# Nether Providence Master Bicycle and Pedestrian Plan

Context sensitive solutions for a more accessible Nether Providence





Prepared for Nether Providence Township by the Graduate Planning Studio Department of Planning and Community Development, Temple University

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## **Executive Summary**

This plan presents recommendations to improve bike and pedestrian connectivity and mobility within Nether Providence Township (the Township or Nether Providence) and to surrounding locations. The plan is the result of demographic analysis, development of infrastructure and points of interest inventory, GIS modeling, accident record assessment, an electronic survey, and implementation prioritization among other activities.

The objective of the plan is to improve safe access to critical points of interest within the Township, primarily its schools. The Township is, as confirmed by the demographic analysis and electronic survey, a family-oriented community. Promoting safe and effective active transportation within the Township can improve public health as well as allow residents greater choices for running errands, getting to work, or getting to school. The existing transit services in the Township will also benefit from added non-motorized feeder infrastructure, boosting ridership.

The plan focuses on pragmatic improvements for accessibility to major points of interest, and for safety considerations. The result consists of recommended infrastructure such as roadside signage, sharrows, and crosswalk signals at specific locations in order to reduce reliance on single occupancy vehicles.

This plan establishes a number of targeted improvements and prioritizes development of cyclist and pedestrian amenities. Included in the list of recommendations is an identification of Providence Road, Brookhaven Road and Rose Valley Road as the most important routes in need of improvement, along with the locations where they intersect with one another. Providence Road may be improved by upgrading most of its existing sidewalks to raised concrete, the installation of sharrows and additional crosswalks (which would be illuminated at key locations such as the Furness Library, Wallingford Elementary School and Mother of Providence School). Alternate routes to heavily trafficked Providence Road are encouraged, such as a neighborhood trail link from Copples Lane to Sykes Lane via the Strath Haven Middle School property. Triggered pedestrian crossing signals and additional crosswalks would improve the intersection of Providence Road and Brookhaven Road; this is a key intersection for Southeastern Pennsylvania Transportation Authority (SEPTA) riders who walk to the Regional Rail station or use the route 118 bus. Bike lanes, "Look Both Ways" and "Bicycles May Use Full Lane" signage at the intersection of Providence Road and Rose Valley Road would improve bike safety and contribute to traffic calming. The Recommendations section provides a comprehensive list of improvements. These are listed by individual route and intersection and divided further for pedestrian and bike application.

Finally, a hierarchy of implementation is included. This hierarchy categorizes potential improvements into a rough time scale. This time scale can aid in targeting projects that are achievable quickly based on available funds and grant opportunities.

Due to the built out nature of Nether Providence, conditions within the Township are not expected to radically change for some time after this plan has been published. As such, this plan is recommended to be considered relevant for ten years after its date of release. This figure should be reconsidered if events transpire which dramatically impact the land use, population, or transportation patterns in the Township. This page intentionally left blank.

# Chapter 1 Plan Introduction



## **Plan Background**

This Bicycle and Pedestrian Master Plan is a product of the graduate Planning Studio in Temple University's City and Regional Planning program (Temple). The work spans the spring 2016 semester, beginning January 11 through May 4. Having experienced the benefits of walkable and bikeable communities in the past and recognizing the potential for Federal, state, and county grants to improve residents' quality of life, one of the Temple team members approached Nether Providence officials about the feasibility of producing this plan. They were very supportive of the idea, as the Township's Sidewalk Committee is presently developing a Traffic Calming Matrix and various sidewalk projects have either recently been completed or are in development. Following their suggestion, this plan became a senior year project.

Formally established in 1687, Nether Providence lies in the southwestern Philadelphia suburbs. It is a classic bedroom community, as it contains a greater

number of residents than jobs, with a population of nearly 14,000 in an area covering approximately five square miles. With a highly residential and wooded character, the Township is punctuated by schools, churches, recreational and cultural facilities, along with modest commercial activity.

The Township's family-oriented character is further reinforced by being the location of four of the five schools in the highly regarded Wallingford-Swarthmore School District.



Nether Providence is also a crossroads community, with collector roads linking the surrounding municipalities of Chester, Brookhaven, Media, Rose Valley, Swarthmore, and Upper Providence, Springfield and Ridley Townships. This roadway connectivity took on greater significance with the 1991 opening of Interstate 476 and its Baltimore Pike interchange along the Township's eastern edge. Transit serves Nether Providence via three SEPTA modes – commuter rail, trolley, and three bus routes. These services connect the Township to all of the adjacent municipalities as well as Philadelphia. Refer to the Transit section for additional background.

Existing pedestrian infrastructure includes various disparate sidewalks and paths, including the Leiper-Smedley Trail, which is in the Crum Creek valley. Refer to the Existing Trail and Sidewalk Conditions section for additional background.

## **Plan Goals**

As an aid to promoting alternatives to auto travel, the Nether Providence

Bicycle and Pedestrian Master Plan identifies opportunities for connectivity between the neighborhoods, destinations, transit and existing trails. This report examines the Township's attributes, assesses its pedestrian infrastructure, and makes specific recommendations for improvements. Such improvements take signage, wayfinding, and safety considerations such as crosswalks and traffic calming mechanisms into account. Recent U.S. trends favor healthy lifestyles, which



are enabled by more walkable and bikeable communities. As this shift toward non-motorized transportation and recreation alternatives lessens auto dependency, greenhouse gases are reduced, resulting in environmental benefits. The concept of "complete streets" is where streets are designed to safely accommodate all users, regardless of mode, age or ability. More walkable communities provide social capital by creating opportunities for residents to informally connect with each other. This encourages civic involvement, mutual aid, and a greater sense of trust<sup>1</sup>. Another benefit of this approach toward sustainability is that economically or physically disadvantaged persons have travel alternatives when auto use is unaffordable or infeasible.

<sup>1</sup> Leyden, Kevin M., Social Capital and the Built Environment: The Importance of Walkable Neighborhoods

While this plan's primary beneficiaries are Nether Providence residents, it also expands intra-township connectivity to the regional context; first as countywide by including connections to Delaware County's proposed network, and by including connections to the entire Philadelphia area, as envisioned through regional MPO Delaware Valley Regional Planning Commission (DVRPC) plans.

## **Benefits of Bicycle and Pedestrian Access**

Bicycle and pedestrian access is vitally important to a community for a multitude of reasons in addition to those reflected in recent trends and described earlier. Non-motorized transportation provides access to recreational activities with few barriers to entry for most residents, as well as a number of benefits. Children benefit by having safe routes to school, which promote walking and lower obesity rates. Seniors who may no longer drive benefit and are able to age in place within the community they enjoy, and the disabled or economically disadvantaged benefit by having increased access to opportunities. These reasons also make bike and pedestrian infrastructure a powerful equalizer among various economic, age, and ethnic strata. Finally, greater use of these creates economic opportunities, as businesses desire busy locations<sup>2</sup>.

This document informs to Nether Providence officials' next steps to make a very desirable community even more attractive by prioritizing non-motorized mobility investments to the benefit of all residents. These actions include, for example:

- » Close gaps in the existing bike and pedestrian network
- » Provide recommendations for future infrastructure based on existing conditions
- » Identify possible funding sources and assist in decision making and grant writing
- » Make bicycling and walking convenient, attractive, and safe
- » Encourage positive interactions between pedestrians, cyclists, and drivers
- » Create walking facilities which are "user-friendly" but are designated for adaption to cyclists

<sup>2</sup> Erickson, Donna, Metrogreen: Connecting Open Space in North American Cities

This plan does not address individual properties, propose public / private land development policies or new laws, nor does it impede future analysis or decision-making.

Community engagement is essential in local decision making, as these stakeholders are the ultimate owners of a plan's outcome. With this in mind, one of the initial steps in this project was to include the residents in plan development. An online survey was deployed which asked a series of questions regarding travel habits and roadway and intersection safety observations. Comments were also collected, with an approximately 12% response rate. Refer to the Survey section for additional background.

## **Planning Process**

Temple collected an inventory of existing bicycle and pedestrian network infrastructure as a basis for recommending where network additions might increase connectivity throughout the township. Trails outside of the township from surrounding township bicycle and pedestrian plans, county plans, and regional plans were included when recommending new bike/pedestrian network infrastructure.

In addition to connecting to existing trails, Temple located points of interest within the Township and included them as destinations in their recommended trail improvements. These points of interest included features such as transit stops, schools, churches, community centers, parks, etc. The network included sidewalks, trails, and enhanced roadway shoulders.

### Adequate location of signage for bicycle and pedestrian trail information

Similar to the process of creating the new network infrastructure, an inventory of existing bicycle and pedestrian signage was compiled and assessed for the Township. This inventory was used to provide recommendations for potential signage locations and types at intersections between trails and roads to enhance the pedestrian and bicycle experience while improving travel safety by including appropriate signage, wayfinding, and crosswalks.

## Proper information and language to assist in future grant requests

This plan will aid the Township in seeking future state, county, and Federallyfunded capital and planning grants by reflecting considerations such as other plans or legislation including:

- » Nearby community plans
- » State greenway and bike plans
- » DVRPC short- and long-range plans
- » Improvement prioritization

## Education and safety materials for distribution to the Township schools and community centers

Temple developed materials and flyers to be distributed for educational purposes to the Township to promote safe travel by pedestrians, cyclists, and motor vehicle drivers and how they interact with one another. These materials also promote the health benefits of walking and cycling instead of riding in an auto. Additional safety documents are included in this plan in regards to the Township Sidewalk Committee's traffic calming matrix, which was under development during the creation of this plan.

## **Ties to Other Plans**

Adoption of a master bike and pedestrian plan by Nether Providence would conveniently align with plans by the surrounding communities (existing and proposed), as well as those by Delaware County and the Commonwealth of Pennsylvania. This would incorporate the Township into a larger regional network such as the DVRPC Circuit, as well as the under-development East Coast Greenway.

### Delaware County, Countywide Greenway Plan

Delaware County has designated the existing Leiper-Smedley Trail as part of the Blue Route Bikeway (BRB), a trail network, which will tie the Darby, Crum, and Ridley Creek valleys to the future East Coast Greenway. The Darby and Crum Creek BRB segments would connect with the Township. The Media-Smedley Connector Trail is another connection recommended in this plan, which ties the Leiper-Smedley Trail to downtown Media and Memorial Park in Middletown Township.

## The Delaware County Bicycle Plan

This plan analyzes specific corridors for improvement in order to create a network of bicycling routes throughout the county. The network includes the Bicyclists' Baltimore Pike, which connects with the Leiper-Smedley trail at its intersection with Rose Valley Road. Bicyclists' Baltimore Pike provides to the Cobbs Creek Parkway in West Philadelphia via Swarthmore, Morton, Aldan, Upper Darby and Yeadon, with numerous transit connections.

### Borough of Swarthmore Pedestrian and Bicycle Accessibility Master Plan

Elements in this plan, which are relevant to the Township, include improvements to Yale Avenue, which connects with Rose Valley Road and the Leiper-Smedley Trail. The plan also recommends Yale Avenue / Rose Valley Road as components of a Safe Routes to School for SHHS. This route also includes East Country Club Lane, Palmers Lane, Smithfield Road and Copples Lane.

### Media Borough Bike Facility Implementation Plan

This draft plan proposes a robust bike network throughout the borough and includes Delaware County's Media-Smedley Connector Trail. A second bike / pedestrian connection to Nether Providence is at the intersection of Providence Road and Beatty Road.

### Pennsylvania State Greenways Plan

While not detailing specific elements, this plan recommends coordination of state and local entities, and discusses needs and strategies for implementing greenway programs.

## Nether Providence, Rose Valley, Rutledge, Swarthmore Multi-Municipal Comprehensive Plan

The plan recommends redevelopment of the Comcast commercial center, as a mixed-use village cluster, parkland or parking for Hepford Park NPAA events. This would be beneficial in conjunction with additional / improved Moore Road sidewalks and West Brookhaven Road bike lanes. In combination with partial restoration of the original route 118 bus routing, this might become a transitoriented development (TOD) to the benefit of families with young children and seniors wishing to age in place in Garden City Manor, Garden City, and portions of Scott Glen and Wallingford Valley. A strip shopping center served this confluence of neighborhoods decades ago, prior to development of the East and West Wiltshire Drive homes.

Strategic development of the Pantry One commercial center is also recommended, which would benefit from Providence Road, Wallingford Avenue and East Possum Hollow Road sidewalks. This also has TOD potential, as bus route 118 and the nearby Wallingford Regional Rail station provide transit access. The nearby Wallingford Arms apartments add relevance to density, walkability and TOD.

# Chapter 2 Existing Conditions



## **Chapter Introduction**

This section will explore the existing conditions of the Township by type in order to aid in developing an effective bike and pedestrian plan. Existing conditions within Nether Providence were reviewed through field visits, interviews and online research in order to develop this plan. Neighborhood composition and history, points of interest, trails, transportation, existing bike infrastructure, and pedestrian infrastructure were reviewed and inventoried, among other existing conditions.

## Demographics

In this section, selected demographic characteristics of Nether Providence residents are examined. These demographics are not an exhaustive list of all township characteristics, but are presented to highlight the ways in which the Township differs from the surrounding region. The Township is largely a familycentered community, one with a stronger reliance on automobiles and SEPTA's Regional Rail than the rest of Delaware County or the Philadelphia region. Residents of the Township establish roots in the area due to raising a family there.

Data for this section was collected from the U.S Census Bureau's American Community Survey. Selected data was collected for the Township and compared to Delaware County and the Philadelphia region (consisting of five counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia counties) to identify areas where the Township contrasts with regional trends.

The goal of exploring this demographic data is to aid vision development and understanding of the Township. This township knowledge can then be used to help guide planning endeavors; moreover, by understanding major trends in the Township, this plan can couple American Community Survey data with survey responses to ensure results that are more effective. Demographic data is not meant to replace public involvement by any means; demographic analysis and data can work with survey responses to inform major trends and needs.

A number of demographic factors were assessed in developing this plan. This data addresses factors such as community age and family composition, limited English proficiency households, commuting patterns, school sizes and needs, and more. Each dimension will be discussed and addressed separately, with a description of how the Township differs from the surrounding region. The demographics below are not exhaustive, but they help illustrate the composition of the Township and the needs of township residents. Mirroring the Philadelphia region, the Township is becoming more ethnically diverse.

## Households and Age

Housing and household composition highlight other major trends in Nether Providence: family and age. Those who own, rather than rent their home occupy the majority of households in the Township. This is a major departure from both the state and Delaware County and is reflective of the family-oriented structure of the Township as a whole.

Township residents are much more likely to live in houses owned by a member of their family than residents are of either the five-county region or Delaware County. This greater rate of home ownership and likelihood of living in an ownedresidence reflects the family-oriented nature of the Township. People move to Nether Providence to buy homes and raise families, and tend to establish roots within the Township.





B25026 – Total Population In Occupied Housing Units By Tenure By Year Householder Moved Into Unit

Household composition further reflects this trend. Households in Nether Providence are overwhelmingly households maintained by a family and exceed both the state and the county in their ratio of married-couples to single householders and to non-family households.

Moreover, the Township's population structure demonstrates a higher dependency ratio for children and seniors than the five-county region and Delaware County. The dependency ratio statistic, as shown in Figure 5, provides



#### Figure 2 - Married Couple Households

Source: American Community Survey 2014 Five-Year Estimates (2010-2014); B11012 – Household Type by Tenure

a ratio of a non-working age group to a working-age group. In this case, residents under 15 or over 64 to those ages 15-64. The greater concentration of children and seniors illuminates the need for appropriate infrastructure that can serve both groups.

Nether Providence needs to plan for today's seniors, as well as those who are not yet in the senior age-group cohort. As shown in figure 6, Nether Providence's population structure is stratified, with one age-group cohort being especially pronounced. The Township has a large concentration of 40 to 59 year olds, or baby boomers, which while currently in the labor force, will soon be part of the senior age group.



### Figure 3 - Age Dependency Ratios



Figure 4 - Population Pyramid of Nether Providence

Source: American Community Survey 2014 Five-Year Estimates (2010-2014); S0101 – Age and Sex Safe and accessible pedestrian infrastructure is especially important for seniors. A 2012 report<sup>3</sup> from the AARP noted that walking is the second most common transportation option utilized by seniors, at 8.8% of trips taken, after driving. This same report states that seniors often perceive a lack of adequate sidewalks and other safety concerns as major impediments to walking as a transportation mode. Walking, jogging, and running all present ways for seniors to have active lifestyles in their communities and ensuring that they can safely do so will help encourage the baby boomer cohort to age in place.

## **Race and Language**

Limited English Proficiency was also assessed as part of this demographic analysis in order to determine if bike/pedestrian educational materials may need to be translated into other languages. Four language groups are present with individuals that speak English less than "very well"; however, all of these groups are small percentages of the total population.

Language	Population	Percentage
Spanish or Spanish Creole:	_	
Speak English less than "very well"	37	0.29%
Italian: Speak English less than "very well"	11	0.09%
German: Speak English less than "very well"	12	0.09%
Chinese: Speak English less than "very well"	106	0.82%

#### Figure 5 - Limited English Proficiency Population

Source: American Community Survey 2014 5-Year Estimates: B16001  $\,$  -

Language Spoken At Home By Ability to Speak English for the Population Five Years and Over

<sup>3</sup> AARP Livable Communities. (2012). Waiting for a Ride: Transit Access and America's Aging Population - AARP. Retrieved February 29, 2016, from http://www.aarp.org/livable-communities/ learn/transportation-mobility/info-12-2012/waiting-for-a-ride-transit-access-and-americas-agingpopulation.html

## Transportation

As the goal of this plan is to aid in developing bike and pedestrian improvements, it is important to assess existing transportation within the Township. Nether Providence commutes differently than both Delaware County and the Philadelphia region.

#### Motorized Commuting

Motorized commuting patterns include a variety of options for individuals to get to and from work. These modes



### <u>Figure 6 - Residents That Use Transit Mode</u>

B080301 – Means of Transportation to Work – Workers Age 16 and Over

include driving alone, carpooling, and public transportation such as bus and Regional Rail routes.

The Philadelphia region, Delaware County, and Nether Providence were assessed for their utilization of a variety of motorized modes of transportation. All three geographies overwhelmingly use personal automobiles, with approximately the same rates of auto usage.

One major departure evident is in the type public transportation most heavily utilized by each geography. Residents of the Township tend to utilize the Regional Rail system more than residents of the larger geographies, while also utilizing bus service at a much lower rate. The heavy reliance on rail for traveling to work is likely influenced by the presence of two Regional Rail stations within the Township itself. This trend helps to illustrate the importance of accessibility of the Regional Rail system for township residents.

## Non- Motorized Commuting

Non-motorized commuting has a major departure in commuting patterns

between residents of Nether Providence and the two larger geographies. Township residents are much less likely to walk to work for their commute than residents of the other geographies. While bicycling rates are roughly equivalent (under one-percent) for all three geographies, walking rates are substantially lower in Nether Providence.





Source: American Community Survey 2014 Five-Year Estimates (2010-2014); B080301 – Means of Transportation to Work – Workers Age 16 and Over

## Neighborhoods and Housing

Lacking a traditional town center<sup>4</sup>, the Township has evolved from its original composition of creekside mill villages, farms and woodlands to an eclectic collection of neighborhoods. By the end of the 20<sup>th</sup> century, numerous housing developments had effectively "built out" Nether Providence, leading to municipal acquisition of the remaining open spaces and dedicating them for parks and recreation.

<sup>4</sup> From U.S. Census Bureau data, three census tracts make up the township - 4074.01 from the SEPTA Regional Rail corridor north, 4074.03 south of the corridor and west of Providence Road, and 4074.04, which is south of the corridor and east of Providence Road. 51% of all 5,125 housing units are in 4074.03. The greatest period of development in this tract was between 1940 and 1989. The greatest periods of development in 4074.01 were prior to 1939 and the decade of the 1950s; this decade also prevailed for 4074.04.

Some neighborhoods followed transportation network development during the late 19th and early 20th centuries. Such networks included Baltimore Pike, Providence Road, the Philadelphia to West Chester railroad corridor, and the various trolley lines (with today's SEPTA route 101 being the sole survivor). Although theTownship is heavily wooded with low housing density overall, per the above, South Media, Garden City, and Garden City Manor are much denser, and most of the township's Township's multifamily housing is concentrated in Wallingford Valley.

Not all neighborhoods have formal names. Incremental infilling by numerous single-family homes on subdivided lots has blurred some neighborhood boundaries and complicated the naming process. Where ambiguity arose, attempts were made to consolidate neighborhoods by era of construction, density and housing type. Some streets provide logical boundaries, along with large institutions such as the Strath Haven High School and Middle School campuses, and the Spring Haven Country Club. In addition, Temple has utilized the voting wards map and key development names described in Mervyn Harris' book A Brief History of Nether Providence for additional guidance.

It is important to understand how transportation has influenced neighborhood development over time, as well as their densities and residential character and relationships to key destinations when determining how and where bike and pedestrian infrastructure may be best deployed. The gap closures and facility enhancements addressed in this plan will knit various neighborhoods together, encouraging a greater sense of community.

Please refer to the Appendix for descriptions of neighborhood history and composition.

## Employment

As previously stated, employment is limited in the Township, with approximately 60% of 9,500 workers employed elsewhere. For employment in the Township as well as for residents commuting outside, Healthcare and Social Services, Educational Services and Professional, and Technical and Scientific are the top three industry types at 55% of all workers (within Nether Providence) and over 40% (outside). This coincides with Philadelphia's transition toward an "eds and meds" industry base and the data implies that ManorCare Health Services, the Wallingford-Swarthmore School District (with four of the five schools), and the Chesley Office Campus are the Township's largest employers. It may be assumed that 3-5% of in-township healthcare workers are employed in small doctor and dentist offices scattered throughout the neighborhoods.

## Schools

Nether Providence contains five schools within its boundaries. These schools provide elementary, middle school, and high school education and serve grades K-12. This data was retrieved from the National Center for Education Statistics 2014-2015 School Year dataset.

			Percent Qual	of Students ifying for:
	Grades Served	Total Students	Free Lunch	Reduced Lunch
Wallingford Elementary School	K - 5	487	11.50%	1.64%
Nether Providence Elementary School	K - 5	480	13.33%	3.13%
Strath Haven Middle School	6 - 8	808	8.04%	1.36%
Mother of Providence Regional	Pre-K – 8	218	N/A	N/A
Strath Haven HS	9 - 12	1152	11.63%	2.26%

Figure 8 - Schools in Nether Providence Township

Source: National Center for Education Statistics 2014-2015 School Year

A student who starts in Nether Providence's educational system in Kindergarten could graduate from high school and attend schools entirely within the extent of the Township. As such, safe access to schools, and accessibility of school grounds by active transportation, is important for educational success and student health. Ensuring safe access to these schools is a major component of this plan, as these schools are major points of interest within the community.

## **Points of Interest**

A discussion of township destinations and the means by which they are commonly reached is important when considering options for lessening auto dependency and creating safe pedestrian and bicycling environments. Understanding the locations of these points of interest within neighborhoods and with respect to transportation corridors drives the design of individual pedestrian links as well as an overall municipal network. Going one step further then ties this network to neighboring towns and the region.

As Nether Providence is highly family-oriented, access to relevant institutions such as schools, churches, cultural, and recreational institutions is important. Several of these facilities function, or have the potential to function, as "third place" community centers for the immediate neighborhood. These are neutral places between work and home, where people gather in an equitable atmosphere. As such, they promote social vitality in the community<sup>5</sup>. The Foundry Church in Garden City is one such example, hosting scouting, arts and social services in addition to its own meetings, within dense and relatively walkable Garden City. The Neighborhoods section described the disparate nature of various sections of the Township, and trans-neighborhood bike and pedestrian connections, which draw more residents to these institutions, would be a vital integrative mechanism.

<sup>5</sup> Oldenburg, Ray, The Great Good Place, Celebrating The Third Place

The Points of Interest (POI) numbers by category are below:

- » Seven educational facilities
- » Nine religious institutions
- » Four cultural institutions
- » Thirteen parks and recreational facilities
- » Eight commercial centers (includes two funeral homes and one light industrial)
- » Four transit stations
- » Four municipal facilities
- » A retirement community and a skilled care facility

## Point of Interest Inventory

The Points of Interest (POI) numbers by category are below:

## Figure 9 - Points of Interest Inventory and Classification Table

NUMBER	POINT OF INTEREST	NUMBER	POINT OF INTEREST		
-	POWILING OPEEN	-	SCOTT CLEN		
1	ACME Shopping Center	28	Old Union Nursery School		
+	Active Shopping center	20	Strath Haven High School		
	PINE PIDGE	20	Wallingford Swim Club		
2	Chesley Office Compus	21	St Johns Chrysostom		
2	Smedley Park	22	Mother of Providence Perional Catholic School		
4	Pine Ridge Trolley Station	32	Grace Bible Fellowshin Church		
4	Beatty Road Trolley Station				
5	beatty hoad money station	1	AVONDALE KNOLLS		
	SOUTH MEDIA	24	Strath Haven Middle School		
6	Morris Sanouits Bark	34	Strach Haven Wildle School		
7	Woodrow Wilson Park	36	Leiper Park		
9	South Media Fire Company	50	Leiper Faik		
0	Greater Bhiladelphia Bantist Church		GARDEN CITY MANOR		
10	St Paul AME Zion Church	27	Hanford Park		
11	Christ Christian Community Church	38	Compast Commercial Center		
11	christen community church		contrast commercial center		
MOYLAN			GARDEN CITY		
12	Moylan-Rose Valley Regional Rail Station	39	Nether Providence Elementary School		
13	Pennsylvania Institute of Technology	40	Garden City Fire Company		
		41	Creekside Swim Club		
	SOUTH SUMMIT	42	Miller Greenhouses		
14	Summit School	43	The Foundry Church		
5		44	Taylor Arboredum		
	PENDLE HILL	45	Chester Park NPAA Fields		
15	Pendle Hill Quaker Center	46	Houston Park / Robert Urban Fields / Field of Dreams		
16	Community Arts Center				
17	Plush Mills Senior Living Community		SPROUL ESTATES		
		47	Cycle-Fit Commercial Center		
2	WALLINGFORD	48	Congregation Olev Shalom		
18	Furness Library	49	Holy Trinity Lutheran Church		
19	Pantry One Shopping Center	50	Carr Funeral Home		
20	Wallingford Elementary School	51	D'Anjolell Barone Memorial Home		
21	Wallingford Regional Rail Station	52	Mickey Vernon Field		
22	Furness Park	51	D'Anjolell Barone Memorial Home		
23	Wilson Oil	52	Mickey Vernon Field		
24	Wallingford Presbyterian Church				
25	Nether Providence Township Offices and Police		KEY TO POI TYPES EDUCATIONAL TRANSIT		
26	Nether Providence Township Maintenance and Recycling		COMMERCIAL RELIGIOUS		
27	Adamar Care Health Convince		COMMUNITY OTHER		
21	Manorcare nealth Services		CONNOUTING OTHER		





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## Chapter 3 Accessibility Assessment



## **Chapter Introduction**

This section examines bicycle and pedestrian accessibility throughout the Township as well as connections to the adjoining municipalities. Gaps within the Township were observed and cataloged from an inventory of transit services, trails, sidewalks, crosswalks, and bike infrastructure. In addition to connectivity issues, physical conditions were also analyzed, as cyclists and pedestrians depend on well-maintained and reliable infrastructure for safety. Physical conditions also relate to the aesthetic quality of the cyclist and pedestrian experience, as well as that of the neighbors.

## **Existing Transit**

The type of public transit available and the accessibility of that transit service can have substantial effects on an individual's transportation choices. While this plan is focused on cyclist and pedestrian needs, public transportation is connected with choices to bike or walk. Individuals can bike to a transit station, walk to

a bus stop, or combine mode choices to suit their needs. Nether Providence has several public transportation modes that provide service to the area, and ensuring that individuals are able to safely access these transit stops is critical to making these viable transportation choices.

Fixed-route public transportation in Nether Providence is provided by SEPTA. SEPTA operates one Regional Rail line, three bus



routes, and one trolley with transit stops within the Township. Despite Nether Providence's relatively low density, the Township has a relatively high level of service. However, ridership of these routes may be limited due to lack of bike and pedestrian access to facilities, safety concerns, as well as being limited by infrastructure at transit stops and restrictions relating to being on transit.

This section focuses on assessing general transit service in place in February and March 2016, through assessing schedules and identifying issues that may affect accessibility at transit stops within Nether Providence. These issues impact ridership and accessibility of pedestrians, cyclists, and drivers. SEPTA's 2015 Bike Plan identifies a number of these constraints using a framing device of bikes to transit, at transit stops, and on transit vehicles. These constraints will be mentioned when appropriate.

## **Regional Rail Service**

Regional Rail service to Nether Providence is provided by SEPTA's Media-Elwyn line. This line has two stations located in the Township: Wallingford and Moylan-Rose Valley. Weekday inbound service towards Center City Philadelphia is provided from 5:40 AM to 11 PM, with outbound service operating until after midnight. During peak-travel times, service operates at least twice an hour, with hourly trips during off-peak.

A 2009 report<sup>6</sup> analyzing Regional Rail stations in the region found that both stations were limited in ridership due to a lack of parking spaces. Wallingford has 47 parking locations, and Moylan-Rose Valley has 140 parking spots. Both rail stations have approximately 300 passenger boardings per day. There is little available space nearby to provide expanded parking, as Wallingford's only undeveloped adjacent property is one of the few tracts of open space within Nether Providence, and the area around Moylan-Rose Valley is entirely built out. As such, developing additional parking may not be feasible in order to induce or accommodate additional ridership.

Providing adequate bike and pedestrian access to these stations is essential. Unfortunately, bicycle parking at both stations is severely limited, with only one rack at each. There are also few connecting sidewalks to these stations, making pedestrian access difficult.

<sup>6 2009</sup> Delaware County Regional Rail Station Report
Lack of adequate bicycle parking is a major constraint in access to transit. SEPTA's 2015 report<sup>7</sup> assessing the interaction between bicycling and transit identifies that lack of secure bike storage at transit stations is a concern that limits transit accessibility. Additionally, the report notes that the existing limits placed on bringing bikes onto transit further hampers the connection between biking and transit. On buses, the number of bikes on any bus at one time is limited.

On the Regional Rail system, bikes are forbidden entirely during peak hours and only allowed on specific cars on some trips. This introduces complexity into when one can bring a bike onto the Regional Rail system, as well as making it impossible to do so as part of commuting to work during peak travel hours.

The DVRPC has published a rail station evaluation tool called RideScore. This tool assesses SEPTA Regional Rail stations on a number of criteria such as number of trips, proximity to outdoor amenities, and presence of bicycle facilities nearby, among other factors. Each item is graded on a scale from 0 to 5, with the result being that facilities are graded from 0 to 10. Both Wallingford and Moylan-Rose Valley scored just a 3.7, weighed down by low scores from limited transit service, lack of bicycle amenities, and limited connections to bike trails.

#### Figure 11 - Selected RideScore for Wallingford and Moylan-Rose Valley

	Wallingford Ave	Moylan-Rose Valley
Transit Volumes	1	1
<b>Circuit Proximity</b>	1	1
Near Bicycle Facility	0	0
Non-Parking Boards	3	1

Source: http://www.dvrpc.org/webmaps/ridescore/

<sup>7</sup> SEPTA – Cycle-Transit Plan: A Strategic Approach, April 2015

#### **Bus Service**

Three bus routes provide bus service in Nether Providence: the 109, 110 and the 118. All three routes have several stops in the Township, with route 118 providing access to the Wallingford Regional Rail station.

#### <u>Route 109</u>

Bus route 109 travels on Chester Road within the township, and services the Bus route 109 travels on Chester Road within the Township, and services the southern area. It has 20-minute headways during peak service hours, and operates from 4 AM to 3 AM. This route provides service from Chester Transportation Center to the 69th Street Transportation Center in Upper Darby.

While the route has relatively late night service, its connectivity to other transportation modes is limited. It only travels through the southern portion of the Township. Service is provided along the southern most portions of South Providence Road and on Chester Road. Due to the region of the Township this route travels through, there is approximately a two mile gap between bus service and the nearest Regional Rail station.

The most direct path between Route 109 and Regional Rail service is via Providence Road, which does not have curbed and raised concrete sidewalks for most if its length and is prone to drivers exceeding the posted speed limit of 35 miles per hour. Route 109 does connect to transit outside of the Township as it provides a connection to the Media-Elwyn line at Swarthmore, however the lack of connection to either Wallingford or Moylan-Rose Valley Regional Rail stations limits rail-bus connectivity.

#### <u>Route 110</u>

Nether Providence is also served by Route 110. This route travels between Penn State - Brandywine and the 69th Street Transportation Center in Upper Darby. The route provides service on Baltimore Pike along Nether Providence's northern extent, between the Pine Ridge and Pendle Hill neighborhoods. This route has 30-minute headways from 69th Street Station and hourly headways from Penn State - Brandywine. The route provides service from 6 AM to 11 PM.

Accessibility is a concern for this route. Baltimore Pike is extremely inaccessible for pedestrians and cyclists due to the high-posted speed limit of 45 miles per hour. The road itself consists of two-travel lanes in each direction with one turning lane in the middle. It has no sidewalks, and there are no pedestrian signals along its path through the Township.

#### <u>Route 118</u>

Bus Route 118 travels on Brookhaven Road and Providence Road within the Township. It travels in close proximity to the Wallingford Regional Rail station, stopping approximately 1,000 ft. away. It also provides service near the Moylan-Rose Valley Regional Rail station, with a stop approximately 1,500 ft. away. The route is limited by its time of operation. It operates outbound service towards Newtown Square from 6 AM to 7 PM, with typically hourly headways. Inbound service towards Chester Transportation Center is provided from 6 AM to 7 PM, with one additional trip at between 10 PM and 11 PM.

Route 118's trip times also do not coordinate with departures from Wallingford or Moylan-Rose Valley Regional Rail stations. There are a total of 50 inbound and outbound trips on the Media-Elwyn line that serve stations within the Township. Of these trips, 17 of them do not have a connecting bus trip that is feasible to take, as corresponding bus trips are either impossible to board due to the bus departing before the train arrives, or the bus does not run during those hours. Additionally, the average wait time between the mode switch from rail to bus or vice versa is 29 minutes. This extended commute time makes it difficult to utilize the bus for an intermodal rail connection.

#### **Trolley Service**

Nether Providence is also served by the Route 101 trolley. Route 101 travels parallel to Baltimore Pike in the northern region of Nether Providence Township, adjacent to Baltimore Pike. Pine Ridge and Beatty Road stations are in the township, and Providence Road station is just outside of Nether Providence Township in Media. It offers service from 4 AM to 1 AM, with 20-minute headways during peak travel times, and 30-minute headways otherwise.

While the route's hours of operation are extensive, and it provides more frequent service than any of the Regional Rail or bus routes that service Nether Providence, accessibility is also a major concern. For residents living south of the trolley route, they must cross Baltimore Pike to reach the trolley station. The intersection of Baltimore and Beatty has pedestrian signals present, but few corridors leading to this intersection accommodate pedestrians. As such, there are few safe corridors for pedestrians to travel to reach this station.

## **Existing Trail Network and Plans**

#### Introduction

The existing trail network for Nether Providence is limited but has the potential to grow in the near future, with many proposed trails surrounding the Township. Currently, the Leiper Smedley Trail, which was planned as a part of the Blue Route Bikeway (BRB) and local park trails are the only trails that exist throughout the Township. The Delaware County Greenway Plan depicts increased trails surrounding the Township by adding five additional trails that connect to other municipalities throughout the county. As these trails are completed, a network will be available in the Township that has connections to regional networks such as The Circuit as well as national networks such as the East Coast Greenway. A trail network is important to the Township as well as the Plan because it increases connectivity outside of the road and sidewalk network for bicyclists and pedestrians respectively. Trails are also important to the assessment matrix in this plan as they are considered a "Recreation Facility" in the weighting scale.

#### **Delaware County Greenway Plan**

The Delaware County Greenway Plan was prepared by the Delaware County Planning Department with the assistance of TPW Design Studio, Toole Recreation Planning, and Campbell Thomas & Associates and was adopted by the county on April 22, 2015. The trail network in the plan mainly consists of conceptual and potential segments, but in some cases, there are proposed and constructed routes as well. The trails are to be viewed as planning corridors for more detailed trail studies to be conducted in the future. The local trails should feed into the county trails identified to ease bicycle transportation between downtowns, housing developments, open space, recreational facilities, and other major POIs. The county trails will then connect to surrounding county, state, and national trails. The goal of the physical trails are to be paved, off-road, and ADA compliant where feasible but when that is not an option, trails may be made of crushed stone, boardwalk, or earthened material and can follow sidewalks, roadsides, and roadways. The following trails are all included in the Delaware County Greenway Plan.

#### Media - Smedley Connector Trail

The Media-Smedley Connector Trail connects the BRB – Leiper-Smedley Trail and BRB – Smedley to Darby Creek Trail with the north portion of the Ridley Creek Greenway. The Media-Smedley Trail is planned to follow the SEPTA 101 Trolley Line in Nether Providence and 3<sup>rd</sup> Street in Media. The trail will be on a mixed-



use path through Smedley Park, paved ways behind the Chesley Office Campus and ACME Shopping Center, and follow a short portion of Providence Road to 3<sup>rd</sup> Street. This trail will connect cyclists and pedestrians to the Pine Ridge Trolley

Station and downtown Media. The portion of the trail that is planned to run along Providence Road will require an installed bike lane. This trail is listed as proposed on the Delaware County Greenway Plan.

#### Blue Route Bikeway – Smedley to Darby Creek

The BRB – Smedley to Darby Creek trail connects the BRB – Leiper-Smedley Trail and Media-Smedley Connector Trail to the Darby Creek Trail in Haverford Township. The trail loosely follows Interstate 476 and connects trails following Crum Creek and Darby Creek. Portions of this trail are existing but other parts are proposed to be completed according to the Delaware County Greenway Plan.





Figure 12 - Nether Providence Regional Trail Network

Existing Trail Network and Plans

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#### Blue Route Bikeway – Leiper-Smedley Trail

The BRB – Leiper-Smedley Trail is an existing trail that connects Leiper Park to Smedley Park thus connecting BRB – Leiper to Kinder Connector with the BRB – Smedley to Darby Creek and the Media-Smedley Connector Trail. The BRB – Leiper-Smedley Trail follows Interstate 476 and Crum Creek by sharing Avondale Road from Leiper Park to a bike path under Interstate 476 that continues across Baltimore Pike and into Smedley Park. The trail also crosses East Brookhaven Road and Plush Mill Road, giving cyclists and pedestrian's access to the Wallingford Regional Rail station and the Community Arts Center respectively.



#### Blue Route Bikeway – Leiper to Kinder Connector



The BRB – Leiper to Kinder Connector will tie together the existing BRB – Leiper-Smedley Trail to the potential BRB – East Coast Greenway Connector. This trail connector will run through a bike path in Black Rock Park and along Avondale Road through a portion of Leiper Park thus avoiding Interstate 476 by traveling underneath it. The Delaware County Greenway Plan has listed this as a potential trail for development.

#### Blue Route Bikeway – East Coast Greenway Connector

The East Coast Greenway is a planned paved, off-road bike route that will stretch the length of the United States' east coast from Maine to Florida connecting major urban areas. In Delaware County, the East Coast Greenway follows the Delaware River and will share the route with BicyclePA Route E. The BRB – East Coast Greenway Connector allows riders on the BRB – Leiper to Kinder Connector and the south section of the Ridley Creek Greenway to easily access the East Coast Greenway. The three greenways are planned to connect near the intersection of Bullens Lane and Governors Drive just outside Nether Providence. According to the Delaware County Greenway Plan, this is only a potential trail due to the many obstacles such as Interstate 95, Chester Pike, and the CSX Transportation freight rail line.



#### **Ridley Creek Greenway (North and South Sections)**



The Ridley Creek Greenway is split into a north section and a south section but only the south section travels within the Township. The south section of the Ridley Creek Greenway connects the BRB – East Coast Greenway Connector and BRB – Leiper to Kinder Connector to Ridley Creek State Park. The south section of the Ridley Creek Greenway will follow Ridley Creek through a collection of municipal parks and open space in both Nether Providence and the City of Chester. The north section and south section of the Ridley Creek Greenway are both listed as proposed on the Delaware County Greenway Plan. A plan to connect both sections is under review currently but a trail design has been difficult due

to the steep Ridley Creek stream valley.



#### **Existing Park Trails**

While there are many trails that are a part of the Delaware County Greenway Plan, there are additional trails in the area within local parks. To the south, there are Chester Park and the Taylor Arboretum trails, which are both confined within their respective parks. Chester Park trail is made up of dirt and paved surface that is primarily a wooded, hilly trail. The Taylor Arboretum trail is made of dirt and is also wooded with a mix of flat and hilly surfaces.

To the west, there are Saul Wildlife trail and Minquas trail, which are also confined to their respective parks. These trails are both dirt, wooded and have a mix of flat and hilly surfaces.

To the northeast, the Smedley Yellow trail connects north to a proposed bike trail that would run along Sproul Road in Springfield. The Smedley Yellow trail is primarily dirt, wooded, and on hilly and flat surfaces.

To the east is the Swarthmore trail that is confined to the Swarthmore Woods. The trail is dirt, wooded, and on flat and hilly surfaces. Two trails are within the Township that serve specific purposes and these are Furness Park trail and Hepford Field Trail. Furness Park allows SEPTA Regional Rail riders to access SEPTA's additional parking for the Wallingford Regional Rail station along Turner Road. This trail is dirt, wooded, and flat. Hepford Field trail runs the circumference of the athletic fields in Hepford Field and gives pedestrians and cyclists a route around the field. This trail is paved, in a field, and on a flat surface.

These trails and their descriptions were provided by the Delaware County Planning Commission. In addition, a pair of dirt trails traverse Houston Park from Harvey Road to Chester Road.

The current trail network in the Township may seem insignificant but only because there are few connections from the existing sidewalk network and the very sparse bicycle network. As all three networks develop, the interconnectivity inside and outside the Township will grow to allow for more fluid travel by pedestrians and cyclists alike. Listing the existing and proposed trail network as a "Recreational Facility" in the assessment matrix will weigh the importance of connectivity throughout the Township. This connectivity will be beneficial to the application of the Plan.



## **Existing Sidewalks and Crosswalks**

## Importance of Sidewalks to a Network and Safe Routes to Schools

Sidewalks are a very important asset to have in any municipality, especially one with a nursing home and five schools. When a sidewalk is installed and maintained correctly, it provides a separation between pedestrians, automobiles, and bicycles. This separation is important to pedestrians to not only give them the sense of feeling safe, but also to keep pedestrians from interrupting the flow of traffic for automobiles and bicycles. Similar to trails, sidewalks provide a

healthy alternative to driving in an automobile when traveling to local destinations.

Similar to trails, sidewalks are important to the Nether Providence community because of children under the age of 18 and senior citizens who are statistically known to walk more than other demographic age groups. Sidewalks are also beneficial to the Safe Routes to School program in Pennsylvania to allow students to have the ability to walk to school without worrying about sharing



the street with automobiles. The Township has a small, disconnected sidewalk network that needs to be improved to better serve the community.

#### Figure 13 - Sidewalk Network



#### **Existing Sidewalk Conditions**

There are sidewalks in the Township that are in satisfactory condition while others in the Township could benefit from replacement. After an aerial review and field visits, sidewalks in the Township were grouped into separate categories based on their quality.

The sidewalks planned to be installed along Copples Lane, Wallingford Avenue, Moore Road, and Possum Hollow Road between Kershaw Road

and Brookhaven Road are in the best condition of the township and do not need replacement.

Many sidewalks are in good condition but could be placed on a "watch" list for spot maintenance. These sidewalks run along Mulbury Lane, Truepenny Road, Rogers Lane, Manchester Avenue, Hastings Avenue, Chestnut Parkway, and along Providence Road between Strath Haven High School and Strath Haven Middle School and between Baltimore Pike and Highland Avenue.



Sidewalks that are in need of replacement are along Providence Road throughout the township outside of the two areas mentioned in the "watch" category because currently, the sidewalk is raised asphalt and not concrete. Additionally, the sidewalk along Avondale Road needs to be replaced as it is a part of the BRB – Leiper-Smedley Trail and is raised asphalt. Lastly, Possum Hollow Road has a painted walkway along it between Providence Road and Kershaw Road that act as a sidewalk that should be replaced with a concrete sidewalk. Kershaw Road has the same painted walkway between Possum Hollow Road and Brookhaven Road as well.

#### Existing Sidewalk Network

After an aerial review on the Township, it was found that approximately 17% of the roads in Nether Providence have a sidewalk that run along them. The primary vein of the sidewalk network is Providence Road, which has a sidewalk running from outside of the Township in Media to Harvey Road. The network's



highest concentration of sidewalks is along Chestnut Parkway with Maple Road and Ridley Drive running parallel with and a connection to Moore Road along Hastings Avenue.

The network also includes roads within neighborhoods throughout the Township that connect to proposed and existing trails. Avondale Road connects to the BRB – Leiper-Smedley Trail, Ridley Drive connects to the proposed southern section of the Ridley Creek Greenway, and Providence Road connects to the proposed Media-Smedley Connector Trail. Lastly, many points of interest are currently on a road with a sidewalk. Most of these points of interest are on Providence Road from Helen Kate Furness library to the three of the five schools in the Wallingford-Swarthmore School District and many places of worship. Additionally, points of interest are found along Moore Road and Wallingford Avenue with Nether Providence Elementary School / Creekside Swim Club, and places of worship respectively.



Figure 14 - Slope of Potential Sidewalk between Intersections

Sources: Road centerlines provided by Carroll Engineering from 2009 then attributed with USGS elevation data from 2009 to analyze slope.

#### **Elevation Conditions of Sidewalks**

Existing sidewalks in the township all have a running grade that is compliant with the Americans with Disabilities Act (ADA) standards. These standards state that if a sidewalk is at the same grade as a roadway, regardless of the steepness of the roadway grade, that sidewalk is ADA compliant. Additionally, a sidewalk that is separate from a roadway must have a running grade that is no greater than 5%. All sidewalks in the township follow roadways and even if they did not, their running grade is within the 5% requirement. If the running grade of a sidewalk is greater than the roadway, it must not exceed 8.33% or a ramp must be installed to compensate for the grade change.

Fortunately, for the township, few roads running grades exceed 5% and most that do, do not exceed 8.33% so there is little chance that a sidewalk installed on any road within the Township will have any problems being complaint with ADA standards. The few roads that are greater than 8.33% are on the outskirts of the township and are not connected to any existing sidewalks in the township.

A sidewalk network throughout the township promotes healthy living as well as provides a safe place for pedestrians to be separate from cars on busy roads. It is important to have connectivity throughout the township and connections to surrounding sidewalk networks to allow for safe travels on a continuous route instead of just portions of a network. The sidewalk network will use the assessment matrix to weigh the importance of an intersection or a road. The matrix only weighs sidewalks for pedestrians, as it is not designed to be shared with cyclists. The matrix weighs intersections without sidewalks leading to them heavily because an intersection without a sidewalk makes it much more difficult for drivers to predict where a pedestrian plans to cross in an intersection.

#### **Existing Dangerous Pedestrian Routes**

There are routes in the township that have been labeled as "hazardous" in previous plans developed by the Township managers. These routes were Wallingford Avenue and Copples Lane, which both have sidewalk installations planned to decrease vehicular speeds and increase pedestrian safety.

In the past 10 years, there have been 17 automobile crashes involving pedestrians in the township. The road with the most crashes involving pedestrians is Providence Road, which does have a sidewalk, that, in some areas, may need replacing. Four roads had two crashes involving pedestrians in the past 10 years and they were Brookhaven Road, Baltimore Pike, Putman Boulevard, and Beatty Road. None of these four roads have sidewalks, which could be a contributing cause to the accidents occurring. As these hazardous and dangerous routes are identified, it is imperative to act by installing sidewalks in high demand areas, especially those noted in the assessment matrix in this report, to make the thoroughfares safe for motor vehicles and pedestrians to share the road.

#### **Existing Crosswalk Conditions**

Most of the crosswalks in Nether Providence follow a simple design. The crosswalks are painted white block crossings with some locations that have signage identifying their location. At the intersection of Providence Road and Chester Road and the intersection of Baltimore Pike and Grandview Road, there are crosswalks that have solid white lines bordering the crosswalk without block crossings painted inside. There are not any sidewalks in the Township that have hazard lighting to notify a driver that a pedestrian is crossing. In one location along Brookhaven Road at the front entrance of Strath Haven High School, there is a crosswalk with "Yield to Pedestrian" signage in the center of the street to notify motorists. There are few other traffic-calming elements for crosswalks in the Township besides the crossing guards on duty during arrival and departure times for the schools. Some of the crosswalks in the Township have worn paint from motor vehicles, yet still visible to drivers.

#### Existing Crosswalk Network

Existing crosswalks in the township are focused primarily around the four public schools and the Wallingford Regional Rail station. Additional sidewalks are located along the BRB – Leiper-Smedley trail where it crosses over Rose Valley Road, Avondale Road, Rogers Lane, and Plush Mill Road. The sidewalks around the Wallingford Elementary School are at the intersections of Providence Road and Possum Hollow Road as well as Providence Road and Brookhaven Road. The crosswalks crossing Providence Road on both Possum Hollow and Brookhaven do not connect to a sidewalk on either side while the Providence Road crosswalks do. There are two additional sidewalks near the front entrance of WES that are staffed by a crossing guard during arrivals and departures from school. Additionally, there is a crosswalk staffed by a crossing guard during arrivals and departures from school on Kershaw Road crossing Brookhaven Road.

At the front entrance of Strath Haven High School, there is a crosswalk that crosses Brookhaven Road but again does not connect to any existing sidewalks. There is also a crosswalk between Strath Haven Middle School and High School across Providence Road at Hickory Road with a pedestrian bridge crossing Providence Road just 500 feet south of the sidewalk. At the back entrance of Strath Haven Middle School along Copples Lane, there are several crosswalks across Copples Lane that lead to side streets without crosswalks. There is another concentration of sidewalks along and crossing Moore Road near Nether Providence Elementary School that connect Moore Road sidewalks but do not have any sidewalks to connect to adjoining side streets.There are a few crosswalks that are not in proximity to the school, transit, or the BRB – Leiper-Smedley trail. The first crosses Rose Valley Road at Moreland Road with no stop signs or crosswalk signage but connects to an existing sidewalk along Springhaven Road. The second is crossing Putnam Boulevard connecting Putnam Village to the Putnam Village Office and Pool.

Figure 15 - Existing Bicycle Network Plans



Sources: Delaware County on road bike improvement network digitized from Delaware County Bicycle Plan from 2009. Swarthmore bike network and Old Baltimore Pike bike route digitized from Borough of Swarthmore Pedestrian and Bicycle Accessibility Master Plan from 2013. Media bike network digitized from Media Borough Bike Facility Implementation Plan Draft from 2015.

## **Existing Road Conditions for Cyclists**

#### Importance of Shared Roads to a Network

Shared road networks are an important safety feature to create a healthy interaction between motor vehicles and bicycles. Similar to trails and sidewalks, a shared road network promotes healthy living and would be an important piece of infrastructure for Nether Providence because the demographic group of children under the age of 18 is known to have high bicycle ridership. A shared road network not only benefits the cyclists, it benefits the driver because it allows them to know where the cyclists will be on the road instead of mixing the traffic. A shared network benefits the Plan by increasing the connectivity of cyclists traveling inside the Township as well as outside to surrounding bike networks.

#### **Existing Roads Network**

Currently, Nether Providence does not have an existing shared road network plan. Since the surrounding municipalities do, theirs would give the Township a building block to creating such a shared road network. Swarthmore has an existing network and Media has a draft network on progress that Nether Providence will be able to tie in to, to allow for continuity on the roads throughout the region. Additionally, the Bicyclists Baltimore Pike Route is a route that runs parallel to Baltimore Pike to allow cyclists to avoid a very automobile-heavy road. Lastly, Delaware County has created a planned countywide improvement network that incorporates some of the Township's roads as primary and secondary routes.

#### **Delaware County Improvement Network**

The goal listed in the "Delaware County Bicycle Plan" for the countywide network is to "create a network of on-road routes for future bicycle improvements that connect people with retail, employment, education, and entertainment destinations." These network suggestions will benefit the county with direct and safe routes for cyclists. The county's purpose of this plan is not to identify roads that are in the best physical condition currently for cyclists but to identify roads which could benefit the county with a non-motorized interconnected network. The route suggestions were based on current bicycle ridership, bicycle accident records, and destinations throughout the county. From these categories, a ranking of primary, secondary, and tertiary routes have been determined for road infrastructure development, although it should be noted that Nether Providence did not receive any suggestions for tertiary routes.

#### Primary Routes vs. Secondary Routes

Primary routes and secondary routes were determined using a bicycle improvement network matrix that calculated the importance of the route to the county. The importance was based on a public survey, number of crashes, schools, recreational facilities, county employers, and transit stops that were along the individual road in question. A point system was then created weighing the significance of the categories listed and adding them up per road then dividing that total by the distance of the road. Since this formula divided the total points by the distance of the road, the matrix was used to calculate the proximity to the points of interest each potential route would have.

#### **Primary Routes**

The primary routes for a shared road network in the Township reflect high scores from the bicycle improvement network matrix. The primary shared road bicycle network follows, for the most part, the primary road network in the township. The routes that stand out regarding educational access are Providence Road, which has four of the five schools in the Township located on it and Brookhaven Road, which has Strath Haven High School's main entrance on it and is in proximity to the elementary schools in the township. Brookhaven Road also provides access to numerous destinations in Brookhaven. Baltimore Pike is listed as a primary route due to the generous amount of retail in both Media and Springfield. Turner Road is listed as a primary route due to its proximity to the Wallingford Regional Rail station and Pine Ridge trolley station. Avondale Road is listed as a primary road due to its importance to the BRB – Leiper-Smedley trail as a recreational facility. Chester Road and Bullens Lane were selected as primary due to their connection to employers as well as proximity to recreational facilities.

#### Secondary Routes

The secondary routes in the Township have similar profiles to the primary routes though they were not in close enough proximity to any one category on the bicycle improvement network matrix to include it as a primary route. Beatty Road, Manchester Avenue, Rose Valley Road, and Chestnut Parkway/Waterville Road all scored higher than average in proximity to schools, recreational facilities, and employers. Beatty Road and Chestnut Parkway/Waterville Road both scored evenly between the three categories while Manchester Avenue and Rose Valley Road had a slightly higher focus on schools.

#### **Media Network**

The Media bicycle network designed in the drafted Media Borough Facility Implementation Plan is very dense and connected due to the borough's street grid. The network consists of one-way and two-way routes throughout Media's downtown section where sharrows are planned to be painted on the road as well as potential inclusion of a bike lane along Providence Road. The Media network can connect to a one in



Nether Providence along their proposed Providence Road bike path, which would then connect to the primary route along Providence Road suggested by Delaware County. Additionally, a proposed route with sharrows along Front Street could connect to Surrey Road to feed into a potential Beatty Road bike lane or route with sharrows. The Media shared road network would also allow bike access from the Township to Glen Providence Park.



#### Swarthmore Network

The Swarthmore bicycle network bears greater similarity to the Township network suggestions from Delaware County than the Media bicycle network due to the design of their street network. According to the Swarthmore Pedestrian and Bicycle Accessibility Master Plan, the network consists of roads painted with sharrows to notify cyclists and drivers where the bike route is located. The Swarthmore network can connect with the Township network at the intersection of Yale Avenue, Avondale Road, and Rose Valley Road. Avondale Road is listed as a primary route in the county improvement network and Rose Valley Road is listed as a secondary route. Joining this network will permit Nether Providence residents to ride their bikes to Swarthmore College and Swarthmore's downtown. This network also provides connections to regional parks and the Springfield Mall. A major vein in this network runs along Yale Avenue, which is a section of the on-road bike trail, Bicyclists Baltimore Pike.

#### **Bicyclists Baltimore Pike**

Bicyclists Baltimore Pike is a bike route that was planned by the Delaware County Regional Planning Commission to connect areas in Delaware County to Center City Philadelphia. The route begins at the intersection of Rose Valley Road, Avondale Road, and Yale Avenue, which



allows for an easy connection to the township network. This intersection is also where the BRB – Leiper-Smedley Trail crosses Rose Valley Road, which will allow riders of the trail to easily access Bicyclists Baltimore Pike. This route not only provides access to Center City Philadelphia but also connects the Township to surrounding municipalities, retail centers, recreational facilities, and parks and open space.

#### **Elevation Conditions of Roads**

The slopes of roads in the township make it possible for a bike network to be installed for the average cyclist. According to multiple bicycle and master plans of similar municipalities, an average cyclist will be comfortable riding at a running grade below 5%. Running grades between 5% and 7% tend to be a "buffer zone" between where the average cyclist feels safe and unsafe with automobiles and pedestrians on the same road. At 7%, average cyclists no longer feel safe riding on a street without their own lane between other forms of transportation and a bike lane (protected or unprotected) should be installed.

Most roads in the township fall under the 5 % gradient to enable the average cyclist to feel comfortable on the road with automobiles. There are a few areas in the township that fall within the 5% and 7% "buffer zone" but only for short road sections or roads that do not fall within Delaware County's improvement network. Even fewer roads have gradients greater than 7% and most of them are outside of the improvement network but if a portion of the bike network were to be altered to fall on one of these roads, a bike lane would be suggested.

While the existing bicycle network is sparse, it is necessary for a revised network to accommodate for both cyclists and drivers. A primary goal of a planned bicycle network is to make both parties aware of each other on the road, and to make the corridor provide safer riding and driving conditions. A primary goal of the bicycle and pedestrian plan is to increase connectivity throughout the Township as well as with surrounding networks; this is why connections to surrounding bicycle networks is weighed in the assessment matrix. This connectivity is important because it promotes healthy living by allowing cyclists to continue on a network with ample amounts of available miles.

#### **Existing Speeds**

Since the Township road network is mainly made up of small neighborhood roads, the predominant posted speed limit is 25 miles per hour. The state routes in the Township are mainly 35 miles an hour. The only state routes over 35 miles an hour are Baltimore Pike and Brookhaven Road west of Providence Road, which are 45 miles per hour and 40 miles per hour respectively.



Figure 16 - Slope of Potential Bike Lanes Between Intersections



Sources: Road centerlines provided by Carroll Engineering from 2009 then attributed with USGS elevation data from 2009 to analyze slope.

According to accident records from the Nether Providence Police Department, 86% of crashes involving a bicycle and a motor vehicle have occurred on a road with a speed limit greater than 25 miles per hour in the past 10 years. In that same 10-year span, 71% of crashes involving a pedestrian and a motor vehicle have occurred on roads with speed limits greater than 25 miles per hour. While these roads are known to have greater traffic volume than many of the 25 miles per hour roads providing a higher probability of crashes, it can also be said that much of the traffic on these roads comes from the 25 miles per hour neighborhood roads. This would mean that there is a similar amount of traffic, though dispersed and less consistent, on the 25 miles per hour roads but the crashes are far less.

#### **Existing Dangerous Routes**

Due to the lack of bike lanes, sharrows, and share the road bicycle signage, many routes throughout the Township could be considered "dangerous". The most concrete evidence of dangerous routes is the accident data provided by the Nether Providence Police Department.

Similar to the dangerous routes for pedestrians, Providence Road has the highest amount of motor vehicle crashes involving cyclists with eight crashes in the last 10 years. The only other road with multiple crashes is Rose Valley Road with two crashes in the past 10 years. Both of these roads have a similar design with just vehicular lanes and no shoulders for cyclists to ride along. This causes cyclists to share the road with motor vehicles that are traveling at least 35 miles per hour. These conditions cause cyclists



to ride along the edges of the vehicular lanes, which may be the reason why many of the traffic crashes involve automobile side mirrors knocking cyclists off of their bicycles and injuring them. Figure 17 - Road Speed Limits



45 mph Sources: Road centerlines provided by Carroll Engineering from with 2015 speed limit data attributed using PennDOT data through PASDA GIS Repository.

35 mph 40 mph

## **Existing Gaps**

This section presents evident gaps in the Township's non-motorized transportation network. While categorized as trail or sidewalk, a few emerge as neither and serve to connect points of interest or as corridor relief.

#### **Existing Trail Gaps**

Nether Providence has a plethora of existing and planned trail networks that run nearby throughout the county that allow for cyclists and pedestrians to connect to other municipalities. These trails can also be used to commute within the township itself. Unfortunately, due to the built out nature of the township, it is not feasible to create off-road bike trails that follow certain routes to close gaps. Because of this, on-road bicycle and pedestrian routes will be required to create a fully connected network for both forms of transportation. Refer to the Recommendations section for details.

Route	From	То	Connects
Rose Valley Road	Brookhaven Road	Leiper- Smedley Trail	SHHS SHMS Wallingford Swim and Racquet Club Springhaven Club Mother of Providence Regional Catholic School St. John Chrysostom Grace Bible Fellowship Church
Ridley Creek	Media	Chester	Five schools, bus and Regional Rail routes, community centers, and places of worship
Open space	Willow Road terminus	Houston Park trails	Houston Park and Harvey Road (and the route 109 bus stop at South Providence Road and Chester Road, in conjunction with the below sidewalk gap closure)

#### Figure 18 - Trail Gaps

#### Sidewalk Gaps

With only 17 percent of the road network having a sidewalk, there are many gaps to be found in the Township. Primary gaps that are being evaluated are gaps that can easily connect to the existing sidewalks in the Township's network.

Route	From	То	Connects	
Possum Hollow Road	Providence Road	Kershaw Road	Wallingford Regional Rail station and existing sidewalk on Possu Hollow Road between Kershaw Road and Turner Road.	
Kershaw Road	Possum Hollow Road	Brookhaven Road	Wallingford Regional Rail station and existing sidewalk on Possum Hollow Road between Kershaw Road and Turner Road.	
Rogers Lane	End of 2013 Turner Road sidewalk	Just east of Wilson Oil	Existing sidewalk to the Blue Route Bridge – Leiper - Smedley Trail	
Rogers Lane	I-476 bridge	Avonbrook Lane	Existing sidewalk to the Blue Route Bridge – Leiper-Smedley Trail	
Rose Valley Road	Providence Road	Osborne Lane	Providence Road with an entrance to the Blue Route Bridge - Leiper Smedley Trail on Avondale Road and to Swarthmore	
Chester Road	Medbury Road	Avondale Road	Existing sidewalks on either side of Chester Road connecting the Township to Swarthmore	
Avondale Road	Copples Lane	Brookhaven Road	Sidewalks that lead to the Wallingford Regional Rail station	
Brookhaven Road	Avondale Road	Church Road	Sidewalks that lead to the Wallingford Regional Rail station	
Beatty Road	Providence Road	Twykenham Road	Rite Aid and the ACME shopping center	
Manchester Avenue	Moylan-Rose Valley Regional Rail station	Wallingford Avenue	Drexel University's Pennsylvania Institute of Technology and South Media – connect with sidewalks which were recently installed in conjunction with new housing	
Harvey Road	Houston Park	Existing sidewalks on Pleasant Hill Road	In conjunction with the trail connection from Willow Road (in the above trail gap closure), connects Garden City to the route 109 bus on South Providence and Chester Roads.	
Plush Mill Road	Pendle Hill, the Arts Center, and Leiper- Smedley Trail	Plush Mills Retirement Center	Plush Mills Retirement Center - sidewalks are presently only across the I-476 bridge.	

#### Figure 19 - Sidewalk Gaps

#### Corridor Gaps

Neither trail or sidewalk, these gaps are unique destination-connectors or bypass routes to heavily-traveled roads.

Route	From	То	Connects
Parallel to	Copples Lane	Sykes	Links the Avondale Knolls and Wallingford
Providence Road		Lane	neighborhoods
East Brookhaven	Providence	Church	Connects shoulders at West and East Brookhaven
Road	Road	Road	Road.

#### Figure 20 - Corridor Gaps

In summary, the many destinations in the township dictate that gaps described in this section beg for solutions, particularly regarding safe routes to schools, access for seniors and first / last mile transit connectors. SEPTA recently published its Cycle-Transit Plan which recognizes such closure strategies as ways of attracting more riders to its sustainable Regional Rail Division which is very constrained by limited parking facilities.

# Chapter 4 Public Survey



## **Survey Introduction**

To better understand the needs of township residents, Temple prepared a survey utilizing Google Forms. This survey ultimately reflected many of the points in the Demographic analysis, as well as identifying areas for improvement within Nether Providence. Survey respondents tended to live in two-person households, tended to have children, and prioritize access to schools over other destination types. Respondents recognized the importance of a community that promotes safe active transportation, both for their health, as well as the impact that a walkable/ bikeable area can have on keeping the Township a desirable place to live.

This section will review major takeaways from the survey and their importance to the overall plan document. As such, only selected responses are included within this section, especially those that are influential on the identification of areas for potential infrastructure development. For the full collection of responses, refer to the Appendix.

"I often put my bike on my car and drive to a safe place to bike. I would like to be able to bike to Media but there are no safe routes."

#### **Survey Format**

The majority of the survey consisted of dropdown or single-select responses, such as dropdown menus for age ranges or spectrums of desire (e.g., Very Important to Very Unimportant). Questions consisted of a few demographic items, questions relating to desire for accessibility of different types of location, and transportation preferences. While results from the multiple choice response questions were illuminating, some of the most compelling results came from the free response sections.

The full list of survey questions and response options is available in the Appendix.

### **Response Overview**

There were two free response questions on the survey. Some respondents made use of the "Other" choice on multiple-choice selections to provide a freetext response, but these typically consisted of brief responses that were relevant additions to the options provided, such as residents who lived outside of the Township. Respondents identified a number of locations that could be improved, and even the benefits that they perceived would arise from improvements in nonmotorized infrastructure.

There were several major takeaways from the survey free response sections. Firstly, residents of the township want an active, safe, and healthy community. This desire for community development is also paired with a pragmatic assessment of what is realistic for their community. Respondents did not call for traffic devices such as physically separated bikeways or a bike lane on every street, but expressed a desire for sidewalks on roads that connect to schools, traffic calming or speed-limit reductions on roads that exceed 25 miles per hour, and street lighting to improve visibility, among other proposed improvements. Residents recognize the importance that a walkable and bikeable community can play in their quality of life, and they have a consistent ideal of what is appropriate and feasible for their community. Responses frequently called for sidewalks, calmer streets, and greater safety for all uses, with accessibility and safety of children being a chief concern.

#### "Sidewalks, sidewalks, sidewalks - and lighting for those sidewalks."

References to specific streets and intersections in free-response questions were tallied for use in an assessment matrix. Several standards were used for the tallying of responses. These tallying rules were used to ensure a consistent assessment, as well as to ensure that problem intersections would be paid due attention and assessed holistically.

- » If a respondent mentioned multiple streets, each street would be counted
- » If one respondent mentioned the same street multiple times, that street would only be counted once
"More stop signs, more speed bumps, side walks"

# **Survey Findings**

Beyond the vote tally that the survey was used to develop, several major findings are apparent from the survey. See the Appendix for response results, as this passage only includes major takeaways.

A majority (over 70%) of respondents identified that they had one or more children living in their household. Additionally, over 70% of respondents were within a 26 to 55 year old age cohort.

This population group was also primarily made up of predominantly individuals living in two-person households. 60% of respondents identified as living in two-person households and were within the 26-55 year old age cohort.

Moreover, this age cohort also identified as living in a household with one or more children with 68% of all responses were individuals from this age cohort living in a household with one or more children.



<u>Figure 21 - Number of Children in</u> <u>Respondent Household</u>

Respondents also expressed the importance of schools to the community. 73% of all respondents identified access to Schools as being Very Important. The 26-55 age cohort made up the majority of these responses.

The results from this survey confirm much of what the demographic analysis established. Nether Providence is a family-centric community with a number of educational locations. Individuals establish roots in the community in order to raise a family. Ensuring access to its schools and community resources is critical to maintain Nether Providence's quality of life and keeping it an attractive community to live in.

# *"Encouraging alternative transit method is vital for the continued growth of community. It is also very important offering safer environment for kids."*

Additionally, respondents expressed that they would like to be able to utilize alternative modes of transportation, with over 60% expressing a desire to be able to do so in general, and 22% wanting to be able to do so only to destinations within the Township. In response to why they currently do not make use of alternatives to driving, respondents were primarily concerned about safety than factors such as the difficulty or travel times.



# Figure 22 - Percent of Respondents in Age Group

Responses from this survey reinforce the need for safe and accessible modes of transportation in Nether Providence. Respondents expressed that they already make use of a variety of travel modes, but their concerns regarding safety, and the fact that respondents currently prefer driving instead of other modes is indicative of a need to improve conditions for pedestrians and cyclists, as well as improving accessibility of the Township's transit stops.

"If walking to WES, SHMS and SHHS were safer from all directions, it would not be necessary to provide bussing to students who live within blocks of the schools, and it would considerably ease traffic problems during morning and afternoon rush hours." This page intentionally left blank.

# Chapter 5 Recommendations



# **Assessment Matrices**

To assist in recommending new infrastructure in the township, assessment matrices were created. Each matrix weighs the importance of the votes from a community survey, crash records, and proximity to points of interest. The points of interest were selected using a quarter mile buffer for pedestrians and a two and a half mile buffer for cyclists. These buffers were selected using standards based on Federal Highway Administration Pedestrian Safety Guide. The points of interest were broken into five categories for each matrix.

The pedestrian and bicycle assessment matrices for intersections and roads included proximity to schools, recreational facilities, regional rail stops, and bus and trolley stops. The intersection matrices differ between pedestrian and bicycle transit by counting the amount of roads with sidewalks that enter the intersection for pedestrians and by counting the bike networks that fall within the bicycle buffer of the intersection for bicycles. The road matrices differ between pedestrian and bicycle transit by calculating the average distance of road without sidewalks for pedestrians and bike networks that connect to the road in question for bicycles.

After each category was tabulated, their number was converted to points by calculating the average of the number for each category and then dividing each individual intersection or road number for that category by the average. Then the points for each category were summed for each intersection or road to rank the intersection or road for implementation of infrastructure. The upper third tiers of the results were selected for review by Temple with outliers selected based on high votes from the survey.

Intersections and roads identified in Red are prioritized and have recommendations that are made available either by individual recognition or by overall suggestions. Intersections and roads identified in Green are secondary, and while they lack specific recommendations in this plan, they should be considered as areas for investment to improve safety and mobility.

These assessment matrices are presented in the Appendix due to the size of the individual tables. The recommendation section below provides specific recommendations based on the assessment matrices.

Figure 23 - Intersection Matrix Weights



# **Recommended Improvements**

This section details recommended improvements for intersections and streets identified in the assessment matrices. Locations were assessed with respect to improvements that would improve safety and accessibility. The addition of sidewalks, bike lanes, trails, and crosswalks provide infrastructure, which is dedicated for pedestrians and cyclists. They serve to separate vehicular traffic, and in the case of trails, fully segregate people from vehicles. Mobility is increased for groups who either choose not to drive or are unable to; these include children, senior citizens, the disabled or the economically disadvantaged. Sidewalks, bike lanes, signals, and signage also increase pedestrian and cyclist visibility to motorists, serving as reminders to exercise caution.

Signage identified for each section is identified by its name and ID from Federal Highway Association's Manual of Uniform Traffic Control Devices (2009) unless otherwise noted. Signage examples are available in the Appendix.

An increase in these types of infrastructure encourages healthy lifestyles through physical activity, provides environmental benefits through reduced greenhouse gas emissions and lessens vehicular congestion. Greater numbers of pedestrians and cyclists increases social capital through chance encounters and neighbors will develop bonds and a greater sense of trust.

# **Pedestrian Road Network Recommendations**

If sidewalks are not feasible on an existing roadway, the sign Walk On Left Facing Roadway (R9-1) should be installed on roadways where the speedlimit is not in excess of 25 miles per hour. While this is part of the educational materials developed for this plan, it is important that pedestrians be knowledgeable about how to safely walk along a roadway, and which roadways to prefer for travel. Walking against traffic allows pedestrians to remain aware of traffic conditions and to evade potentially dangerous situation. This sign should be installed so that pedestrians would see it when attempting to walk with the flow of traffic.

Additionally, the Cross Only at Cross Walks (R9-2) or No Pedestrian Crossing (R9-3) signage may be used to deter crossing at inappropriate areas, such as roadways with poor visibility or high speeds of travel.

# 1) Providence Road

#### Sidewalks

- » Improve existing sidewalks to raised concrete sidewalk to act as a traffic calmer and provide safer routes to the four schools located along Providence Road
- » Install a trail on SHMS property connecting Copples Lane and the Sykes Lane cul-de-sac to allow for safer route for students and residents during high traffic periods on Providence Road

#### Crosswalks

- » Install crosswalks at every intersection along the northbound lane to connect to existing and improved sidewalks
- » Install lighted crosswalks crossing Providence Road at the Hellen Kate Furness Library, Wallingford Elementary School, and Mother of Providence Regional Catholic School as these areas do not have nearby safe crossing locations for pedestrian traffic



Figure 24- Pedestrian Road Network Recommendations

# 2) Brookhaven Road

#### Crosswalks

» Install lighted crosswalks crossing Brookhaven Road at Strath Haven High School, the intersection at Kershaw Road, and the intersection at Church Road as these areas do not have nearby safe crossing locations for pedestrian traffic

#### 3) Possum Hollow Road

#### Sidewalks

» Improve pedestrian pavement markings to raised concrete sidewalk between Providence Road and Kershaw Road to provide safer access to Wallingford Regional Rail Station

# 4) Turner Road

#### Sidewalks

» Install a sidewalk between Baltimore Pike and Plush Mill Road to allow access for residents to gain access between the Wallingford Regional Rail station and the Community Arts Center

# 5) Rose Valley Road

#### Crosswalks

» Improve existing crossway to lighted crosswalks crossing Rose Valley Road at Bickmore Drive and Moreland Road as both of these crosswalks are difficult to see be used frequently by pedestrians

# 6) Avondale Road

#### Sidewalks

» Install a sidewalk from Brookhaven Road to the entrance of the BRB Leiper-Smedley Trail to connect the Wallingford Regional Rail station planned sidewalk network to the trail

#### Crosswalks

» Install lighted crosswalks along intersections that recommended sidewalk crosses for pedestrian safety

# **Bike Road Network Recommendations**

If a road is identified as important to cyclists, regardless of whether or not sharrows or a bike lane is proposed, Bicycles May Use Full Lane signage (R4-11) should be implemented. This sign informs both cyclists and drivers that cyclists may make full use of the lane.

Additionally, signage indicating the Pennsylvania state passing distance should be implemented. This signage is not currently listed in the Manual of Uniform Traffic Control devices currently, as the minimum passing distance varies from state to state. In Pennsylvania, the minimum legal passing distance for vehicle passing a bicycle is four feet. It is recommended to use a sign similar to California's three foot passing sign (R117) if signage is installed. An example of this sign, updated to refer to Pennsylvania's four-feet passing law, is included in the Appendix.

If bike lanes are proposed for a road, Bike Lane (R3-17) may be used to inform cyclists and drivers that a bike lane is present. This signage may be modified using an Ahead (R317aP) or an Ends sign to keep travelers alert regarding changing traffic conditions.

Additional signage may be implemented as infrastructure is developed in order to inform travelers of legal modes of travel. For example, if cyclists take to traveling the wrong way down a street, the signs Wrong Way (R5-1b) and Ride With Traffic (R9-3cP) may be combined to inform cyclists of the requirement to travel with the flow of traffic rather than against it.

If drivers are not respecting installed bike lanes, or passing aggressively, signage is available as well. Pass With Care (R4-2) informs drivers of the need to both obey legal minimum passing distances and the importance of safe passing. Two signs (R7-9, and R7-9a) are available if drivers are found to be parking in bike lanes, with both being fairly explicit.



Figure 25 - Bike Road Network Recommendations

Recommended Improvements

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# 1) Providence Road

#### Bike Lanes and Trails

» Install sharrows along Providence Road in its entirety to make drivers aware that the road is shared with cyclists

# 2) Rose Valley Road

#### Bike Lanes and Trails

- » Install sharrows between Brookhaven Road and Providence Road as this section of the road is too narrow to install bike lanes but is frequented by cyclists
- » Install bike lane between Providence Road and Avondale Road as this section of the road currently has large shoulders that can be converted to separate bike lanes

# 3) Brookhaven Road

#### Bike Lanes and Trails

- » Install sharrows along East Brookhaven Road as this section of the road is too narrow to install bike lanes but is frequented by cyclists
- » Install bike lanes along West Brookhaven Road between the border of the Township and Brookhaven Borough and Providence Road as this section of the road currently has large shoulders that can be converted to separate bike lanes

# 4) Avondale Road

#### Bike Lanes and Trails

- » Install bike lanes between the entrance of BRB Leiper-Smedley Trail and Rose Valley Road as this section currently has wide lanes and a large sidewalk which could be altered to have a bike lane
- » Install sharrows between Brookhaven Road and BRB Leiper-Smedley Trail to connect Brookhaven Road sharrows to the trail

# 5) Turner Road

#### Bike Lanes and Trails

» Install sharrows between Baltimore Pike and Avondale Road to continue the Brookhaven Road sharrows throughout the Township

# **Pedestrian Intersection Recommendations**

# 1) Providence Road and Brookhaven Road

#### Signals and Signage

- » Install triggered pedestrian crossing signals allowing pedestrians to pre-empt a cycle of signals
- » If no triggered pedestrian crossing signals are installed, "Turning Vehicles Yield to Pedestrians" (R10-15) should be installed to make vehicles aware of pedestrians
- » Continue using "No Turn on Red" signs

#### Crosswalks

- » Install crosswalks on eastbound and westbound lanes of Brookhaven Road to connect Providence Road sidewalks to 118 bus stops
- » Continue using crosswalk on northbound lane of Providence Road to connect existing sidewalks

#### 2) Providence Road and Possum Hollow Road

#### Signals and Signage

- » Install triggered pedestrian crossing signals allowing pedestrians to pre-empt a cycle of signals
- » If no triggered pedestrian crossing signals are installed, "Turning Vehicles Yield to Pedestrians" (R10-15) should be installed
- » Replace "No Pedestrians" (R9-3) sign preventing pedestrians from entering Possum Hollow Road with "Walk On Left Facing Traffic" (R9-1) to promote safe crossing on side with crosswalk without confusion

#### Crosswalks

- » Continue using crosswalk on westbound lane of Possum Hollow Road to connect to route 118 bus stop
- » Continue using crosswalk on northbound lane of Providence Road to connect existing sidewalks



Figure 26 - Pedestrian Intersection Recommendations

# 3) Providence Road and Copples Lane

#### Signals and Signage

» Install traffic light that is actuated by vehicles at Copples Lane to slow traffic on both roads

#### Crosswalks

» Install crosswalk on northbound lane of Providence Road to connect existing sidewalks

# 4) Providence Road and Furness Lane / Providence Road and Wallingford Ave

#### Signals and Signage

- » Install actuated pedestrian signal that illuminates across Providence Road between the Shopping Center and Hellen Kate Furness Library to allow for safe crossing
- » Install traffic light at Providence Road and Wallingford Avenue to mitigate rush-hour congestion

#### Crosswalks

- » Install crosswalk on northbound lane of Providence Road to connect existing sidewalks
- » Install crosswalk on northbound lane of Providence Road to connect proposed Wallingford Avenue sidewalk and Shopping Center
- » Install crosswalk across Providence Road between Shopping Center and Hellen Kate Furness Library to allow for safe crossing between both points of interest

# 5) Turner Road and Baltimore Pike

#### Signals and Signage

- » Install traffic light to allow safer access for pedestrians to route 110 bus stops
- » Install pedestrian actuated signal to cross Baltimore Pike on northbound lane of Turner Road to allow safer access for pedestrians to route 110 bus stops

#### Crosswalks

» Install crosswalk along northbound lane of Turner Road if traffic signal installed to allow safer access for pedestrians to route 110 bus stops

# 6) Baltimore Pike and Chelsey Drive

#### Signals and Signage

- » Install triggered pedestrian crossing signals allowing pedestrians to pre-empt a cycle of signals
- » Install "Turning Vehicles Yield to Pedestrians" (R10-15) signs on Baltimore Pike to improve pedestrian crossing safety on a a 45 miles per hour road

#### Crosswalks

» Replace standard crosswalk design with continental crosswalk design to increase visibility of crosswalk to drivers

# 7) Brookhaven Road and Kershaw Road

#### Signals and Signage

- » Install an actuated lighted pedestrian crossing to increase visibility of crosswalk for drivers
- » If actuated lighted pedestrian crossing is not installed, signage such as "Yield Here to Pedestrians" (R1-5) or (State Law Yield to Pedestrians Within Crosswalk" (R1-6) should be installed prior to intersection

#### Crosswalks

» Remove crosswalk along northbound lane of Kershaw Road and continue to use southbound lane of Kershaw Road

# 8) Providence Road and Rose Valley Road

#### Crosswalks

- » Install crosswalk on northbound lane of Providence Road to connect existing sidewalks
- » Install crosswalk on eastbound lane of Rose Valley Road and Meadow Lane to connect Providence Road sidewalk network with Wallingford Swim and Racquet Club

# 9) Possum Hollow Road and Kershaw Road

#### Crosswalks

- » Install crosswalk on eastbound lane of Kershaw Road to connect current striped sidewalk on Kershaw Road to Wallingford Regional Rail Station parking lot
- » Continue using crosswalk on northbound lane of Possum Hollow Road

# 10) Manchester Road and Ridley Creek Road

#### Signals and Signage

» Install stop signs on Manchester Road in both directions to improve pedestrian safety and provide opportunities to safely cross

#### Crosswalks

» Install crosswalk at installed stop signs to allow easier pedestrian crossing

#### 11) Brookhaven Road and Avondale Road \ Brookhaven Road and Church Road

#### Signals and Signage

» Install lighted pedestrian crossing across Brookhaven Road along the northbound lane of Church Road to allow pedestrian traffic from the Wallingford Regional Rail Station to cross Brookhaven Road safely

#### Crosswalks

» Install crosswalk along the northbound lane of Church Road to connect existing Wallingford Regional Rail Station sidewalk network with the Wallingford Presbyterian Church parking lot which leases spaces to SEPTA for additional parking

# **Bicycle Intersection Recommendations**

# 1) Providence Road and Rose Valley Road

#### Bike lanes and Trails

» Install bike lanes crossing Providence Road that connect East Rose Valley Road bike lanes to West Rose Valley Road sharrows

#### Signals and Signage

- » Install "Look Both Ways" (R15-8) sign on East and West Rose Valley Road to reinforce the importance of vehicle safety entering Providence Road
- » Install "Bicycles May Use Full Lane" (R4-11) sign on West Rose Valley Road entrance to increase the attention of sharrows on Rose Valley Road

# 2) Providence Road and Brookhaven Road

#### Bike lanes and Trails

» Install bike lanes crossing Providence Road that connect West Brookhaven Road bike lanes to East Brookhaven Road sharrows

#### Signals and Signage

» Install "Bicycles May Use Full Lane" (R4-11) sign on East Brookhaven Road to increase the attention of sharrows on Brookhaven Road

# 3) Providence Road, Chester Road, and Harvey Road

#### Bike lanes and Trails

» Install bike lanes parallel to right lanes throughout intersection to allow for safe crossing

#### Signals and Signage

- » Install actuated signals for both pedestrians and cyclists as intersection is difficult for both transportation types to cross with high speed limits on both roads
- » Install "Begin Right Turn Lane Yield to Bikes" (R4-4) sign on southbound right lane of Chester Road because this sign indicate that bikes may continue to travel straight while vehicles intend to turn

# Figure 27 - Bicycle Intersection Recommendations



# Implementation

# **Prioritization**

This plan lays out a number of prioritization areas and proposed improvements for specific locations to improve safety and increase mobility for pedestrians and cyclists. Despite the rigid appearance of the recommended improvements, flexibility is possible and they may be modified to improve safety within the township.

The township should continue to work with the Sidewalk Committee to assess problem areas as they develop. The Sidewalk Committee arose from Walkable Wallingford, an advocacy group to improve walkability within the township. This committee has substantial expertise and insight into the needs of the township and problem areas, and can assist in recommendations that this plan does not directly address such as installation of street lighting for specific areas.

Additionally, the township should assess the possibility of lowering speed limits on roads that exceed 25 miles per hour, such as Providence Road. A traffic study should be conducted to assess the potential impacts on congestion, and weigh those impacts alongside improvements to pedestrian and cyclist accessibility and safety, especially to major destinations such as schools and transit. Calming traffic on these streets could have great improvements to safety and promote active transportation to areas within the township limits, and is not unprecedented in the region, as Swarthmore Borough recently lowered the speed limit on Chester Road.

# **Funding Opportunities**

A number of funding sources are available to help drive pedestrian and cyclist improvement projects. Due to the number of schools in Nether Providence, and the importance of these schools to the community, a major funding opportunity that should be pursued is Safe Routes to School.

Safe Routes to School is a community-centered program that allows communities to receive Federal funding for transportation improvements. This program has been shown to be effective at improving safety and accessibility for children, who are some of the most vulnerable pedestrians and most prone to suffering serious injury. Safe Routes to School is targeted at schools, but its benefits may be enjoyed by the entire community through installing sidewalks along school access corridors that are utilized by school children and community members.

A number of funding sources are available to develop bike and pedestrian infrastructure in Nether Providence. The sources listed below have been specifically identified because of their relevance to bike and pedestrian improvements and potential utility for the Township.

- » Congestion Mitigation and Air Quality (CMAQ)
- » PennDOT Multimodal Transportation Fund
- » Transportation Alternatives Program (TAP)
- » Greenways, Trails, and Recreation Program
- » Pennsylvania Department of Community and Economic Development Multimodal Transportation Fund

# Improvement Schedule

Some proposed improvements in this plan have lower implementation costs compared with others. Due to variations in construction costs, right of way acquisition requirements, and other factors that influence the total outcome of a project, exact dollar figures are not included. The varying factors also impacts the time scale at which improvements may be pursued.

Improvements are classified into time horizons for potential phasing, as lowcost improvements can typically be pursued much quicker than more expensive projects due to availability of funds and ease of installation. Due to the built out nature of the Township, obtaining the right of way for installation of new infrastructure can be time consuming, setting some recommended improvements into later time tiers than they would be if space were not a factor.

# Near Term Improvements

- » Street-side signage identifying conditions or modifying travel patterns
- » Roadway striping, such as for crosswalks
- » Sharrows (painted bike symbol suggesting where cyclists should ride)

# Medium Term Improvements

- » Street lights in order to improve visibility during evening hours
- » Painted bike-lanes
- » Pedestrian actuated crossing signals with or without countdown timers *Long Term Improvements* 
  - » New traffic-light installations
  - » Sidewalks
  - » Dedicated bike lanes

# Appendix



# Neighborhoods

# **Bowling Green and Pine Ridge**

Initial developments in these neighborhoods accompanied the early 20th century trolley line construction, with rolling, wooded hills, large homes on large lots.

# **South Media**

This is a very dense and narrow street grid of smaller single-family and twin homes, on small lots, developed throughout the 20th century. Sidewalks will soon be replaced along Wallingford Avenue, a collector road that bisects South Media as it connects Manchester and Providence Roads and hosts the SEPTA route 118 bus.

# Moylan

Moylan is bisected by the SEPTA Regional Rail corridor and is heavily wooded, with large early 20th century vintage homes on large lots. Woodward road parallels the railroad corridor, with speed humps and a single-lane stream crossing.

# South Summit and Pendle Hill

These neighborhoods are heavily wooded with large homes on large lots. Pendle Hill includes the hilly terrain along the Crum Creek valley.

# Wallingford

This neighborhood is the historic center and postal address for much of the township and named for Wallingford England. The neighborhood consists of large single-family homes on large lots, many of which date to the early 20th century, with the Wallingford Arms apartments representing the only multifamily housing.

# Avondale Knolls

This name is derived from the historic Avondale mill community and one of the constituent housing developments. This neighborhood is a mix of housing types, with older large single-family homes on large lots in the wooded hilly terrain near Avondale Road and Crum Creek. Mid-20th to early 21st century development lies to the west and south, where the development is somewhat denser. The Avondale Springs townhouses near the Crum Creek valley have been included based on proximity.

# Scott Glen

Much of this neighborhood is from post-WWII, moderate-to-large single-family homes. This name was derived from one of the area housing developments. Homes along West Brookhaven Road west of Moore Road toward Putnam Boulevard have been included, based on similar density and housing type. Homes north of Brookhaven Road in the area adjacent to the Sackville neighborhood of Rose Valley Borough have been included based on proximity.

# Wallingford Valley

This neighborhood lies along Putnam Boulevard between Moore and West Brookhaven Roads (a sliver of single homes along Waterville Road has been included based on proximity). It is comprised of mid-1980s developments of townhouses, condominiums and apartments named Danbury, Saybrook, Putnam and Weston Villages and Plymouth Colony. This is the greatest concentration of multifamily housing in the township.

# **Garden City Manor**

Originally built as temporary defense workers' housing during World War II and then known as Crum Creek Manor, postwar demand precluded its demise, and it subsequently became county-owned affordable rental housing and finally sold to private homeowners. It is a very dense collection of single-family, twinranch, townhouse and townhouse with connected end-ranch type of homes. Numerous dead-ended courts cross the looping and narrow major streets.

# **Garden City**

Most of Garden City was initially developed in the early 20th century, and the lots have been subdivided over time into a dense neighborhood, with a mostly narrow street grid and smaller single-family homes and a few twins on small lots, with sidewalks on a few major streets. It may have been considered a streetcar suburb due to the 1893 launch of the Chester and Media Electric Railway trolley service.

# **Sproul Estates**

This neighborhood is comprised of mid-20th century small-to-midsize singlefamily brick homes (some have stone fascias) on various lot sizes. The Crum Creek Valley Condominiums lie in the northeastern section along Crum Creek.

# **Resource Compendium**

A number of documents are available for further guidance on developing effective improvements for bike and pedestrian safety. Federal, state, county, and other township documents can provide further technical guidance or case studies as needed. This section is a list of useful documents for further information.

# Federal

- » American Association of State Highway Transportation Officials Guide for the Development of Bicycle Facilities (2012)
- » National Association of City Transportation Officials Urban Bikeway Design Guide (2010)
- » Federal Highway Administration Manual of Uniform Traffic Control Devices (2009)

# State

- » Pennsylvania Greenways: An Action Plan for Creating Connections (2001)
- » PennDOT Traffic Calming Handbook (2012)
- » PennDOT Handbook of Approved Signs (2012)

# County

- » Delaware County Planning Department Delaware County Bicycle Plan (2009)
- » Delaware County Planning Department Delaware County Greenway Plan (2015)

# Local

- » Swarthmore Bike and Pedestrian Master Plan (2013)
- » Paoli Pike Trail Plan (2015)
- » Media Bike and Pedestrian Master Plan

# Survey Responses

# Survey Questions and Aggregated Responses

# 1) What Nether Providence neighborhood do you currently live in?<sup>8</sup>

Neighborhood	Count		
Avondale	9		
Avondale Knolls	3		
Bowling Green	1		
Garden City	9		
Garden City Manor	1		
Live in Other Municipality	3		
Moylan	2		
Pendle Hill	11		
Pine Ridge	2		
Putnam	4		
Saybrook Weston Putnam	2		
Scott Glen	11		
South Media	8		
Sproul Estates	9		
Wallingford	64		
No Answer	21		

# 2) If you do not live in Nether Providence, where do you live?

» - One response each for Avondale Knolls (listed in Question 1), Media, Ridley Township, and Swarthmore

<sup>8</sup> Neighborhood boundaries and identification was updated shortly after the survey was published. "Pendle Hill" was subdivided to indicate the "South Summit" neighborhood and "Saybrook Weston Putnam" is referred to as "Wallingford Valley".

# 3) What is your age?



# 4) How many adults currently reside in your household?



Appendix



# 5) How many children (under 18) currently reside in your household?

# 6) How important are the following destination types to your typical daily/ weekly routine?

	Not Very Important	Not Important	Neutral	Somewhat Important	Very Important	N/A
Schools	10.00%	3.13%	5.00%	6.88%	73.75%	1.25%
Churches	31.88%	9.38%	21.88%	19.38%	15.00%	2.50%
Parks & recreation	2.50%	0.63%	5.00%	29.38%	61.25%	1.25%
Transit stop	10.63%	8.13%	13.13%	25.63%	41.25%	1.25%
Government	21.88%	18.13%	36.88%	13.75%	6.25%	3.13%
Retail	10.63%	6.25%	13.75%	33.75%	33.13%	2.50%



# 7) How do you currently travel to the above destination types?

Percentage of Respondents That Make Use of Mode in Question 7



# 8) Are there any streets or intersections that you feel are especially dangerous? If so, please list and briefly describe why.

(Free response question, results not listed to limit Personally Identifiable Information)

# 9) Do you currently travel to work at a part or full-time job?





# 10) If you work, how do you currently travel to work?

Percentage of Respondents That Make Use of Mode in Question 10


#### 11) If you are enrolled in a school, how do you currently travel to school?

(The majority of respondents were parents responding on behalf of their children. Trips were primarily single-mode, and are not broken down by combination of modes.)



12) If you currently drive as your primary means of reaching destinations, would you prefer to be able to use an alternative mode of travel?



# 13) If you currently drive as your primary mode of transportation, and would like to use another mode of transportation, what mode would you prefer to use?



14) If you would like to use an alternative to driving (or already are but would prefer to do so more frequently), why do you not currently do so?



15) Please provide any additional comments/suggestions in the field below

(Free response question, responses are not included in order to limit Personally Identifiable Information)

## **Assessment Matrices**

The full results of the implementation matrices are included on the following pages. These matrices are large and take up several pages.

		Ped	estri	an Inte	irsec	tion A	ssess	ment	Mati	xir					
Intersection	>	otes	Cra (2005	shes :-2015)	Sch	ools	Recr Fac	eation ilities	# of int	Roads entering ersection w/o sidewalk	Trans	iit (Rail)	T (Bus,	ransit /Trolley)	Score
	#	Points	#	Points	#	Points	#	Points	#	Points	#	Points	#	Points	Total
Providence Road and Brookhaven Road	10	4.18	1	2.24	3	14.25	0	0.00	2	1.01	0	0.00	3	1.93	23.61
Providence Road and Possum Hollow Road	12	5.01	0	0.00	1	4.75	1	0.93	2	1.01	1	4.22	3	1.93	17.86
Providence Road and Copples Lane	3	1.25	2	4.47	2	9.50	0	0.00	0	0.00	0	0.00	0	0.00	15.22
Providence Road and Furness Lane	4	1.67	0	0.00	-	4.75	-	0.93	1	0.51	1	4.22	ε	1.93	14.01
Turner Road and Baltimore Pike	2	0.84	2	4.47	0	0.00	2	1.85	3	1.52	0	0.00	2	1.29	9.97
Providence Road and Wallingford Avenue	4	1.67	0	0.00	0	0.00	1	0.93	0	0.00	1	4.22	3	1.93	8.75
<b>Baltimore Pike and Chelsey Drive</b>	0	0.00	1	2.24	0	0.00	2	1.85	4	2.03	0	0.00	4	2.58	8.69
Brookhaven Road and Kershaw Road	4	1.67	0	0.00	0	0.00	0	0.00	4	2.03	1	4.22	1	0.64	8.56
Providence Road and Rose Valley Road	12	5.01	0	0.00	0	0.00	2	1.85	2	1.01	0	0.00	0	0.00	7.88
Possum Hollow Road and Kershaw Road	1	0.42	0	0.00	0	0.00	1	0.93	2	1.01	1	4.22	2	1.29	7.87
Manchester Road and Ridley Creek Road	1	0.42	0	0.00	0	0.00	1	0.93	4	2.03	1	4.22	0	0.00	7.59
Brookhaven Road and Avondale Road	2	0.84	0	0.00	0	0.00	1	0.93	3	1.52	1	4.22	0	0.00	7.50
Beatty Road and Baltimore Pike	1	0.42	-	2.24	0	0.00	2	1.85	2	1.01	0	0.00	ε	1.93	7.45
Brookhaven Road and Possum Hollow	4	1.67	0	0.00	0	0.00	1	0.93	1	0.51	1	4.22	0	0.00	7.33
<b>Moore Road and Bickmore Drive</b>	1	0.42	0	0.00	1	4.75	1	0.93	1	0.51	0	0.00	1	0.64	7.25
Brookhaven Road and Church Road	2	0.84	0	0.00	0	0.00	1	0.93	2	1.01	1	4.22	0	0.00	7.00
Providence Road and Waterford Way	0	0.00	2	4.47	0	0.00	2	1.85	1	0.51	0	0.00	0	0.00	6.83
Chestnut Parkway and Harvey Road	0	00.0	1	2.24	0	0.00	2	1.85	1	0.51	0	0.00	3	1.93	6.53
Wallingford Avenue and Vernon Street	0	0.00	1	2.24	0	0.00	2	1.85	1	0.51	0	0.00	3	1.93	6.53
Providence Road and Chester Road	5	2.09	0	0.00	0	0.00	2	1.85	0	0.00	0	0.00	4	2.58	6.52
Brookhaven Road and Waterville Road	0	0.00	1	2.24	0	0.00	1	0.93	3	1.52	0	0.00	2	1.29	5.97
Providence Road and Beatty Road	5	2.09	0	0.00	0	0.00	2	1.85	0	0.00	0	0.00	3	1.93	5.87
Wallingford Avenue and Carleton Street	0	0.00	1	2.24	0	0.00	1	0.93	1	0.51	0	0.00	3	1.93	5.60
<b>Brookhaven Road and Putnam Boulevard</b>	0	0.00	1	2.24	0	0.00	0	0.00	3	1.52	0	0.00	2	1.29	5.04
Rose Valley Road and Brookhaven Road	5	2.09	0	0.00	0	0.00	0	0.00	3	1.52	0	0.00	2	1.29	4.90
Chestnut Parkway and Ryanard Road	1	0.42	0	0.00	0	0.00	2	1.85	0	0.00	0	0.00	4	2.58	4.85
Beatty Road and Crum Creek Road	0	0.00	1	2.24	0	0.00	1	0.93	3	1.52	0	0.00	0	0.00	4.68
Wallingford Avenue and Manchester Road	2	0.84	0	0.00	0	0.00	2	1.85	0	0.00	0	0.00	3	1.93	4.62
<b>Bullens Lane and Brent Drive</b>	1	0.42	0	0.00	0	0.00	2	1.85	3	1.52	0	0.00	1	0.64	4.44
Providence Road and Bullens Lane	1	0.42	0	0.00	0	0.00	1	0.93	3	1.52	0	0.00	2	1.29	4.15
Putnam Boulevard and Saybrook Lane	0	0.00	1	2.24	0	0.00	0	0.00	3	1.52	0	0.00	0	0.00	3.76
Woodward Road and Chestnut Lane	0	0.00	1	2.24	0	0.00	0	0.00	3	1.52	0	0.00	0	0.00	3.76
Turner Road and Plush Mill Road	ŝ	1.25	0	0.00	0	0.00	0	0.00	4	2.03	0	0.00	0	0.00	3.28
Turner Road and Knoll Road	1	0.42	0	0.00	0	0.00	1	0.93	ε	1.52	0	0.00	0	0.00	2.86

Rose Valley Road and Avondale Road		0.42	0	0.00	0	00.0	2	1.85	Ч	0.51	0	0.00	0	0.00	2.78
Copples Lane and Avondale Road	Ч	0.42	0	0.00	0	0.00	1	0.93	2	1.01	0	0.00	0	0.00	2.36
Manchester Road and Emerald Street	1	0.42	0	0.00	0	00.0	0	0.00	1	0.51	0	0.00	2	1.29	2.21
Beatty Road and Penn Valley Road	1	0.42	0	0.00	0	00.0	0	0.00	3	1.52	0	0.00	0	0.00	1.94
Intersection	^	otes	Cra (200!	ishes 5-2015)	Sch	sloot	Recr Fac	eation ilities	# of int	roads entering ersection w/o sidewalk	Trans	it (Rail)	Tra (Bus/	insit Frolley)	Score
Total	91		17		∞		41		75		6		59		
Average	2.39		0.45		0.21		1.08		1.97		0.24		1.55		7.00

		Bic	ycle	Inters	ectic	n Asse	ssme	nt Ma	trix						
Intersection	>	otes	Cra (2005	ashes 5-2015)	Scl	sloor	Recre Facil	ation ities	Conn N	ecting Bike etworks	Tran	sit (Rail)	Tr (Bus/	ansit 'Trolley)	Score
	#	Points	#	Points	#	Points	#	Points	#	Points	#	Points	#	Points	Total
Providence Road and Rose Valley Road	12	4.48	1	2.43	S	1.05	25	1.16	4	1.05	2	1.10	34	1.19	12.46
Providence Road and Brookhaven Road	10	3.74	1	2.43	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	11.72
Providence Road and Chester Road	5	1.87	2	4.86	5	1.05	19	0.88	3	0.79	1	0.55	24	0.84	10.84
Providence Road and Possum Hollow Road	12	4.48	0	0.00	5	1.05	24	1.12	4	1.05	2	1.10	34	1.19	9.99
Rose Valley Road and Brookhaven Road	2	1.87	1	2.43	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	9.85
Providence Road and Wallingford Avenue	4	1.49	1	2.43	S	1.05	24	1.12	4	1.05	2	1.10	34	1.19	9.43
Rose Valley Road and Bickmore Drive	0	0.00	1	2.43	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	7.98
Possum Hollow and Woodward Road	0	0.00	1	2.43	5	1.05	23	1.07	4	1.05	2	1.10	32	1.12	7.82
Providence Road and Geary Road	0	0.00	1	2.43	5	1.05	21	0.98	4	1.05	2	1.10	26	0.91	7.51
Providence Road and Plush Mill Road	0	0.00	1	2.43	ъ	1.05	21	0.98	4	1.05	2	1.10	26	0.91	7.51
Beatty Road and Baltimore Pike	1	0.37	1	2.43	4	0.84	15	0.70	4	1.05	2	1.10	22	0.77	7.26
Manchester Road and Emerald Street	1	0.37	1	2.43	4	0.84	15	0.70	4	1.05	2	1.10	22	0.77	7.26
Brookhaven Road and Kershaw Road	4	1.49	0	0.00	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	7.04
Brookhaven Road and Possum Hollow	4	1.49	0	0.00	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	7.04
Providence Road and Furness Lane	4	1.49	0	0.00	S	1.05	24	1.12	4	1.05	2	1.10	34	1.19	7.00
Providence Road and Copples Lane	3	1.12	0	0.00	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	6.67
Pennsylvania Avenue and Denver Court	0	0.00	1	2.43	5	1.05	20	0.93	3	0.79	1	0.55	25	0.87	6.62
Providence Road and Beatty Road	5	1.87	0	0.00	4	0.84	18	0.84	4	1.05	2	1.10	22	0.77	6.46
Brookhaven Road and Avondale Road	2	0.75	0	0.00	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	6.30
Brookhaven Road and Church Road	2	0.75	0	0.00	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	6.30
Turner Road and Plush Mill Road	3	1.12	0	0.00	5	1.05	21	0.98	4	1.05	2	1.10	28	0.98	6.28
<b>Copples Lane and Avondale Road</b>	1	0.37	0	0.00	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	5.92
Rose Valley Road and Avondale Road	1	0.37	0	0.00	5	1.05	25	1.16	4	1.05	2	1.10	34	1.19	5.92
Possum Hollow Road and Kershaw Road	1	0.37	0	0.00	5	1.05	24	1.12	4	1.05	2	1.10	34	1.19	5.88
Turner Road and Knoll Road	1	0.37	0	0.00	5	1.05	21	0.98	4	1.05	2	1.10	30	1.05	5.60
<b>Turner Road and Baltimore Pike</b>	2	0.75	0	0.00	4	0.84	18	0.84	4	1.05	2	1.10	23	0.80	5.38
Wallingford Avenue and Manchester Road	2	0.75	0	0.00	4	0.84	18	0.84	4	1.05	2	1.10	22	0.77	5.34
Providence Road and Waterford Way	0	0.00	1	0.00	5	1.05	24	1.12	4	1.05	2	1.10	28	0.98	5.29
<b>Moore Road and Bickmore Drive</b>	1	0.37	0	0.00	5	1.05	24	1.12	4	1.05	1	0.55	27	0.94	5.09
Manchester Road and Ridley Creek Road	1	0.37	0	0.00	4	0.84	15	0.70	4	1.05	2	1.10	22	0.77	4.83
<b>Providence Road and Bullens Lane</b>	1	0.37	0	0.00	5	1.05	18	0.84	3	0.79	1	0.55	23	0.80	4.40
<b>Bullens Lane and Brent Drive</b>	1	0.37	0	0.00	5	1.05	18	0.84	3	0.79	1	0.55	22	0.77	4.37
Chestnut Parkway and Ryanard Road	1	0.37	0	0.00	5	1.05	18	0.84	З	0.79	1	0.55	22	0.77	4.37

Totale		Votac		Crashes		Schoole		Recreatio	<u>د</u>	onnecting	g Bike	Tranci	(liea) +	Tra	ansit	Croro
10(4)2			(2	005-201	5)			Facilities		Networ	ks			(Bus/T	Trolley)	סרטוב
Total	91		-	4	1(	52		30		29		62		975		
Average	2.6	8	 0	41	4.	76	21	.47	3	.79		1.82		28.68		6.93
				-												
				Bike (	Stree	t Asse	ssme	nt Matr	<b>.</b> ≚							
Street	٥٨	tes	Cra	shes -2015)	Scho	sloc	Recrea	ation Co ties	onnec	ting Bike	Transi	t (Rail)	Tra (Rus/T	nsit rollev)	Score	Length (ft)
	#	Points	#	Points	#	oints	=	oints #		Points	#	Points	#	Points	Total	Total
Providence Road	39	7.03	∞	12.57	с L	1.04	25	1.13 4		1.06	5	1.13	34	1.16	25.13	16293.95
Rose Valley Road	20	3.61	2	3.14	ъ	1.04	25	1.13 4		1.06	2	1.13	34	1.16	12.27	6446.51
Brookhaven Road	12	2.16	0	0.00	5	1.04	25	1.13 4	-	1.06	2	1.13	34	1.16	7.69	11285.92
Avondale Road	11	1.98	0	0.00	5	1.04	25	1.13 4	+	1.06	2	1.13	34	1.16	7.51	8482.74
Turner Road	8	1.44	0	0.00	ъ	1.04	25	1.13 4		1.06	2	1.13	34	1.16	6.97	3939.09
Woodward Road	0	0.00	1	1.57	5	1.04	23	1.04 4	H	1.06	2	1.13	32	1.09	6.94	3246.90
Possum Hollow Road	7	1.26	0	0.00	5	1.04	25	1.13 4	t	1.06	2	1.13	34	1.16	6.79	4613.84
Baltimore Pike	2	0.36	1	1.57	4	0.83	18	0.82 4		1.06	2	1.13	23	0.79	6.55	5527.03
Manchester Road	1	0.18	1	1.57	4	0.83	18	0.82 4	t	1.06	2	1.13	22	0.75	6.34	4231.17
Copples Lane	З	0.54	0	0.00	ъ	1.04	25	1.13 4	H	1.06	2	1.13	34	1.16	6.06	3016.33
Rogers Lane	3	0.54	0	0.00	5	1.04	24	1.09 4	H	1.06	2	1.13	34	1.16	6.02	3525.59
Moore Road	2	0.36	0	0.00	5	1.04	25	1.13 4	t t	1.06	2	1.13	33	1.13	5.85	3301.36
Wallingford Avenue	2	0.36	0	0.00	S	1.04	24	1.09 4		1.06	2	1.13	33	1.13	5.80	3731.27
Pennsylvania Avenue	0	0.00	1	1.57	5	1.04	20	0.91	~	0.80	1	0.56	25	0.86	5.73	2925.23
Bickmore Drive	1	0.18	0	0.00	S	1.04	25	1.13 4		1.06	2	1.13	34	1.16	5.70	3570.71
Plush Mill Road	2	0.36	0	0.00	S	1.04	21	0.95 4		1.06	2	1.13	28	0.96	5.50	5987.18
Beatty Road	3	0.54	0	0.00	4	0.83	18	0.82 4	t	1.06	2	1.13	22	0.75	5.13	6012.34
Chester Road	2	0.36	0	0.00	5	1.04	22	1.00	~	0.80	1	0.56	27	0.92	4.68	3421.94
Ridley Creek Road	1	0.18	0	0.00	4	0.83	16	0.73 4		1.06	2	1.13	22	0.75	4.68	1922.61
Media Parkway	1	0.18	0	0.00	5	1.04	20	0.91	~	0.80	1	0.56	25	0.86	4.34	2299.63
Waterville Road	1	0.18	0	0.00	5	1.04	18	0.82	~	0.80	1	0.56	23	0.79	4.18	3311.05
Chestnut Parkway	1	0.18	0	0.00	5	1.04	18	0.82 3		0.80	1	0.56	22	0.75	4.15	2176.39
Street	٧٥	tes	Cra	shes	Scho	ols	Recre	ation Co	onnec	ting Bike	Transi	t (Rail)	Tra	nsit	Score	Length (ft)
Total	122		14		106	,	485	8	3		39		643			109268.778
Average	5.55		0.64	4	1.82	2	2.05	3.	17		1.77		29.23		7.00	4966.76

3.85

0.66

19

1.10

2

0.53

7

0.56

12

0.63

з

00.00

0.37

-

**Beatty Road and Penn Valley Road** 

Average

			٩	edestri	an S	treet A	sses	sment	Matrix							
Street	ν	otes	Cra (2005	shes :-2015)	Sch	ools	Recr Faci	eation ilities	Length o without si (ft)	f road dewalk	Trans	it (Rail)	Tr (Bus/	ansit /Trolley)	Score	Length (ft)
	#	Points	#	Points	#	Points	#	Points	#	Points	#	Points	#	Points	Total	Total
Providence Road	39	7.67	4	5.65	4	6.86	∞	2.56	0.00	0.00	1	3.43	6	2.73	28.90	16293.95
Brookhaven Road	12	2.36	2	2.82	3	5.14	2	0.64	11285.92	1.00	1	3.43	6	2.73	18.13	11285.92
Possum Hollow Road	7	1.38	0	0.00	ц,	1.71	2	0.64	3539.11	0.77	1	3.43	2	0.61	8.53	4613.84
Baltimore Pike	2	0.39	2	2.82	0	0.00	ъ	1.60	5527.03	1.00	0	0.00	7	2.13	7.94	5527.03
Turner Road	8	1.57	0	0.00	0	0.00	3	0.96	3741.67	0.95	1	3.43	2	0.61	7.52	3939.09
Rose Valley Road	20	3.93	0	0.00	0	0.00	4	1.28	5438.38	0.84	0	0.00	2	0.61	6.67	6446.51
Woodward Road	0	0.00	1	1.41	0	0.00	2	0.64	3246.90	1.00	1	3.43	0	0.00	6.48	3246.90
Putnum Boulevard	0	0.00	2	2.82	1	1.71	0	0.00	3555.53	1.00	0	0.00	3	0.91	6.45	3555.53
Beatty Road	8	0.59	2	2.82	0	0.00	æ	0.96	5570.32	0.93	0	0.00	З	0.91	6.21	6012.34
Manchester Avenue	1	0.20	0	0.00	0	0.00	3	0.96	1089.56	0.26	1	3.43	3	0.91	5.75	4231.17
Copples Lane	m	0.59	0	0.00	2	3.43	-	0.32	3016.33	1.00	0	0.00	0	0.00	5.34	3016.33
Avondale Road	11	2.16	0	0.00	0	0.00	ы	1.60	7010.46	0.83	0	0.00	2	0.61	5.20	8482.74
Chesley Drive	0	0.00	1	1.41	0	0.00	3	0.96	1385.85	1.00	0	0.00	9	1.82	5.19	1385.85
Ridley Creek Road	Ч	0.20	0	0.00	0	0.00	-	0.32	1922.61	1.00	1	3.43	0	0.00	4.95	1922.61
Wallingford Avenue	2	0.39	1	1.41	0	0.00	ε	0.96	0.00	0.00	0	0.00	7	2.13	4.89	3731.27
Media Parkway	1	0.20	0	0.00	1	1.71	4	1.28	1096.92	0.48	0	0.00	з	0.91	4.58	2299.63
Chester Road	2	0.39	0	0.00	0	0.00	4	1.28	2031.70	0.59	0	0.00	9	1.82	4.09	3421.94
Bickmore Drive	1	0.20	0	0.00	1	1.71	2	0.64	3570.71	1.00	0	0.00	-	0.30	3.85	3570.71
Chestnut Parkway	1	0.20	1	1.41	0	0.00	3	0.96	0.00	00.0	0	0.00	4	1.22	3.78	2176.39
Moore Road	2	0.39	0	0.00	1	1.71	3	0.96	0.00	0.00	0	0.00	2	0.61	3.68	3301.36
Carlton Street	0	0.00	1	1.41	0	0.00	1	0.32	347.28	1.00	0	0.00	3	0.91	3.64	347.28
Waterville Road	1	0.20	0	0.00	0	0.00	З	0.96	2930.75	0.89	0	0.00	5	1.52	3.56	3311.05
Plush Mill Road	2	0.39	0	0.00	0	0.00	ъ	1.60	5987.18	1.00	0	0.00	0	0.00	2.99	5987.18
Rogers Lane	8	0.59	0	0.00	0	0.00	5	1.60	1576.52	0.45	0	0.00	0	0.00	2.64	3525.59
			Cra	shes			Recr	eation	Length o	f road		:	Ē	ansit		
Street	Š	otes	(2005	-2015)	SCI	lools	Faci	ilities	without si (ft)	dewalk	I rans	iit (Kail)	(Bus/	/Trolley)	Score	Length (ft)
Total	122		17		14		75		73870.72		7		79			111632.20
Average	5.08		0.71		0.58		3.13		3077.95		0.29		3.29		6.71	4651.34

## Signage Examples



Image: State of the state of









R4-11

R117 (CA, updated to list 4 feet instead of 3 feet)







R7-9a



R5-1b

R9-3cP



R10-15





W16-7P



R9-1







R9-2



R9-3

### **Safety Fliers**

# Bicycle Safety Tips

- Bikes are required to stop at red lights and stop signs just like vehicles
- Ride with the flow of traffic so that vehicles can pass when it is safe to do so. Riding into traffic can force cars to pass or stop immediately
- You are able to make full use of the travel lane and do not have to ride in the shoulder.





When locking your bike, be sure to use a strong lock. U-Locks are more secure than cable locks, but the two lock types work well together.

Be sure to lock the bike frame and wheels against the bike rack to deter theft.



## Driver Safety Tips Remember, bicycles are allowed to use the full-lane for travel and are not required to ride in the shoulder NA. Pennsylvania law requires that cyclists be given at least four feet of space when passed. PASS Pedestrians have the right of way while they are in STAT pedestrian walkways. Be sure to yield to pedestrians when they are crossing at marked crosswalks.

These intersections are marked with striping and signage indicating they are for pedestrian crossing.



# Additional Maps

Figure 28 - Street Network and Base Map



Sources: Road centerlines, rail lines, streams and Nether Providence Township boundary provided by Carroll Engineering from 2009.

### Figure 29 - Points of Interest



### Figure 30 - SEPTA Transit Map



### Figure 31 - Environmental Hazards



Additional Maps

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<u>Figure 32 - Parks</u>



Sources: Park locations provided by DCNR through PASDA from 2015.

Figure 33 - Wetlands



Figure 34 - Land Use



Appendix

Figure 35 - Zoning

