# The Susquehanna Township-wide Bicycle, Pedestrian, and Greenway Plan

*The Fort Hunter Trailhead for the Capital Area Greenbelt in Susquehanna Township provides a model for how well it serves pedestrians and bicyclists*

Submitted to:

**Susquehanna Township**
Doug Knauss, Parks and Recreation Director
1900 Linglestown Road,
Harrisburg PA 17110

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*by*

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# I. Executive Summary

## A. Background

Since the adoption of Sustainable Susquehanna 2030 Comprehensive Plan, the groundwork has been laid for the development of pedestrian and bicycle connections and other priority areas within the Township. Key goals from this plan focused on Redevelopment and Reinvestment, Pedestrian and Bicycle Connections, Transportation Safety and Mobility, Neighborhood Character, Parks and Recreation, and Community Events and Celebrations.

Following the adoption in 2019 of the Comprehensive Plan, Susquehanna Township worked to identify, assess, and address bicycle/pedestrian issues in the Township and advance the bicycle/pedestrian recommendations of the comprehensive plan. This work included the pursuit of funding for this **Susquehanna Township Bicycle, Pedestrian, and Greenway Plan.**

## B. General Objective of this Study

The overall objective of this study is to serve as a guide for Susquehanna Township in the expansion and creation of a townshipwide network of trails and sidepaths, bike lanes, bike routes, footpaths, sidewalks, and other appropriate facilities to restore the ease and safety of walking and bicycling in the Township. This plan is intended to promote safe and convenient walking and bicycling within local neighborhoods, community amenities, public transit, and regional attractions such as the Capital Area Greenbelt, Wildwood Park, and Fort Hunter. While many residents may still take most trips in automobiles, walking and bicycling should be restored as an option for any trip one would wish to take within Susquehanna Township or to nearby points.

## C. Study Recommendations

The intent of the recommended bicycle, pedestrian, and greenway network is to provide a complete set of recommendations for a network of bicycle and pedestrian connections throughout the Township and beyond. This includes connections to schools, existing and proposed parks and recreational facilities, residential and business communities, cultural, natural, and historic resources, and the already well-established Capital Area Greenbelt. The proposed network meets this goal by providing trails and sidepaths, sidewalks, bike routes, bike lanes, and footpath connections appropriate to each link. The entire network is depicted in **map 5a (Proposed Trails) in Appendix A**.

The completed network will consist of a variety of facility types, which are discussed in the **Typical Pedestrian and Bicycle Infrastructure** and **Recommendations** chapters of this report. Several opportunities exist to expand upon the existing greenway network with off-road trails along greenway corridors, waterways, and sewar/stormwater easements, but connections into more urbanized areas often require other treatments. In many cases, existing neighborhood streets allow for safe walking and bike riding in their current conditions. In other cases, there may be existing sidewalks in places, but with gaps in coverage that need to be filled in. In still other areas, the more heavily traveled roads will require sidewalks, sidepaths, and/or bike lanes to create walking and biking opportunities that currently do not exist at all. In some locations, formal bike lanes may be possible. In other areas, the bicycle route may consist of wide shared lanes and signs indicating the presence of bicyclists.

Beyond trail recommendations, this plan makes recommendations around transit, signage, and major crossings and intersections as follows:

**Transit Recommendations include:**

- Work with SRTA (the Susquehanna Regional Transit Authority).
- Coordinating bus routes with walking and bicycling routes, and access to bus stops.
- Consider looping bus routes, possibly making more direct travel options available between different parts of the Township without transfers.

- Make information systems for the buses first class.
- Consider teaming up with local businesses on safe, comfortable waiting areas.
- Coordinate with School District to promote safe routes to school and bicycle trails/parking at School facilities.

**Signage Recommendations include:**

- Directional/Wayfinding
- Traffic and Safety
- Informational
- Interpretive

**Crossing Recommendations** include an analysis of intersections for crossing pattern and complete street intersection treatments at:

- Progress Avenue and Linglestown Road
- Progress Avenue and Paxton Church Road
- Progress Avenue and Elmerton Avenue
- Progress Avenue and Walnut Street
- Progress Avenue and Union Deposit Road
- Linglestown Road and the US Highway 22 Interchange

## D. Implementation

In addition to recommending a list of walking and bicycling facilities, this study also includes an implementation plan to guide the Township in ongoing efforts to bring this recommended network to fruition. The implementation plan consists of a phasing plan, an initial opinion of probable costs associated with implementing each of the recommended facilities, and recommended sources of grant funding to consider.

The phasing plan designates which facilities are the highest priority and should be undertaken first, which are second priority, third priority, and fourth and fifth priority. In addition to the five phases of work, an initial phase focusses on priority planning and coordination with state agencies. This phase focusses on two longer-term projects of high priority that will require substantial engineering and coordination with other state agencies. Each of the phases is depicted on individual maps in **Appendix A.**

- **Priority Planning Projects** focuses on two priority planning projects that require substantial engineering, support, time, and funding to implement. Although, these larger projects could take numerous years to complete, laying the groundwork for these impactful projects early will be key to connecting the overall network.
- **First Priority Projects** prioritizes those connections that are most impactful and achievable to the community. This phase focuses on the Paxton Creek Trail corridor as a natural extension for the Capital Area Greenbelt, as well as the spine roadways along Linglestown Road and Progress Ave. Two low-hanging fruit connections have also been identified in this phase to connect residential neighborhoods along Wondering Way Road to Olympus Heights Park.
- **Second Priority Projects** consist mostly of east-west trail, bike lane, and signed routes that would extend the reach of the CAGB, and tie into new areas of development, the high-school, and existing residential communities on the south side of the Township.
- **Third Priority Projects** continue to build upon the progress made in previous phases. Included are sections of bicycle lanes, bicycle routes and sidewalk improvements to further interconnect communities both within and beyond the Township, especially on the south side of the Township.

- **Fourth and Fifth Priority Projects** consist of the remainder of the bicycle/pedestrian network. It should be noted that placing projects in the later phases does not mean that no action should be taken toward their implementation until all other phases are complete. Rather, it is a recognition that these facilities will best function following the implementation of earlier phases and may take considerable time and effort to complete. Nonetheless, the Township should pursue opportunities related to these projects whenever they present themselves.

## E. Summary of Opinion of Probable Cost

Cost estimates for the facilities recommended in this plan are discussed in the Implementation Plan chapter and are shown in detail in a table contained in **Appendix B**.

The total cost of the network is estimated to be approximately $20.4 million. These costs are summarized in the table below.

**Miles of Proposed Network**

| Phase | Multi-use Trail (Ped/Bike) | Bike Lane (Bike) | Bike Route – Signed (Bike) | Improvements Requiring Substantial Engineering (Ped/Bike) | Earthen Trail (Ped) | Sidewalk (Ped) | Cost |
|---|---|---|---|---|---|---|---|
| **Priority Planning** | 0.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0* | **N/A** |
| **1** | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0* | **$7,697,364** |
| **2** | 2.8 | 1.6 | 0.6 | 0.0 | 0.0 | 2.2* | **$1,830,163** |
| **3** | 4.5 | 6.9 | 2.6 | 0.0 | 0.0 | 9.5* | **$2,183853** |
| **4** | 8.3 | 6.7 | 2.4 | 0.0 | 0.0 | 9.1* | **$5,478,917** |
| **5** | 4.5 | 3.1 | 4.6 | 0.0 | 1.1 | 7.7* | **$3,225,067** |
| **TOTAL** | **32.5** | **18.3** | **10.2** | **3.6** | **1.1** | **28.5*** | **$20,415,419** |

*Sidewalk milage includes proposed and existing sidewalk along roads proposed for bike lanes and bike routes and is not included in the cost. A sidewalk inventory is recommended.

Most of these implementation costs will be paid by grant funds, with the Township paying very little and often contributing design and engineering work but no direct funding. There are a variety of grants available for trail construction, with some grants being more applicable to some types of projects and other grants more applicable to other types of facilities. The range of available funding sources is discussed in detail, beginning on page 39.

# II. Introduction

## A. Project Background and Scope

In May 2019 the Susquehanna Township Board of Commissioners adopted the Sustainable Susquehanna 2030 Comprehensive Plan as an official policy guide for short- and long-term decision making related to future land use, growth, and development, and resource preservation over the next 10-years. This plan also laid the groundwork for pedestrian and bicycle connections and other priority areas through the following plan goals (*Sustainable Susquehanna 2030*).

**Redevelopment and Reinvestment**

- Encourage redevelopment and reinvestment along the Township's priority corridors to promote appropriate development including a mixture of housing, retail, office, and commercial uses.

**Pedestrian and Bicycle Connections**

- Prioritize pedestrian improvements in priority corridors throughout the Township and develop bicycle and pedestrian requirements for development projects and road improvements.

**Transportation Safety and Mobility**

- Improve safety and mobility along priority corridors and major roadways within the Township and improve public transportation.

**Neighborhood Character**

- Protect neighborhood character and develop ways to address and prevent deteriorating properties.

**Parks and Recreation**

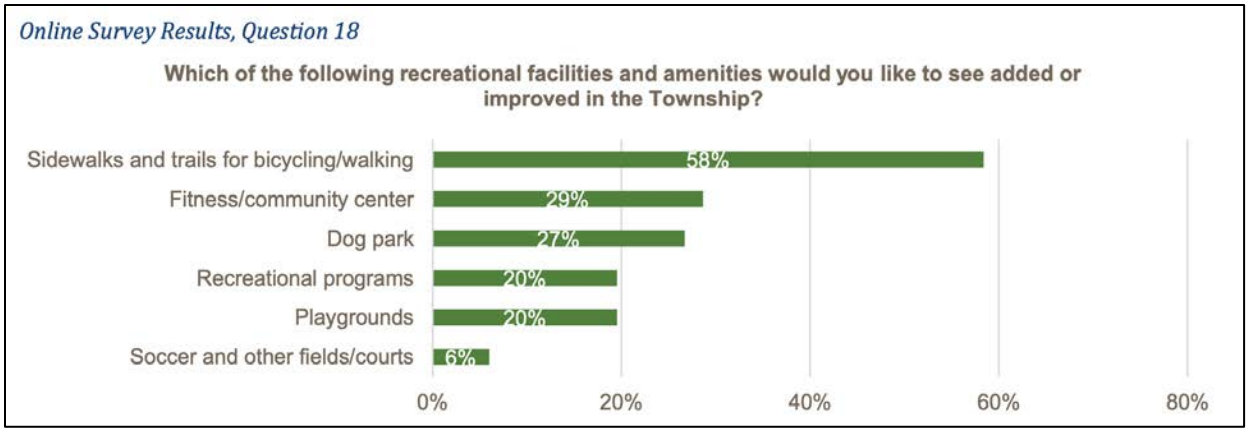
- Improve park and recreation facilities and programs, and explore the potential for developing additional park acreage to leverage new passive and active recreation opportunities in the Township, and work to provide links between parks and communities.

**Community Events and Celebrations**

- Invest in new opportunities to bring residents together at community events and celebrations.

The public survey in the Sustainable Susquehanna 2030 Comprehensive Plan identified that 58% of the survey respondents would like to see sidewalks and trails for bicycling and walking added or improved in the Township. This was more than any other recreational facility identified and indicated the need for an additional bicycle and pedestrian study (page 37 - *Sustainable Susquehanna 2030).*

*Front Street north of Linglestown Road with Bikepath along the Susquehanna*




Following the Comprehensive Plan, Susquehanna Township worked with the Board appointed a volunteer bicycle pedestrian coordinator, Richard Norford, who advises the Township on bicycle and pedestrian related matters. Mr. Norford participates in DCED's department meetings and has the opportunity to comment on submitted plans to the Township to address Bicycle and Pedestrian Matters. He also assists with identifying, assessing, and addressing bicycle/pedestrian issues in the Township and advancing the bicycle/pedestrian recommendations of the comprehensive plan. This work included the pursuit of funding for this Susquehanna Township Bicycle, Pedestrian, and Greenway Plan, which aims to improve multimodal transportation throughout the Township and the ability to link the residents of the Township to schools, parks, businesses, and county infrastructure and services.

## B. Project Partners

Funding for the study was partially provided by a grant from the Community Conservation Partnerships Program administered by the Pennsylvania Department of Conservation and Natural Resources (DCNR), Bureau of Recreation and Conservation (Bureau). Funding was also partially provided through the WalkWorks Program administered by the Department of Health and Pennsylvania Downtown Center. Funding for this program was provided by the Pennsylvania Department of Health through the State Physical Activity and Nutrition Program and the Preventative Health and Health Services Block Grant from the Centers for Disease Control and Prevention.

In January 2023, Susquehanna Township hired Campbell Thomas & Company and their colleagues at Herbert, Rowland & Grubic, Inc. (HRG) and Connect the Dots (CTD) to conduct the plan.

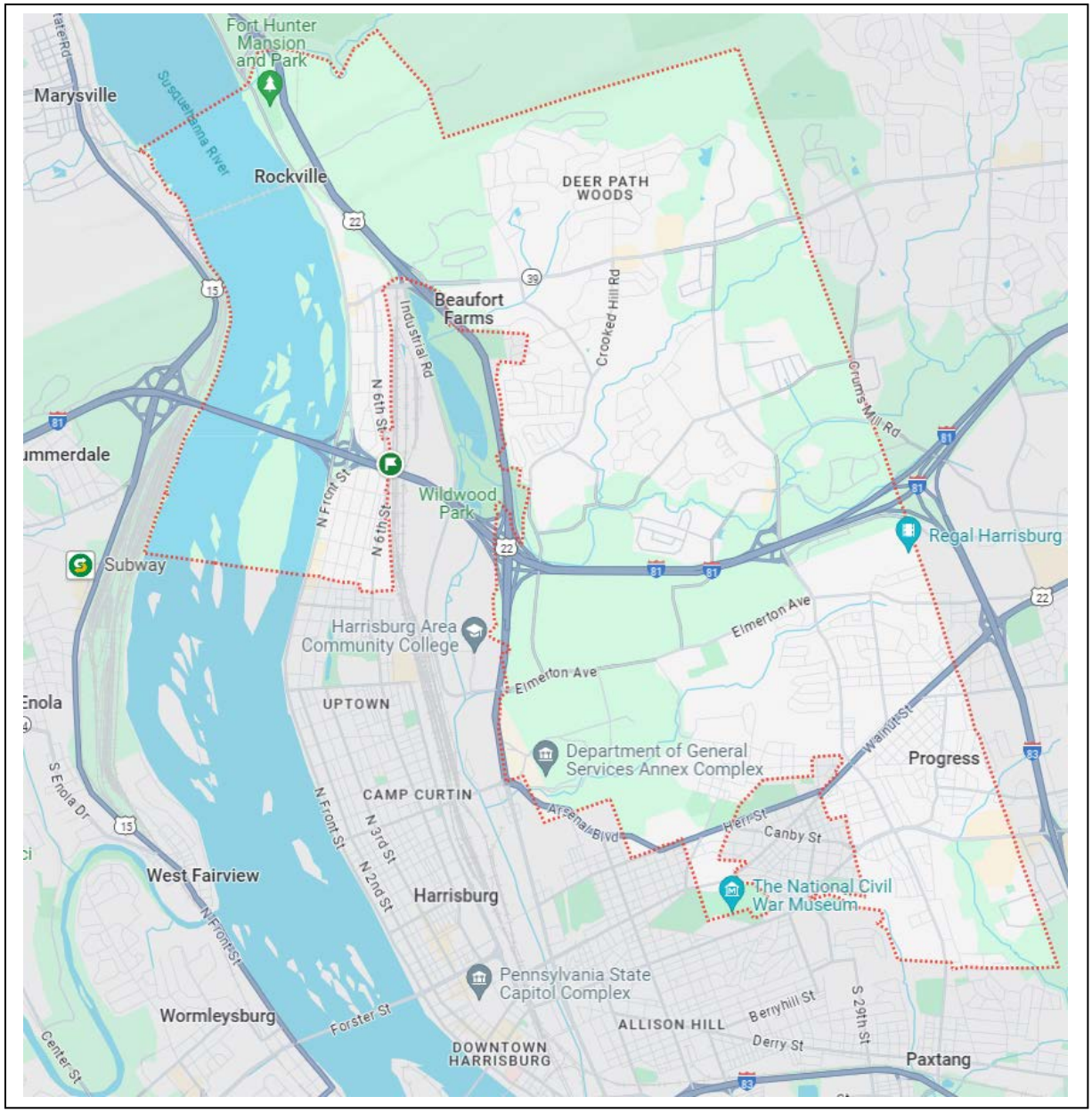
Campbell Thomas & Co. (CT&C) is an environmentally and community-oriented firm of architects and planners with an award-winning record in "green" transportation, community planning and revitalization, accessibility, historic preservation, and practical design and construction. The firm was founded in 1976 by architects Robert P. Thomas and James C. Campbell who originally met through volunteer work on a variety of transportation, preservation, and conservation projects. The firm's mission has focused on developing projects that are socially, environmentally, and technology innovative and important such as this township-wide bicycle, pedestrian ang greenway plan.

CT&C and their colleagues at HRG and CTD worked cohesively with Susquehanna Township staff and the Steering Committee assembled for this plan throughout the year long planning process.

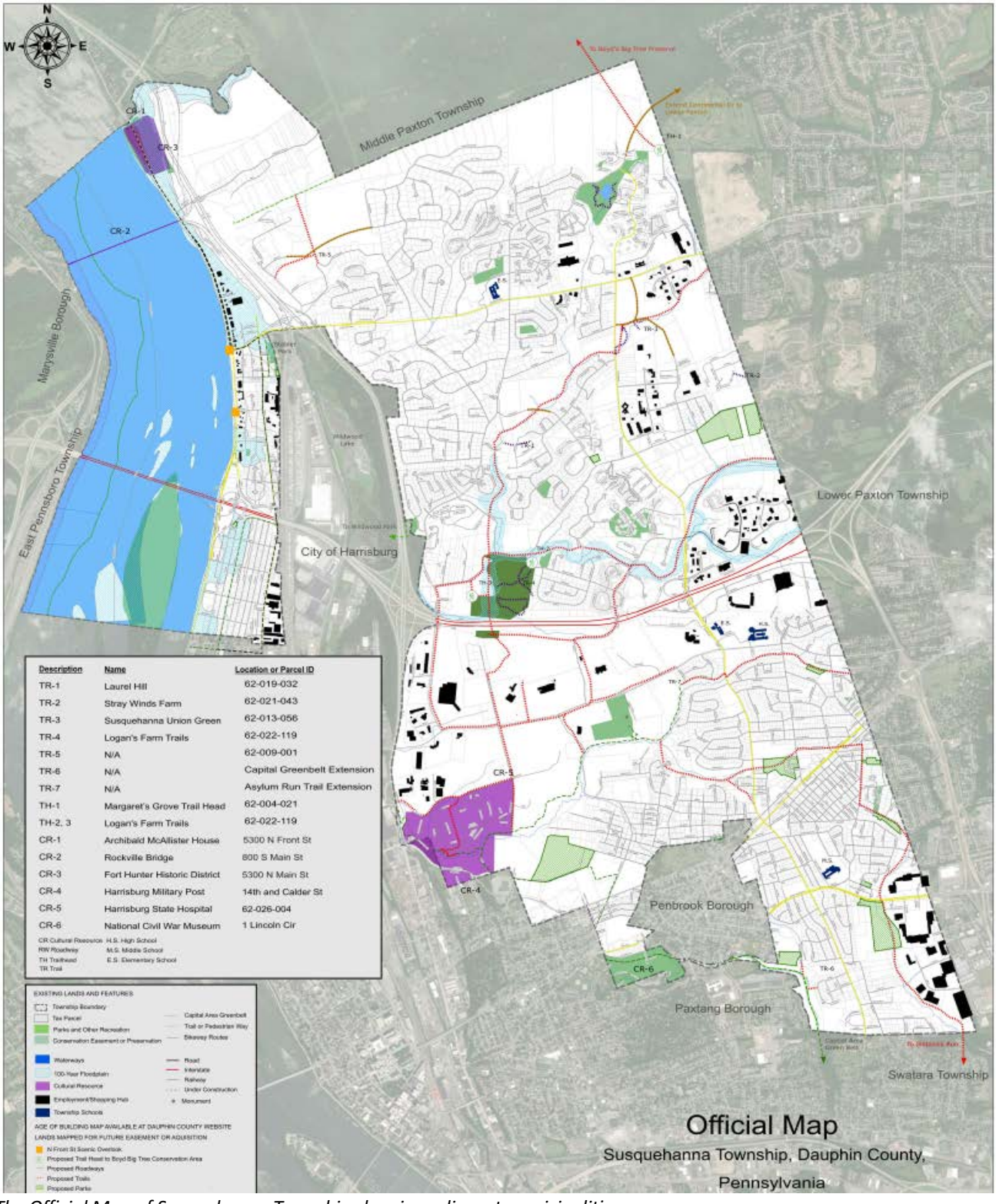
## C. Context

### Regional Context

1. **Location of the Township's Boundaries:** Susquehanna Township lies largely to the north and east of the City of Harrisburg in Dauphin County. It extends up along the Susquehanna River from Harrisburg just below Interstate 81 to the Fort Hunter Mansion and Park and to Middle Paxton Township. To the south lie the National Civil War Museum, the Boroughs of Penbrook and Paxtang, and Swatara Township. To the east it shares a border with Lower Paxton Township. Surprisingly the Township includes the entire width of the Susquehanna across to the West Shore and Cumberland County.



See the **Official Map** below showing the extent of the Township and its relationship to neighboring municipalities.




| Description | Name | Location or Parcel ID |
|---|---|---|
| TR-1 | Laurel Hill | 62-019-032 |
| TR-2 | Stray Winds Farm | 62-021-043 |
| TR-3 | Susquehanna Union Green | 62-013-056 |
| TR-4 | Logan's Farm Trails | 62-022-119 |
| TR-5 | N/A | 62-009-001 |
| TR-6 | N/A | Capital Greenbelt Extension |
| TR-7 | N/A | Asylum Run Trail Extension |
| TH-1 | Margaret's Grove Trail Head | 62-004-021 |
| TH-2, 3 | Logan's Farm Trails | 62-022-119 |
| CR-1 | Archibald McAllister House | 5300 N Front St |
| CR-2 | Rockville Bridge | 800 S Main St |
| CR-3 | Fort Hunter Historic District | 5300 N Main St |
| CR-4 | Harrisburg Military Post | 14th and Calder St |
| CR-5 | Harrisburg State Hospital | 62-026-004 |
| CR-6 | National Civil War Museum | 1 Lincoln Cir |

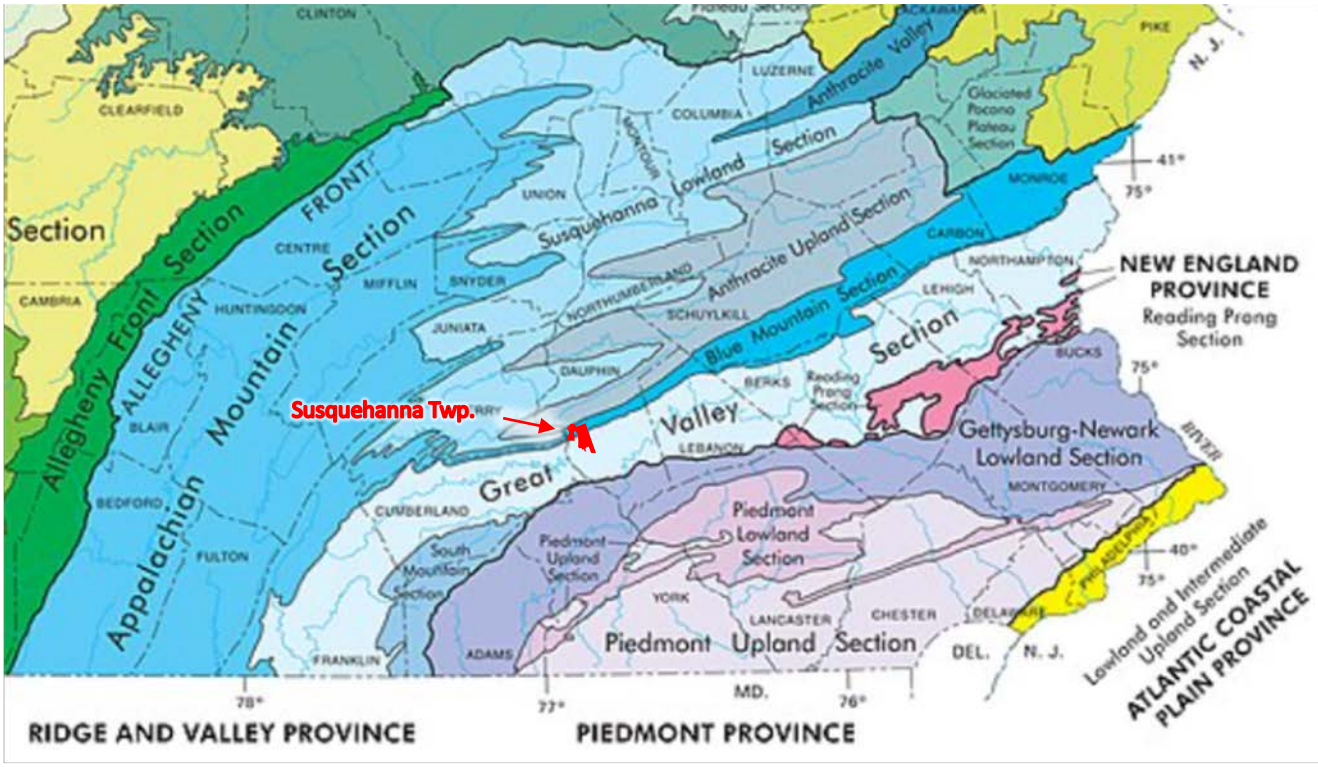
CR Cultural Resource H.S. High School
RW Roadway M.S. Middle School
TH Trailhead E.S. Elementary School
TR Trail

EXISTING LANDS AND FEATURES
Township Boundary
Tax Parcel
Parks and Other Recreation
Conservation Easement or Preservation
Capital Area Greenbelt
Trail or Pedestrian Way
Bikeway Routes
Waterways
100-Year Floodplain
Cultural Resource
Employment/Shopping Hub
Township Schools
Road
Interstate
Railway
Under Construction
Monument
AGE OF BUILDING MAP AVAILABLE AT DAUPHIN COUNTY WEBSITE
LANDS MAPPED FOR FUTURE EASEMENT OR ADJUSTION
N Front St Scenic Overlook
Proposed Trail Head to Boyd Big Tree Conservation Area
Proposed Roadways
Proposed Trails
Proposed Parks

*The Official Map of Susquehanna Township showing adjacent municipalities*

**Topography and Major Natural Features:** The Township lies in Pennsylvania's Ridge and Valley Province, with the majority being in the Great Valley Section of Pennsylvania that extends across the state from the Delaware River to the Mason-Dixon Line. The very northern part of the Township is in the Blue Mountain section, which extends on both sides of the Susquehanna River. Blue Mountain is a scenic, formidable barrier with a gap at Rockville and the Darlington Trail following its ridgetop. The island-studded Susquehanna River is almost a mile wide, and is crossed only by Interstate 81, and the trains of Amtrak and Norfolk Southern on the great Rockville Bridge.

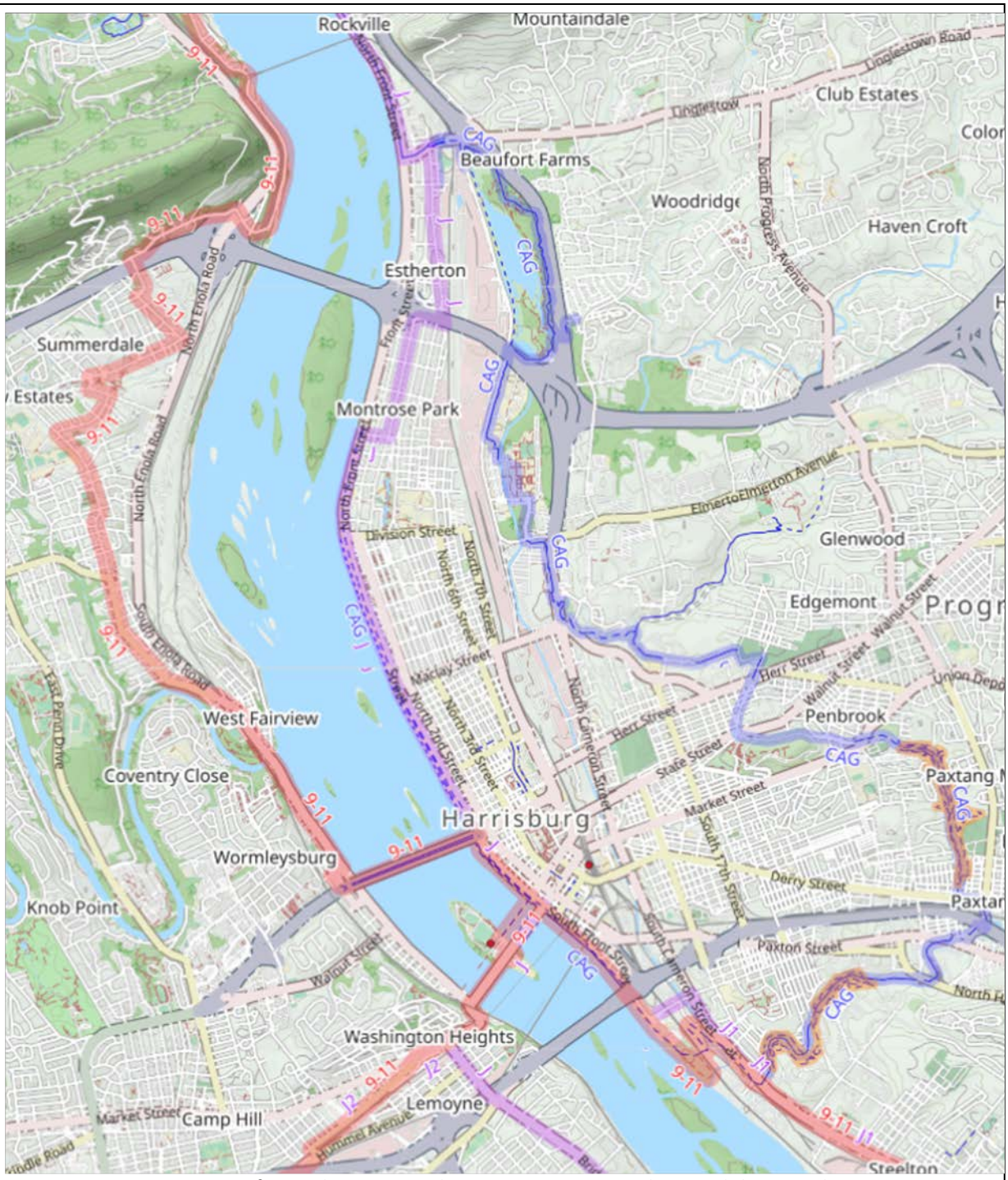
See the excerpt below of the Pennsylvania Physiographical Regions Map centered on Susquehanna Township.




*Susquehanna Township sits largely in the Great Valley Section of the Ridge and Valley Province, with a small part in the Blue Mountain Section.*

**Regional Transportation - Highways:** The Township is well-connected for motor vehicles to the regional network of highways including State Routes 39, 230 and 441; US Routes 22 and 322; and Interstate Highways 81, 83, and 283. The Pennsylvania Turnpike lies about seven miles south of the Township.

**Bicycles:** There are several significant regional Bike Routes that closely traverse or pass through the Township with destinations beyond in every direction including **The September 11th National Memorial Trail**, the **Main Line Canal Greenway**, the **Capital Area Greenbelt and V** and **Pennsylvania Bicycle Route "J"**. Please see the map on the next page.




*Current Open Streets Map of Long-distance Bicycle Routes Serving Harrisburg and the Township*

- ***CAG** = Capitol Area Greenbelt and Veterans Park trail spur*
- ***9-11** = Sept 11th National Memorial Trail*
- ***J, J-1, J-2** = Pennsylvania Bicycle Route "J"*

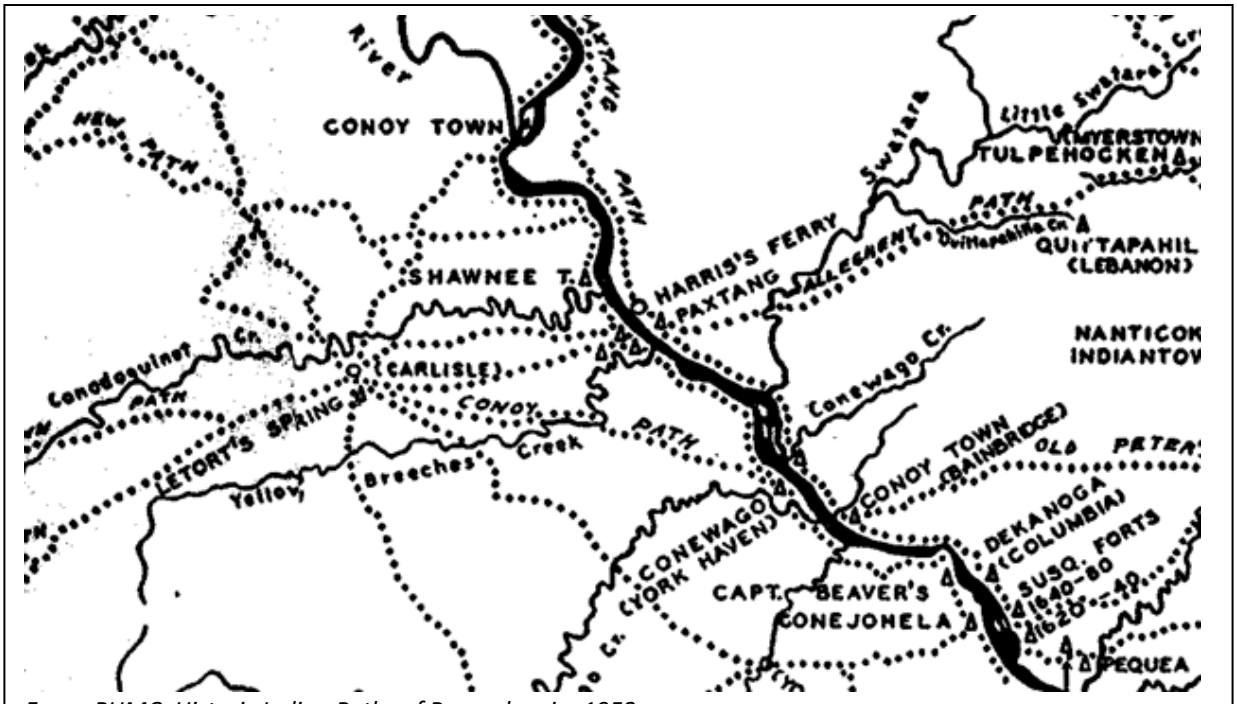
**Long-Distance Trains and Busses:** Amtrak is the only operator of passenger trains serving the Harrisburg area. The "Keystone" trains operate throughout the day and evening to Philadelphia with most continuing to New York City. These trains carry riders' folding bicycles only, at no additional

charge. The "Pennsylvanian" train runs from New York City to Philadelphia, Harrisburg and Pittsburgh once a day, all week. It has a baggage car that allows riders to transport their full-size bicycles as luggage for an additional fee to major stations. Amtrak anticipates a second Amtrak train between New York, Harrisburg and Pittsburgh to begin operation in 2025.

The Harrisburg Amtrak station is near the state capitol, not far from Susquehanna Township. the Station is known as the **Harrisburg Transportation Center**, as it serves not only trains, but serves long-distance buses on the lower-level as well, making for easy connections. Long-distance bus companies include Greyhound, Flixbus, Trailways, Ourbus, Megabus and Amtrak Thruway buses. Most of these companies carry bicycles as luggage, usually for an additional fee.

## 2. Local Context

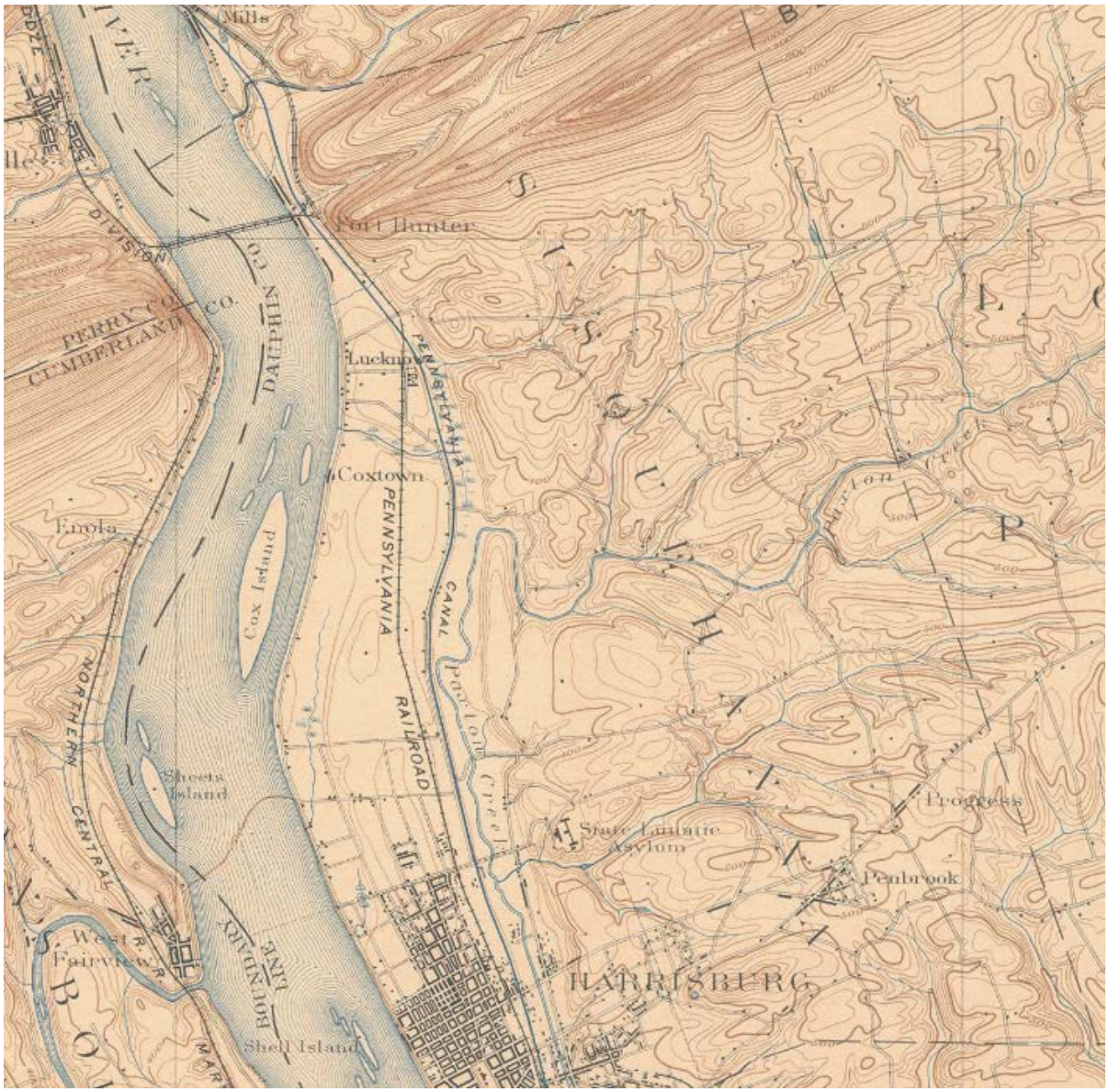
**History and Development Patterns:** The Susquehanna River and its banks have been a travel route since the Native Americans first inhabited the area over 10,000 years ago. From what is today Harrisburg, the Paxtang Path followed the River heading north through what is now Susquehanna Township and beyond. Some of the views and level grades along the river enjoyed from the Capitol Area Greenbelt today are the same as those enjoyed from the Paxtang Path.



*From: PHMC: Historic Indian Paths of Pennsylvania, 1952*

By the second half of the 19th century, travel between Harrisburg and Rockville along the Susquehanna River was provided by the river road, the Pennsylvania Railroad, and the Pennsylvania Canal. Going east from Harrisburg, what is today Walnut Street served Penbrook and Progress, two of the few villages in the township at the time. Other than the Pennsylvania State Hospital (shown on the 1899 Map as the State Lunatic Asylum), the rest of the Township was rural farmland. This explains the older buildings and grid street patterns along Walnut Street in the southern portion of the Township. A grid street pattern developed in the floodplain adjacent to the Susquehanna River as well.

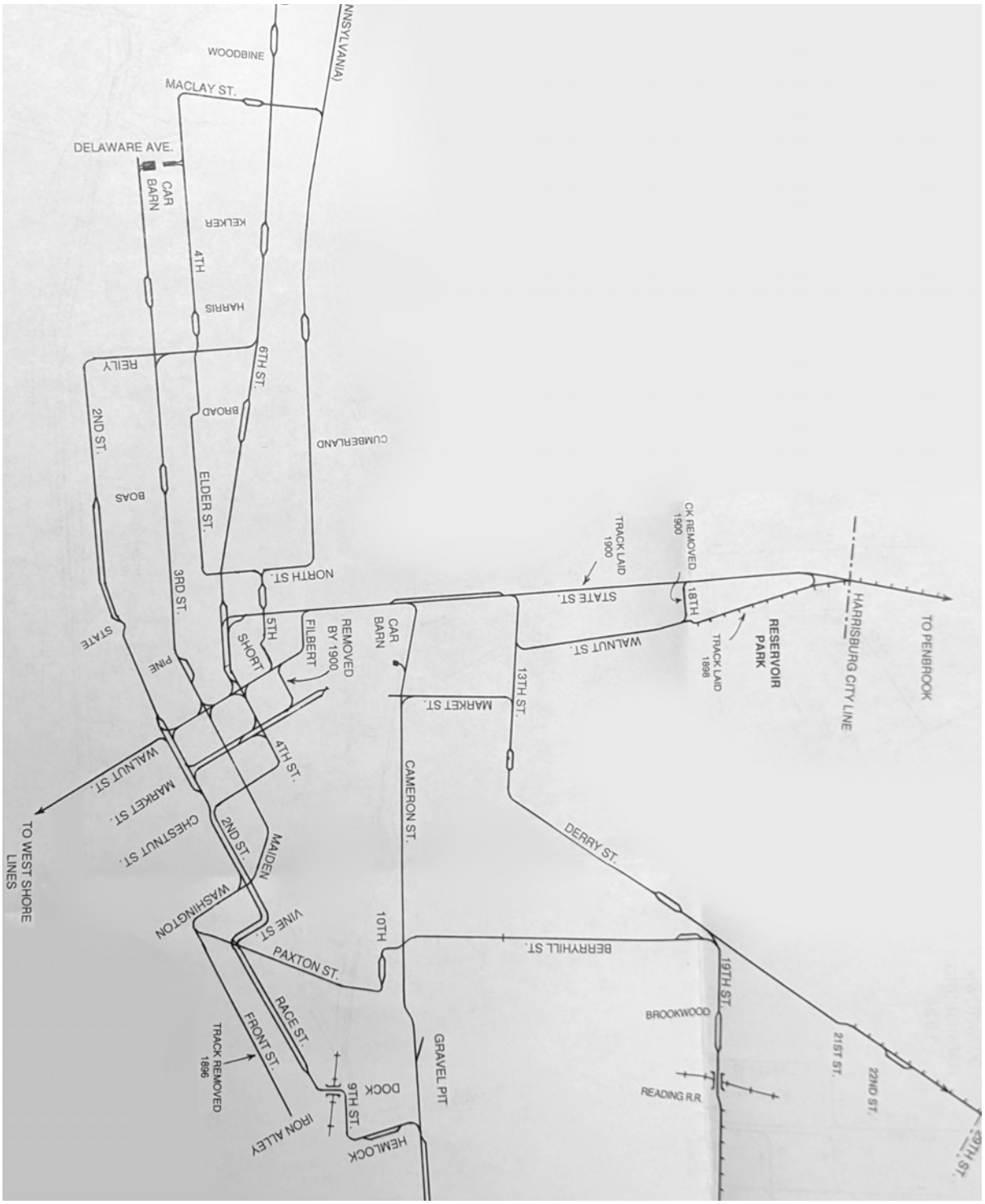
See the excerpt of the 1899 USGS Harrisburg quadrangle map below.




*The USGS 1899 Map shows the Township when it was almost entirely rural farmland.*

Further development in the late 19th and early 20th centuries going east on the Walnut Street Corridor and north on the Susquehanna River was driven by the access to the State Capitol by the Harrisburg Railways trolley system. One route important to the Township's development was the line north along the Susquehanna River and the other was the line stretching eastward to Progress and eventually to Linglestown in Lower Paxton Township.

The relative absence of other public transportation in the Township left it a prime candidate for the automobile-centric development that defines most of the Township today, and which this study seeks to confront in creating a truly walkable and bikeable Susquehanna Township.




*Harrisburg Railways in 1930. Trolley lines ran north on 2nd and 6th Streets to the township, and east from Harrisburg to Progress and Linglestown. (Courtesy of Mike Szilagyi)*

**Local Transportation:** Today most of the Township consists of auto-dependent development making walking and bicycling in the Township often extremely difficult and dangerous with some exceptions.

**Street and Roadway Network:** A few older areas such as the communities along the Susquehanna River and Walnut Street have traditional connected street and sidewalk patterns within an individual development. Most of the other parts of the Township have post WWII suburban development patterns of heavily travelled major roadways that divide one community from another. Individual community streets, consisting of looping roads and cul-de-sacs often allow for walking and bicycling within an individual community, but not for crossing major barriers to another area or section within the Township.

**Sidewalk and Walking Trail/Path Network:** The Township's network of sidewalks and paths has numerous gaps that often force walkers into fast-high volume traffic. This study addresses this deficiency, which is found all over the United States, by showing how to connect all these communities with a continuous, safe, and delightful network of walkways, sidewalks, and trails.

**Bicycle Network:** The Capital Area Greenbelt and the extension of the riverfront trail to Fort Hunter are extremely popular and show what is possible in developing a bicycle network to serve all people at all levels of experience. For bicycling, as with walking, one can generally bicycle safely within individual developments, but there is often great difficulty in connecting to other developments and reaching destinations such as schools, houses of workshop, shopping, medical faculties, and similar destinations. These residential areas were often developed with the separation of uses common in suburban zoning practices.

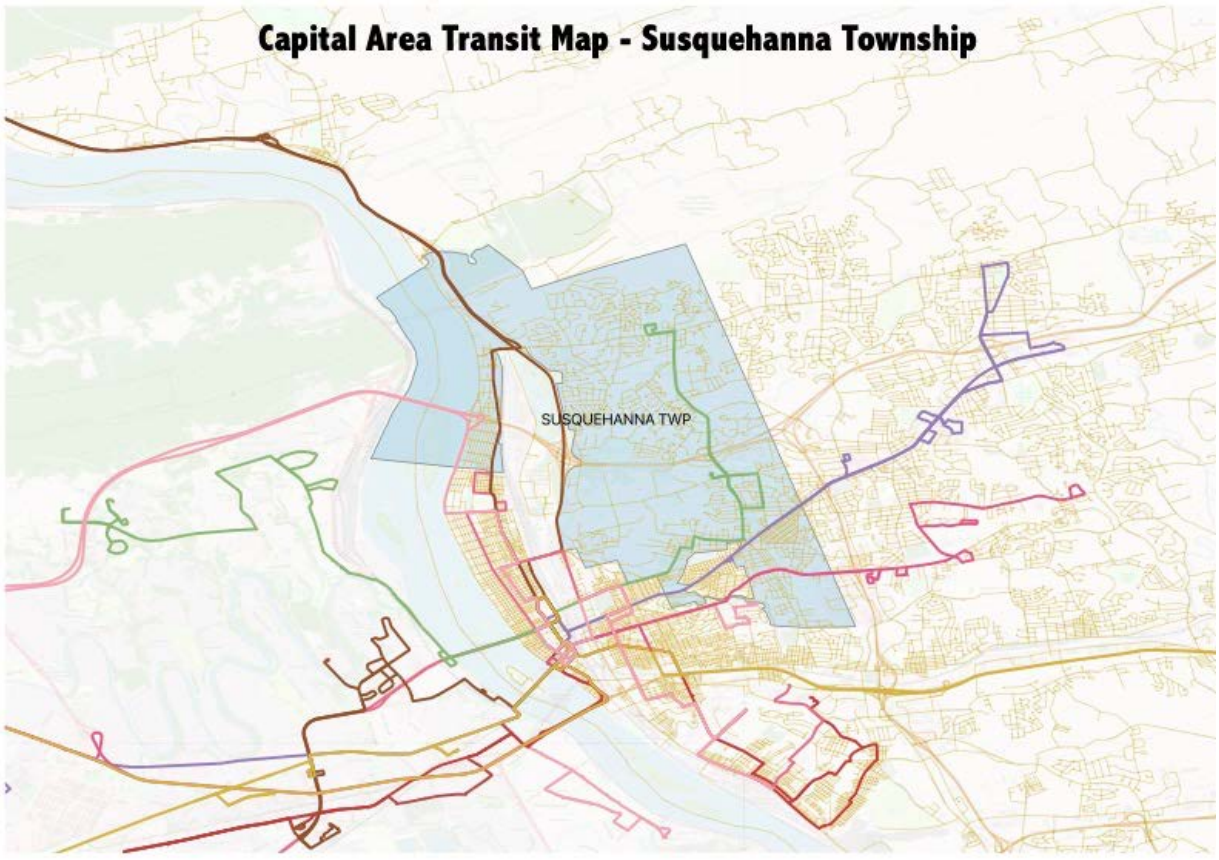
**Local Trains and Busses:** Amtrak is the only operator of passenger trains serving the Harrisburg area. The "Keystone" trains operate throughout the day and evening to Philadelphia with most continuing to New York City. Many of these trains make local area stops at Middletown, Elizabethtown, and Mount Joy. These trains can only carry passenger's folding bicycles at no charge. Standard bicycles or cargo bikes must be handled as luggage or freight for a fee on Amtrak's once-a-day Pennsylvanian.

*The trolley to Progress and Linglestown often ran at the side of area rural roads*

Local bus service is provided the SRTA (Susquehanna Regional Transportation Authority), operator of CAT (Capital Area Transit) and Rabbittransit. While there are a number of residents and people employed by the Township who rely on the system, its utility is often limited by difficult-to-access

bus stops, long intervals between busses, and lack of service or direct service to many areas of the Township that grew up in the post-WWII age. SRTA buses are equipped with bicycle racks that allow riders to travel with a bicycle, which may make the bus a more viable option for some residents.

See the following map showing the local bus routes in the Township and nearby areas.




*SRTA busses operate on both sides of the Susquehanna River, with most routes running from outlying areas to downtown Harrisburg. Getting from one part of the township to another often requires riding in and out of downtown Harrisburg and transferring.*

## D. Goals and Objectives

**General Goals of this Study:**

As identified in the Susquehanna Township Sustainable Susquehanna 2030 Comprehensive Plan adopted in 2019 and the 2017 Susquehanna Township Parks and Recreation Comprehensive Plan, a goal in both plans is the development of a Township Comprehensive Bicycle and Pedestrian plan. Since bicycle and pedestrian areas often correlate with greenways, Susquehanna Township added the greenway component to this plan.

For the development of this plan the consultant team was tasked with the following goals by Susquehanna Township:

- Identify and make recommendations for bicycle, pedestrian and greenway connections between various Township and County infrastructure. This includes, but is not limited to schools, parks, businesses, neighborhoods, and country infrastructure and at the same time identifying existing greenways and future greenway connections are possible to unify the greenway system throughout the Township.
- Embrace walking, wheeling (bicycles, wheelchairs, and other micro-mobility options), and public transportation (where applicable) on and along roadways and in off-road trails and greenways.
- Consider how well the community's transportation system connects people to jobs, services, and other everyday destinations and prioritize projects that will improve those connections.
- Propose locally appropriate ways to encourage more people to choose active transportation options more often as they are made available, through public outreach, educational programs, events, coaching, and collaboration with service agencies and nonprofits.

**General Objectives of this Study:**

- Gather information and public input for a bicycle, pedestrian, and greenway system that will link parks and natural areas with neighborhoods, business districts, schools, and adjacent municipalities.
- Provide an assessment of existing natural and man-made site features, opportunities and constraints, potential links to neighborhoods, communities, and public lands within the Township.
- Determine an appropriate location for the bicycle/pedestrian network that considers the assessment results of the local physical environment, historic and cultural resources, and adjoining properties.
- Present initial findings of legal feasibility, usage feasibility, and location feasibility; gather comments and describe methods of easement and/ or property acquisition.
- Establish recommendations for future steps toward planning and design, engineering, and construction of the Township-wide network.
- Provide probable costs for future construction and investigate potential funding sources.
- Present initial strategies for Implementation and Priorities of Development.

**Enhancing the Quality of Life throughout Susquehanna Township:**

In preparing this study, the consultants and Township staff were told repeatedly that improving the ease and safety of walking and bicycling to many places is key to improving the quality of life in Susquehanna Township. Creating these elements of a "green" transportation network will improve life for the Township's residents by:

- Making local active travel a quiet, peaceful, un-congested experience, which is no less pleasant or practical than choosing to drive, and perhaps even more so.
- Increasing opportunities to exercise while performing both necessary trips and recreational travel.
- Making it possible for Township residents to reach the Capital Area Greenbelt and the existing trail system safely and enjoyably, without the need for a personal motorized vehicle.

- Considerably improving walking and bicycling opportunities for all, particularly those without the means, ability, or interest to travel by use of a personal vehicle.

*Bike Share at the Wedgewood Hills Apartment Homes observed during a community walk in September 2023*

## E. Benefits

In developing a comprehensive bicycle, pedestrian, and greenway network in Susquehanna Township, numerous benefits can be provided to individuals, communities, and the environment. Here are some of the key benefits:

**Health and Fitness:**

- Physical Health: An active transportation plan encourages physical activity, promoting cardiovascular health and overall fitness.
- Mental Health: Regular exercise is linked to improved mental well-being, reduced stress, and enhanced mood.

**Environmental Sustainability:**

- Reduced Emissions: A comprehensive active transportation network promotes eco-friendly transportation, reducing air pollution and greenhouse gas emissions.
- Energy Efficiency: Bicycling and walking are energy-efficient modes of transportation, requiring less energy than motorized vehicles and often at considerable savings.

**Traffic Congestion:**

- Reduced Traffic: A comprehensive active transportation network relieves congestion by providing alternative modes of transportation and reduces the number of cars on the road.
- Improved Flow: Encourages a more efficient flow of traffic by reducing the dependence on cars for short-distance trips.

**Community Connectivity:**

- Social Interaction: Enhances social connections by providing opportunities for casual and impromptu encounters and interactions.
- Local Business Support: Boosts local economies as people are more likely to stop and patronize businesses when walking or biking, as opposed to driving.

**Safety:**

- Reduced Accidents: Lower speeds and fewer vehicles contribute to safer streets for both pedestrians and cyclists.
- Infrastructure Improvements: Investment in pedestrian and bicycling infrastructure can lead to safer roads for all users.

**Quality of Life:**

- Enjoyable Environment: Making local travel a quiet, peaceful, un-congested experience, which is no less pleasant or practical than choosing to drive.
- Access to Nature: Encourages outdoor activity and provides access to natural surroundings.

**Reduced Parking Demand:**

- Less Need for Parking: Promotes less dependency on large parking lots, freeing up space for other uses.
- Cost Savings: Reduces the need for expensive parking and related storm-water management infrastructure.

**Equity and Accessibility:**

- Inclusive Transportation: Provides an accessible mode of transportation for people of all ages and abilities.
- Reduced Socioeconomic Barriers: Low-cost transportation options reduce economic barriers to mobility.

**Tourism and Recreation:**

- Regional and National Trail Network: The Capital Area Greenbelt and the September 11th National Memorial Trail promote regional connections from Susquehanna Township.
- Tourist Destinations: Interconnecting with the proposed Township bicycle/pedestrian network will enhance the attractiveness and interconnectivity of local resources/amenities of the Township.

**Climate Change Mitigation:**

- Lower Carbon Footprint: The network encourages sustainable transportation options, contributing to efforts to combat climate change.
- Enhanced Vegetation and Tree Canopy: Landscaping of trails and sidepaths connect and enhances the Township's tree canopy.

**Economics/Finance:**

- Increased physical activity and active transportation improves the bottom line for employers, by increasing productivity and reducing health care and health insurance costs.
- More mobility options reduce the cost of transportation for households by reducing reliance on the least efficient and most expensive mode: private motor vehicles.

In sum, a well-designed bicycle, pedestrian, and greenway network contributes to a healthier population, a more sustainable environment, improved traffic conditions, a stronger local economy, a better financial bottom line, and a higher quality of life for all residents.

*Many communities in Susquehanna Township are already walkable and bikeable within their own boundaries – this study identifies how to create the safe, attractive links that will tie all communities and destinations together*

## F. Projected Use

**Township Demographics**

As part of this plan, HRG prepared a comprehensive Demographic Profile for Susquehanna Township. Please reference **Appendix E** for more detailed information.

In sum, the Township has grown in population in both size and diversity. As the Township becomes increasingly diverse and the population begins to age, residents' relationships with transportation networks will change. Additionally, with an increased demand to be active and be outdoors during the COVID-19 pandemic, trail usage increased, and in some cases has remained high since. These spaces largely became popular as they provided safe places to recreate, which can also be achieved as well through a robust active transportation network. Not only do active transportation networks provide these safe places for residents to recreate but they also provide transportation mode options for commuting, running errands, and getting to a destination.

**Projected Use**

The Susquehanna Township bicycle, pedestrian, and Greenway network, as envisioned, will appeal to a broad spectrum of users: including residents, employees, and visitors to the area. It is intended that the highest benefit of these walking and bicycling connections will be the reestablishment of healthy, non-motorized links between existing and proposed parks, residential and business communities, cultural, natural and historic resources, and the already well-established Capital Area Greenbelt.

The bicycle/pedestrian network is further envisioned as a strategic element of the future growth and development of the township with potential for increased markets for tourism and economic development. Furthermore, it is envisioned that the bike-ped network will connect to and enhance the public transportation network to further enable multi-modal travel throughout the township. Susquehanna Regional Transportation Authority (SRTA) saw an 18% increase in use of bicycle bus racks this past year and is currently preparing for an internal assessment and Transportation Development Plan (TPD). Recommendations from this study will be integral to the systems improvements.

## G. Determination of Feasibility

The plan that follows is a series of recommendations that determine a feasible Township-wide network of pedestrian and bicycle routes. The proposed network will be implemented piece by piece over time. The formula for determining the feasibility of each piece is a measure of three primary factors – Public Support, Financing and Constructability. It is important when determining the feasibility of each specific component of the plan to weigh and balance these three factors.

**Public Support** – Given adequate public support over time, the Township will be able to garner funding to accomplish the significant goals and visions of this plan. Continued public support will provide valuable future enhancements that will add to the quality of life of the residents and visitors of Susquehanna Township. In planning the network, this plan determines a realistic demand and potential for such a network at the "larger Township-wide planning scale" and prepares the Township for the next phases of preliminary design that includes landowner coordination, planning, and engineering that result in preparation of construction plans.

Specific and "smaller scale" projects and segments of the plan have not yet been evaluated for localized demand or public support. It is important not to overlook the importance of communicating and coordinating with landowners before they see a plan project proposed through, on, or near their property. Proceeding in this diplomatic way will characterize a sensitive design and implementation approach that listens to the demands, needs and considerations of Township residents and the various landowners.

**Financing** – To assist in the determination of financial feasibility, an opinion of probable cost has been provided that outlines the planning level cost estimates associated with each segment of the Township-wide network (recognizing this network will take many years to complete, inflation must be considered at the time of design). The overall implementation of the bicycle/pedestrian network requires three primary categories of cost – Design, Acquisition and Construction. Planning level construction costs have been estimated in the Preliminary Opinion of Cost Tables **(Appendix B).** Acquisition costs vary significantly and cannot be usefully evaluated in this planning level study.

A list of a variety of funding sources for trails, pedestrian and bicycle connection projects has also been included. The type of funding pursued for each specific project, -- whether Federal, State, County or Local funds – will also determine the degree of public participation, level of design documentation and number of environmental considerations necessary to meet the financing regulations. For example, a project using Federal funding will be required to meet more stringent social, environmental, and technical regulations than a project implemented solely with Township funds. Those trails, side-paths, and bike routes running along or crossing roads under PennDOT jurisdiction will require more review and documentation than those segments solely on Township-owned roads. Properties on the historic register or within flood plains will also require higher degrees of review.

**Constructability** – The network proposed in this Plan was visually scouted and data was collected through a variety of methods to determine the construction feasibility of each recommended link. The plan was evaluated based on local knowledge, the judgment of design professionals, and public and agency input. As specific projects move toward the design phase and more detailed knowledge of physical and environmental factors is developed, the feasibility of individual segments solely of the network may need to be re-evaluated.

One criterion for the assignment of a segment to a particular phase is the relative ease or difficulty of construction. For instance, two projects may have similar support and financial feasibility but may have different physical restrictions. One segment may require a new bridge while the other may simply require an earthen bank to be re-graded for a short length to allow a particular connection to be made. The project that requires the bridge may be less viable due the cost involved in overcoming its physical obstacles.

**Closing Priority Gaps** – Another criterion is the closing of important gaps in the bicycle/pedestrian network. Projects that eliminate gaps with a bridge or hard-to-build sections often receive priority for funding and should receive careful consideration when allocating time and money owing to the significant benefits they can provide.

*The George Wade Bridge carries Interstate 81 from Harrisburg to Cumberland County, but currently has no provisions for pedestrians and bicycles, for whom the nearest crossing is some distance away.*

## III. Typical Bicycle and Pedestrian Infrastructure

### A. Types of Facilities Considered

The Susquehanna Township bicycle/pedestrian network will be a combination of existing and proposed trails, paths, bike lanes, sidewalks, and shared roadways that interconnect and are intended to serve all users. Various on-road and off-road bicycle and pedestrian treatments can be utilized to develop a complete street network in Susquehanna Township. Prior to developing recommendations for a bicycle, pedestrian, and greenway network, it is important to first understand the variety of bicycle/pedestrian infrastructure that are available to the Township. It is also important to recognize that different conditions and circumstances call for different bicycle/pedestrian infrastructure recommendations to be made.

**On-road and off-road treatments for bicycle and pedestrians can include the following:**

1. **Sidewalks / Full Sidewalks –**

A sidewalk is the portion of a street intended for the use of pedestrians, running adjacent and parallel to the roadway. This familiar pedestrian facility is seen throughout many walkable communities and provides a safe, often grade-separated, pedestrian facility, but is not typically wide enough for both pedestrians and cyclists. Full sidewalks are typically wider than a standard 5-foot sidewalk and accommodate both pedestrian traffic and a range of street furnishings and fixtures. The area of the sidewalk closest to the curb, where light poles, tree pits and other vegetation, signs, fire hydrants, and street furniture are typically located, is referred to as the "furnishing zone." Sidewalks should also meet current ADA guidelines to enable usability by all individuals.

2. **Bike Routes –**


A full, striped bike lane should generally be 5 feet wide, although a 4 foot wide lane is sometime employed in tight circumstances. When a bike lane is not possible, a bike route can be established whether a striped shoulder is present or not. Signage designating the road as a bike route (such as "Share the Road" signs) should be installed.

3. **Sharrows –**

Shared Lane Markings or "Sharrows" are pavement marking symbols that indicate appropriate bicycle positioning in a shared vehicle and bicycle lane. Although sharrows do not provide a completely separated space for bicycles, they can be ideal for use on downhill or connector areas with narrow roadway widths. Sharrows are most appropriate on low volume, low speed roads, ideally with just one lane in each direction. Sharrows are often paired with "share the road" signage and can be color backed to visually define a section of road that is open to bicycles and vehicles. Sharrows require frequent repainting.

4. **Conventional Bike Lanes –**

Bike Lanes provide a marked space along the length of the roadway and are designated by pavement markings and/or signs for the preferential or exclusive use by bicyclists traveling in a single direction. Although physical separation is not used, bike lanes can be color backed to visually define a separation between the bicycle lane and the roadway. Bike lanes are typically 5 feet in width but can be narrower if the roadway is constrained. Often, existing road lane widths are excessive and can be narrowed or shifted to accommodate a new bike lane without road widening. Conventional bike lanes are not considered safe for all ages and abilities but are more for a subset of experienced cyclists due to their lack of protection; as a result, they are not an effective way of expanding the network for all users.

5. **Protected Bike Lanes –**

A protected bike lane is a one-directional bike facility with a physical separation from vehicle traffic by a buffer space, parking space, or barrier. Protected bike lanes are typically used on high-volume or high-speed roads, or roadways with high parking turnover.

6. **Grade-Separated Bike Lanes –**
A grade-separated bike lane is raised above the roadway to sidewalk grade, or in between sidewalk and roadway grade. This type of bike lane provides a very safe space for bicyclists and is often accompanied by a sidewalk. Grade-separated bike lanes are utilized in areas where there is adequate right of way adjacent to the roadway. Sharrows were added to Harrisburg's 2nd Street reconstruction project.

7. **Two-Way Bike Lanes / Cycle Tracks –**
A two-way bike lane or cycle track accommodates cyclists traveling in both directions and is typically separated from the roadway by a buffer of 2 to 3 feet or a barrier. This buffer can come in the form of parking protection, reflective bollards, or simply pavement markings. Cycle Tracks are typically paired with a pedestrian sidewalk and are ideally 10 to 12 feet in width to enable bicycles to easily pass each other while traveling in opposite directions.

8. **Multi-Use Trails or Sidepaths –**
Multi-Use Trails or Sidepaths provide one of the safest trail facilities due to their separation from the vehicle traffic lane. Certain trails may further separate pedestrian and bicycle traffic through signage and pedestrian markings to increase safety between modes. Due to limitations in the availability of public right-of-way, multi-use trails are less common in urban environments, but can be suitable facilities in parks and along highways and waterways. Multi-use trails are typically 10 to 12 feet in width and come in a variety of surfaces.

**9. Hiking Trail Connection –**

A cleared path of minimal width or improvement for walking or hiking only, 4 to 5 feet wide or more. They are constructed by clearing and marking the path and are built with minimal grading and soil conservation measures. If required, cutting vegetation and debris removal to maintain a clear path can often be accomplished by volunteers. The Darlington Trail on Blue Mountain in Susquehanna Township is a good example of a hiking trail.

**10. Shared Streets –**

Also known as a "pedestrian-priority" street, a shared street is a roadway designed for slow speeds by all users where pedestrians, cyclists, and motorists all share the right of way. Typically employed on low vehicle volume and/or high pedestrian volume streets and walkable commercial districts. Vehicles are advised to drive 5 mph, and the roadway may be flush from building line to building line, separated by bollards or pedestrian amenities rather than the typical curb line grade separation.

**11. Bicycle Signalization & Signage -**

Intersections are known to be the most dangerous locations for vehicles, cyclists, and pedestrians. Bicycle signalization and signage can be utilized to help define both the appropriate location and timing for crossing movements for all modes. Like pedestrian crossing signalization, bicycle crossing signalization can be incorporated into the cycle of traffic signals at a particular intersection.

**12. Bicycle Boxes -**

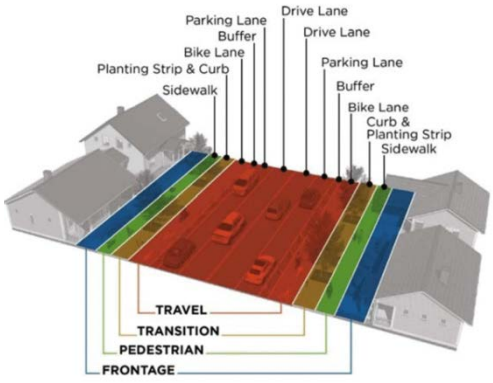
Bicycle Boxes provide an additional safety measure to help a bicyclist transition across vehicle lanes, through an intersection or between various types of bicycle facilities. A green zone between the stop bar and crosswalk allows bicycles to pull in front of motor vehicles at a signal to accommodate and improve visibility of bicycles at the intersection.

**13. Curb Extension / Bump Out –**

An expansion of the curb line into the lane of the roadway adjacent to the curb (typically a parking lane) for a portion of a block either at a corner or mid-block. Curb extensions increase safety and reduce the crossing distance for pedestrians crossing the street. Curb extensions can also provide space for functional elements such as seating, plantings, stormwater management with rain gardens and filtration bays, bike share stations, and street furniture.

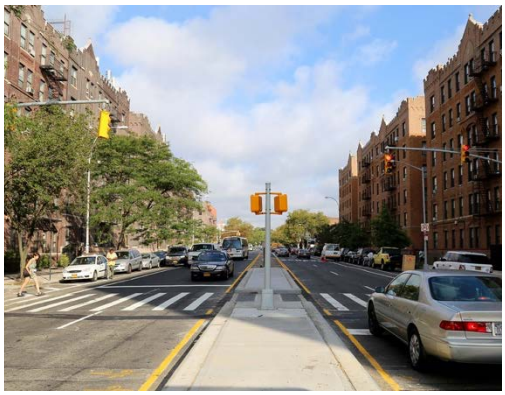
**14. Narrowing Vehicle Traffic Lanes –**

Streets can make up more than 80% of public space in cities and towns. Historically, roadways have over-allocated this public space to accommodate vehicle traffic by widening vehicle traffic lanes to the available road width. The "Roadway Cross-Section Reallocation Guide" from National Academies is an excellent resource to guide the re-allocation of existing roadway width to best accommodate all modes of transportation, as well as reduce excess pavement, traffic speeds, and crossing distances.



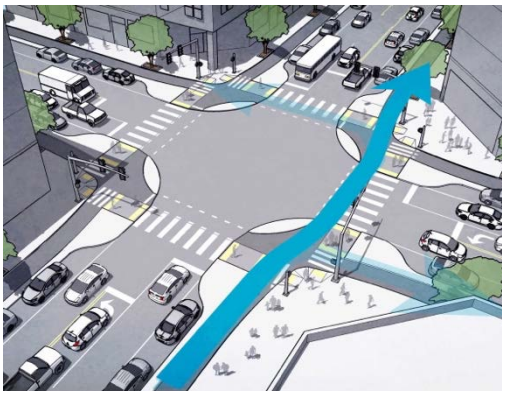
**15. Pedestrian Safety Islands –**

A raised area located at crosswalks that serves as a pedestrian refuge by separating traffic lanes or directions. Pedestrian safety islands are often used on wide roadways, where vehicle numbers or crossing distance pose a challenge. Pedestrian safety islands create two or more partial crossings to allow pedestrians to safely traverse the street. A pedestrian safety island can be found at the Greenbelt crossing on Cameron Street.



**16. Complete Street Intersection Treatments –**

A complete street intersection design should prioritize safety, accessibility, and the needs of all road users to create a vibrant and functional urban environment. Dedicating separated space and crossing locations for each mode (bicycle, pedestrian, vehicle, and public transportation) and slowing travel speeds at the intersection is key to developing a safe intersection. Within Susquehanna Township, priority intersections will require further study that analyze all travel requirements.



**17. Bicycle Parking –**

Designing effective bicycle parking facilities is crucial for encouraging cycling as a mode of transportation and ensuring the safety and security of cyclists and their equipment. Each bicycle parking facility should consider location, capacity requirements, types of parking (short-term, long-term, covered, exposed), and accessibility for each location. Layouts suitable for a variety of bicycle frame types should be provided. As with vehicular parking, the parking should integrate with the public space, and be convenient and accessible to the user. Bicycle parking can be a key element in street design, helping to organize public space and enhance pedestrian visibility by displacing illegal vehicle parking spaces.

# IV. Recommendations

## A. Description of the Network Plan

As previously described, the overall intent of the recommended bicycle, pedestrian, and greenway network is to provide a complete network of bicycle and pedestrian connections throughout the Township and beyond. This includes connections to schools, existing and proposed parks and recreational facilities, residential and business communities, cultural, natural and historic resources, public transit, and the already well-established Capital Area Greenbelt. The proposed network meets this goal by providing trails, sidewalks, side paths, bike routes, bike lanes, and hiking trail connections appropriate to each link. Forging connections between Susquehanna Township's neighborhoods and the existing trail system is a central goal of this plan; interconnections between Susquehanna Township and the neighboring municipalities and their resources are also emphasized.

The physical locations of potential pedestrian and bicycle network routes are depicted in the maps included in **Appendix A**. The maps are organized as follows:

- **Study Area Base Map –** This map represents a comprehensive inventory of the study area, including existing roadways, parks and playgrounds, trails, and points of interest. A geographic sidewalk data layer was not available to our team for this plan, but this report recommends its creation.
- **Community Barriers Map –** This map serves as a planning and analysis tool aimed to depict community barriers within the Township. Circled **blue** areas are largely safe to walk and bike within, but the **red** lines indicated the barriers that exist and disconnect one community area from another for pedestrians and bicyclists.
- **Access Map** – This map serves as a planning and analysis tool and identifies areas that are within a 10-minute walk of Township parks, and areas that are within a quarter-mile radius of public bus stops.
- **Regional Connections Map** – This map covers the surrounding area. Regional long-distance trails such as the September 11th National Memorial Trail, the Darlington Trail, and the Capital Area Greenbelt are represented.
- **Proposed Trails Map –** This map was developed both with and without an overlay of public transit routes and displays the pedestrian, bicycle, and multi-use trail recommendations from this plan. These maps show the overlay of connections linking neighborhoods, parks, open spaces, public schools, roadways, other community resources.
- **Phasing Maps –** Map Phases 1 through 5 show how the network should be implemented in stages. Additionally, two priority planning projects requiring coordination with other state agencies have been identified in a phase preceding Phase 1. Advocacy for these projects should start early on to ensure their long-term improvements.

## B. Types of Recommended Routes

The following describes the **Proposed Trails Map (See Appendix A)**– the maps of individual phases are discussed in the section on implementation. The map illustrates the following network elements:

**Proposed Bike Lanes**

Roads where bike lanes are proposed are indicated with a pink and white dashed line on the map. Bike lanes provide a dedicated space for bicyclists. In certain cases, narrow pavement widths preclude the installation of bike lanes within the existing cartway, but many of the roads that include PennDOT highways provide cartway that can be altered to accommodate a new painted bike lane. In certain situations, where the cartway is too narrow, widening may be required to best accommodate all modes of traffic. Recognizing bike lanes can only accommodate bicyclists, new sidewalks are also recommended along these corridors where they don't already exist. We suggest that a sidewalk inventory be taken following this study to identify gaps in the Township's sidewalk network.

*A bike lane with a high protected curb might be both appropriate and attractive on the township's wide roads.*

**Proposed Bike Routes (signed)**

Roads shaded **orange** on the maps may serve as bicycle routes without bike lanes. These roads vary in their degree of bicycle-friendliness. Neighborhood roads such as Shield Street have ample width for a bike lane, but primarily serve as residential connectors and do not have heavy traffic volumes, so simple signed bicycle routes serve it well. Other roads, such as Paxton Church Road are important bicycle routes but are quite narrow and will require "Share the Road" signs at the least, if not more extensive design modifications. Although some of these low-speed/low-traffic volume roads may comfortably support pedestrian movement within the cartway, new sidewalks are also recommended along these corridors where they don't already exist. As previously suggested, a sidewalk inventory should be taken following this study to identify gaps in the Township's sidewalk network.

By Pennsylvania law, bicycles are considered a vehicle, and all roadways are required to be safe and usable by bicycles, except limited access highways. Most roads throughout the Township have been

rated as bicycle friendly for experienced cyclists except for limited access highways such as Route 81. Less experienced riders may experience varying levels of comfort on some roads depending on time of day, traffic volumes, sight lines, road surfaces, and such. We suggest that a Bicycle Level of Stress/Comfort Map be prepared following this study.


*The Capitol Area Greenbelt makes use of a safe, attractive, interesting sidepath that sets a good example for both bicycle recreation and transportation.*

**Proposed Multi-Use Trails or Sidepaths**

Streets and greenway corridors recommended to receive a multi-use trail or side path are represented with a **green** dashed line. In some cases, where a clear "bench" of relatively level land within the public right of way is present, a multi-use asphalt trail may be the most appropriate type of facility. This treatment is already present along certain sections of the Capital Area Greenbelt on Linglestown Road. In other cases, with more difficult topography and vegetation, an asphalt or crushed-stone multi-use path may be the more appropriate way to provide for pedestrian and bicycle use of the corridor. A primary focus of the recommended trails/sidepaths is developing new connections to the existing trail network. Several of these recommendations were included on the Township's Official Map and look to utilize existing sewer easements within the Township. We recommend updating the Official Map with multi-use trail recommendations from this study where suitable. Identifying such improvements on an Official Map expresses the intent of the Township to acquire that specific land at some future date. It also reserves the right of the Township to negotiate the acquisition of this reserved land prior to any future development.

Newly proposed trail corridors will largely require a more detailed feasibility study prior to design and development.

**Other Existing Trails**

Existing multi-use trails and trail routes are represented with a solid **green** line. Much of this is identified as the Capital Area Greenbelt in Susquehanna Township, which serves as the existing

spine trail through the community and ties together many of the Township's parks and greenway corridors.

Existing hiking trails are also identified using a dashed **red** line. The Darlington Trail is the only known long distance hiking trail in Susquehanna Township.

**Proposed Footpath**

Proposed footpaths are represented with a dashed **brown** line. Only two sections of footpath are proposed as part of this plan, and both connect from the residential neighborhood north of Linglestown Road to the existing Darlington Trail. Steep topography and existing use suggest these sections serve as a pedestrian only path.

**Proposed Trail Improvements requiring Substantial Engineering**

This network category is represented with a dashed **blue** and white line. It identifies key trail connections that will require an additional study and outside support. A number of these corridors are on state highways and bridges that are currently unsafe for pedestrian and bicycle traffic but serve as a key corridor to the proposed bicycle/pedestrian network. In particular, the continuation of a trail adjacent to the Susquehanna River and beneath State Route 81 was identified as a key priority during this study.

**Proposed Sidewalks**

As noted under the description of proposed bike lanes (pink) and bike routes **(orange)** above, new sidewalks are recommended along these same corridors where it doesn't already exist to ensure pedestrian access is also prioritized. The sidewalk mileage noted below is representative of both the existing and proposed sidewalks along these routes.

**Summary of mileage:**

The following table illustrates the total mileage of each type of network segment, by type:

| Proposed Bicycle/Pedestrian Network Mileage | |
|---|---|
| **Bike Lanes** | **18.3 miles** |
| **Multi-Use Trail or Sidepath** | **32.5 miles** |
| **Footpath** | **1.1 miles** |
| **Proposed Trail requiring Substantial Engineering** | **3.6 miles** |
| **Bike Route** | **10.2 miles** |
| **Sidewalks** | **28.5 miles *** |

*Sidewalk milage includes proposed and existing sidewalk along roads proposed for bike lanes and bike routes. A sidewalk inventory is recommended.

## C. Brief Discussion of Trail Standards

### Resources for Trail Standards

The most widely referred-to bicycle trail standards in the United States are those published in the Guide for the Development of Bicycle Facilities, 4th edition, published in 2012 by AASHTO (American Association of State Highway and Transportation Officials). Detailed standards are set forth for both off-road (trails) and on- road bicycle facilities.

In Pennsylvania, three additional excellent resources are available:

- Pennsylvania Trail Design & Development Principles – Guidelines for Sustainable, Non-motorized Trails, by Pennsylvania Department of Conservation and Natural Resources (2013)
- For multi-use trails, Guidelines for Trail Development, 2005 by Montgomery County Planning Commission
- For hiking trails, Community Trails Handbook, 1997, by Brandywine Conservancy

### Surfaces and drainage

Various trail surfaces can range from earth to crushed stone to macadam. In all cases, properly designed drainage is of key importance. Hiking trails traversing steep slopes benefit from the installation of wooden water bars or check-dams to deflect rainwater off the trail before the runoff is concentrated enough to cause erosion. Crushed stone-surface or asphalt multi-use trails require comprehensive stormwater design, including swales; pipes and culverts to convey runoff beneath the trail; and in some situations, detention basins or structures designed to reduce peak stormwater runoff.

Porous macadam may be specified as a trail surface, to reduce a trail's impervious area and thus ameliorate the trail's potential intensification and concentration of stormwater runoff. It should be noted that porous macadam requires special ongoing maintenance and is not best suited within floodplains due to the silt that blocks the pavement's pores after each inundation.

*Toilet facilities are very popular at trailheads. This premanufactured pair of composting toilets were sucessfully instaled in an environmentally sensitve natural area.*

### Amenities

Trailheads provide parking for trail users arriving by car, bicycle, foot or transit, provide information, and in some cases provide restroom facilities and drinking water.

The size of a trailhead and the extent of the services that should be provided are dependent upon the projected level of use of the trail, and the

distance between trailheads. Often the provision of restrooms and potable water for trail users makes the most sense at locations where trails and parks coincide. Where demand is not as high, simply providing portable restrooms can be a low-cost option. If these are in areas subject to flooding, arrangements must be made to temporarily remove portable restroom facilities prior to storms that can cause flooding.

## D. Transit Recommendations

**Transit Recommendations:** The study team learned much from meeting with the progressive management of SRTA, as well as looking at the results of the project survey and listening to citizens at the public meetings and tour. Here are a few suggestions we make following this public involvement process:

1. **Work with SRTA:** The management is keenly aware of the types of innovative concepts being tested and introduced in other communities with similar needs to Susquehanna Township regarding transit. Such ideas include:

2. **Coordinating bus routes with walking and bicycling routes, and access to bus stops.** Some bus stops may have good frequency of service, but getting to the stop is dangerous. Analyzing these conditions can help set priorities for sidewalk and bike path connections to transit service. Additionally, transit stop design should focus on accessibility for all user groups.

3. **Consider looping routes** that circulate around the Township but also pass through the downtown. This could reduce the need for transferring **while possibly making more direct travel options available between different parts of the Township.**

4. **Make information systems for the buses first class**, with timely information available on bus locations. Provide up-to-date route maps and schedules posted at bus stops as does the Island Explorer bus system, which provides service in rural Maine between Bar Harbor, local communities, the regional airport, and Acadia National Park destinations.

5. **Consider teaming up with local businesses** to provide safe, warm and dry places with up-to-date transit status to wait for buses. This is sometimes called the "transit café" approach to providing attractive services, and enhancing customers for both the businesses involved and the buses.

6. **Coordinate with School District to promote safe routes to school and bicycle trails/parking at School facilities**. Enhancing the bicycle and pedestrian facilities around schools can minimize the need for so-called "hazard busing" for students within walking distance for whom there is no safe walking route to school.

## E. Signage Recommendations

### Sign Types to Consider

In general, four types of signage are appropriate with trails, as well as bicycle and pedestrian improvements.

- **Directional / Wayfinding -** These signs help with navigation, particularly at crossroads or trail junctions. Path-finder signs located on roadways can point the way to trail-heads or trail access points. As recommended, a fully signed pedestrian and bicycle network will provide safe and direct access from people's homes to places they want to go daily. By signing the network, people will be aware that these are the primary roads and trails that offer the highest degree of safety, connectivity, and linkages. This signage system should integrate with the existing Capitol Area Greenbelt Association directional signage to ensure new and existing signage is cohesive and clear.

- **Traffic and Safety** - Standard traffic and safety signage will be required throughout the Township for both the proposed pedestrian and bicycle route network and is typically the responsibility of the PennDOT and/or the Township or governmental body having jurisdiction. Design regulation for traffic and safety signage is a complex field and should be referenced in the FHWA's Manual on Uniform Traffic Control Devices (MUTCD). Both MUTCD and American Association of State Highway and Transportation Officials' (AASHTO) 1999 "Guide for the Development of Bicycle Facilities" provide the basic standards for safety and traffic controls. Traffic volumes, speeds, sightlines, and other hard data studies may be required as a basis for design at some dangerous intersections and varying site conditions.

*Informational Sign on the Schuylkill River Trail*

- **Informational** – Informational signs such as business location kiosks inform trail users of nearby amenities such as cafes, bike shops, and local businesses. Community kiosks may be erected at trailheads and at locations where trails intersect with major roadways or intersections. Brochures could also be provided to promote ease of use and safety education. Local places to eat, shop, sleep, and find bicycle repairs could be identified to help promote the economic prosperity of the area, and convenience for citizens. Moreover bicycle parking areas and facilities should be identified and wayfinding signage should be located where appropriate.

- **Interpretive** - Such signs explain historical and natural features to trail users, deepening their understanding and appreciation of a trail and its setting. These signs are generally specific to the location and can serve as an educational component of a trail.

**Crossings**

Intersections with roadways require careful consideration, especially those with multiple vehicle lanes and heavy traffic volumes such as Linglestown Road and Progress Avenue. Signage, painted crosswalks, and dedicated space for each mode will help alert bicyclists, pedestrians, and motorists to watch for one another. Stop signs or Rectangular Rapid Flashing Beacons (RRFB) may be placed on trails to stop pedestrians and bicyclists at major intersections, on the road to stop motorists, or both. Crossings of high-traffic volume or high-prevailing speed roadways may warrant the installation of additional safety features such as push-button-actuated or infrared-actuated warning signals. It is recommended that the Township work with PennDOT and Tri-County Regional Planning Commission to promote and support additional analysis of major intersections to determine appropriate crossing patterns and complete street intersection treatments for all road users. These intersections should include, but are not limited to:

- Progress Avenue and Linglestown Road
- Progress Avenue and Paxton Church Road
- Progress Avenue and Elmerton Avenue
- Progress Avenue and Walnut Street
- Progress Avenue and Union Deposit Road
- Linglestown Road and the US Highway 22 Interchange

Should an at-grade crossing not be suitable, grade separated crossings should also be considered. One bridge being recommended with the development of the Paxton Creek Corridor Trail would cross Linglestown Road at the Giant Supermarket. Suitability for such a bridge would be determined during the detailed trail feasibility study and trail design for this trail segment.

*Some roads are too busy to cross at grade. Here a September 11th National Memorial Trail crosses US1*

## V. Implementation Plan

The previous section of this plan illustrates and provides rationale for the proposed Township bicycle/pedestrian network. The chapter also presented issues associated with the various types and locations of facilities within the entire Township trail network. In an ideal world, the entire network could be implemented at once and all trails could be in place within a few years. However, implementing the proposed bicycle/pedestrian network will be a time-consuming endeavor, with significant Township energy needed to obtain rights-of-way, grants, oversee project design and construction, and arrange for the enlarged network's long-term management and maintenance. This implementation plan section is intended to guide the implementation process.

*Combining bicycles with transit, as with this Rabbit-transit bus, is part of implementing a ped/bike plan that works for many residents of the Township.*

The implementation plan consists of a few key pieces. To implement this plan effectively, it is critically important to prioritize the projects so that the most important and achievable trails are pursued first. To support the feedback received through the public outreach process, we are recommending initial phases of work that tackle major gaps in the bicycle/pedestrian network, even if they may require substantial engineering, support, time, and funding to implement. Although some of the larger projects could take numerous years to complete, laying the groundwork for these impactful projects early on will be key to connecting the overall network. To this end, a phasing plan has been developed.

A factor in setting appropriate priorities is the approximate cost of the proposed trails. **An initial Opinion of Probably Cost for construction (planning level cost estimates) appears in Appendix B.** Once approximate costs are known, it is important to understand what funding sources are available and most appropriate for each proposed bicycle/pedestrian network improvement. A list and discussion of a range of potential funding sources is included as part of this implementation plan **(see section IV.C. below).**

### A. Phasing Plan – Prioritization of Recommended Improvements

**Priority Planning and Coordination with Other State Agencies – Map 6b in Appendix A**

Throughout the public outreach process, which included a digital survey, discussions with key stakeholder groups, project steering committee meetings, two public workshops, and a public walk and bike ride, it became clear that priority projects were not limited to the "low-hanging-fruit" improvements. Priorities also included major connections that tackled challenging barriers and obstacles and built upon the existing bicycle/pedestrian network to extend the reach of the Capital Area Green Belt. Main barriers included passing beneath I-81 to secure a waterfront trail and connecting Dauphin County to Cumberland County via the I-81 bridge. These longer-term projects have been identified as **Phase P1 and P2** on **Map 6b** in **Appendix A**. As priority planning projects requiring coordination with other state agencies, these projects will also precede Phase 1 through Phase 5.

**Phase P1: CAGB connection along Front Street (Linglestown Rd. to the Capital Area Green Belt at Susquehanna Township/City of Harrisburg Line) –** This section of proposed trail would connect from the existing trail (CAGB Fort Hunter Extension) at Front Street and Linglestown Road to the existing segment of the CAGB trail at Front Street and Vaughn Street in Harrisburg. Although this Greenbelt Gap has previously been studied and on-road recommendations were made for N. 6th Street, Green Street, and Vaughn Street in 2022 *(Greenbelt Gap Study by McMahon and Sowinski Sullivan),* further consideration should take place to close this trail gap. Through our discussion with the Tri-County Regional Planning Commission this trail gap will be investigated further as part of the Harrisburg Area Transportation Study (HATS) that is currently underway and slated for completion in 2024.

**Phase P2: I-81 George N. Wade Memorial Bridge connection (Susquehanna Township/East Pennsboro Township Line to Wildwood Park at Industrial Hwy. - Coordination needed with City of Harrisburg and PennDOT) -** Although this connection would require major engineering, support, and funding to complete, a safe bicycle and pedestrian connection between East Pennsboro Township in Cumberland County and Harrisburg/Susquehanna Township in Dauphin County would have a major positive impact on accessibility and interconnectivity in the region. Crossing the Susquehanna River as a bicyclist and pedestrian is currently feasible on the Clarks Ferry Bridge in Duncannon to the north and the M. Harvey Taylor Memorial Bridge fifteen miles to the south, which also serves as the current route for the September 11th National Memorial Trail. The 1-83 John Harris Memorial (South) Bridge project that is planned for replacement was previously considered for bicycle/pedestrian improvements but will unfortunately not be seeing such improvements due to a variety of challenges. Should the I-81 George N. Wade Memorial Bridge be renovated in the future, a bicycle and pedestrian connection should be incorporated into the design. This is an appropriate use of the bridge infrastructure and should be part of a strategy to shift short trips away from cars, rather than planning only for an infinite expansion of driving.

**Phase 1 – Map 6c in Appendix A**

Building off the existing bicycle/pedestrian network and the initial work to advocate for Priority Planning projects P1 and P2 the **Phase 1 Map,** included in **Appendix A,** identifies the **initial 11 priority projects** for the Township to implement. These improvements (labeled to correspond with the Phase 1 Map) are:

**Phase 1A- 1F: Paxton Creek (Boyd Park to Olympus Heights Park and the CAGB)**
The Paxton Creek Trail corridor is a natural extension for the Capital Area Greenbelt and a primary trail identified on the Sustainable Susquehanna 2030 plan. Not only would this proposed trail connection tie to Olympus Heights Park and the Capital Area Greenbelt, but it provides an off-road trail spine that will serve a number of residential communities to the northeast of the Township. As a new off-road spine trail, we recommend a trail bridge over Linglestown Rd. to connect with the commercial amenities, residential communities, and to Boyd Park to the north. This trail is also heavily prioritized, as it exists along an existing sewar easement. Recognizing that the scale of this trail project is quite large, we have broken this into the following segments that we believe to be more suitable for grant funding.

- Phase 1A: Boyd Park to Linglestown Rd.
- Phase 1B: Bridge over Linglestown Rd. (Requires further detailed study)
- Phase 1C: Linglestown Rd. to Reichert Rd.
- Phase 1D: Reichert Rd. to Shutt Mill Park
- Phase 1E: Shutt Mill Park to Paxton Church Rd.
- Phase 1F: Paxton Church Rd. to Olympus Heights Park

**Phase 1G: Paxton Creek (Spur from Linglestown Rd. to Woodbridge Dr.)**
As a continued effort to expand the Paxton Creek Trail, Phase1G follows a spur of the Paxton Creek between Woodbridge Dr. and Linglestown Rd. This trail will require a crossing of Progress Ave., but will provide access to the expanding commercial and residential developments in and around Progress Ave. and Linglestown Rd.

**Phase 1H: Linglestown Road (Industrial Hwy. to the Susquehanna/Lower Paxton Township Line)** – The Capitol Area Greenbelt was recently developed along Linglestown Road from Front Street to Industrial Road and sees substantial use for walking and biking between Wildwood Park and Fort Hunter Mansion and Park. Extending this trail eastward along the entirety of Linglestown Road will greatly improve pedestrian and bicycle safety and access for residents living in the northern end of the Township, as well as provide access to the commercial establishments and resources along Route 39, a major PennDOT Highway connecting from Harrisburg to Hershey. Although there appears to be suitable space for dedicated bike lanes, a multi-use side path would provide a safe space for all trail users, regardless of age or ability. We propose that both a multi-use trail and bike lanes be pursued. Recognizing the challenges of crossing the US 322 interchange, initial work should include a study that looks not only at multimodal transportation but provides considerations for the corridor as a whole.

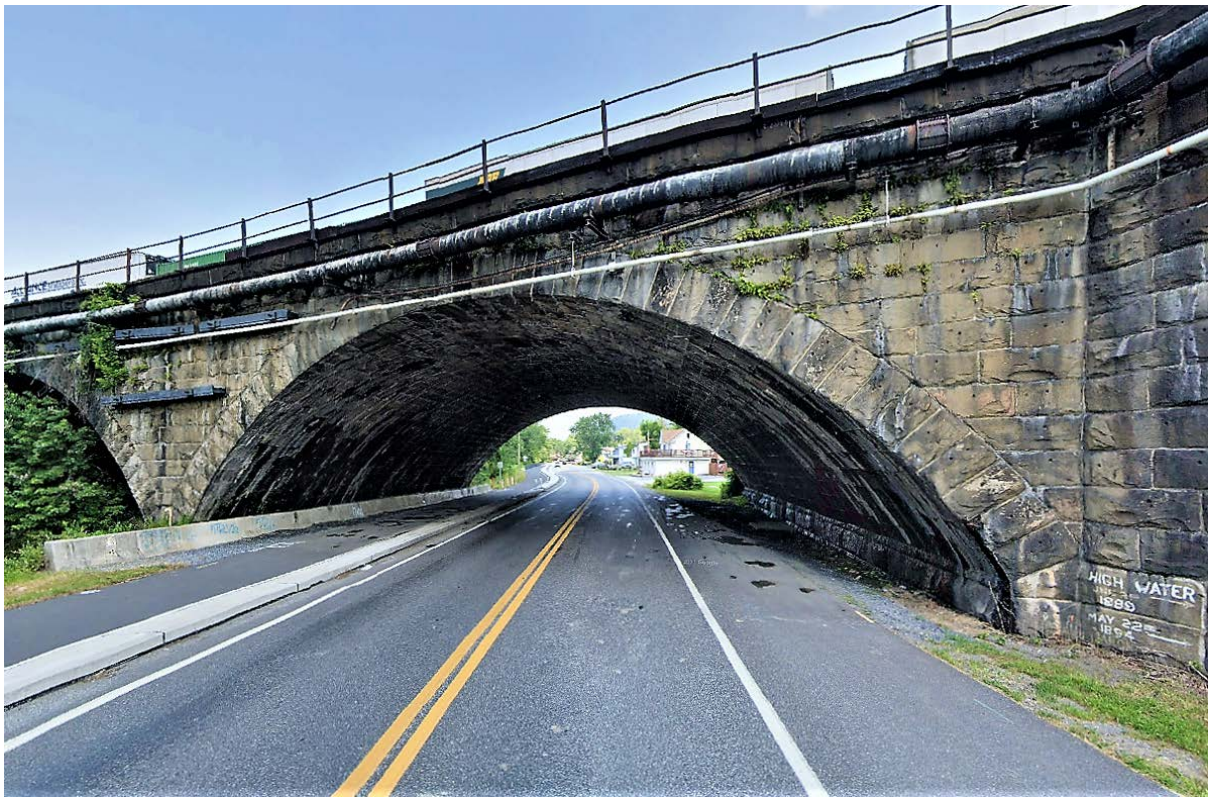
**Phase 1I: Progress Avenue (Linglestown Rd. to Old Township Rd. at the Susquehanna Township/Paxtang Brough Line) –** Similar to Phase 1A, developing a multi-use trail along Progress Avenue from Linglestown Road to the Township's southern boundary will greatly improve bicycle and pedestrian safety and access along the Township's primary north/south transportation corridor. Progress Avenue interconnects with numerous east/west travel corridors that have planned improvements identified in future phases. This proposed multi-use trail directly serves the High School, several planned residential and commercial developments, and numerous other Township resources along PennDOT route 3015.

**Phase 1J & 1FK: Trail Easement and Connection between Pelham Road and Wandering Way Road, and Apollo Ave and Wandering Way Road-** Several neighboring cul-de-sac developments off Crooked Hill Road abut one another but do not directly connect without first traversing the busy Crooked Hill Road. Two such situations are between Wandering Way Road, Pelham Road and Apollo Ave. Tying these neighborhoods together with a multi-use trail will not only enable bicycle and pedestrian connections for these neighborhoods but will provide access to the CAGB and Wildwood Park via the Olympus Heights Park underpass. A property owner located between Pelham Road and Wandering Way Road indicated their interest in providing the Township an easement to develop one such connection. These connections should be pursued during Phase 1 as a short-term, easily implemented improvement to the bicycle/pedestrian network. A detailed feasibility study to confirm public support and construction viability for these connections is recommended prior to the Township accepting an easement.

Following Phase 1 – **Phases 2 through 5 build upon each previous phase**, focusing on the following elements:

- **Second Priority Projects --** consist mostly of east-west trail, bike lane, and signed routes that would extend the reach of the CAGB, and tie-into new areas of development, the high-school, and existing residential communities on the south side of the township. By the time the second phase is completed, most Township residents will have access to some portion of the Susquehanna Township bicycle/pedestrian network.

- **Third Priority Projects --** continues to build upon the progress made in previous phases. Included are sections of bicycle lanes, bicycle routes and sidewalk improvements to further interconnect communities both within and beyond the Township, especially on the south side of the Township. A Herr Street connection will require multi-municipal coordination but will greatly improve the access between downtown Harrisburg and Susquehanna Township.
- **Fourth and Fifth Priority Projects --** consist of the remainder of the bicycle/pedestrian network. It should be noted that placing projects in the later phases does not mean that no action should be taken toward their implementation until all other phases are complete. Rather, it is a recognition that these facilities will best function following the implementation of earlier phases and may take considerable time and effort to complete. Nonetheless, the Township should pursue opportunities related to these projects whenever they present themselves.




*Careful and coordination with road and railroad representatives made possible this extension under Norfolk Southern to Fort Hunter. The same diligence and tenacity will be needed for many other trails and sidepaths.*

## B. Opinion of Probable Costs

The following table is a summary of the probable costs of construction/implementation presented in this study. The costs that are provided are for planning level purposes.

The estimated costs provided are based on time-honored practices in the construction industry. The study team does not control the cost of labor, materials, equipment, or a contractor's method of determining prices nor competitive bidding practices and market conditions. The probable costs of construction represent our best judgment as professionals at the time of preparation. The study team cannot guarantee that proposals, bids, and construction costs will not vary from these estimates.

The table indicates the estimated costs broken down by phase, indicating within each phase the mileage of each facility type. Detailed tables are provided in **Appendix B.**

It should also be noted that improvements requiring substantial engineering and additional study do not have associated costs at this time. These project costs will be determined during future planning and engineering. Additionally, the sidewalk costs identified below are representative of both existing and proposed sidewalks along the roads proposed for bike lanes and bike routes.

Although existing milage for each treatment was not identified due to the limited scope of this project, an inventory of bicycle and pedestrian facilities has been recommended.

The total cost of the network is estimated to be approximately $20.4 million. These costs are summarized in the table below.

**Miles of Proposed Network**

| Phase | Multi-use Trail (Ped/Bike) | Bike Lane (Bike) | Bike Route – Signed (Bike) | Improvements Requiring Substantial Engineering (Ped/Bike) | Earthen Trail (Ped) | Sidewalk (Ped) | Cost |
|---|---|---|---|---|---|---|---|
| **Priority Planning** | 0.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0* | **N/A** |
| **1** | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0* | **$7,697,364** |
| **2** | 2.8 | 1.6 | 0.6 | 0.0 | 0.0 | 2.2* | **$1,830,163** |
| **3** | 4.5 | 6.9 | 2.6 | 0.0 | 0.0 | 9.5* | **$2,183853** |
| **4** | 8.3 | 6.7 | 2.4 | 0.0 | 0.0 | 9.1* | **$5,478,917** |
| **5** | 4.5 | 3.1 | 4.6 | 0.0 | 1.1 | 7.7* | **$3,225,067** |
| **TOTAL** | **32.5** | **18.3** | **10.2** | **3.6** | **1.1** | **28.5*** | **$20,415,419** |

*Sidewalk milage includes proposed and existing sidewalk along roads proposed for bike lanes and bike routes and is not included in the cost. A sidewalk inventory is recommended.

Below is a description of each type of connection:

- **Multi-Use Trail** – It is assumed that the multi-use trail is a 10-foot-wide paved (asphalt) trail. Assumes 3″ asphalt (binder and wearing surface) and 6″ of subbase. Includes excavation.
- **Traditional Bike Lane** – It is assumed there is existing width to the roadway that will be utilized for the bike lane but requires new striping (see additional information on bike lane striping below).

    - It is assumed that the bike lane striping defines the area as a separate lane, not a fully colored bike lane.
    - If expansion of the pavement is needed there is an estimated costing for expansion of the roadway for a 6-foot-wide bike lane, on one side would be about $22.00 per linear foot. This price assumes a 1.5″ wearing surface, 2.5″ binder, 4″ base and 6″ subbase. Includes excavation.
- **Bike Lane Signage** – It is assumed that a bike lane sign is installed approximately every quarter mile. However, additional signage may be needed approaching/near intersections to improve safety and guidance.
- **Sidewalk** – It is assumed that the sidewalk will be 5 feet wide and in accordance with the Pennsylvania Department of Transportation, Publication 408. Estimated costs include earthwork and excavation.
- **Earthen Trail** – for the purpose of this cost estimate it is assumed that the trail will be developed utilizing stone dust, at a width of 6 feet. However, alternative options could be pursued with proper soil stabilization.

The planning level cost estimates do not include the following, unless specified above:

- Clearing and Grubbing – Dependent on the project.
- Erosion and Sediment Control – Dependent on the project.
- Additional Signage or Striping – Dependent on the project.
- Mobilization – Approximately 8% of the total project cost.
- Traffic Control – Approximately 5% of the total project cost.
- Design/Engineering – Dependent on the project scope.
- Contingency – Approximately 10% of the total project cost.

The provided cost estimates are a planning-level cost estimate that should be understood as such. More exact estimates should be prepared during future preliminary design of any proposed facility

### C. Potential Funding Sources

Funding sources have been included below for trail design and construction opportunities. As priority projects move into future stages of planning, design and construction, specific funding sauces will need to be identified. Grants often vary in focus and area of priority from year to year, and each source should be assessed for the specific project at that time.

## STATE GRANT OPPORTUNITIES

**Commonwealth Financing Authority (CFA) - Greenways, Trails and Recreation**

The Commonwealth Financing Authority (the "Authority") Program provides funds for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects using the Greenways, Trails, and Recreation Program (GTRP). Projects could include development, rehabilitation and improvements to public parks, recreation areas, greenways, trails, and river conservation.

- Usual Submission Deadline: Spring (May)
- Grant Award Amount: Maximum of $250,000
- Match Requirement: 15% Match Required

**Dept. of Conservation and Natural Resources (DCNR) - Community Conservation Partnerships Program (C2P2)**

The Department of Conservation and Natural Resources' Bureau of Recreation and Conservation assists local governments and recreation and conservation organizations with funding for projects related to Parks, Recreation, and Conservation. Projects could include planning, acquisition, and development of public parks, recreation areas, trails, river conservation, and access/conservation of open space.

- Submission Deadline: Usual Spring Submission (April)
- Grant Award Amount: Depends on the Specific Grant Type
- Match Requirement: 50% Match Required

*Representative of the 911 Trail meeting with elected representatives near Harrisburg. Developing good relationships is most helpful in obtaining funding for trail and walking/biking improvements.*

**Commonwealth Financing Authority (CFA) - Local Share Account (LSA) – Statewide**

The Local Share Account – Statewide Program funds projects in the public interest that improve the quality of life of citizens in the community. Projects could include support economic development

projects, community improvement projects, and projects in the public interest, including sidewalks, parks, and recreation. In most cases eligible projects must be owned and maintained by an eligible applicant or a nonprofit organization. However, sidewalks that are in the public interest or for public use are eligible even if they are not owned or maintained by an eligible applicant or nonprofit.

- Submission Deadline: Spring Submission (March)
- Grant Award Amount: $25,000 to $1,000,000
- Match Requirement: No Match Required

**PennDOT - Safe Routes to School Program**

Safe Routes to School (SRTS) is a national and international movement to create safe, convenient, and healthy opportunities for students to walk and bicycle to school. The program encourages students to walk, bike, and roll to school, helping to reverse an alarming decrease in students' physical activity and an associated increase in obesity and other health conditions. Applicants must apply for Safe Routes to School project funding through PennDOT's Transportation Alternatives Set-Aside (TASA) Program. SRTS projects, which can be infrastructure and non-infrastructure projects, and must be within two (2) miles of a public or private primary, middle, or high school (kindergarten through twelfth grade) to qualify for funding.

- Submission Deadline: The deadline to submit the mandatory Draft Application is in the summer. Applicants will discuss the draft application with their local PennDOT District and MPO/RPO before submitting the final application, which is due in the early fall. The SRTS Program is currently only offered on a bi-annual basis, with 2023 have been an application year.
- Grant Request Amount: $50,000 to $1,500,000 (higher awards can be justified on a case-by-case basis for "exceptional" projects. There is no minimum for non-infrastructure projects.)
- Match Requirement: No Match Requirement.

**Pennsylvania Department of Community & Economic Development – Multi-Modal Transportation Funds Program**

The Multimodal Transportation Fund provides grants to encourage economic development and ensure that a safe and reliable system of transportation is available to the residents of the commonwealth. Funds may be used for the development, rehabilitation and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development.

- Submission Deadline: Applications for the Multimodal Transportation Fund are accepted annually between March 1 and July 31.
- Grant Request Amount: Minimum$100,000 but may not exceed $3,000,000
- Match Requirement: 30% Match Required

**PennDOT – Multimodal Transportation Fund**

The Multimodal Transportation Fund (MTF) also provides funding for priority investments in any mode through PennDOT's MTF Statewide Competitive Funding Program. The MTF program provides grants to ensure that a safe and reliable system of transportation is available to the residents of this commonwealth.

- Submission Deadline: The MTF Program is currently offered on a bi-annual basis, with 2023-2024 being an application period. The next available funding cycle will be 2025.
- Grant Request Amount: $100,000 to $3,000,000
- Match Requirement: 30% Match Requirement

**PennDOT – Transportation Alternative Set-Aside Program**

The Transportation Alternatives Set-Aside (TASA) provides funding for projects and activities defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation, trails that serve a transportation purpose, and safe routes to school projects.

- Submission Deadline: Spring/Summer (May – July), with final applications due in fall (September)
- Grant Request Amount: $100,000 to $1,500,000, although higher awards can be justified for "exceptional" projects.
- Match Requirement: No Match Requirement

**PennDOT – Green Light Go**

Grant funding through the Green Light-Go Program may be utilized for a range of operational improvements to existing traffic control signals located in Pennsylvania. All project improvements must have a useful life of not less than five years upon project completion in order to be eligible for funding.

- Submission Deadline: Pre-Application in Winter (December – January), Full application due in February
- Grant Request Amount: $100,000 to $3,000,000
- Match Requirement: 20% Match Requirement. Design funding is considered as a match (design costs are typically 10-15% of construction costs)

**Local Share Account (LSA) – Statewide**

The PA Race Horse Development and Gaming Act (Act 2004-71), provides for the distribution of gaming revenues through the Commonwealth Financing Authority (CFA) to support projects in the public interest within the Commonwealth of Pennsylvania. Funds can be used for projects in the

public interest and projects that improve the quality of life of citizens in the community. Eligible projects must be owned and maintained by an eligible applicant or a nonprofit organization. Eligible uses include acquisition, construction, demolition, infrastructure (including sidewalks for public use), purchase of vehicles or equipment, planning, design, and engineering.

- Submission Deadline: Fall (September – November)
- Grant Award Amount: Maximum of $1,000,000
- Match Requirement: No Match Requirement

## COUNTY & LOCAL GRANT OPPORTUNITIES

### Dauphin County - Transportation Infrastructure Safety Improvement Program (TISIP)

The program is intended to provide financial grant assistance to Dauphin County municipalities in order to improve the safety of municipally owned transportation assets with documented accident history trends and/or substandard features with respect to current transportation design criteria. The program will be administered by the Dauphin County Department of Community and Economic Development Corporation.

- Submission Deadline: Summer (there are Pre-Application Activities that are Required prior to submission).
- Grant Award Amount: Maximum of $1,000,000
- Match Requirement: 25% Match Required. Applicants should be prepared to provide additional funds beyond the 25% required match due to the competitive nature of the grant program.

### Dauphin County Local Share Municipal Grant

As required under Act 71 (The Gaming Act), PA Department of Community and Economic Development (DCED) and the Commonwealth Financing Authority (CFA) have developed program guidelines to distribute Local Share Account (LSA) funds generated in certain counties. Eligible applicants and uses of funds vary by county/program.

The Dauphin County Local Share Municipal Grant Program helps to distribute funds generated by gaming to eligible local governments for projects that support and enhance community and economic well-being and mitigate the impact of gaming and related activities. Qualifying categories include: Infrastructure and Facility Improvements; Transportation; Emergency Services, Health, and Public Safety; Public Interest Initiatives; and Human Services.

- Submission Deadline: Sponsorship Request Deadline in August, Grant Deadline in September.
- Grant Award Amount: Maximum of $150,000
- Match Requirement: Not stated

## NON-PROFIT & FOUNDATION GRANT OPPORTUNITIES

### PeopleForBikes - People for Bikes Community Grant Program

The PeopleForBikes Community Grant Program supports bicycle infrastructure projects and targeted initiatives that make it easier and safer for people of all ages and abilities to ride. People for Bikes focuses most grant funds on bicycle infrastructure projects, such as bike paths, lanes, trails and bridges, mountain bike facilities, bike parks and pump tracks, BMX facilities, end-of-trip facilities such as bike racks, bike parking, bike repair stations and bike storage.

- Submission Deadline: Fall
- Grant Award Amount: Maximum of $10,000
- Match Requirement: 50% Match Requirement

### Recreational Equipment, Inc. (REI) - REI Cooperative Action Fund

REI Co-op founded the REI Cooperative Action Fund, a community-supported nonprofit that partners with and provides financial support for organizations building a new outdoor culture and improving the health and well-being of all people. The grant program has three different focus areas: Connecting People Outside, Creating Spaces Outside, and Centering Health Outside.

Note: This program does not include a traditional grant application, but potential grantees can submit for consideration by using their "recommend a potential grantee" to be considered to receive funding.

- Submission Deadline: "Recommend a potential grantee" forms can be submitted anytime, with funds being awarded in the Spring and Fall
- Grant Request Amount: No request amount requirements
- Match Requirement: No Match Required

## SUSQUEHANNA TOWNSHIP OPPORTUNITIES

### Pennsylvania Open Space Tax / Earned Income Tax for Open Space

PA Act 153 of 1996, amended the Pennsylvania Conservation and Land Development Act and gives municipalities in the commonwealth among others a financing tool for open space preservation, acquisition, and maintenance within their communities. This Act enables Susquehanna Township to impose one of two taxes: a) a tax on real property or b) an earned income tax on residents. If desired by the community, this tax opportunity can be instituted through a simple majority vote by ballot referendum.

Note: The above grant opportunities list is current at the time of writing, and changes will likely occur to the match and the time of submission noted under each program. Additionally, there could be new programs that come about and others not included on this list that could be used to help fund the implementation of this plan.

## D. Implementation Strategies

### Overview

This report is the first step towards the realization of the Township-wide bicycle/pedestrian network for Susquehanna Township. It lays out a dynamic and publicly supported vision giving a verbal, visual and diagrammatic strategy of what the network could look like, and how some of the processes involved will lead to its construction. This feasibility report attempts to estimate the cost and prioritize key routes and projects at an overall planning level. The Township can make the most of this report by seeing it as a "menu" of items and segments of routes for the Township to choose projects for implementation.

As the next steps in the process, the Township, with the continued assistance of a steering committee, should continue to meet after the conclusion of this study. This will allow the committee to work out priorities for development and strategize implementation techniques from the "menu" options at a more specific, local level, such as, whether segments should be sidewalks or side paths, what funding stream is most applicable, and which political avenues would be the most effective to pursue.

### Network Implementation

A phased implementation program has been developed, as explained above. Projects included in the first phase were selected to maximize the benefits to the most users, address major connections that eliminate the barriers and obstacles to provide a safe and interconnected bicycle and pedestrian network, and to extend the reach of the CAGB.

The next priority projects continue the philosophy of extending the reach of the existing network along primary transportation corridors to help establish system interconnectivity and build community usage and support.

In the short term, it is important for the Township to adopt codes and standards that reinforce the implementation of the network and include and involve residents and community associations in each step of the planning and implementation process. For the long term, the various projects that make up the network should be formally included in the respective Township, County, MPO, PennDOT, and Federal transportation, open space, recreation, and preservation plans and programs so that they are recognized broadly as a committed vision of the Township's future. The Township should develop a bicycle and pedestrian checklist for any up-and-coming capital project, scheduled roadway maintenance, and any proposed development to ensure that bicycle and pedestrian issues are considered. Additionally, we recommend updating the Official Map with multi-use trail recommendations from this study where suitable.

Listed below are some of the more common implementation techniques:

### Capital Improvements

Capital improvement projects, such as longer segments of the network that cannot, or should not, be developed piecemeal may first need to be evaluated, studied, conceptually designed, and scoped. There may also be a need to identify specific construction items and costs before any funding can be considered. Public involvement will most likely be necessary before implementation of any longer segment of sidewalks, trails or bicycle routes can proceed. As a general rule of thumb, capital improvement projects should garner advocacy and citizen committees to ensure that bicycle/pedestrian needs are given the attention they deserve throughout the community. Please note that depending on the funding source(s), projects that affect PennDOT owned roadways (e.g., Linglestown Road) may need to meet environmental, design and review standards that are more rigorous and include a greater in-depth public involvement process.

**Maintenance Implementation**

The Township can choose to implement smaller parts of the network such as crosswalk installation, bike lane striping, sidewalk repair, and minor constructions such as curb ramps as Township maintenance projects. This will help manage the scope of the larger bicycle and pedestrian projects by including the smaller projects in the maintenance budget. Additionally, the Township can encourage landowners who are responsible for sidewalks along their properties into upgrading or infilling portions of the network by strictly enforcing municipal maintenance codes where violations occur.

**Proposed Development Implementation**

Another implementation technique is to piggyback smaller bicycle and pedestrian projects into the scope of the larger projects such as, larger street widening, repaving, or bridge work. Coordination with the Susquehanna Township Authority as they work to upgrade sewer and stormwater conveyance could provide an opportunity to incorporate trails into construction plans. Such project coordination can keep the overall cost to implement the bicycle/pedestrian network project down. The Township can pressure or sometimes require any new private development or subdivision fronting portions of the recommended network into developing the network as part of their project by adopting Township bicycle and pedestrian standards into the design, construction, approval, and review process. Additionally, the Township can look to readdress past sidewalk deferments as part of the sidewalk inventory.

## E. Recommendations for Future Action

**Summary of Key Recommendations:**

- Create new multi-use trails and sidepaths to link neighborhoods to each other, and provide connections to the existing trail system, parks and recreation centers, commercial and employment areas, schools, and places of worship.
- Create "share the road" bike routes where suitable. Use signage and/or "sharrows".
- Stripe bike lanes where possible. Authorize the Township engineer to prepare a design for bike lanes on PennDOT highways ahead of road resurfacing. Bike lanes can then be implemented when PennDOT announces that a road is scheduled for resurfacing.
- Develop an inventory of existing bike lanes and sidewalks, and gaps in the bike lane and sidewalk network. This information should be used in the development of a strategy around improving bicycle and pedestrian access within the Township.
- Implement signage and information systems.
- Enhance the Township's transit stop amenities including shelter, seating, and posted maps and schedules, as well as bicycle parking facilities. As part of this study, our team spoke with SRTA about the re-organization of the bus-network being undertaken. We recommend the Township continues to work with SRTA to coordinate access and amenities along the updated bus routes.
- Promote appropriate development along multimodal transit corridors, including a mixture of housing, retail, office, commercial, and institutional.
- Educate and inform the public of the benefits of walking and cycling and location of alternative routes to heavily trafficked roads largely relied upon today.
- Review potential funding sources.

- In addition to the Bicycle and Pedestrian Task Force and other existing groups, encourage the formation of proactive bicycle and pedestrian citizen groups or committees of civic and citizens groups, and "Safe Routes to School" organizations.
- Coordinate with organizations promoting long distance trails that link or will link Susquehanna Township and Harrisburg with distance communities such as the September 11th National Memorial Trail Alliance and The Pittsburgh to Harrisburg Main Line Canal Greenway
- Select and prioritize projects for implementation that will make the largest positive Township-wide impact along with the largest positive local community change.
- Define and negotiate necessary easements and rights-of-way with landowners.
- Select planning and design/engineering consultant team(s) to process and prepare planning, design and construction documents for prioritized legs and segments of trails based on the guidelines established within this study the prioritization committee.
- Obtain funding from sources that will either provide a matched contribution to outside grant sources or dedicate capital improvements funds for design and construction phases.
- Coordinate with other nearby local municipalities to incorporate desired connections to planned park and recreation, land development sites and facilities.
- Coordinate with municipal, state, and regional agencies to secure appropriate clearances, permits, and authorizations for future construction. This should include the Tri-County Regional Planning Commission, Dauphin County, PennDOT, the Susquehanna Regional Transportation Authority, and adjoining municipalities to which links are being made.
- Work with PennDOT and Tri-County Regional Planning Commission to analyze pedestrian and bicycle safety at major intersections to determine appropriate crossing patterns and support complete street intersection treatments suitable for all road users.

**Quick Implementation infrastructure improvement**

This plan recommends that Susquehanna Township work to identify 1-2 early action projects from the list above to assist in the transition from planning into implementation. We have found that completing a few initial low-hanging fruit projects can help bring awareness to the changes being proposed and garner support to further implementation of the plan.

## F. Key Implementation Responsibilities

The following are recommendations regarding who, within the Township and beyond, should be primarily responsible for which key implantation items.

| Executive and Legislative Body | | |
|---|---|---|
| 1. Assign responsibilities to staff person or agency for addressing bicycle and pedestrian issues.<br>2. Continue to support the Bicycle and Pedestrian Task | Force to advance recommendations from this plan.<br>3. Establish a capital funding program that can be used to fund bicycle and pedestrian related projects or leverage municipal, state, and federal grants. | 4. Adopt ordinances to provide bicycle parking facilities at new buildings and employment centers, and buildings undergoing substantial rehabilitation or change in use. |

5. Institute a public awareness campaign showing the benefits of bicycling and walking.

6. Provide leadership through the initiation and adoption of the bicycle, pedestrian, and greenway plan.

7. Initiate a citizen participation process that allows public input into decision-making regarding bicycling and walking.

8. Increase the number of areas zoned as mixed-use development.

9. Require all new development plans to include plans for accommodating bicycle and pedestrian facilities.

**Planning Department**

1. Promote local bicycle, pedestrian, and greenway plan initiatives at municipal, state, and regional agencies.

2. Develop a bicycle infrastructure and sidewalk inventory to understand existing conditions and gaps to be filled.

3. Develop and implement a procedure for evaluation of bicyclists' and pedestrians' needs in the early planning stages of all capital projects.

4. Implement a bicycle usage monitoring program.

5. Prepare land use plans and ordinances that encourage mixed-use development.

6. Administer a public participation program.

7. Improve bicycle and pedestrian accessibility around schools and bus stops.

8. Prepare plans for linkages between shopping centers, other commercial areas, parks, residential areas, and future land use.

9. Design open space linkages using any abandoned rail corridors, stream valleys, utility corridors and other rights of way.

**Public Works Department**

1. Provide bicycle and pedestrian facilities in conjunction with capital projects.

2. Provide bicycle and pedestrian facilities as independent capital projects.

3. Develop a spot improvement and maintenance program.

4. Train Public Works staff in design, installation, and maintenance best practices for bicycle and pedestrian facilities.

**Recreation Department**

1. Promote bicycling and walking to parks by providing access facilities.

2. Develop greenways to link open spaces.

3. Conduct bicycle and pedestrian safety programs as well as bicycle-friendly driver training.

4. Include programs to promote walking and bicycling.

5.Consider park development on open space that would have a natural connection to existing or planned network improvements.

6. Develop trail connections to the parks and neighborhoods.

**Police Department**

1. Foster safe, shared use of highways by all users through the promulgation of enforcement actions and programs.

2. Support and conduct educational programs that train bicyclists and motorists to bicycle and walk safely in traffic.

3. Provide training for law enforcement officials in bicycle and pedestrian education and regulations.

4. Implement a bicycle and pedestrian accident monitoring and surveillance system.

**Susquehanna Regional Transit Authority**

1. Improve bicycle and pedestrian facilities at transit facilities to encourage bicycling and walking connections to transit. Consider teaming up with local businesses to develop "transit cafés" (any business, not necessarily a food business, that offers a safe, dry, warm place to wait for a bus and which displays "real-time" bus information.)

2. Continue to develop facilities and operational guidelines for carrying bicycles on buses, ideally on racks or in cargo bays.

3. Coordinate with Susquecycle to expand the existing bike share program.

4. Adjust coverage to integrate first and last mile connections with the bicycle and pedestrian network.

5. Consider looping routes to provide service with fewer needed transfers.

6. Make information systems for buses first class and easy to use.

**Significant Landowners, Advocacy Groups and Service Organizations**

1. Assist with the development of comprehensive bicycle and pedestrian plans.

2. Monitor legislative, educational, and engineering opportunities for increasing efficient and safe bicycling and walking.

3. Conduct Effective Bicycling or similar education programs.

4. Help educational institutions in the delivery of bicycle and pedestrian education programs.

5. Conduct or assist with user surveys.

6. Identify barriers to bicycling and walking.

7. Participate in citizen participation or public involvement processes.

**Educational Institutions**

1. Acquire or develop educational material that will encourage safe and effective bicycling and walking.

2. Deliver bicycle and pedestrian education programs in conjunction with other curricula or as a separate program.

3. Support enforcement activities by providing educational elements.

4. Develop programs to promote walking and bicycling to school and at the same time limit student automobile parking.

5. Coordinate with the Susquehanna Regional Transit Authority to promote transit access to school.

**Employers and Corporations**

1. Encourage bicycling and walking to work as part of an Employee Commute Options Program.

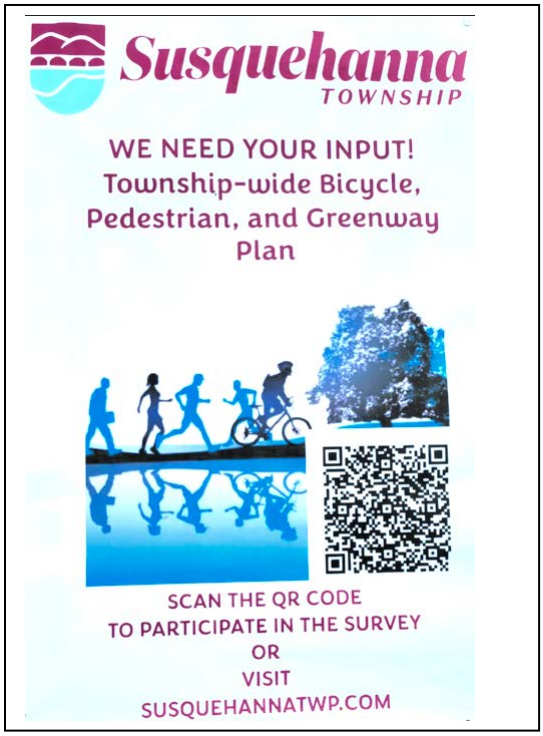
2. Promote bicycling and walking as part of health and wellness programs.

*Adapted from PennDOT Statewide Bicycle & Pedestrian Plan, April 1996*

## VI. Inventory and Methodology

This section explains the process and inventory information that guided the development of the plan. This information is the basis for the study's design assumptions and recommendations and can be used as a resource by the Township and design professionals when working on the implementation of this plan. The information below contains:

- Brief descriptions of existing plans and policies that provide the basis for this plan;
- A description of the steering committee meetings, public meetings and workshops held to gather input from Township residents;
- An overview of Connect the Dot's research and recommendations regarding engagement of the underserved disabled community;
- Field survey and public tours methodology and findings;
- A review of the public survey process;
- Feedback from key stakeholder interviews;
- An understanding of the potential legal issues involved.




Throughout the planning process, the Township utilized their civilspace platform to publicize the project, share background information and material, provide project updates, specify important dates, share supporting documents, and provide a link to the public survey. Information can be found at:

https://susquehannatwp.civilspace.io/en/projects/susquehanna-township-wide-bicycle-pedestrian-greenway-plan

### A. Existing Plans and Reports

In preparing the Susquehanna Township Bicycle, Pedestrian and Greenway Plan, several related studies, plans, maps, and resources were consulted. Key materials related to trails and connectivity were identified and analyzed to guide the recommendations being made in this plan. The key documents of interest included the following:

- **Sustainable Susquehanna 2030 Comprehensive Plan** (adopted in 2019)

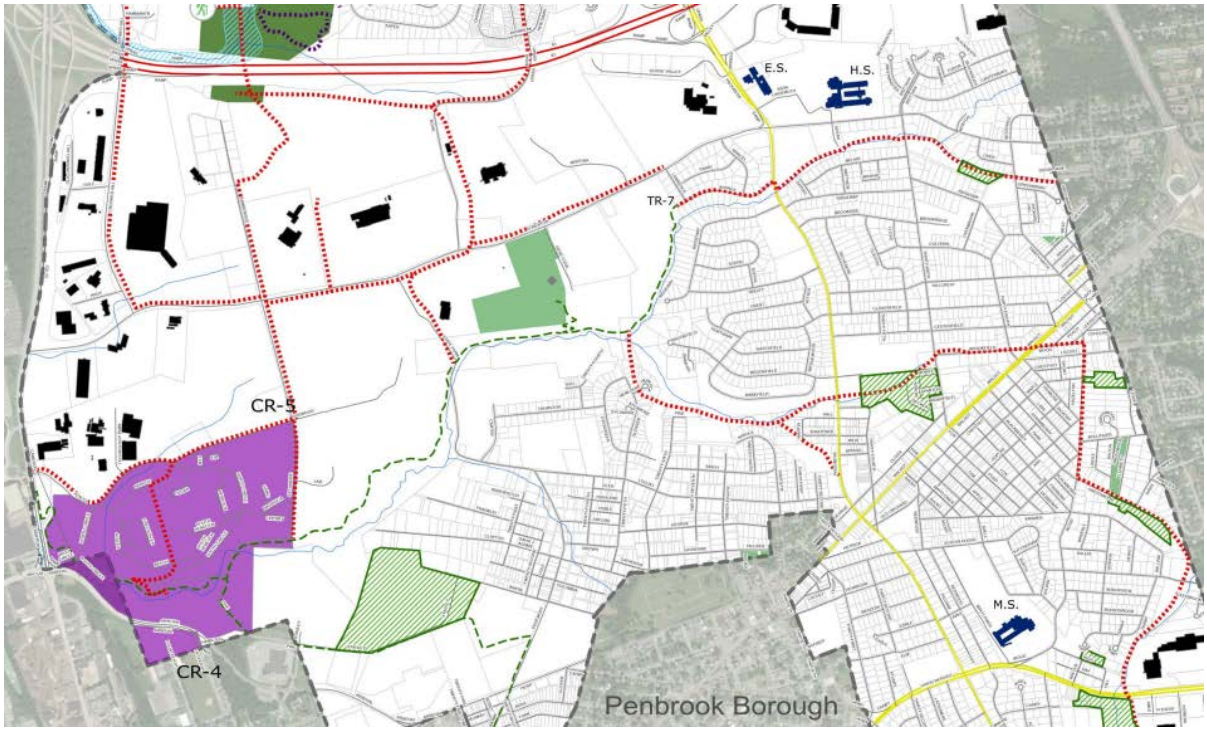
  The Township's Comprehensive Plan is clear about the need for improved bicycle and pedestrian connections throughout the Township. The Plan stresses future land use, growth and development, and resource preservation for the township and identifies the related advantages of a fully realized bicycle/pedestrian network and lays the groundwork with clear bicycle and pedestrian connection goals and implementation recommendations to build upon.

- **Susquehanna Township Parks and Recreation Comprehensive Plan** (adopted in 2017)

This plan provided a comprehensive vision for the Susquehanna Township Parks and Recreation Department. It focused on recreational and social activities for the benefit of Township residents; to maintain safe, accessible, and aesthetically pleasing recreational areas and facilities; and to advise Township officials on the acquisition of open space, development of new facilities, and improvements to existing facilities. This plan also set forth the priority of developing a Township Comprehensive Bicycle and Pedestrian Plan.

- **The Susquehanna Township Official Map and Ordinance** (adopted in 2021)

  As part of the continuing work of implementing the Comprehensive Plan, Sustainable Susquehanna 2030, Susquehanna Township has developed an Official Map and Associated Ordinance. The Board of Commissioners adopted the map and ordinance on February 11, 2021. The map and associated ordinance identify the location of planned public lands and facilities. It is an official declaration by the governing body of the municipality's interest in acquiring private lands for public purposes sometime in the future. Public purposes may include proposed streets, parks, open spaces, trails, transit routes, and flood control and stormwater management facilities.




*Proposed trails, shown on this excerpt of the Official Map as dotted red lines, were carefully examined in the preparation of the walking/biking plan.*

- **Riverfront Trail Study** (Vaughn Street to Linglestown Road) (2014)

  This study outlined engineering findings, preliminary layouts, "high-level" approximate cost estimates, and the pros and cons of developing a riverfront trail from Vaughan Street to Linglestown Road to link Dauphin County's Fort Hunter and Riverfront Parks. This section of trail was not developed, and an on-road route was later implemented for the CAGB along


*The existing Capitol Area Greenbelt within Susquehanna Township and its links were carefully examined for improvements and connecttions as part of the overall proposed plan*

Vaughn Street, Green Street, N. 6th Street, Lucknow Road, and Kaby Street. The concepts developed in this study are very relevant as this study was identified as one of the top priorities identified in this plan.

- **Greenbelt Gap Study** – Prepared for PennDOT (2022)

  The purpose of this study was to complete a feasibility evaluation of this existing on-road route for the Capital Area Greenbelt by utilizing segments of Vaughn Street, Green Street, N. 6th Street, Lucknow Road, and Kaby Street within the City of Harrisburg and Susquehanna Township. The evaluation identified ways to improve safety, connectivity, and comfort for Greenbelt users along this route. The analysis included a feasibility evaluation of on-road bicycle infrastructure, identification of gaps and significant deficiencies in the existing

sidewalk network, and a review of wayfinding signage along the route. The study focused on improvements to the existing roadways and sidewalks and did not include evaluation of significant roadway widening or providing a dedicated off-road shared use path for this connection. This study presents the technical feasibility evaluation, which can be used by project partners to further evaluate, prioritize, and implement improvements to the Greenbelt.

- **Connect the Dots** – A Report by the Susquehanna Township Bicycle and Pedestrian Coordinator (2021)

  This 2021 study focused on opportunities within Susquehanna Township to improve bicycle pedestrian connectivity, safety, and transportation while creating connections to neighborhoods, parks, centers of employment, community resources, and adjacent municipalities. This hub and spoke network built off the existing CAGB by developing key bicycle and pedestrian transportation corridors to reach local destinations. A safety component of this report focused on developing a Smart Cycling Class to teach groups or individuals safe bicycling practices.

- **Lower Paxton Township Greenway Plan** (2008)

  Although this plan is over a decade old, it identified neighborhood bikeway and walkway connections, off-road trails, on-road bikeways, walkways, and intersection improvements for the neighboring municipality. Ensuring Susquehanna Township's proposed network interfaces with the surrounding area one key to the network's success.

## A. Study Committee Coordination and Meetings

Through the entirety of the planning process, our project team worked collaboratively with the project Steering Committee, which was comprised of Township staff, government planning organization representatives, key stakeholders, and other residents and interested parties. The committee included the following:

- **Doug Knauss** – Susquehanna Township Director of Parks and Recreation
- **Betsy Logan** – Susquehanna Township Director of Community & Economic Development/Asst. Twp. Manager
- **Mack Breech** – Susquehanna Township Planning and Zoning
- **Richard Norford** – Susquehanna Township Bicycle and Pedestrian Coordinator/Recreational Advisory Committee
- **Frank Chebnikow** – Susquehanna Township Planning Commission
- **Chief Robert Martin** – Susquehanna Township Police Department / Public Safety
- **Commissioner Fred Faylona** – Susquehanna Township Board of Commissioners, Ward 6
- **Commissioner Jody Rebarchak** – Susquehanna Township Board of Commissioners, Ward 1
- **Scott Doyle** – Capital Area Greenbelt Association
- **Mike Loomis** – Harrisburg Bike Club
- **Andrew Bomberger** – Tri-County Regional Planning Commission
- **Kenena Korkutovic** – PennDOT District 08
- **Ted Witfield** – Peddle Pusher Bike Shop
- **Jenifer Donnelly** – Resident / Recycle Bicycle Harrisburg

Throughout the planning process there was a kickoff meeting ("Meeting Zero") between the client and consulting team, and two Steering Committee meetings. Minutes recording the discussions and conclusions of the meetings, along with agenda, are included as part of this report in **Appendix F.** The dates of the meetings are listed below.

- **Meeting Zero** – Preliminary Kickoff Meeting – January 31, 2023 (Virtual)
- **Steering Committee Mtg. #1** – March 13th, 2023 at the Township Municipal Building
- **Steering Committee Mtg. #2** – September 13th,2023 at the Township Municipal Building

## B. Public Meetings and Workshops

Susquehanna Township worked collaboratively with Campbell Thomas & Co. and their project consulting team to conduct two Public Workshops as part of the Public Outreach Process for the Susquehanna Township Bicycle, Pedestrian, and Greenway Plan. The Township assisted with meeting arrangements, publicizing, and running the workshop, and CT&C's planning team prepared and presented meeting materials and conducted presentations. Minutes recording the discussions and conclusions of the workshops along with agenda and attendance records are included as part of this report in **Appendix F.** Additionally, the Draft Report was submitted to the Board of Commissioners, Planning Commission, and Recreation Advisory Board in mid-December 2023. The dates of the meetings are listed below.

- **Public Workshop #1** – June 1st,2023 at the Township Municipal Building
- **Public Workshop #2** – October 24th,2023 at the Township Municipal Building
- **Submission of the Draft Report to the Susquehanna Township Board of Commissioners** – December 14th,2023 at the Township Municipal Building
- **Submission and Review of the Draft Report with the Susquehanna Township Planning Commission and Recreation Advisory Committee** - December 18th,2023 at the Township Municipal Building

## C. Stakeholder Interviews

In additional to Steering Committee meetings and public meetings, stakeholder interviews took place with the following stakeholders, municipal entities, and other interested parties. Documentation of these interviews is included as part of this study in **Appendix F.**

- **Susquehanna Township Police/Public Safety**
  - Interview completed on May 11th,2023
- **Susquehanna Township Planning Commission**
  - Interview completed on May 12th,2023
- **Susquehanna Township School District**
  - Interview completed on May 17th,2023
- **PA Dept of Health**
  - Interview completed on May 18th,2023
- **PennDOT District 8**
  - Interview completed on May 30th,2023
- **Tri-County Regional Planning Commission**
  - Interview completed on June 18th,2023
- **Susquehanna Regional Transportation Authority (SRTA) - Capital Area Transit/Rabbittransit**

    - Interview completed on June 20th,2023
- **Susquehanna Township Public Works**
    - Interview completed on August 09th,2023
- **Dauphin County Parks and Recreation**
    - Interview completed on August 11th,2023
- **Capital Area Greenbelt Association**
    - Interview completed on August 25th,2023

## D. Engaging the Underserved Disabled Community – (CtD)

A key component of the Susquehanna Township Bicycle, Pedestrian and Greenway Plan focused on engaging the underserved communities in the Township. Community engagement specialists at Connect the Dots focused on this component of the study; particularly addressing those living with disabilities in Susquehanna Township.

As part of their work, Connect the Dots hosted an **Existing Conditions of Engagement Mapping Workshop** with Susquehanna Township staff.

The main purpose of these conversations was to:

- Map current and existing outreach and engagement resources including how community outreach and engagement is currently being conducted in Susquehanna Township, particularly for residents and stakeholders within the local disabled community, through communications tools, events, committees, etc.
- Identify opportunities for additional outreach and/or engagement.
- Assess the level of engagement of each existing outreach and engagement mechanism.
- Identify people, departments, and organizations contributing to outreach and engagement in Susquehanna Township for residents and stakeholders within the local disabled community.

Additionally, Connect the Dots identified a total of 25 key stakeholders that work in some capacity with the local disabled community. They then conducted 5 representative stakeholder meetings that were selected from the larger group.

A **final report** was prepared by Connect the Dots and can be found in **Appendix D.** The report focuses on how to better understand the current conditions of outreach and engagement for people with disabilities in Susquehanna Township. This report provides recommendations and suggests next steps aimed to foster relationships, expand outreach efforts, enhance accessibility, and improve the Township's online presence, ultimately leading to more effective engagement and successful achievement of project goals. These recommendations are not only relevant to the Township's engagement for the current plan, but for future outreach efforts.

## E. Field Survey and Public Tour

In addition to the public meetings, workshops, project survey and research, considerable work was performed by the consulting team, field surveying the entire Township and close-by related areas to determine the challenges and opportunities afforded by the existing conditions. Not only were the characteristics of all key streets, roads and trails examined in-person, but other potential trail corridors

such as stream valleys, "benches" at the side of roads, and opportunities to incorporate new sidewalk, bike paths and trails examined as well.

The project team was aided in its surveys by any number of interested people, but in particular by Richard Norford, the Township Pedestrian and Bicycle Coordinator, and Ward 6 Commissioner Fred Faylona. Surveys were conducted by numerous methods – walking, bicycling and by motor vehicle. Two public tours were conducted, examining the areas near Progress Avenue, one tour by bicycling and one by walking. Talking with citizens and getting their reaction to both the existing conditions and the possibilities for future improvements was most helpful.

*One of the public tours given as part of the study*

The Township and the project team werealso represented at the **Tour de Belt**, on Sunday, June 4th, 2023, the annual tour and fund-raiser for the Capitol Area Greenbelt. While staffing a table at the Township's booth, helpful ideas and other input was gathered from citizens who attended the event. This was also an opportunity to alert people who happened to come by about the development of this plan.

## F. Public Survey

Campbell Thomas & Co. worked with HRG and Susquehanna Township to create a digital survey focused the bicycle, pedestrian, greenway plan. This survey was distributed using the Township's Civilspace platform and provided valuable insights into transportation habits, safety concerns, infrastructure preferences, and community needs. In addition to demographic information, the civilspace survey was broken into four categories to help direct public feedback. These categories included questions related to **pedestrians, bicycling, mass transit,** and **greenways.**

The results from this survey can be found in **Appendix F.**

## G. Legal Feasibility (Ownership Status)

The Pennsylvania Landowner Liability Act, amended in 2007, specifically encourages landowners to make lands available to the public for recreation purposes -- including trails -- by limiting landowners' liability.

## Ownership Status

In general, this plan did not identify individual landowners along any proposed routes as this is typically a task where the municipality is involved directly with owners. The parcel information used in this plan proved adequate for Township planning level, but more detailed surveys will be needed at the implementation stage. During the implementation stage, right of way lines, property boundaries, roadway dimensions and other items may need to be surveyed as GIS data is adequate for planning level purposes, but not for engineering purposes.

The following table outlines legal considerations for each type of route:

## Legal Feasibility

| TOPIC | BICYCLE LANES/ROUTES | SIDEWALKS | TRAILS AND SIDEPATHS |
|---|---|---|---|
| **Rights of way** | • All within Public Right of Way | • Many in Public Right of Way<br>• Right of Way may need widening<br>• Easement can be pursued | • Typically not in existing Right of Way<br>• Highway Occupancy Permit necessary at PennDOT Intersections<br>• Easements are the best tool |
| **Necessary Coordination** | • Township Agency<br>• PennDOT | • Township Agency<br>• PennDOT<br>• Adjacent Landowners | • Township<br>• PennDOT<br>• Landowners |
| **Greatest Obstacles** | • Legal on all roads but Expressways | • Owners may be uncooperative if improvements don't sensitively relocate elements found in legal Right of Way<br>• Owners may be uncooperative to widened Right of Way | • Non amenable owners<br>• If the Municipality, County or PennDOT will own the trail, then Eminent Domains can be considered |

## Recommended Acquisition Techniques

Much of the proposed bicycle/pedestrian network will be located within existing roadways and rights of way. This approach minimizes both impacts to private properties and impacts to adjacent natural, historic, and environmentally sensitive landscapes. The portions of routes and trails that would require acquisition outside of the existing public right of way will require interface and negotiations with private property owners.

It will be Susquehanna Township's, PennDOT's or Dauphin County's responsibility to negotiate easements, rights-of-way, and set costs for the necessary acquisition of land. This study cannot compare acquisition prices as this has typically been the responsibility of the governing jurisdiction.

However, several of the preferred acquisition techniques that have proven mutually amenable to municipalities and property owners are described below:

1. **Easements:** Municipalities have often been successful in negotiating with property owners in securing easements and rights-of-way for similar projects on local, state, and national levels. Easements may be drafted based upon agreements with property owners to permit conveyance of recreational facilities across private properties with limited liability to the property owner. The legal terms of easement agreements can vary based on the type and use of property as well as the proximity of historic, cultural, or environmental features. Generally, easements are defined spaces that overlay existing property, zoning, and land use for the specific intent and use proposed. Very similar in nature to stormwater conveyance easements, trail and recreation easements permit conveyance and allow use of public activity across a defined space within or across a property. Typically, the municipality will secure the easement in the form of a formal agreement recorded by the County in the form of a written description or legally surveyed and deeded description. Expenses incurred for easement requested by the municipality are typically covered or reimbursed by the municipality.

2. **License Agreements**: Like easements, a municipality may determine through negotiations with property owners that a non-specific easement may be desired to permit location of a trail across subject properties. This type of license agreement would secure trail location and functions for a specific period of time rather than producing a permanent agreement between parties specified and recorded in the land deed.

3. **Fee Simple Purchase:** Municipalities can also negotiate with property owners for outright purchase of property for public use. Following negotiations with property owners and upon determination that easement or license agreement is not amenable, a land transfer through monetary purchase is possible. From the municipality's standpoint, this is often the most costly solution given the time required to process subdivision and land development plans, prepare parcel surveys, and prepare and record new deeds.

## H. Security and Risk Management Plan (Primarily for any off-road trails)

### Safety and Risk Management

Experience in developing other trails shows that trail owners have not regularly experienced significant safety, crime, or liability problems. Research suggests that the more heavily a trail is used, the fewer problems there will be regarding safety and risk. However, in a litigious society, the Township should take the necessary steps to provide both a safe trail for the users and to protect themselves from liability claims wherever possible.

Safety in Design and Development: Any facilities developed using federal money must be designed and developed in accordance with federal, state, and local standards. As noted earlier, these include the standards of AASHTO (American Association of State Highway and Transportation Officials), and of PennDOT.

All hazardous conditions and unattractive nuisances should be identified and removed where possible during the design and construction of the trail. Those that cannot be removed should have warning signs posted.

Existing structures with safety devices that are in poor condition should be a top priority for repair or replacement.

As entrances are developed with signage, and when pamphlets and guidebooks are published, clear mention should be made that the trail or portions thereof, while open to the public, are not yet fully developed, and that users must exercise necessary care when using the trail.

**Tree Trimming for Sight Lines and Safety:**

Most vehicular collisions occur at intersections, often because one or both parties did not see the other. Trees and brush should be cut back as necessary at intersections where sight lines are impaired. Special attention should be paid at points where the links join roads at grade and at a sharp angle.

In addition, trees adjacent to the trail should be evaluated annually for the removal of unhealthy, dead, and hazardous limbs or trees.

**Maintenance**

One of the most effective ways that the managing agency can provide safe trail conditions and protection from liability is through a conscientious maintenance management system. An on-going maintenance program will help to remove trail hazards with the potential for causing accidents and injuries. The maintenance management program should include regular inspections for trail safety.

In addition to reducing trail hazards, documentation of trail maintenance activities is essential in combating possible liability claims. Through written records of good maintenance practices, the managing agency will be able to build a case against negligence accusations.

Trail managers' report that professional, well-trained staff are critical to keep trails safe and secure. Well-trained people are in the best position during their normal work functions to identify and report hazards.

**Liability**

Pennsylvania's state law for the "Recreational Use of Land and Water" limits the liability of property owners who make their land available to the public for recreational use. Although this law does largely protect the managing agencies, they still need to be concerned with this issue.

A case in Philadelphia challenged this law with the courts, finding in favor of the plaintiff and holding the City of Philadelphia responsible for an injury. However, the decision was based upon the view that the injury resulted from a poorly maintained element of a developed recreational facility. Thus, a good risk management plan, including maintenance needs, is imperative for the Trail operating agency.

The managing agency should develop an incident reporting system to document injuries and accidents on the trail. In addition, the managing agency should develop a complaint management system. Both systems will help the trail in terms of safety management as well as public relations if the staff deals courteously and swiftly with the people involved.

Because of the cost of liability insurance, Susquehanna Township and PennDOT should retain ownership of the right-of-way that bicycle and pedestrian facilities are located within, with management through an agency or department such as the Parks and Recreation or Public Works Department. Public/private partnerships regarding trail ownership and management are common and could be an option for the Township.

**Trail Security**

While security generally increased with heightened trail use, vandalism and littering decreases significantly with heightened volume of users and as local 'ownership' develops. The managing agency should work out cooperative agreements regarding security and protection for the trail. The local police department should determine how a facility should be patrolled within their own jurisdiction. Telephone numbers for police and emergency personnel should be posted at major access points. A trail entrance design should include easily removable bollards for access by emergency and law enforcement vehicles. These bollard "gates" should also be lockable in both the open and closed positions.

**Bicycle Parking**

Currently, the relative absence of bicycle parking at many multi-family residential, recreational, and commercial locations makes bicyclists feel unwelcome. It is recommended that Susquehanna Township encourage the provision of bicycle parking where appropriate. For example, the Township could provide additional bicycle racks at Township owned facilities. The Township could work with the School District and Dauphin County to provide bicycle parking facilities at local schools and county parks. Finally, the Township should work with developers of any future commercial or multi-family residential developments to strongly encourage the provision of bicycle parking facilities. Susquehanna Township should consider incorporating bicycle parking regulations in its Zoning Code as has been done successfully in other municipalities.

*Parking can be pretty. This Trailhead has parking for cars and bicycles along the Schuylkill River Trail in Pottstown PA. . A few years ago it was a treeless, ugly former industrial lot.*

## VII. Appendix

**Appendix A -- Maps**
**Appendix B -- Opinion of Probable Cost**
**Appendix C -- Connect the Dots Report**
**Appendix D – Demographic Profile (HRG)**
**Appendix E – Public Participation and Meeting Minutes**