/21/2020 12:13 PM
49	19348	7/21/2020 12:12 PM
50	19348	7/21/2020 12:09 PM
51	19348	7/21/2020 12:08 PM
52	19348	7/21/2020 12:06 PM
53	19348	7/21/2020 12:04 PM
54	19345	7/21/2020 10:52 AM
55	19311	7/21/2020 10:47 AM

56	19348	7/21/2020 10:46 AM
57	19390	7/21/2020 10:44 AM
58	19348	7/21/2020 10:42 AM
59	19348	7/21/2020 10:39 AM
60	19348	7/21/2020 10:20 AM
61	19348	7/21/2020 10:19 AM
62	19390	7/21/2020 10:16 AM
63	19374	7/21/2020 10:14 AM
64	19348	7/21/2020 10:10 AM
65	19390	7/21/2020 10:09 AM
66	19348	7/21/2020 10:07 AM
67	19317	7/21/2020 10:05 AM
68	19348	7/21/2020 10:03 AM
69	19348	7/21/2020 10:02 AM
70	19348	7/21/2020 10:00 AM
71	51860	7/21/2020 9:58 AM
72	197313	7/21/2020 9:44 AM
73	19311	7/9/2020 11:27 PM
74	19348	7/9/2020 11:31 AM
75	19311	7/7/2020 2:00 AM
76	19348	7/6/2020 1:39 AM
77	19390	7/5/2020 11:02 PM
78	19390	7/5/2020 5:56 PM
79	19390	7/5/2020 4:48 PM
80	19390	7/5/2020 4:41 PM
81	19390	7/5/2020 4:06 PM
82	19338	7/5/2020 3:54 PM
83	19390	7/5/2020 3:52 PM

84	19311	7/5/2020 3:29 PM
85	19248	7/4/2020 3:36 PM
86	19348	7/1/2020 10:19 PM
87	19348	7/1/2020 9:58 PM
88	19390	6/27/2020 9:55 AM
89	19348	5/9/2020 1:09 PM
90	19380	3/26/2020 10:38 AM
91	19348	3/13/2020 3:46 PM
92	19348	3/13/2020 2:35 PM
93	19374	3/13/2020 12:58 PM



# Q13 ¿Cuál es su ingreso familiar anual?

ANSWER CHOICES	RESPONSES
Menos de \$30,000/año	78.02% 71
\$30,000-60,000	13.19% 12
\$60,001-\$90,000	6.59% 6
\$90,001-\$120,000	2.20% 2
Más de \$120,000	0.00% 0
TOTAL	91

#### Answered: 97 Skipped: 3 Asiático Negro/Afroameri cano Latino Blanco/Caucásic Otro 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

# Q14 ¿Cómo se identifica usted? (marcar todos que apliquen)

ANSWER CHOICES	RESPONSES
Asiático	0.00% 0
Negro/Afroamericano	0.00% 0
Latino	94.85% 92
Blanco/Caucásico	4.12% 4
Otro	3.09% 3
Total Respondents: 97	

#	OTRO	DATE
1	Hispano	7/22/2020 11:27 AM
2	Hispana	7/22/2020 9:13 AM
3	Hispano	7/21/2020 12:26 PM

Interactive Map Results from Public Meeting #1



Participants in the first public meeting provided feedback on potential destinations and preferred trail segments, and identified segments that could be problematic.

#### Interactive Map Results from Public Meeting #2



B | Public Survey Results

Appendix C: Project Advisory Committee Workshop Results On February 6, 2020 the Project Advisory Committee met to brainstorm potential trail alignments, focusing on what trails currently exist or are proposed. The study area was broken into an east half and a west half, and PAC members could provide ideas at one or both of these stations, depending on which parts of the study area they were most familiar with. The alignments suggested were digitized using GIS software and became the starting point for alignment analysis.







Appendix D: Cecil County, Maryland's Octoraro Trail -Conceptual Layout





# D | Octoraro Trail - Conceptual Layout

Appendix E: Evaluation Maps

# E | Evaluation Maps



				Miles of	Number of private parcels	Number of different private landowners	Linear	Significant		Linear feet	
MD line to 472	Mileage	Facility type evaluated	Miles of public ROW	private ROW	potentially impacted	potentially impacted	feet of wall	at-grade crossings	Stream crossings	of wetland impacts	Structure impacts
PA-472 (Market St.) to Valley Ave.	0.54 mi.	split mode (existing sidewalks)	0.54 mi.	0 mi.	0	0	0 l.f.	6	0	0 l.f.	0
Valley Ave to PA-272/ Ewing Dr.	2.93 mi.	bike lanes	2.93 mi.	0 mi.	0	0	0 l.f.	3	0	0 l.f.	0
PA-272 to MD line	2.31 mi.	multi-use	0.81 mi.	1.5 mi.	12	7	0 l.f.	6	0	0 l.f.	0
Total	5.78 mi.	various	4.28 mi.	1.5 mi.	12	7	0 l.f.	15	0	0 l.f.	0



		Fo ellite terre	Miles of	Miles of	Number of private parcels	Number of different private landowners	Linear	Significant	Churchen	Linear feet	Churchan
472 to 896	Mileage	evaluated	public ROW	ROW	impacted	impacted	wall	crossings	crossings	impacts	impacts
PA-896 to N. 5th St	4.06 mi.	bike lanes	4.06 mi.	0 mi.	0	0	0 l.f.	4	2	0 l.f.	0
N. 5th St. to PA-472 (Market St.)	0.20 mi.	split mode (existing sidewalks)	0.20 mi.	0 mi.	0	0	0 l.f.	2	0	0 l.f.	0
Total	4.26 mi.	various	4.26 mi.	0 mi.	0	0	0 l.f.	6	2	0 l.f.	0

				Miles of	Number of private parcels	Number of different private landowners		Significant		Linear feet	
896 to 41	Mileage	Facility type evaluated	Miles of public ROW	private ROW	potentially impacted	potentially impacted	Linear feet of wall	at-grade crossings	Stream crossings	of wetland impacts	Structure impacts
PA-41 to State St.	0.18 mi.	multi-use, restricted use	0 mi.	0.18 mi.	7	6	0 l.f.	1	1	0 l.f.	1
State St. to Lake Rd.	1.76 mi.	split mode, multi-use	0.22 mi.	1.54 mi.	11	9	0 l.f.	2	3	1,700 l.f.	0
Bike lanes to West Grove Borough Line	0.7 mi.	bike lanes	0.7 mi.	0 mi.	0	0	0 l.f.	1	0	0 l.f.	0
New sidewalks to West Grove Borough	0.09 mi.	split mode	0 mi.	0.09 mi.	5	2	0 l.f.	0	0	0 l.f.	0
Existing sidewalks in West Grove	0.74 mi.	split mode	0 mi.	0 mi.	0	0	0 l.f.	1	0	0 l.f.	0
New sidewalks west of West Grove	0.05 mi.	split mode	0 mi.	0.05 mi.	2	2	0 l.f.	0	0	0 l.f.	0
Bike lanes West Grove to Jennersville	1.88 mi.	bike lanes	1.88 mi.	0.05 mi.	0	0	0 l.f.	0	0	0 l.f.	0
New High School entrance to Upper Oxford Twp. Line	1.90 mi.	multi-use	0 mi.	1.9 mi.	16	8	O l.f.	8	0	O l.f.	0
Upper Oxford Twp. line to PA-896	1.99 mi.	bike lanes	.99 mi.	0 mi.	0	0	0 l.f.	1	1	0 l.f.	0
Total	8.29 mi.	various	3.79 mi.	3.76 mi.	41	27	0 l.f.	14	5	1,700 l.f.	1



# E | Evaluation Maps



		Eacility type	Miles of	Miles of	Number of private parcels	Number of different private landowners	l inear feet	Significant	Stream	Linear feet	Structure
41 to Schoolhouse Rd.	Mileage	evaluated	public ROW	ROW	impacted	impacted	of wall	crossings	crossings	impacts	impacts
PA-41 to Newark Rd.	1.43 mi.	multi-use	0 mi.	1.43 mi.	26	17	0 l.f.	1	0	0 l.f.	0
Newark Rd to Scarlet Rd.	1.63 mi.	sidewalk, multi-use	0.09 mi.	1.54 mi.	40	26	0 l.f.	2	1	0 l.f.	0
Existing sidewalks in Kennett	1.56 mi.	existing sidewalk	1.56 mi.	0 mi.	0	0	0 l.f.	10	0	0 l.f.	0
Sidewalk extension west of Kennett	0.42 mi.	sidewalk	0 mi.	0.42 mi.	8	7	0 l.f.	1	0	0 l.f.	0
Ways Lane to Schoolhouse Rd.	0.59 mi.	multi-use	0 mi.	0.59 mi.	9	8	O I.f.	2	0	0 l.f.	0
Total	5.63 mi.	various	1.65 mi.	3.98 mi.	83	58	0 l.f.	16	1	0 l.f.	0



Section 110: MD line to PA 472	Mileage	Facility type evaluated	Miles of public ROW	Miles of private ROW	Number of private parcels potentially impacted	Number of different private landowners potentially impacted	Linear feet of wall	Significant at-grade crossings	Stream crossings	Linear feet of wetland impacts	Structure impacts
PA-472 to PA-272	3.2 mi.	multi-use	1.1 mi.	2.1 mi.	15	11	0 l.f.	3	3	2,850 l.f.	0
PA-272 to MD line	2.11 mi.	multi-use	0.81 mi.	1.3 mi.	7	6	0 l.f.	4	0	0 l.f.	0
Total	5.31 mi.	multi-use	1.91 mi.	3.4 mi.	22	17	0 l.f.	7	3	2,850 l.f.	0



Section 100:		Facility type	Miles of	Miles of private	Number of private parcels potentially	Number of different private landowners potentially	Linear feet of	Significant at-grade	Stream	Linear feet of wetland	Structure
PA 472 to PA 896	Mileage	evaluated	public ROW	ROW	impacted	impacted	wall	crossings	crossings	impacts	impacts
PA-896 to PA-10	3.13 mi.	multi-use	2.27 mi.	0.86 mi.	10	9	0 l.f.	3	2	2,270 l.f.	0
PA-10 to PA-472 (Lancaster Rd.)	2.18 mi.	multi-use, split mode	1.16 mi.	1.02 mi.	6	5	530 l.f.	2	0	1,100 l.f.	0
Total	5.31 mi.	multi-use, split mode	3.43 mi.	1.88 mi.	16	14	530 l.f.	5	2	3,370 l.f.	0

# Evaluation Maps | E



Section 200: PA 896 to PA 41	Mileage	Facility type evaluated	Miles of public ROW	Miles of private ROW	Number of private parcels potentially impacted	Number of different private landowners potentially impacted	Linear feet of wall	Significant at-grade crossings	Stream crossings	Linear feet of wetland impacts	Structure impacts
PA-41 to PA-841	1.42 mi.	multi-use	0.72 mi.	0.7 mi.	3	3	0 l.f.	2	2	300 l.f.	0
PA-841 to PA-796	2.51 mi.	multi-use	1.28 mi.	1.23 mi.	8	6	0 l.f.	2	2	1,350 l.f.	1
PA-796 to PA-896	2.43 mi.	multi-use	1.86 mi.	0.57 mi.	7	5	3,400 l.f.	2	2	1,800 l.f.	0
Total	6.45 mi.	multi-use	3.86 mi.	2.5 mi.	18	14	3,400 l.f.	6	6	3,450 l.f.	1



					Number	Number of different					
Section 210: PA 41 to Schoolhouse Rd.	Mileage	Facility type evaluated	Miles of public ROW	Miles of private ROW	of private parcels potentially impacted	private landowners potentially impacted	Linear feet of wall	Significant at-grade crossings	Stream crossings	Linear feet of wetland impacts	Structure impacts
Bancroft Rd. to PA-41	2.98 mi.	multi-use	2.66 mi.	0.32 mi.	4	3	3,100 l.f.	3	3	0 l.f.	1
Mill Rd. to Bancroft Rd.	1.29 mi.	multi-use	0.43 mi.	0.86 mi.	9	9	2,060 l.f.	1	1	0 l.f.	0
E. Baltimore Pike to Mill Rd.	1.99 mi.	multi-use	1.63 mi.	0.36 mi.	3	3	500 l.f.	2	1	0 l.f.	0
Total	6.26 mi.	multi-use	4.72 mi.	1.54 mi.	16	15	5,660 l.f.	6	5	0 l.f.	1

# **Circuit Trail Connection - Facility Types Evaluated**



Bennett's Run option	Mileage	Facility type evaluated	Miles of public ROW	Miles of private ROW	Number of private parcels potentially impacted	Number of different private landowners potentially impacted	Linear feet of wall	Significant at-grade crossings	Stream crossings	Linear feet of wetland impacts	Structure impacts
Bypass to Elmwood Drive	2.72 mi.	multi-use	0 mi.	2.72 mi.	13	5	0 l.f.	6	0	0 l.f.	0
Elmwood Drive to Brandywine Creek	3.78 mi.	multi-use, bike route	1.29 mi.	2.49 mi.	15	15	0 l.f.	4	1	200 l.f.	0
Total	6.5 mi.		1.29 mi.	5.21 mi.	28	20	0 l.f.	10	1	200 l.f.	0

# E | Evaluation Maps

Circuit Trail Connection - Facility Types Evaluated



Railroad corridor option	Mileage	Facility type evaluated	Miles of public ROW	Miles of private ROW	Number of private parcels potentially impacted	Number of different private landowners potentially impacted	Linear feet of wall	Significant at-grade crossings	Stream crossings	Linear feet of wetland impacts	Structure impacts
Bypass to 52 Bikeway	2.33 mi.	multi-use	0.12 mi.	2.21 mi.	22	15	0 l.f.	10	0	0 l.f.	0
52 Bikeway from Baltimore Pike to RR xing	1.19 mi.	existing bike lanes	1.19 mi.	2.00 mi.	0	0	O l.f.	0	0	0 l.f.	0
52 Bikeway to Brandywine Creek	3.11 mi.	multi-use, bike route	0.52 mi.	2.59 mi.	18	18	0 l.f.	3	1	0 l.f.	0
Total	6.63 mi.		1.83 mi.	6.8 mi.	40	33	0 l.f.	13	1	0 l.f.	0

# **Street Road Option**



							Number of private parcels	Number of different private landowners
Street Road option	Mileage	New multi-use trail	New restricted use trail	New signed bike route	Significant at- grade crossings	Stream crossings	potentially impacted	potentially impacted
Total	6.3 mi.	<b>4.1</b> mi	1.2 mi.	1.0 mi.	9	2	20	11

# E | Evaluation Maps

**Hillendale Option** 



Hillendale Road option	Mileage	New multi-use trail	New restricted use trail	New signed bike route	Existing bike lanes	Significant at-grade crossings	Stream crossings	Number of private parcels potentially impacted	Number of different private landowners potentially impacted	
Total	6.5 mi.	4.1 mi	0.4 mi.	1.3 mi.	0.7 mi.	20	0	39	27	



Baltimore Pike Analysis - Annual Average Daily Traffic

# E | Evaluation Maps

#### Baltimore Pike Analysis - Posted Speed Limit



# **Steering Committee**

Shawn Magill-Legendre, DVRPC Hannah Christopher, East Marlborough Township Margaret Moore, Pennsbury Township Rachel Berkowitz, Kennett Square Borough Ramsey Reiner, New Garden Township Kati Parlier, New Garden Township Becky Brownback, Avondale Borough **Dottie Howell.** Avondale Borough Kenneth Battin, London Grove Township Kristin Proto, West Grove Borough Karen Versuk, Penn Township Ralph Churchill, Penn Township Herb McCombie. Penn Township Peggy Ann Russell, Oxford Borough Tiffany Bell, West Nottingham John Meisel, TMACC **Rick Tralies,** Natural Lands Rob Daniels, Brandywine Conservancy Abbie Kessler. The Land Conservancy for Southern Chester County Blair Fleishman, SAVE Amanda Blevins, La Communidad Hispana Josie Marsh, Bike Kennett **Scott Fetterolf,** Oxford Area Recreational Authority Suzanne Geougue, Kennett Area Parks and Rec Board Renee Ezokas DePietro. Longwood Gardens Christina Norland, Kennett Trails Alliance Patrick Curran, Oxford Area Civic Association

# Chester County Planning Commission

Kevin C. Kerr, Chairman Dr. Douglas Fasick, Vice-chairman Nathan Cline, P.E. Stephanie Duncan Matthew Hammond, P.E. Michael Heaberg Molly Morrison E. Martin Shane Angela Thompson-Lobb

# **Planning Commission Staff**

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