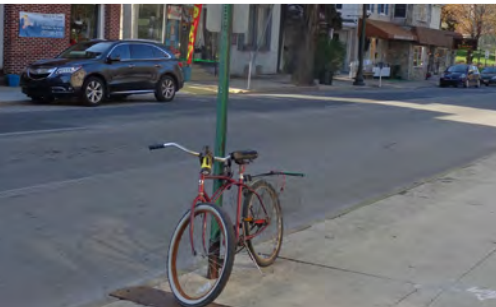


OCTOBER 2017 DRAFT PLAN



PEDESTRIAN AND BICYCLE IMPROVEMENTS PLAN 2017

DRAFT



Prepared for Borough of Chambersburg, PA
Prepared by Johnson, Mirmiran & Thompson, Inc.

ACKNOWLEDGEMENTS

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1.0 INTRODUCTION



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1.0 INTRODUCTION

Many communities are setting goals to increase walking and bicycling to improve individual health as well as to improve the environment, economics and mobility.

Chambersburg has set its sights on becoming a clean, green, safe and healthy community. To achieve this status, an important community characteristic is to possess a high level of pedestrian- and bicycle-friendliness.

Chambersburg, like many other small towns across the nation, is challenged with aging infrastructure and issues of accessibility, mobility and safety for all users of the transportation network coupled with financial challenges associated with capital and maintenance costs for pedestrian and bicycle improvements.

Although it is difficult to accurately measure just how many people walk or bike in the US, state, county or Borough, the Alliance for Biking & Walking documents that there is a small but steady increase in the number of people walking and biking to work. As well as, many Americans continue to walk, run and bike for both health and recreational purposes. The Alliance states that advocacy for walking and biking is a key factor to successfully achieving Pedestrian and Bicycle-Friendly status.

In 2015, the League of Bicycle Friendly America ranked Pennsylvania 12th in the nation and 5th in the East as a bicycle friendly state. This ranking evaluates factors such as:

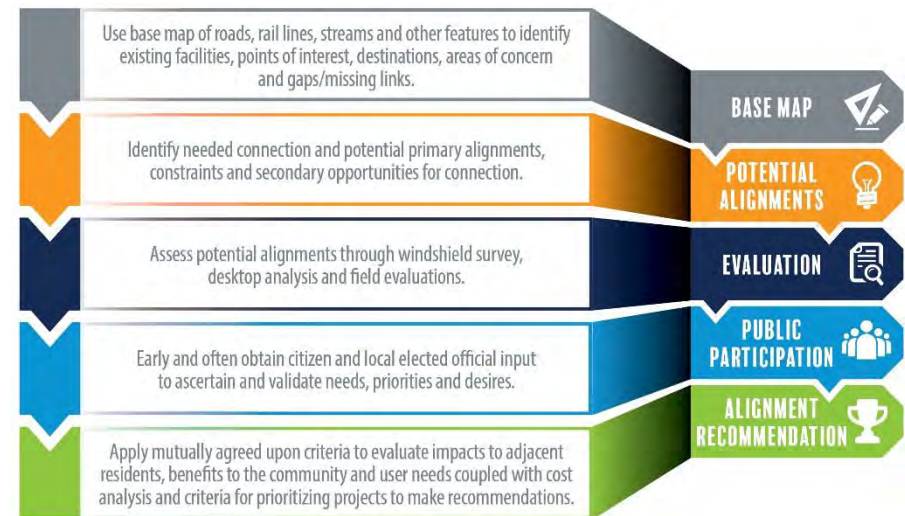
- Legislation and Enforcement
- Policies and Programs
- Infrastructure and Funding
- Education and Encouragement
- Evaluation and Planning

Source: http://bikeleague.org/sites/default/files/BFS2015_Pennsylvania.pdf

Based upon the current walkability rating of 50 identified by Walk Score, the Borough has some ground to cover to achieving walkability.



Knowing what barriers exist and what connections to make are crucial to success.



This plan addresses factors as they relate to pedestrian and bicycle travel and recreation within the Borough as well as considers opportunities for connection to the surrounding region. The plan also considers Smart City initiatives that result in innovative and cost-effective solutions with emphasis on corridors recognizing walking and biking fundamentals.

1.1 PURPOSE OF THE PLAN

Creating a Pedestrian- and Bike-Friendly Town!

The interrelationship between transportation, land use and recreation planning and implementation are important components of the Borough's mission. This interrelationship is addressed in many Borough and County plans with recommendations for various pedestrian and bicycle facilities.

The purpose of this plan is to inventory, assess and recommend policies, programs and improvements that address pedestrian and bicycle accessibility, safety and mobility.

The plan identifies a vision, goals, objectives, policies, programs, regulations, infrastructure and implementation strategies with potential funding sources. Additionally, the plan outlines a community educational, awareness and encouragement campaign.

1.2 DEFINING THE PLANNING PROCESS

A collaborative planning process was implemented to gain input from a variety of stakeholders of various ages and input from the public. The planning process and public involvement is further detailed in Appendix C.



1.3 RELATIONSHIP TO OTHER PLANS

This plan is not a stand-alone plan. Instead, the plan is designed to reinforce current plans by drilling down into specific details that when implemented will contribute to Chambersburg becoming a pedestrian- and bike-friendly town. This plan is characteristic of a specific plan with a focused vision, goals, objectives and implementation of pedestrian and bicycle improvements consistent with the following Borough specific plans, official documents and subsequent updates:

- Comprehensive Plan and future updates
- Future Recreation Facilities, Trails and Greenways Map
- Chambersburg Downtown Master Plan and Main Street 5-year Action Plan
- Borough Study of Sharrows and Share the Road Decals/Signs for Downtown
- Franklin County Forward, Long Range Transportation Plan 2013-2032
- Official Map (updates may be necessary)
- Regulatory Ordinances (updates may be necessary)
- Elm Street Plan (updates may be necessary)

1.4 PLANNING PARTNERS

Summit Health

Summit Health approached the Borough to form a partnership to improve bicycle and pedestrian access by improving connectivity with existing trail and sidewalk networks and by incorporating Healthy Community Design and Complete Streets concepts to public policies, programming and physical improvements promoting bicycle and pedestrian accessibility and mobility. Summit Health participated in fundraising activities to obtain necessary resources to support development of this plan and served as a member of the Project Advisory Committee to guide plan development.

The US Department of Health & Human Services tracks a variety of community indicators of healthy communities. [Franklin County characteristics include 32% adult obesity and 27% of adults have no leisure-time physical activity.](http://www.countyhealthrankings.org/app/pennsylvania/2017/rankings/franklin/county/outcomes/overall/snapshot) Source – <http://www.countyhealthrankings.org/app/pennsylvania/2017/rankings/franklin/county/outcomes/overall/snapshot>

DOWNTOWN CHAMBERSBURG, INC.

Downtown Chambersburg, Inc. (DCI), an affiliate of the Greater Chambersburg Chamber of Commerce, recently completed a downtown visioning and master planning process. The culmination of this process was the creation of a Downtown Master Plan which is part of an overall economic development strategy that will make downtown Chambersburg a place that people want to be.

The Downtown Master Plan identifies several key pedestrian and bicycle connections between the downtown and the existing rail trail, parking strategies and bicycle and pedestrian improvements that are addressed further in this plan. Recently, DCI launched a funding raising campaign for a Community Mural Project; a project that has relevance to this plan with respect to placement of bicycle amenities in and around the downtown.

Borough Administration and Departments

In addition to the focus of planning partners, the Borough Administration and various Departments understand and are acting under a directive that gives meaning to the importance of pedestrian and bicycle improvements, connections and programs. The following departments participated in a forum to provide input with respect to needs and opportunities:

- Borough Manager
- Department of Public Works/Water Department
- Land Use & Community Development
- Parks & Recreation Department
- Parking, Traffic & Street Lights
- Engineering

Chambersburg Area School District

Several of the destinations within the borough of Chambersburg include or are near school properties. In addition, students represent a major portion of the users of the pedestrian and bicycle facilities within the borough. Thus, representatives from the school district were included throughout the plan development process.



Housing is the largest spending category for American families with transportation spending second.

Source: US Bureau of Labor Statistics



Franklin County Planning Commission / MPO

Franklin County provided support and insight associated with regional aspects of plan development as well as shared valuable inventory and assessment information contained in their Comprehensive Plan and Long-Range Transportation Plan.

Youth Leader Focus Group Forum

A focus group discussion with nearly 20 youth leaders from BOPIC met to discuss bicycle and pedestrian needs, destinations and opportunities for improvement. Discussion also focused on education, safety and bicycle sponsorship programs. Driver awareness to share the road with bicyclists and pedestrian safety were also key topics discussed by the group.

Planning Partners (Project Advisory Committee) & Their Focus

Plan partners along with representatives from the Borough secured approval from Town Council to seek a consultant to prepare the plan and to conduct a fundraising campaign to support this effort. A project [Advisory Committee](#) met routinely throughout the planning process to provide guidance, input and review of stakeholder and citizen input as well as review plan content. The Committee identified a list of priorities to be addressed in this plan:

- New sidewalk installations.
- A network of bicycle routes (on/off-road), including extension of the Rail Trail.
- Connections between the bicycle network and public areas such as parks, the Downtown and other priority destinations.
- A public education campaign to encourage walking and bicycling as alternative modes of transportation.



IDEAS, THOUGHTS & CONCERNS

Stakeholder Responses

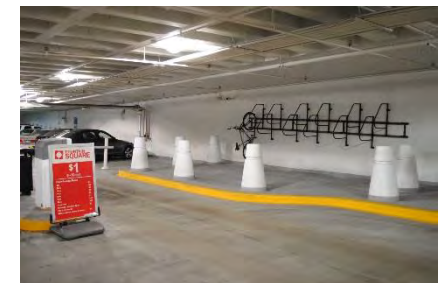
- Best case scenario – dedicated bicycle lanes and paths.
- Need to provide adequate wayfinding signage and signage of facilities
- Signage to tell cyclists where to ride.
- Bicycle lanes pose challenges at intersections.
- Bicycling education and safety training is needed.
- Extend the rail trail to connect to surrounding Townships.
- Organize a ride from Chambersburg to Carlisle.
- Concern about safety of sharrows on high volume streets.
- Cost of sharrows and maintenance over time is of concern.
- Connections between schools, parks and playgrounds are important.
- Route 11 has a high volume of traffic, may not be safe for bikes.
- Missing sidewalks should be addressed.
- Pedestrian and bicycle connections promote health and equal access.
- Children crossing the street are in danger due to speeding vehicles.
- Crosswalks must be clearly painted/improved.
- Provide more bicycle parking at schools, businesses and health care facilities.
- Traffic calming is needed in key locations where services are provided to children.
- More enforcement to prohibit bicycling on downtown sidewalks is needed.
- Regular patrolling of trails, pedestrian and bicycle facilities are needed.
- Provide amenities such as benches, water fountains along the Rail Trail.
- Some pedestrian crossing lights are not functioning properly.
- Commercial areas outside of the downtown do not accommodate bicycle lanes.
- Collaborate with schools to provide outreach and education.
- Need safe and clearly defined pedestrian and cycling areas.

1.5 STAKEHOLDERS

A wide range of stakeholders were engaged throughout the planning process. Representatives from the following list of stakeholders participated in an interview process to determine their level of interest, concern and preferences with respect to pedestrian and bicycle facilities.

Stakeholder Participation

Franklin County Cyclist Club
Chambersburg Road Runners Club
An Active Community Cyclist
Bicycle Messenger
Keystone Health
BOPIC
Wilson College
Keystone Pediatrics
Mayor of Chambersburg
Healthy Community Partnership
Hispanic American Center
11/30 Network / Young Professionals Group
YMCA
Boys and Girls Club
NETwork Ministries
Police Department



Bicycle parking/wall rack in parking garage.



Sharrows pavement markings.

Participants responded to a series of standard questions supplemented by free-flow discussion to gather ideas and thoughts based upon their area of service, expertise or special interest. A summary of list of responses are identified to the left.

Note: Source of images in this section are from other communities across the United States researched to develop this plan.

2.0 VISION, GOALS AND OBJECTIVES



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2.0 VISION, GOALS AND OBJECTIVES

2.1 VISION

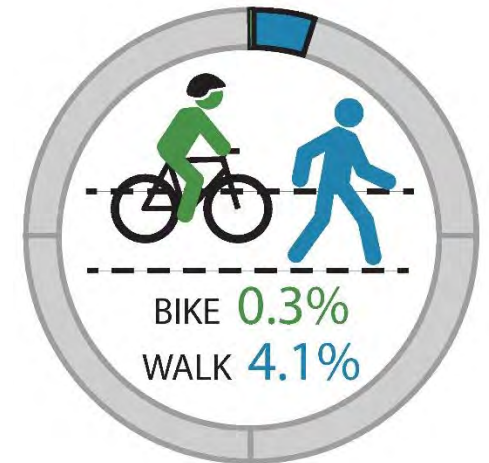
The Borough will be a healthy, walkable and bicycle-friendly community with enhanced connectivity between the historic downtown, neighborhoods, shopping and employment centers, businesses, education and health care facilities and institutions. Our community will provide a safe, livable and economically viable community with a walking and bicycling environment as part of the public transportation system and regional recreation facilities.

This vision was created through a continuous and collaborative dialogue with the community, stakeholders and special interests. The intent is that this vision will result in policy recommendations and solutions that focus on facility improvements, safety enhancements, education and promotion that encourages pedestrian and bicycle opportunities across the community. Benefits include increased transportation and recreation options, as well as, increased wellness and active living.

This plan takes a holistic approach to active transportation and public health. This policy element is supported by an implementation strategy and community design guidance with explicit consideration of health and safety-related impacts. Our vision is strengthened by the following **smart transportation concepts** that when implemented will make the town sustainable through **completing the streets** resulting in safer streets.

- Provide an active transportation system that encourages walking and/or bicycling to increase opportunity for physical activity resulting in potential health benefits and disease prevention.
- Provide enhanced safety of pedestrian and bicycle movement throughout the town.
- Promote walking and bicycling as smart solutions that reduce air pollution and contribute to conformity with FHWA air quality requirements and green town initiatives.
- Apply community design standards that support residents in their pursuit of health-related activities with emphasis on walking and bicycling.

The following goals, objectives and performance measures provide the framework for realizing this vision of creating a pedestrian- and bicycle-friendly community.



Sources:
2008-2012 – US Census Journey to Work Data
www.walkscore.com and www.neighborhoodscout.com

Connectivity

**Economic
Viability**

Safety

Health

**Environmentally
Sensitive**

Equity

2.2 POLICY GOAL AND OBJECTIVES

① **Over Arching Goal** – Accommodate pedestrians and bicyclists within the overall transportation system so that those who walk and ride bicycles can safely, conveniently and comfortably access destinations within the community; and, to encourage bicycling and walking to improve public health.



Objectives:

- a) Collaboration between the Curb and Sidewalk Policy Compliance Committee and Borough Council, Mayor, Manager and Departments to define and adopt a [Complete Streets policy](#) with consistent implementation and enforcement.
- b) Modify and/or adopt design guidelines and regulations to implement a Complete Streets policy.
- c) Educate all Borough Departments about the meaning and intent of this policy.
- d) Assure equitable policy implementation that results in investments benefiting people of all backgrounds and income levels providing safe, comfortable places to walk and bicycle.

2.3 PEDESTRIAN-FRIENDLY GOALS AND OBJECTIVES

② **Facility Improvement Goal** – Provide and maintain a continuous, connected and accessible pedestrian network that enables people of all ages and abilities to move safely and comfortably between places and destinations.



Objectives:

- a) Provide sidewalks throughout the Borough on both sides of the street where physically feasible – develop and adopt as a [component of the Official Map and ADA Transition Plan](#) a Borough-wide map to depict street frontages where the sidewalk network exists and identify areas where the network should be completed to provide a continuous network with connections to priority destinations.
- b) Provide ADA compliance facilities where technically feasible.
- c) Increase the number of off-street pedestrian/bicycle connections to neighborhoods, the downtown, shopping and employment centers, parks/recreation facilities, schools, libraries, parking lots and parking garages, social services and other destinations.
- d) Utilize alleyways in the downtown for pedestrian access and connections to other pedestrian/bicycle facilities, parking, neighborhoods, trails, park/recreation facilities and public spaces/places.
- e) Provide streetscape design standards for the downtown and neighborhoods to include appropriate levels of pedestrian amenities such as landscaping, lighting, furniture, wayfinding signage and other items that create an aesthetically pleasing, user friendly and comfortable environment.



③ **Safety Goal** – Create a safe pedestrian environment that encourages walking for all people of all ages and abilities.

Objectives:



- a) Target for improvement areas where there are gaps in the sidewalk system and lack of connectivity to public spaces/places, trails, schools, libraries, social services and shopping and employment centers.
- b) Ensure that all pedestrian facilities are well designated using national best practices for safety and accessibility.
- c) Reduce conflicts between pedestrians, vehicles and bicyclists by improving intersections (i.e. crosswalks, lighting, pedestrian cycles, signage and pavement markings); posting appropriate speed limits; and providing appropriate facilities for pedestrians.
- d) Coordinate with the Police Department for enforcement and School District to enhance/expand the crossing guard program.

2.4 BICYCLE-FRIENDLY GOALS AND OBJECTIVES

④ **Facility Improvement Goal** – Develop a connected bicycle network including on- and off-street facilities along with support facilities such as bicycle parking and elements that provide various levels of safety and comfort for riders of all ages and abilities.



Objectives:

- a) Increase the miles and types of on- and off-street bicycle facilities as part of a community-wide network that enables safe bicycle travel.
- b) Provide a routine maintenance program for on- and off-street bicycle facilities and treatments (i.e. signage, pavement markings, parking facilities, etc.).
- c) Provide a bike share program tailored to both the context and economics of the community through public-private participation.
- d) Provide connections between off-street facilities to the downtown via wayfinding and well-designated routes such as low volume streets and alleyways that pose minimal conflicts between all modes of travel.
- e) Maintain good sidewalk condition for both pedestrians and youth bicyclists outside of the downtown where you are permitted to bike on the sidewalks.
- f) Acquire right-of-way and easements necessary to complete the streets as well as provide for interconnection and extension of off-street paths/trails.

⑤ **Safety Goal** – Create a safe bicycling environment that encourages bicycling as a preferred mode of transportation and recreation for riders of all ages and abilities to move safely and comfortably between places and destinations.



Objectives:

- a) Implement a range of bicycle facility and bicycle signage and pavement marking solutions appropriate to the street and its surrounding context that can contribute to the reduction of conflicts between bicycles, vehicles and pedestrians.
- b) Coordinate with the Borough's Bicycle Patrol Unit, schools and local bicycling clubs to conduct bicycle safety education programs and education programs for motorists with respect to sharing the road with bicyclists.
- c) Use effective law enforcement in conjunction with bicycle programs, policies and facilities to improve safety of both bicyclists and motorists.
- d) Include safety as an important aspect of an ongoing Public Education, Awareness and Encourage Campaign.

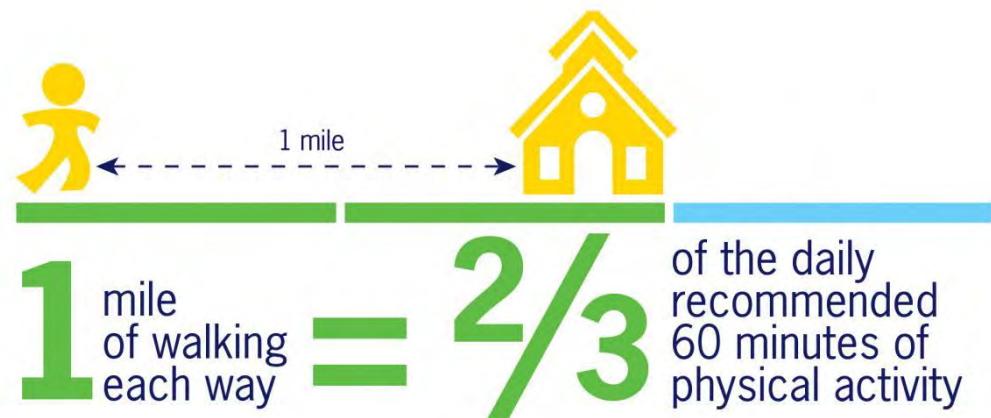
2.5 PUBLIC EDUCATION AND ENCOURAGEMENT GOALS AND OBJECTIVES

© **Education/Encouragement Goal** – Promote walking and bicycling as a means of improving transportation circulation, transit access, public health, environmental quality, recreation and wellness to advance both healthy and green community initiatives.



Objectives:

- a) Work with the Police Department, local health care providers, school district and local organizations to encourage and promote existing walking and bicycling programs, new programs, regulations, activities and events.
- b) Develop and implement a walking and bicycling campaign working collaboratively with partners communicating with a diverse community.
- c) Promote walking and bicycling as an alternative form of transportation that results in a healthy lifestyle.



Images and Graphics – Internet Sources.

2.6 PERFORMANCE MEASURES

Pedestrian and bicycle-friendliness is an assessment of various aspects of walking and bicycle travel including pedestrian and bicycle laws and policies to promote safety, education efforts to encourage walking and bicycling as well as increasing the general acceptance of walking and biking throughout the community.



Walkability Performance Measures

Walking has health, environmental and economic benefits as well as is a solution to reduce traffic congestion. **Walkability** is a measure of how friendly an area is to walk. Chambersburg’s Walk Score reflects a community that is car dependent with an average score of 48.

Walk Score	Description
90 - 100	Walker’s Paradise Daily errands do not require a car.
70-89	Very Walkable Most errands can be accomplished by foot.
50-69	Somewhat Walkable Some errands can be accomplished on foot.
25-49	Car-Dependent Most errands require a car.

Source: <https://www.walkscore.com/methodolgy.shtml>

The following performance measures are identified to help assess progress to achieving goals and objects to make the Borough pedestrian-friendly as measured overall by a higher Walk Score.

Walkability Performance Measure	Responsible Department/Group	Baseline Data & Source	Frequency	Related Goal(s)
Percent people walking to work	Planning	US Census / Crowd Sourcing / Commuter Services of Pennsylvania	Census- 10 yr. Cycle Annual Reporting	1(a-d) & 2(a-e)
Number of pedestrian-motor vehicle crashes as well as pedestrian injuries and fatalities	Police Department	Incident Reports	Annual Reporting	3(a-d)
Linear feet of new or reconstructed sidewalk	Engineering	Maintenance, Capital Projects, CDBG Projects and Land Development Plans	Annual Reporting	2 (a-e)
Miles of paved off-street trails	DPW, Recreation Department & Planning	Maintenance, Capital Project & Grant Funded Projects	Annual Reporting	2(c)
Number of intersections with safety and accessible improvements	Parking, Traffic & Lighting	Inventory in GIS	Annual Reporting	2(b) & 3(a, c, & d)
Number of Schools with Safe Routes to School programs and crossing guard program	Police Department & School District	Program Participants	Annual Reporting	3(d)
Number of sidewalk complaints/ maintenance requests/citations/permits	Engineering	Complaints, Work Orders, Citations and/or Permits	Annual Reporting	2 & 3
Percentage of signalized intersections with pedestrian countdown signals	Parking, Traffic & Lighting	Inventory in GIS and Signal Warrant Plans	Plans and Annual Reporting	3(a & c)
Percentage of people walking to carpool and/or transit	Commuter Services of PA and Service Providers	US Census, Program/Service Participants / CPTA / Commuter Services of Pennsylvania	Annual Reporting	1
Tracking of Tax Parcels Requiring Sidewalk Installation	Engineering	Inventory in GIS	Annual Reporting	2(a-c)

Note: The above performance measures assess implementation of the plan. These measures are identified based upon measures applied to similar communities.



Bicycle-Friendly Performance Measures

Bicycling, like walking, has health, environmental and economic benefits as well as is a solution to reduce traffic congestion. **Bicycle Suitability** is an assessment of the perceived comfort and safety of a linear section of bikeway (the term bikeway includes shared-use paths and any roadway where bicycle travel is permitted). A street may be suitable for bicycle travel but not lead to useful destinations. If there are too few destinations that can be reasonably reached, then the network is not bikeable even if there are good links with bicycle suitability.

Bikeability is an assessment of an entire bikeway-network in terms of the ability and perceived comfort and convenience to access important destinations. A community might be bikeable, but not bicycle friendly. There may be a lack of respect to bicyclists from motorists or a law of laws to protect and encourage bicycling.

Bike Score	Description
90 - 100	Biker's Paradise Daily errands can be accomplished on a bike.
70-89	Very Bikeable Biking is convenient for most trips.
50-69	Bikeable Some bike infrastructure.
0-49	Somewhat Bikeable Minimal bike infrastructure

Source: <https://www.walkscore.com/methodology.shtml>

The following performance measures are identified to help assess progress to achieving community development goals and objects to make the Borough bicycle-friendly as measured by bicycle suitability and bikeability.

Bicycle-Friendly Performance Measure	Responsible Department/Group	Baseline Data & Source	Frequency	Related Goal(s)
Percent people bicycling to work	Planning	US Census / Crowd Sourcing / Commuter Services of Pennsylvania	Census- 10 yr. Cycle Annual Reporting	1(a-d) & 4(a-f)
Number of bicycle-motor vehicle crashes as well as bicyclist injuries and fatalities	Police Department	Incident Reports	Annual Reporting	5(a-d)
Miles of paved off-street trails/bicycle facilities	DPW/Recreation	Capital Projects	Annual Reporting	4(a-f)
Number of intersections with bicycle accommodations (bike boxes, bike signals, bike loop detectors, etc.)	Parking, Traffic & Lighting	Annual Maintenance Capital Projects	Annual Reporting	5(a)
Number of Schools with Safe Routes to School programs and bicycle safety programs	Parking, Traffic & Lighting & School District	Program Participants	Annual Reporting	5(b-d) & 6
Number of adult bicycle safety programs	Police Department	Program Participants	Annual Reporting	5(b-d) & 6
Number of bike spaces installed	DPW & Planning	Annual Maintenance Capital Projects Land Development Plans	Annual Reporting	4(b)
Number of bicycle facility maintenance requests that are addressed	DPW	Maintenance Request	Annual Reporting	4(b and e)
Number participating in bike share program*	Borough Administration	User Information	Nothing	4(c)

*Potential future program.

Note: The above performance measures assess implementation of the plan. These measures are identified based upon measures applied to similar communities.

3.0 EXISTING CONDITIONS



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3.0 PEDESTRIAN AND BICYCLE FACILITY AND SAFETY AUDIT

3.1 FACILITY AUDIT PROCESS AND RESULTS

The planning process included an audit of facilities, safety and traffic safety enforcement. The audit accomplishes the following:

- Assesses pedestrian and bicycle safety.
- Identifies the current pedestrian and bicycling environment.
- Understands challenges and opportunities that will guide future planning, design and construction.
- Builds upon the performance measures outlined in Section 2.0

This chapter works in concert with subsequent chapters that evaluate policy, regulations and design standards as well as the previous chapter that outlined performance measures related to the vision, goals and objectives. The following components are detailed in this section:

- Field observations and cursory survey of existing pedestrian and bicycle infrastructure conditions.
- Corridors with low levels of comfort for bicyclists.
- Opportunities and constraints (gaps, barriers and potential connections).
- Walking and bicycling trip generators and attractors.
- Community engagement and feedback.

Appendix C contains documentation of detailed activities and level of community input summarized in this section and other sections of the plan.

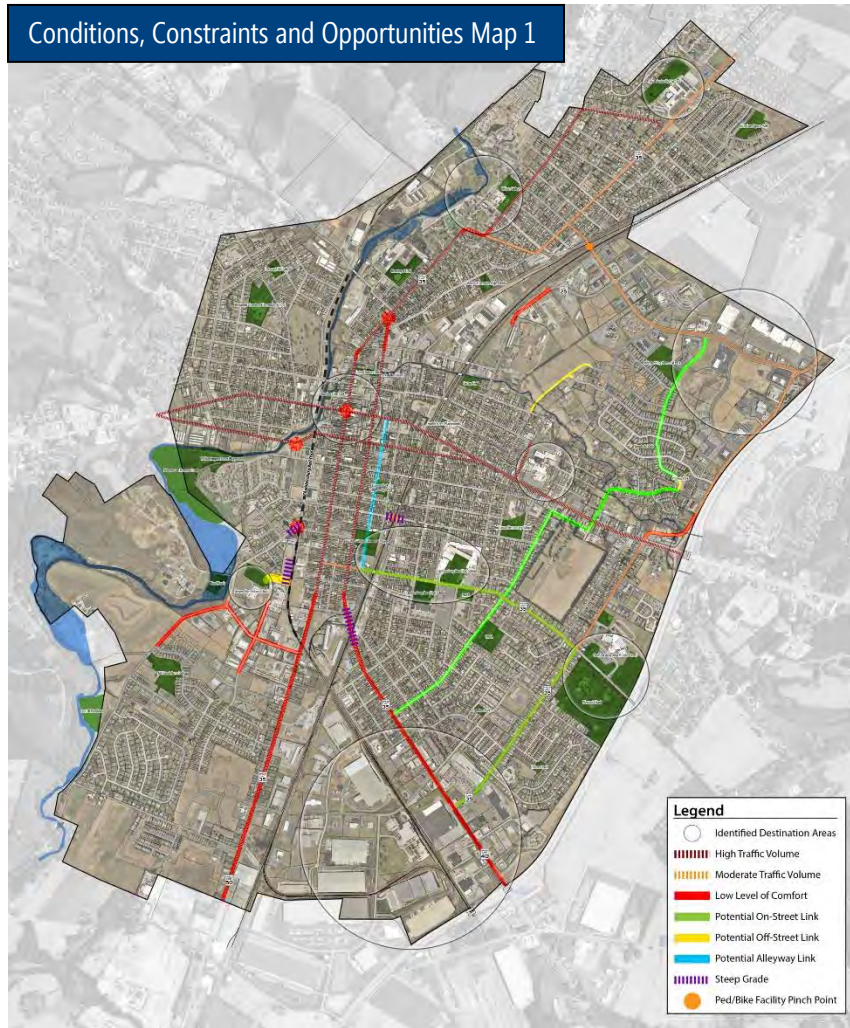
Leadership and Public Involvement

Audit and assessment of pedestrian and bicycle facilities were reviewed and validated by Borough staff/leadership, the Advisory Committee members, stakeholders, a Youth Focus Group and the public. Data, information, input and guidance received from these groups were obtained through the following methods:

- Field observations and a desktop audit of existing conditions, opportunities and constraints.
- Facility inventory information and incident information provided by the Borough.
- Review and validation of audit/assessment information, identify concerns, needs, opportunities and options by Advisory Committee, Youth Focus Group and the public.
- Interviews of stakeholders to identify concerns, needs and opportunities.
- Review of results and guidance during Borough Staff/Leadership workshop.
- Ongoing interaction with the Advisory Committee to obtain guidance.



Conditions, Constraints and Opportunities Map 1

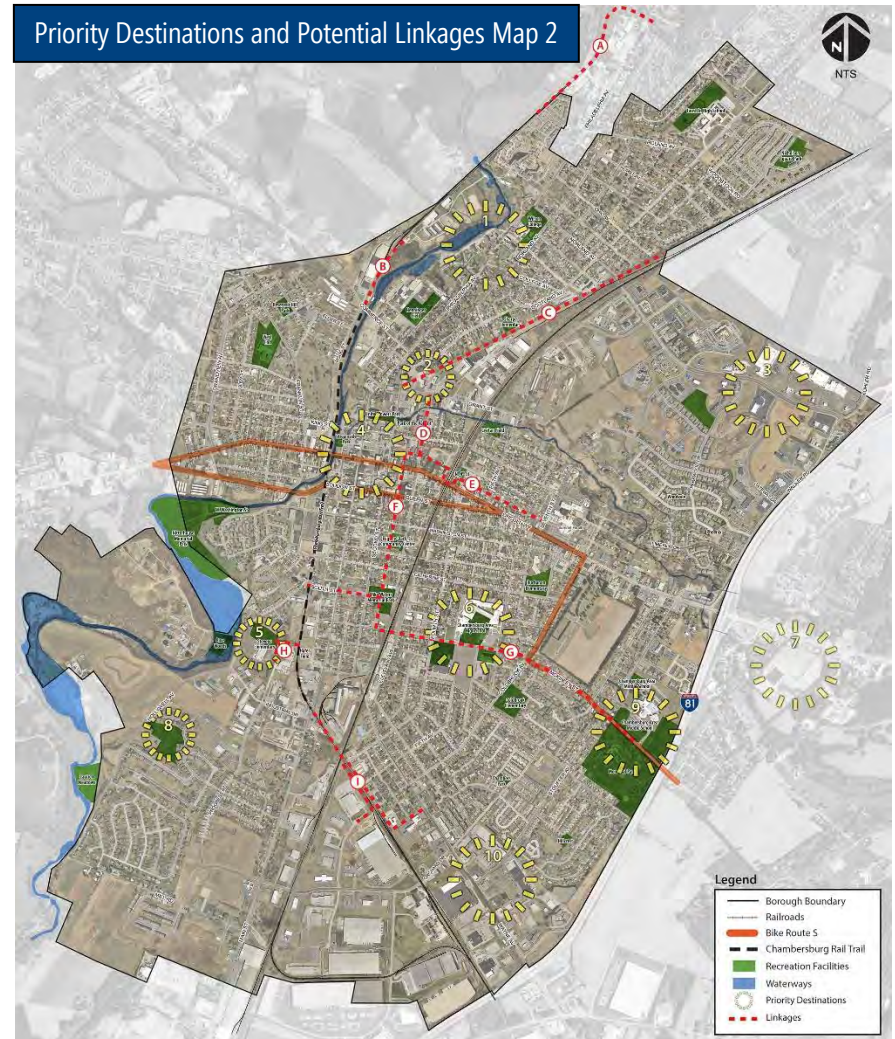


Maps 1 and 2 were developed based upon various audit activities working collaboratively with Borough staff, Advisory Committee members, stakeholders and the community.

Audit Results – Mapping

- Priority Destinations
- High Traffic Volume Streets
- Bicycle Low Level of Comfort
- Potential On-Street Links
- Potential Off-Street Links
- Potential Alleyway Links
- Ped/Bike Facility Pinch-Points
- Steep Slopes

Priority Destinations and Potential Linkages Map 2



Streets with higher frequency of pedestrian and bicycle incidents:	
1 ST AND 2 ND WARDS	N&S SECOND STREET 3 PED 3 BIKE
2 ND WARD	LINCOLN WAY EAST 3 PED 3 BIKE
4 TH WARD	LINCOLN WAY WEST 2 PED 2 BIKE
4 TH WARD	W. LOUDON STREET 3 PED 0 BIKE
3 RD AND 4 TH WARDS	N&S MAIN STREET 4 PED 2 BIKE
5 TH WARD	WAYNE AVENUE 3 PED 1 BIKE

3.2 PEDESTRIAN AND BICYCLE SAFETY

The Federal Highway Administration (FHWA) reports that sidewalks separated from the roadway are the preferred accommodations for pedestrians. Roadways without sidewalks are more than twice as likely to have pedestrian crashes as sites with sidewalks on both sides of the streets. Additional safety improvements include: marked crosswalks for pedestrians, pedestrian cycles with count-down clocks at signalized intersections, on-street bike lanes, paved shoulders and/or share the road signage for bicyclists. *Source: https://safety.fhwa.dot.gov/ped_bike/*

Over the past three (3) years, the Borough Police Department has reported 54 incidents involving vehicle crashes with pedestrians or bicycles. All crashes except one (1) incident has been non-fatal. High incident roadways for pedestrians and bicyclists include: Lincoln Way (east and west), West Loudon Street, Main Street (north and south), Wayne Avenue and Second Street (north and south). *Source: Chambersburg Borough Police Department*

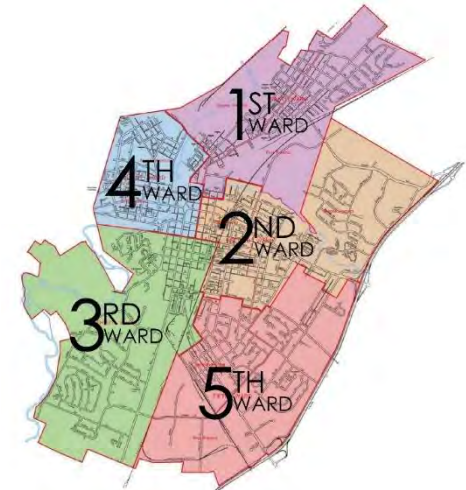
Slower walking speeds have increased opportunity of conflict with vehicles.

Benefits of Reduced Vehicular Speeds

Speeding and higher speed limits is a major contributing factor to crashes of all types and pedestrian/bicycle fatalities. Speed management (both enforcement and appropriate speed limits based upon land use and roadway function) is a critical factor to increasing pedestrian and bicycle safety. FHWA facts reveal that:

- A pedestrian hit by a vehicle traveling at 25 MPH has an 89% chance of survival.
- A pedestrian hit by a vehicle traveling at 35 MPH has a 68% chance of survival.

Lower vehicular speeds reduce the potential for pedestrian and bicycle fatalities.



3.3 PEDESTRIAN FACILITIES PART OF ROADWAY

Sidewalks and ADA Ramps

A cursory inventory of existing facilities for pedestrians and bicyclists are depicted on Exhibit A, Locations Lacking Sidewalks. This map depicts the following features:

- Gaps in sidewalks borough-wide and
- Residential areas / developments without sidewalks

Google Earth aerial photography was used to conduct a quick assessment of sidewalk facilities to determine areas lacking sidewalks. Areas lacking sidewalks are depicted in red on the exhibit. Full neighborhoods lacking sidewalks appear to include recent residential developments.

Additional verification, data collection and assessment by Borough staff will result in a detailed ADA inventory of sidewalks and ramps to support the creation of an official sidewalk program map and ADA Transition Plan (ADA Transition Plan is discussed in detail in Section 8.0).

Sidewalk Placement

Borough Council, staff and citizens have had an ongoing discussion regarding the current curb and sidewalk policy and decisions about which properties need sidewalks and which should not be required to install sidewalks at this juncture. Current federal, state and local curb and sidewalk policies are outlined in Appendix B. Any new sidewalk policies or programs would be based upon recommendations of this plan which analyzes the need for connected networks and connections to priority destinations. Recommended next steps include completion of a Borough-wide inventory for every tax parcel to identify the present or lack of pedestrian facilities.

Continuous, direct, convenient and safe routes provide mobility for pedestrians and bicyclists.

Exhibit A, Locations Lacking Sidewalks

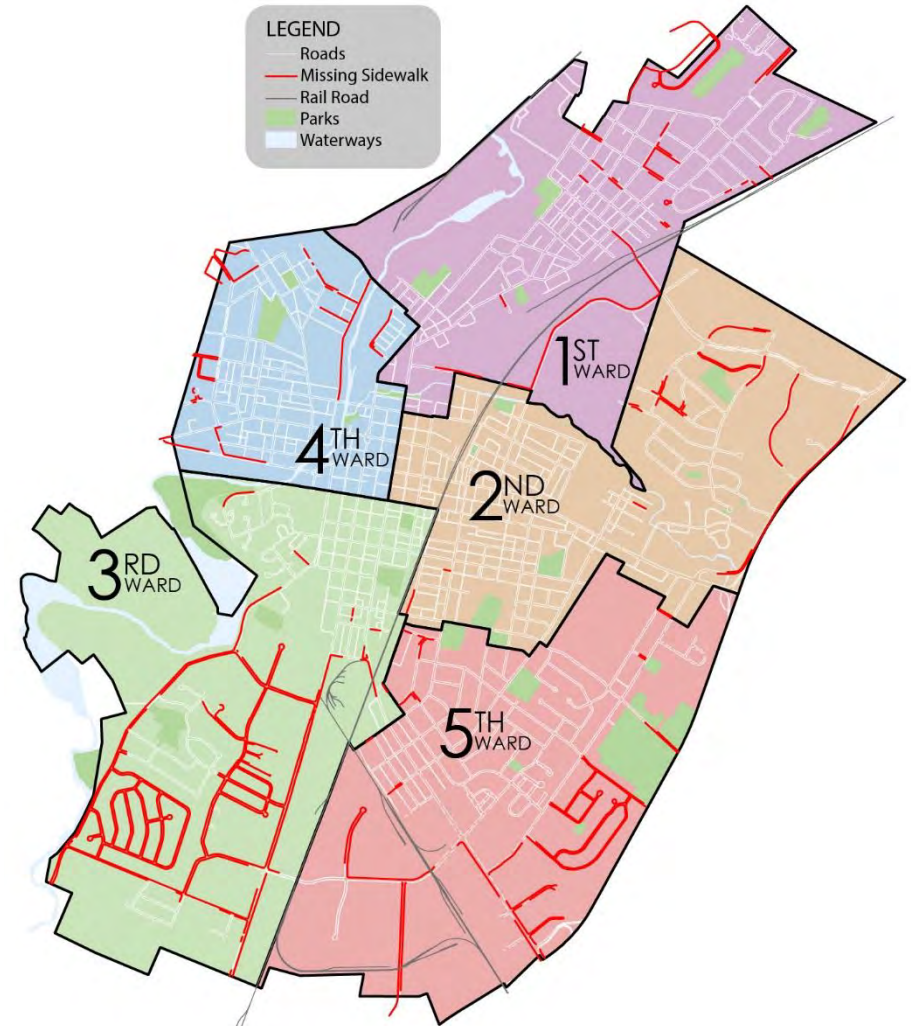
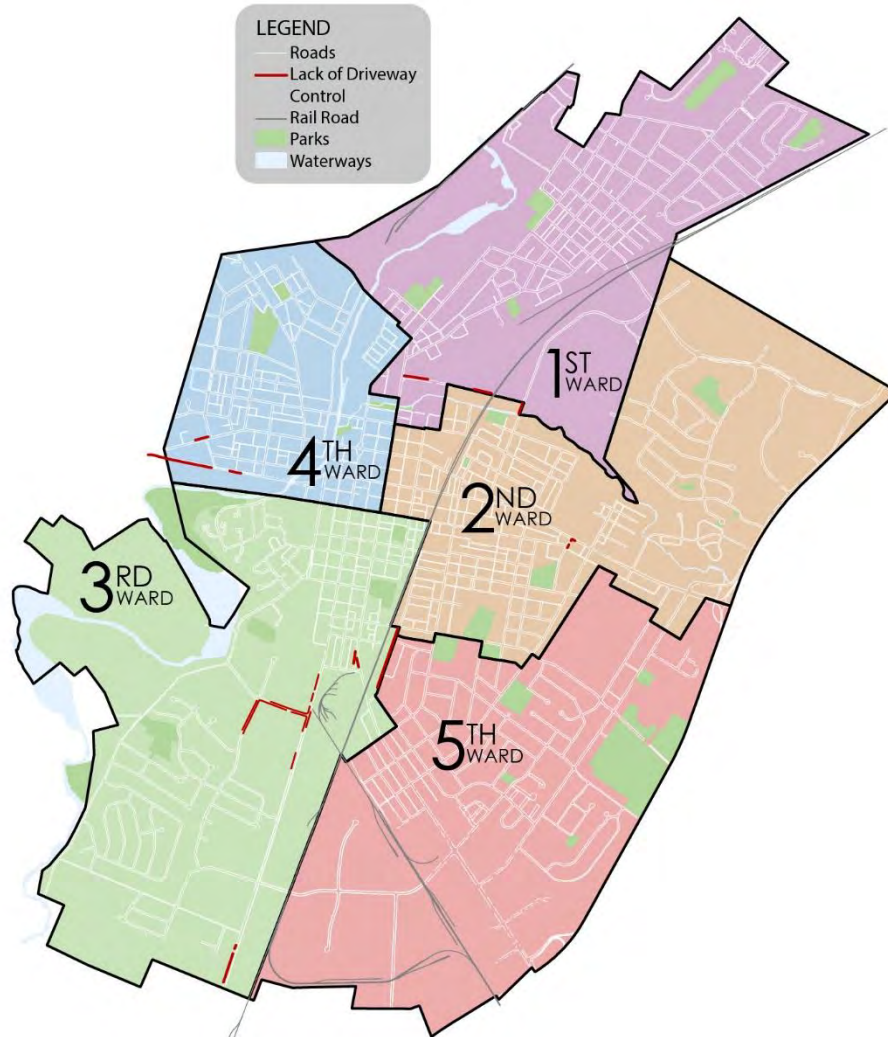


Exhibit B, Locations Lacking Driveway Control



3.4 ROADWAY INFRASTRUCTURE ASSESSMENT

Driveways

The location and design of driveways together with parking and bicycle facilities generate sight distance challenges that impact both pedestrians and bicyclists. Safety issues include factors such as: driveway design and sight distance in conjunction with location of on-street parking, relative speed between vehicles and pedestrians/ bicyclists, presence of bicycle lanes and driveway distance and walking or crossing speed of pedestrians. The areas shown in red on Exhibit B, Locations Lacking Driveway Control are locations where large expansive driveways exist.

Applying access management strategies at driveways has direct impacts and benefits to pedestrian and bicycle safety.

Crosswalks & ADA Ramps

Crosswalks predominantly exists in the downtown and at some recent intersections improved working in partnership with PennDOT. The Borough recently received funding to commence a crosswalk replacement and maintenance program for the Downtown and priority locations. A detailed ADA ramp inventory is part of next steps.

Bicycle Racks/Parking

Limited bicycle racks and parking is present in the Borough with limited facilities in the Downtown. The following table details those locations with bicycle racks on public or non-profit agency property, number of spaces and general condition. Images of most facilities can be viewed on Commuter Services of PA website at:

<https://pacommuterservices.org/chambersburgbike6/>

Location	#of Spaces	Condition
Coyle Free Library	10+ spaces	Good Condition, Bolted Down
Memorial Park	10+ spaces	Fair Condition, Bolted Down
Chambersburg YMCA	5 spaces	Fair Condition, Bolted Down
Mike Waters Park	5 spaces	Good Condition, Bolted Down
Rail Trail (near Ice Cream Shop)	9 spaces	Excellent Condition, Bolted Down
Square	2 spaces	Fair Condition, Bolted Down

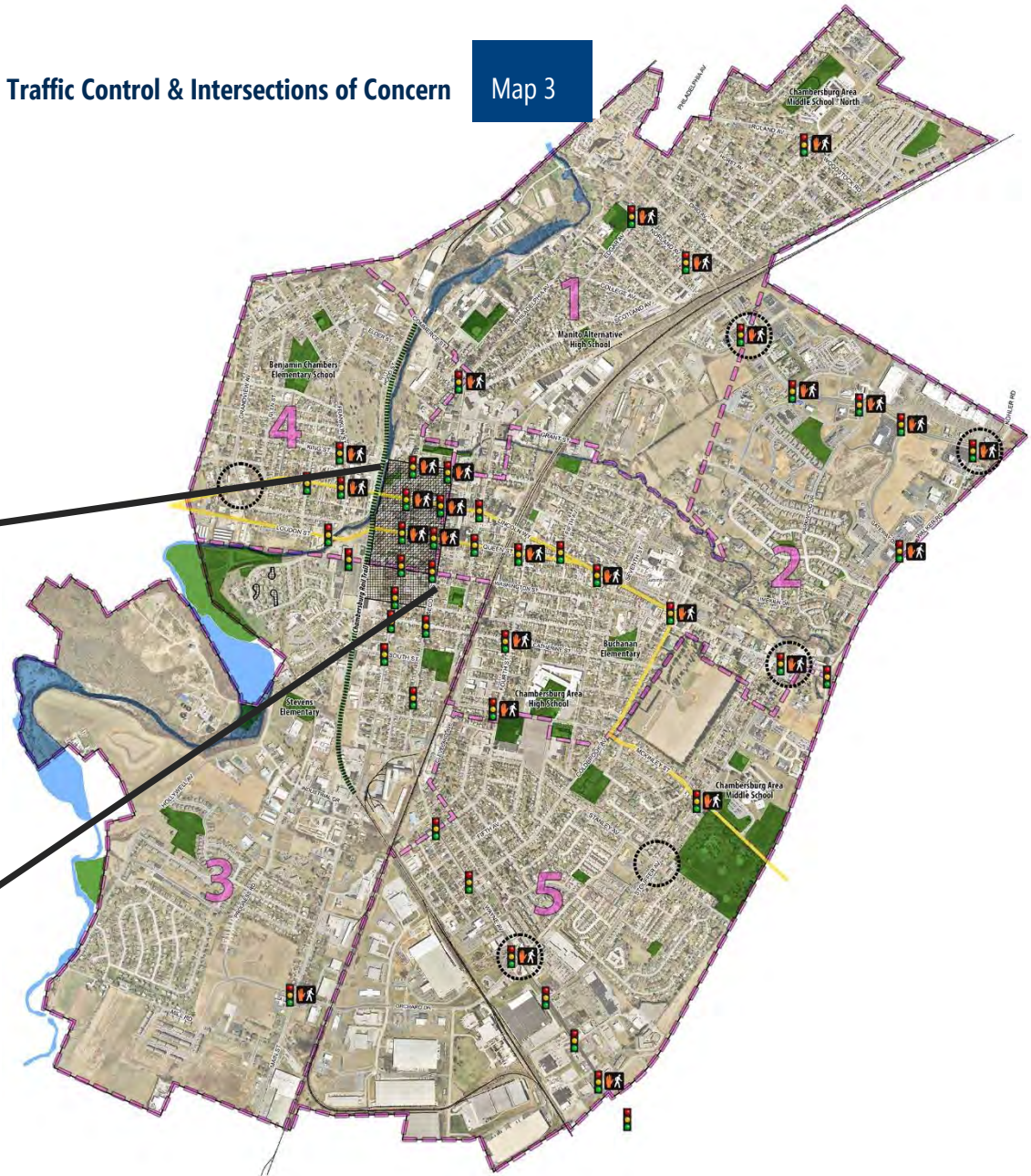
Legend

- Borough Boundary
- Railroads
- Chambersburg Rail Trail
- Recreation Facilities
- Waterways
- PA State Bike Route S
- Intersections of Concern
- Signalized Intersections
- Pedestrian Signals
- Bicycles Prohibited on Sidewalk
- Borough Ward Boundaries

NTS

Traffic Control & Intersections of Concern

Map 3





Bicycle-Friendly Storm Sewer Grates

Based upon roadway, storm sewer improvements and time of development, the type of grate varies. A significant number of storm sewer grates located throughout the Borough are not bicycle-friendly.

Traffic Signal Inventory & Intersections of Concern

An inventory of traffic signals was recently completed by the Franklin County Metropolitan Planning Organization (MPO) as part of the Long-Range Transportation Plan. That information has been incorporated on to Map 3, Traffic Control & Intersections of Concern. There are approximately 41 signalized intersections of which 28 are improved with pedestrian crossing signals. The pedestrian and bicycle crash data presented at the beginning of this section should be further evaluated with Traffic Signal Analysis & Warrant Studies to determine additional locations in need of traffic signals with pedestrian/bicycle crossing signals. Intersections of concern are those with high rates of pedestrian and bicycle incidents, areas adjacent to schools and other intersections identified by stakeholders.

Additional intersections that may require study include: Philadelphia & Park Avenue; Grandview Avenue & Lincoln Way (West); Orchard Road & Route 11; Industrial Drive & Route 11; Colebrook & Route 30; South Street and Main Street; and Roland & Scotland. New Traffic Studies must consider bicycles and pedestrians in addition to motorists.

Traffic Signal Improvement Plan & Implementation

The Franklin County Metropolitan Planning Organization established a Traffic Signal Improvement Plan impacting 66 intersections collectively in the Borough, Greene Township, Guilford Township, Hamilton Township and Peters Township. This plan identifies 49 intersections in the Borough for upgrades including replacing copper wire with fiber optic wire and replacing outdated controller and communication equipment with uniform equipment and replacing outdated loop detection traffic sensors with radar detection traffic sensors.

In November of 2015, the Borough received a notice of award for Federal funding in the amount of \$4.15 M from PennDOT for the upgrade of the full 66 traffic signals on the Chambersburg network in and outside of the Borough. Preliminary design began in early 2016 and the project has been on a phased 2016-2017 construction timetable.

A range of roadway design and defects also impact bicycle and pedestrian safety.

3.5 OFF-ROAD INFRASTRUCTURE

Rail Trail – A Greenway through the Center of the Town

This trail is a 1.2-mile paved urban trail is a linear park through the center of the Town offering walking, jogging, biking, dog walking, skateboarding and rollerblading. The rail line was abandoned by CSX in the late 90's and was acquired by the Borough for conversion to a trail. The trail was constructed in mid-2000's and today is still considered a state-of-the-art asphalt trail lined with benches, trees, plaques, lush strips of grass, trees and bushes.

The trail adjoins a footbridge across the Conococheague Creek providing connection to Chambers Fort Park – a revitalized area that is centered around the site of Fort Chambers – today improved with a central plaza and veteran's and civic memorials and monuments. This bridge also provides access to small shops and government center located within the central business district.

This urban greenway is improved with wayfinding and safety signage and pedestrian crossing buttons that activate flashing yellow warning lights to vehicular traffic. Other amenities along the trail include access to the Creek and the Village on the Falling Spring, historic coal rail car, ice cream shop and Chambersburg Bike Park.

Source: <https://www.trailink.com/trail/chambersburg-rail-trail/>

Chambersburg Bike Park/Pump Track

The bike park is located along the Rail Trail between Commerce and King Streets. The facility is designed for adult and kids of all skill levels. As part of the annual



ChamberFest Bike Day, there is an opportunity for off-road bicyclists to compete in two (2) events – pump track race and best trick contest. This event is coordinated by the Borough’s Recreation Department.

3.6 TRAFFIC ENFORCEMENT & PROGRAMS

Bicyclists are required by PA Law, Title 75 to follow the same traffic laws as motor vehicles including riding with traffic on one-way and two-way streets. The Police Department has given discretion to their officers to cite bicyclists for violations.

Source for PA Law, Title 75: <http://www.legis.state.pa.us/WU01/LI/LI/CT/HTM/75/75.HTM>

Bicycle Patrol

The Police Department has certified 10 bicycle patrol officers. When the weather and manpower permits, these officers patrol borough-wide at any given time around the clock. It is the goal of the bike program to utilize officers to patrol in selected areas to reduce crime and increase contact with citizens. By its nature, a uniformed officer on a bike provides a much greater opportunity for one-on-one contact with the public, which is critical to the Department’s community policing and problem-solving efforts.

Source: <https://franklin.crimewatchpa.com/chambersburgpd/21193>

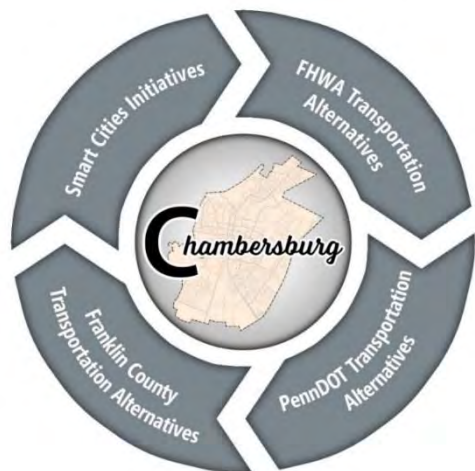
Bicycle Registration Program

The Police Department offers bicycle registration on a voluntary basis. Registration can take place at the Department’s front desk simply by completing a registration form for receipt of a CPD sticker with a registration number to place on the bicycle. Bicycles (registered and/or non-registered) acquired by the Department that are not claimed are donated to various organizations for reuse. When no organizations can be located for reuse, the bicycles are turned over for scrap. Due to low citizen awareness of this program, this program should be promoted as part of a public awareness and education campaign.

4.0 POLICY REVIEW AND RECOMMENDATIONS



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Tools to Meet Active Transportation Goals

- Bicycle/Pedestrian Committee
- Complete Streets Policy
- Share the Road Driver Education Programs
- Protection Infrastructure at Street Crossings and High Volume Intersection
- Bike Share Programs
- Safe Routes to School Programs
- Infrastructure to Serve Elderly & Disabled Populations

4.0 POLICY REVIEW & RECOMMENDATIONS

The physical design of a community can affect its livability and access to complete streets can also affect the health and well-being of a community. Safe, attractive sidewalks, dedicated bike lanes and multi-modal transportation options can make a community healthier by increasing the opportunity for physical activity.

Safer People, Safer Streets a Federal Initiative

This initiative focuses on doing more to address the safety of non-motorized means of travel and help local communities create safe, better connected bicycle and walking networks. This initiative recognizes that:

- Walking and bicycling help complete a reliable multimodal transportation system.
- Walking and biking are good for public health.
- Walking and bicycling are affordable transportation options that create ladders of opportunity.
- Walking and bicycling are sustainable, smart solutions.

Smart Cities a Federal Initiative

The *Smart City Mission* is to drive economic growth and improve the quality of life of people enabling local area development and harnessing technology with technology leading to sustainable outcomes. The application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services. Smart Solutions include:

- Integrated multi-modal transportation systems (includes pedestrian and bicycles)
- Intelligent traffic management
- Smart parking
- Green buildings and green streets
- Water, waste and energy management
- Citizen engagement



Community Vision

The Borough will be a healthy, walkable and bicycle-friendly community with enhanced connectivity between the historic downtown, neighborhoods, shopping and employment centers, businesses, education and health care facilities and institutions. Our community will provide a safe, livable and economically viable community with a walking and bicycling environment as part of the public transportation system and regional recreation facilities.



Source: National Complete Streets Coalition graphic

4.1 COMPLETE STREETS POLICY

Why are pedestrians and bicyclists important?

Bicycling and walking is a healthy, low-cost and environmentally sensitive mobility option that has grown significantly over the past three decades. Nationally, over 11% of all trips made use walking and bicycling as the preferred mode of travel. In 2011, the Political Economy Research Institute (PERI) released a report that showed how a \$1 million investment creates more jobs through building infrastructure specific to bicycling and walking than for road projects without these facilities.¹

In 2014, the US Department of Transportation created the [Safer People, Safer Streets Initiative](#) to address the fact that bicyclist and pedestrian deaths are increasing faster than overall traffic fatalities.

Every transportation agency and local government has a responsibility and opportunity to address bicycle-friendliness and walkability and the safety of bicyclists and pedestrians in our communities.

Plan Vision Statement / Guiding Principles for Plan Development

Through a collaborative planning process, the Borough is seeking to identify implementation strategies that facilitate enhanced pedestrian and bicycle opportunities. Solutions will be focused on facility improvements, safety enhancements and policy recommendations to encourage pedestrian and bicycle opportunities across the community. Benefits include increased transportation and recreation options as well as the promotion of wellness and active living. The vision statement for this plan is identified in Section 3.0 and above left.

Over Arching Goal

To accommodate pedestrians and bicycles within the overall transportation system so that those who walk and ride bicycles can safely, conveniently and comfortably access destinations within a community; and, to encourage bicycling and walking to improve public health.

Challenges

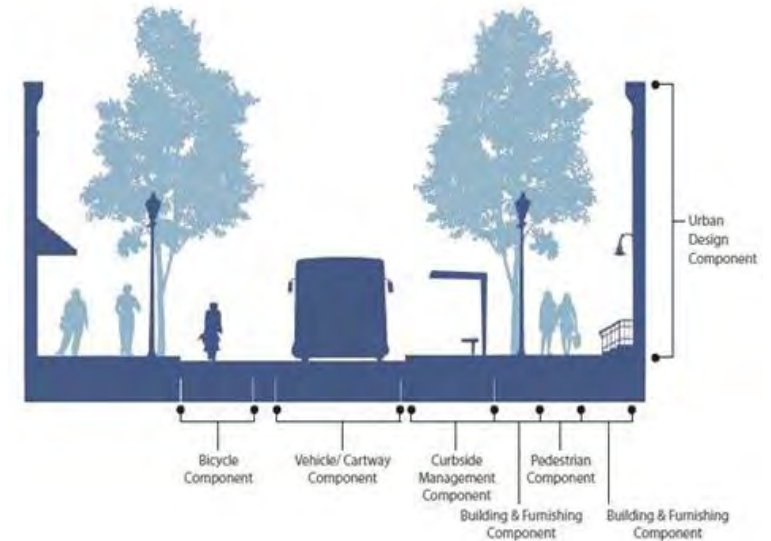
1. Appropriately accommodating walking and bicycling within the overall transportation system.
2. Balancing competing interest of all modes in a limited amount of right-of-way.
3. Funding desired improvements, enforcement, operations and maintenance, safety and security.
4. Large residential communities that have not historically included pedestrian and bicycle infrastructure.

¹Bicycling and Walking in the United States – 2016, Alliance for Biking & Walking, http://www.bikewalkalliance.org/storage/documents/reports/2016benchmarkingreport_web.pdf

Local Complete Streets Policy

The Borough shall provide a comprehensive and integrated network of transportation with connections to recreation facilities that are safe and convenient for people of all ages and abilities traveling by all modes including pedestrians and bicycles. This policy includes:

- Guidance through Resolution, Executive Order, directives, ordinances and design standards.
- Reference to a Complete Streets Policy as part of the goals in the Comprehensive Plan, Neighborhood Plans, Transportation Plan and other plans and implementation strategies.
- Smart Growth land use policies that encourage bicycling, pedestrian and transit trips.
- Bicycling and walking facilities incorporated into all new development, redevelopment and transportation projects unless exceptional circumstances exist.
- Sidewalks, shared use paths, street crossings (including over and under-crossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently along, within and across corridors.
- Safe routes for children to and from school.
- Better access to employment and educational opportunities in all neighborhoods regardless of income or ethnicity as equitable transportation solutions.
- Facilities designed to the best currently available standards and guidelines to provide:
 - Vehicular speeds and congestion compatible with the character of the neighborhood.
 - Usability and safety of well-maintained on/off-street bicycling/pedestrian facilities.
 - A well interconnected street network.
 - Intersection design addressing safety and convenience for bicyclists and pedestrians.
 - Quality, safe and convenient bike parking options at destinations community-wide.
- Departmental policies, staff training program, policy checklist and compliance procedures/performance measures.
- Education and public awareness program for the traveling public, bicyclists and pedestrians.



The decision not to accommodate pedestrians and bicyclists should be the exception rather than the rule.



Common Terms

Pedestrian Facilities include pedestrian access routes and reasonable amenities, including but not limited to benches, bus shelters, lighting and water fountains, and provisions to accommodate, enhance or encourage walking.

Bicycle Facilities include improvements and reasonable amenities and provisions to accommodate, enhance or encourage bicycling, including but not limited to bicycle lanes and paths, traffic control devices, parking, storage facilities and bicycle sharing systems.

Policy Intent

To provide a comprehensive and integrated network of facilities that are safe and convenient for people of all ages and abilities traveling by foot, bicycle, automobile, public transportation and commercial vehicle.



4.2 RECOMMENDATIONS & CODE AUDIT

Those responsible for implementation of a Complete Streets Policy must recognize that all transportation improvements as well as development and redevelopment projects are opportunities to gain some traction to meeting the vision for the Borough. The following general recommendations are made considering the range of transportation network users with the understanding that not all users of a certain mode are the same.

Recommendation 1:	Adopt a Complete Street Policy by either Council resolution, executive order and/or via internal departmental directives. And, feature bicycling and walking (active transportation) on Borough website.
Recommendation 2:	Develop a Sidewalk Installation Program to establish a Borough-wide installation plan and map (component of the Borough’s Official Map) to depict street frontages where the pedestrian infrastructure network exists and should be extended based on certain events or conditions.
Recommendation 3:	Review bicycle and sidewalk policies and regulations to consider whether riding bicycles on sidewalks prohibitions should be amended.
Recommendation 4:	Integrate into new design guidance for streets and street retrofit/rehabilitation guidelines, pedestrian and bicycle standards. Where appropriate, use shoulder striping to define travel lane.
Recommendation 5:	Provide various types of on- and off-street bicycle facilities that best fit the context of density, automobile speeds and congestion to improve safety and encourage more people of all ages and abilities to bicycle.
Recommendation 6:	Implement pedestrian and bicycle facility design standards that meet ADA and PennDOT Design Manual 2 (DM-2), Chapter 16-Bicycle Facilities requirements considering requirements outlined in the AASHTO Guide for the Development of Bicycle Facilities and NACTO Urban Bikeway Design Guide standards.
Recommendation 7:	Utilize the police bike patrol as the designated law-enforcement point person who interacts with the bike community strengthening current role of conducting community policing.
Recommendation 8:	Law enforcement officers are offered regular education on the rights and responsibilities of bicyclists and traffic law as it applies to bicyclists and motorists.
Recommendation 9:	Codes/ordinances that ensure high-quality safe and convenient pedestrian and bicycle facilities with convenient bike parking options at destinations throughout the Borough (refer to Code Audit).
Recommendation 10:	Law enforcement use routine targeted enforcement and information-sharing to encourage motorists and cyclists to share the road safely.

Other Common Terms

Accessibility: Refers to access for people with disabilities to programs, services and activities.

Mobility: The ability to travel or move from place to place.

Infrastructure: All the relevant elements of the environment in which a transportation system operations, including streets, signals, bridges, transit, bike facilities, shared use paths and sidewalks.



Code/Regulation Audit and Recommendations

This section of the plan applies a Smart Code and Zoning Audit to help review regulations to determine if they help the Borough achieve the vision for a more pedestrian and bicycle friendly community. Regulations will be addressed in the context of the street network, streetscape features, parking and multi-use trail facilities.

Assessment of Effectiveness	Yes	No	Local Code/Zoning/SALDO Regulations	Possible Improvement to the Codes/Regulations
Street Network				
Street hierarchy/classification	✓		Comprehensive Plan, SALDO	Reference Franklin County MPO—Long Range Transportation Plan
Street width standards by classification and/or location	✓		SALDO	Reference PennDOT, DM-2 Chapter 1 and AASHTO Green Book
Design speed standards	✓		Design Standards	Reference PennDOT, DM-2 Chapter 1 and AASHTO Green Book
Standards for width, intersection and corner radii for various classifications	✓		SALDO	Reference PennDOT, DM-2 Chapter 2 & 3, AASHTO Green Book and NACTO
Block perimeter length standards	✓		SALDO	Reference PennDOT, Connectivity Handbook Pub 731 (07-12) – includes model ordinance language
Curb cut/Driveway frequency standards	✓		SALDO and Design Standards	Reference PennDOT, DM-2 Chapter 7
Are cul-de-sacs discouraged		✓	SALDO	Reference PennDOT, Connectivity Handbook Pub 731 (07-12) – includes model ordinance language
Provisions to ensure pedestrian and street connectivity between neighborhoods	✓		SALDO	Reference PennDOT, Connectivity Handbook Pub 731 (07-12) – includes model ordinance language and NACTO
Width and use standards for alleyways	✓		Zoning & SALDO	FHWA Lesson 13 – Walkways, Sidewalks & Public Spaces and AASHTO
Are bicycle lanes required		✓	SALDO & Design Standards	Reference PennDOT, DM-2, Chapters 6 & 16 and NACTO
Standards for bicycle lane widths		✓	SALDO & Design Standards	Reference PennDOT, DM-2, Chapters 6 & 16 and NACTO
Standards for bicycle lane surface		✓	SALDO & Design Standards	Reference PennDOT, DM-2, Chapters 6 & 16 and NACTO
Are sidewalk requirements	✓		Town Council and Curb & Sidewalk Policy	Sidewalk construction required after street reconstruction should remain

Important factors that contribute to achieving walkability and bicycling:

- Provide a network of bicycle routes, lanes or shared-use trails to promote bicycling borough-wide.
- Where a shared lane for bicycles and parking is provide a minimum of total lane width of 12' (7' for parking and 5' for bikes) is suggested.
- Retrofit bicycle lanes into roads by changing off-street parking configuration.
- Tighten curb radii to shorten pedestrian crossings and force vehicles to make turns at lower speeds.
- Limit curb radii and require a 25' clear zone to accommodate the wider turning radii required by emergency vehicles.
- Limit the use of cul-de-sacs and when used require pedestrian or bike connections to surrounding neighborhoods.
- Evaluate the use of mid-block pedestrian passages in commercial and mixed-use zones.
- Right-of-way requirements compatible with the characteristics of neighborhoods will provide increased pedestrian and bicycle safety.



Assessment of Effectiveness	Yes	No	Local Code/Zoning/SALDO Regulations	Possible Improvement to the Codes/Regulations
Streetscape Features				
Streetscape features based upon street classification and/or location		✓		Reference PennDOT, DM-2 Chapter 1 and AASHTO Green Book
Provisions for traffic calming		✓	SALDO & Design Standards	Reference PennDOT, Traffic Calming Handbook Pub 383 (7-12)
Crosswalk requirements			Design Standards	Reference PennDOT, DM-2, Chapters 6 & 16, ADA, AASHTO Green Book
Pedestrian right-of-way in crosswalks		✓	Design Standards	
Provisions for pedestrian safety in crosswalks			Design Standards	
Sidewalk requirements	✓		SALDO & Design Standards	
Sidewalks requirements in proximity to schools, hospitals, libraries, parks, places of worship and open space		✓	SALDO & Design Standards	Smart Growth America, National Complete Streets Coalition and ADA
Sidewalks required on both sides of street	✓		SALDO & Design Standards	Smart Growth America, National Complete Streets Coalition and ADA
ADA access standards enforcement		✓	SALDOS & Design Standards	Reference PennDOT, DM-2, Chapters 6 & 16, ADA, AASHTO Green Book
Street trees and street plantings	✓		SALDO & Design Standards	Smart Growth America, National Complete Street Coalition
Street furniture		✓	SALDO & Design Standards	Smart Growth America, National Complete Street Coalition
Pedestrian scale street lighting	✓		SALDO & Design Standards	Reference PennDOT, DM-2 Chapter 5 and AASHTO Green Book
Low voltage street lighting	✓		SALDO & Design Standards	Reference PennDOT, DM-2 Chapter 5 and AASHTO Green Book
Bicycle riding prohibition on sidewalks in Downtown	✓		Bicycle & Skateboard Code	Prohibition for the Downtown should continue

Important factors that contribute to achieving walkability and bicycling:

- Crosswalk signals and lighting increase pedestrian safety and encourage walking.
- Street trees and street planting (landscaping) softens the street environment and makes it more attractive for pedestrians.
- Street trees provides shade for pedestrians, reduces noise and air pollution and provide aesthetics.
- Sidewalks promote walking and contribute to pedestrian safety.
- Limiting curb cuts reduces potential conflict between pedestrians and vehicles resulting in increased pedestrian safety.
- Where street design results in speeding, traffic calming features should be allowed to create conditions conducive to walking and bicycling.
- Require alleys to reduce the number of curb cuts allowed on streets.
- In commercial zones, alleys can function as drive aisles for off-street parking lots and as fire lanes.
- Sidewalk width requirements should take into consideration the nature of the street and the anticipated volume of pedestrian traffic.
- Sidewalks should be provided in urban and suburban areas to provide pedestrian safety.



Assessment of Effectiveness	Yes	No	Local Code/Zoning/SALDO Regulations	Possible Improvement to the Codes/Regulations
Parking				
Minimum and maximum parking requirements	✓		Zoning	Association of Pedestrian and Bicycle Professionals, Safe Routes to School Bicycle Parking Guide and NACTO
Parking requirements based upon land use and district and building type	✓		Zoning	ITE and American Planning Association
Reductions in parking in exchange for bike parking		✓	Zoning	Association of Pedestrian and Bicycle Professionals, Safe Routes to School Bicycle Parking Guide and NACTO
Provisions for shared parking	✓		Zoning	Association of Pedestrian and Bicycle Professionals, Safe Routes to School Bicycle Parking Guide and NACTO
Does on-street parking count for meeting parking requirements		✓	Zoning and SALDO	Association of Pedestrian and Bicycle Professionals, Safe Routes to School Bicycle Parking Guide and NACTO
Provisions for the location of parking	✓		Zoning and SALDO	American Planning Association
Is street parking metered	✓			American Planning Association
Landscaping requirements for parking lots	✓		Zoning and SALDO	American Planning Association
Minimized impervious surface areas	✓		Zoning and SALDO	American Planning Association
Bicycle parking requirements		✓	SALDO & Design Standards	Association of Pedestrian and Bicycle Professionals, Safe Routes to School Bicycle Parking Guide and NACTO

Important factors that contribute to achieving walkability and bicycling:

- Secure bicycle parking is a key ingredient to encouraging bicycling.
- Bicycle trips end somewhere other than the bicyclists home—providing parking and other amenities at priority destinations encourages bicycling.
- Bicycle parking in the downtown and at other public centers, parkign garages, shopping centers and transit stopes encourages bicycling.
- Encourage private businesses to provide bicyclig parking.
- Add provisions to zoning regulations to require bicycle parking as a part of new development and major redevelopment projects.
- Standards for bicycle racks, lockers and lock-ups.
- Bicycle parkign areas conveniently located to building entrances with street access encouraged bicyling.
- Safe, well illuminated parking areas for bicycle parking encourages bicycling.
- Protect bicydl parking areas from the weather.
- Locate bicycle parking so it does not block pedestrian paths/walkways or accessibility.
- Separate bicycle parking, auto parking and road areas with space and a physical barrier.



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5.0 PEDESTRIAN AND BICYCLE ROUTE NETWORK



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5.0 PEDESTRIAN & BICYCLE ROUTE NETWORK

Although the Borough offers a dense street network of roadways, sidewalks, crosswalks and signalized intersections, there is a need for additional enhancements to the network to provide a pedestrian- and bicycle-friendly community. An emphasis on active transportation, walking and bicycling, requires the focus on moving vehicles to shift to pedestrian and bicycle accessibility, mobility and safety. Investments in infrastructure to support pedestrians and bicycles is already reshaping the Borough and requires local and regional officials to reconsider how transportation funding is prioritized. Important destinations, opportunities and constraints are considered along with specific evaluation criteria identified in this section to create a pedestrian and bicycle route network.

5.1 DESTINATIONS, OPPORTUNITIES & CONSTRAINTS

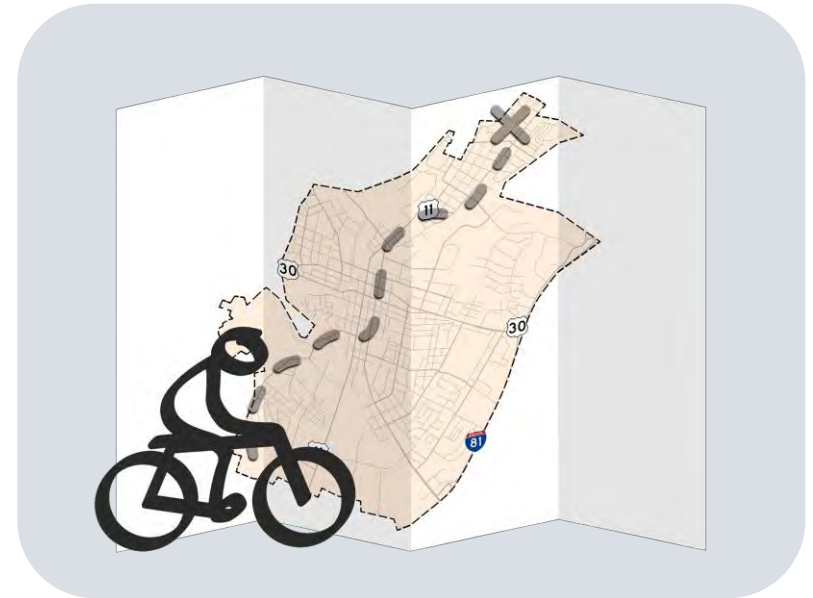
The planning process included input from various stakeholders to identify priority destinations throughout the community to focus attention on improving connectivity to and from neighborhoods to schools, libraries, parks and recreation, shopping and employment centers, social services and other important destinations.

Opportunities for pedestrian and bicycle connections include the following locations:

- Downtown
- Norland Avenue Commercial Area
- Grant/3rd Street Redevelopment
- Stevens Elementary
- Chambersburg Middle School
- Chambersburg High School
- YMCA
- Franklin Center
- Residential Neighborhoods
- Parks, Recreation, Open Space and the Rail Trail
- Memorial Park and Pool
- Wayne Avenue Commercial Area
- Orchard Drive Employment Center

Constraints include:

- Narrow roadway widths
- Conflicts with on-street parking
- Poor roadway condition
- Non-bicycle friendly storm drain inlet covers
- Travel speeds above 25 mph
- Lack of signage for sharing the road
- Sidewalk and curb ramp condition and accessibility (ADA compliance)
- Traffic congestion
- Physical obstructions



5.2 EVALUATION CRITERIA

Opportunities for connections were considered and evaluated for prioritization as part of the master plan pedestrian and bicycle route network. Network evaluation criteria included the following factors to identify and prioritize linkages and facilities to expand the existing pedestrian and bicycle route network:

- Accessibility, directness and continuity.
- Bicycle route safety and attractiveness.
- Bicycle routes with the least amount of conflicts (i.e. low volume roadways and alleyways) and obstructions and good roadway condition.
- Number of linkages to priority destinations.
- Cost, funding source(s) and ease of implementation.

Priority should be given to projects on low volume roads adjacent to schools that provide connections and facilities offering safe and convenient pedestrian and bicycle access. Priority should also be given to pedestrian infrastructure projects where there are gaps in existing sidewalk networks.

Additional guidance from the Franklin County MPO the County Long-Range Transportation Plan includes:

- Opportunities focused on low-cost but highly-effective implementable projects including enhanced signing, striping and connectivity.
- Improving crossings near pedestrian traffic generators on the most heavily traveled routes.
- Higher visibility crosswalks at locations where high pedestrian traffic volumes are expected.
- Advanced warning signage along the most highly traveled routes should be considered.
- Bicycle improvements focused on improving overall connectivity to major destinations.
- Encourage bicyclists to use low volume streets and alleyways.
- Pedestrian and bicycle improvements focused on safe access to school.



5.3 MASTER PLAN MAP

On the following page, Map 4 depicts the Pedestrian & Bicycle Master Plan Map features various primary and secondary linkages. Featured connections are a results of stakeholder discussions and input coupled with assessment and application of evaluation criteria outlined in this section.



Source of graphics: Examples from various communities and organizations.

Pedestrian and Bicycle Master Plan Map

Chambersburg Borough, Pennsylvania

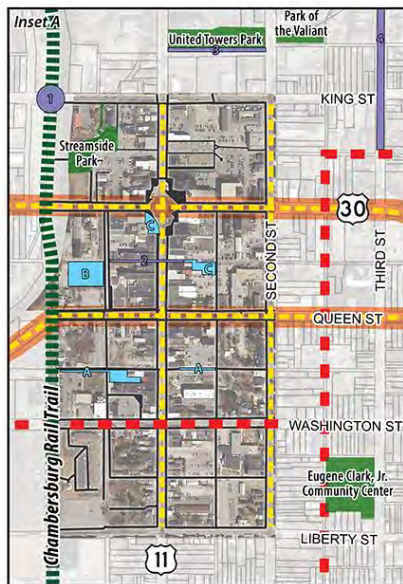
Legend

- **Priority Linkages**
- A Greene Township Trail Connection (*link to points north and Caledonia State Park*)
- B Rail Trail "Gravel Road" Extension
- C Norland Avenue to Future Redevelopment
- D 3rd Street Greenway
- E Trailhead Gateway
- F Harrison Avenue
- G McKinley Street East-West Connection
- H Rail Trail to Stevens Elementary
- I Southern Rail Trail Extension
- - - **Secondary Linkages**
- **Priority Destinations**
- 1 Wilson College
- 2 Grant / 3rd Street Redevelopment
- 3 Norland Avenue Commercial Area
- 4 Downtown
- 5 Stevens Elementary
- 6 Chambersburg High School / YMCA
- 7 Franklin Center
- 8 Residential / Open Space
- 9 Chambersburg Middle School / Memorial Park
- 10 Wayne Avenue Commercial Area
- 11 Orchard Drive Employment Center

- Borough Boundary
- Railroads
- ▬ Chambersburg Rail Trail
- Recreation Facilities
- Waterways
- PA State Bike Route S
- Borough Official Map Projects



Trailhead Gateway - artist rendering of proposed conditions
Chambersburg Downtown Master Plan, Denk & Ebers, 2015



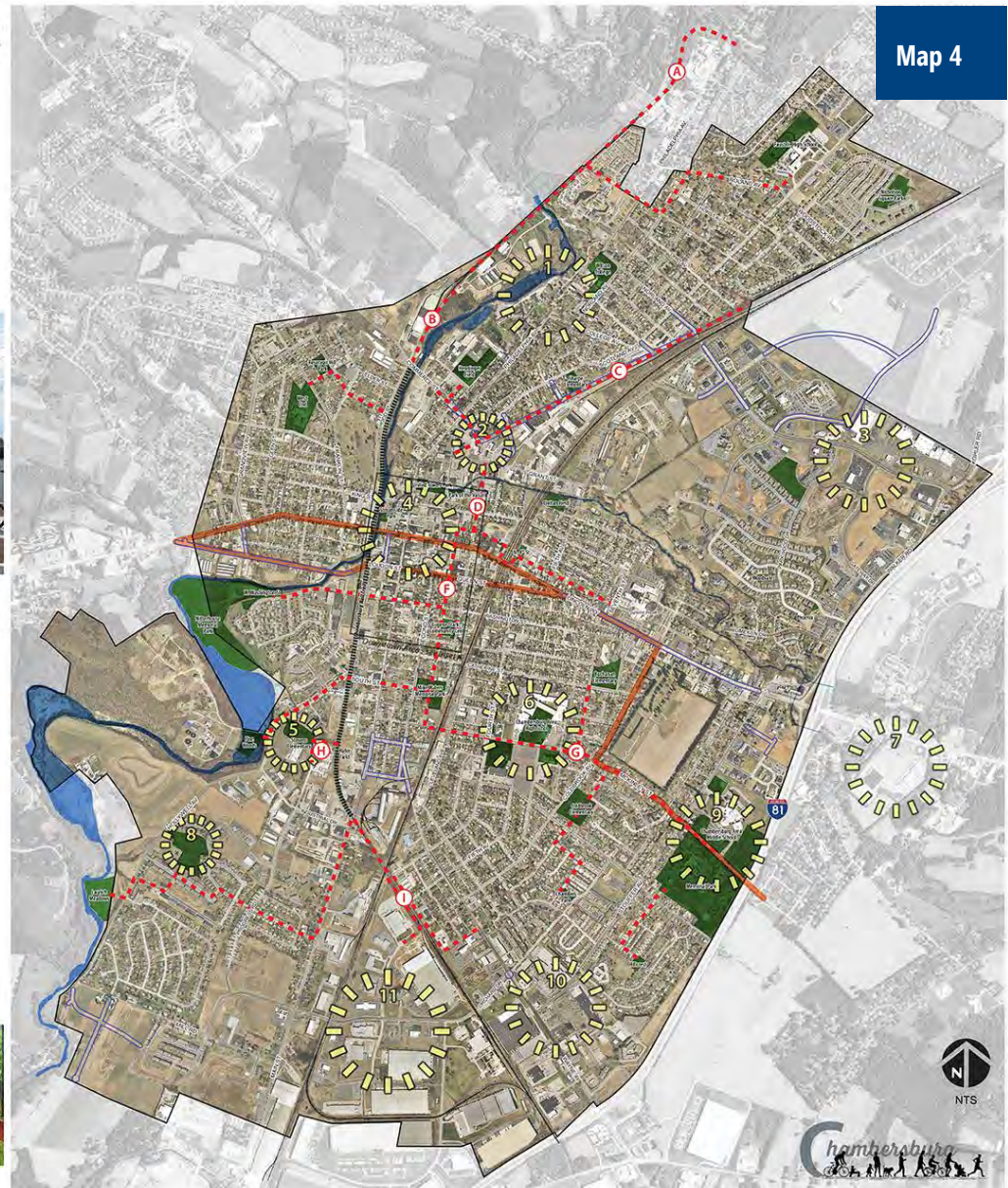
Downtown Area Legend

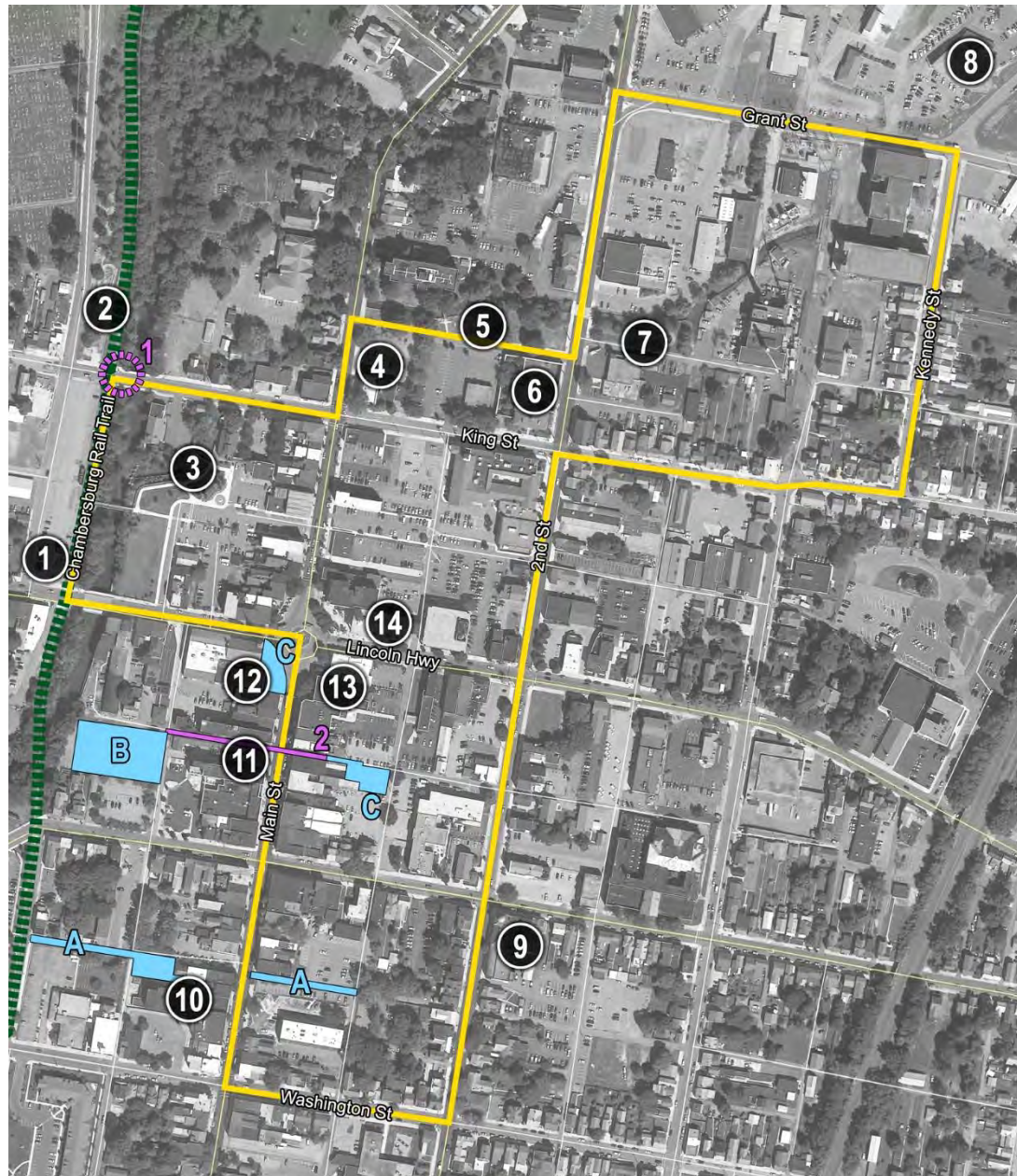
- ▬ Chambersburg Rail Trail
 - Recreation Facilities
 - PA State Bike Route S
 - High Traffic Volume
 - Priority & Secondary Linkages
 - Pedestrian & Bicycle Connections
- Downtown Master Plan Elements**
- Parking & Pedestrian Efficiency
 - A Extended Pedestrian Corridor
 - B Proposed Parking Garage
 - C Green Corridor / Outdoor Seating
 - Preliminary Enhancement Options
 - 1 Trailhead Gateway
 - 2 Alley Enhancements
 - 3 Green Street (Rhodes Drive)
 - 4 3rd Street Greenway



3rd Street Greenway existing conditions (left) and artist rendering of proposed conditions (right)
Chambersburg Downtown Master Plan, Denk & Ebers, 2015

Map 4





Potential Downtown Walking Loop

The following 1.8-mile pedestrian loop is provided for use by residents and visitors. Wayfinding signage and attraction signage should be considered as part of the downtown walking loop. The downtown loop includes points of interest and incorporates various Downtown Master Plan elements such as the following:

Points of Interest:

- 1 – The Historic Texas Lunch
- 2 – Chambersburg Bike Park
- 3 – Chambers Fort Park
- 4 – Coyle Free Library
- 5 – United Towers Park
- 6 – Franklin County Historical Society / Old Jail
- 7 – Park of the Valiant
- 8 – Jim’s Farmers Market
- 9 – Borough Hall
- 10 – Capitol Theatre
- 11 – Franklin County Visitor’s Bureau
- 12 – Franklin County Visitor’s Bureau – New Location
- 13 – Chambersburg Heritage Center
- 14 – Franklin County Courthouse

Downtown Master Plan Elements:

- A – Extended Pedestrian Corridor
- B – Proposed Parking Garage
- C – Green Corridor / Outdoor Seating
- 1 – Trailhead Gateway
- 2 – Alley Enhancements

The downtown loop is a concept for further definition, modification or enhancement as part of implementation of the



Downtown Master Plan, mural initiative and this plan. The loop could incorporate Downtown Chambersburg, Inc. Historic Chambersburg Walking Tours.

Potential Neighborhood Walking Loop

The pedestrian loop depicted to the left provides a future opportunity to link to other pedestrian connections Borough-wide as well as provide a loop local to neighborhoods in this portion of the Borough. This pedestrian loop incorporates the Summit Health Campus and adjacent areas.

This loop identifies an area including existing development and an area where future development may occur. Once fully developed, the pedestrian loop should be improved with signed distance posts and activity stations as part of the actions outline in Section 8.0 Implementation Plan.

This opportunity for pedestrian activity meets both the objectives of the Borough as well as Summit Health to provide safe and accessible options for walking and other physical activity.

This neighborhood walking loop concept can be replicated elsewhere in the Borough based upon level of interest and desire – input from citizens.

Potential Bicycle Loops

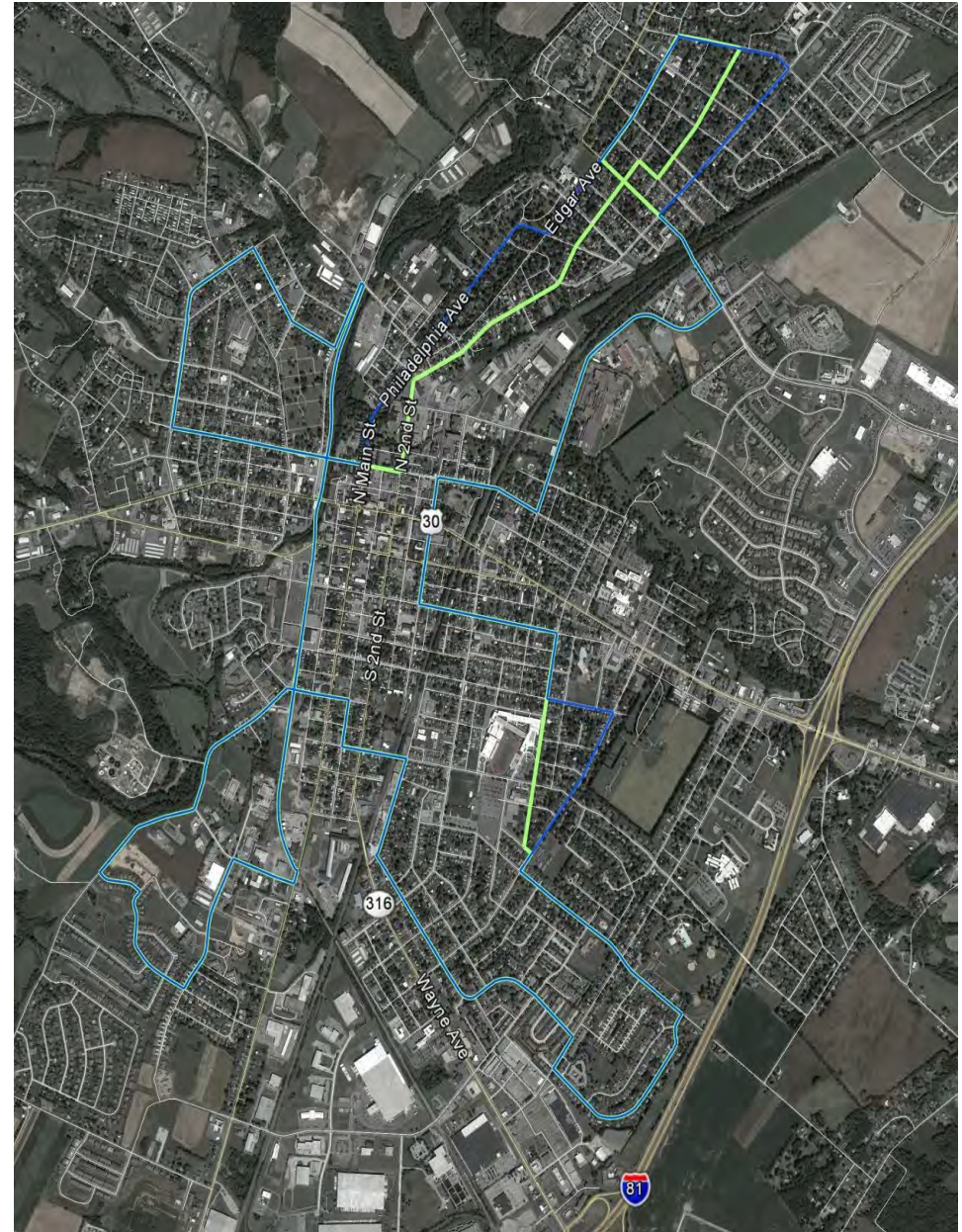
The image on this page depicts the potential routes for a bicycle loop within the Borough limits for both recreational and health purposes. Establishment of a bicycle loop should consider roadway condition, signage and pavement markings to provide cues to vehicular traffic to “share the road” with bicyclists.

A ten-mile ride on low-volume roadways provides a safe option for local bicycling as well as portions of a local loop can provide safe commuter routes.

Bicycle Loop Options:

Blue Loop – 13.8 miles

Green Loop – 13.7 miles



6.0 DESIGN GUIDELINES



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6.0 DESIGN GUIDELINES

Design guidelines will contribute to creating a safe, accessible and interconnected Borough-wide network for pedestrians and bicyclists.

If properly designed, pedestrian and bicycle facilities can play an important role in the overall health of the community as well as the overall transportation network of the Borough with connections to the region. Integration of design standards and modification of Borough regulations will allow for bicycle and pedestrian facility improvements to occur (refer to Appendix B for specific recommendations).

6.1 HEALTHY COMMUNITY DESIGN & COMPLETE STREETS CONCEPTS

National studies indicate that the way we design, build and retrofit our neighborhoods affects our physical and mental health. Decision-makers must consider options that promote walkability, bikeability and livability such as:

- Provide adequate public facilities such as parks, bike trails, recreation centers and outdoor plazas that give people a place to be active and encouraging outdoor physical activity.
- Finding creative ways to address health issues through the design and retrofit of neighborhoods and streets.
- Improve the health of vulnerable populations and access to health care.
- Ensure that sidewalks and streets are in good repair and streets are safe for pedestrians and bicyclists.
- Offer more healthy and affordable food choices readily available and accessible to all neighborhoods.
- Assure land use policies support issues of healthy retail, farmers markets, urban agriculture, restaurants and transportation.
- Incorporate crime prevention through environmental design (CPTED) standards into ordinances and design standards where appropriate to create

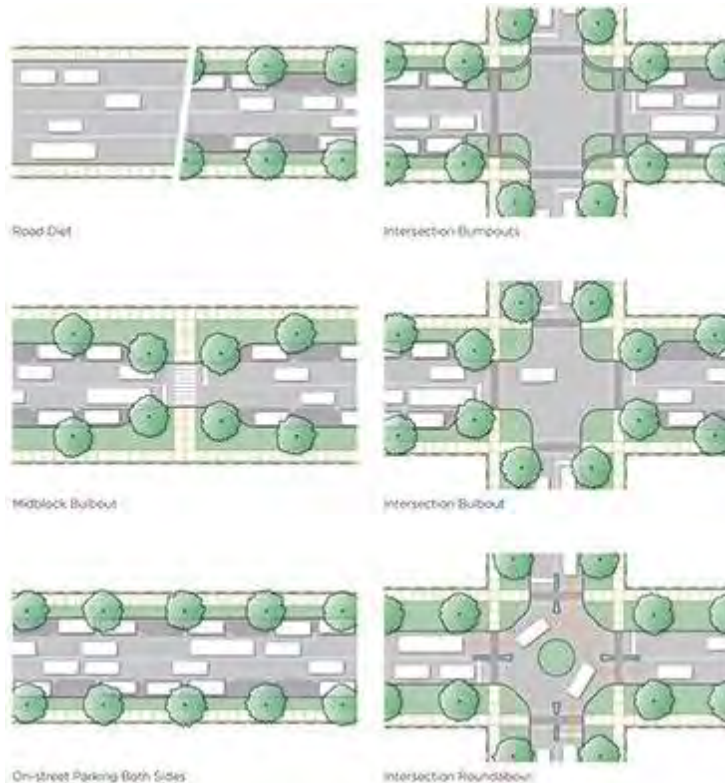
an environmental that promotes safety. Feeling safe in your surroundings plays an important role in mental and physical health.

- Establish a Good Neighbor guide that provides strategies for becoming a good neighbor to other residents and adjacent businesses as well as becoming a partner to local government.
- Create a welcoming and friendly environment through social events, citizen engagement and leadership skills.
- Promote environmental stewardship and protection with residents, businesses, developers and government.
- Adopt a complete streets policy and amend ordinances and design standards to require public and private investment comply with this policy.
- Create corridors that provide safety, accessibility and mobility for multiple forms of transportation.



6.2 TRAFFIC CALMING & SIGNAGE GUIDELINES

Traffic calming solutions are detailed in Pennsylvania’s Traffic Calming Handbook published by PennDOT (Pub 383). Examples are shown below.


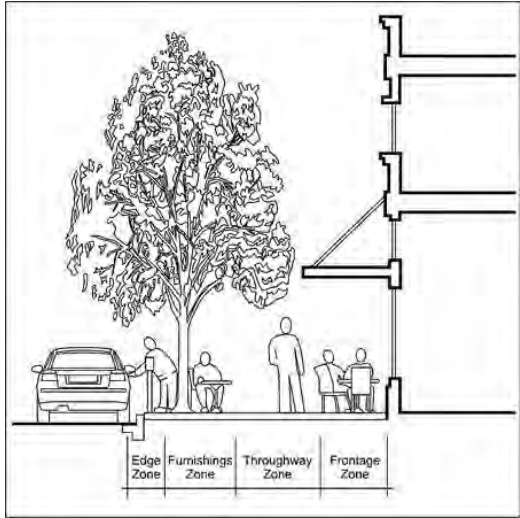

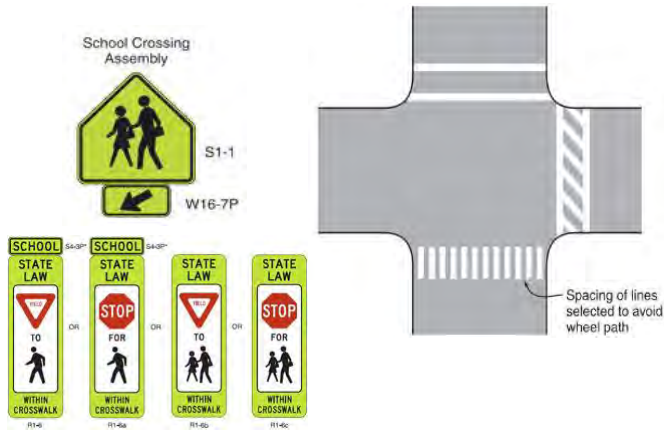


6.3 BICYCLE & PEDESTRIAN FACILITIES GUIDELINES


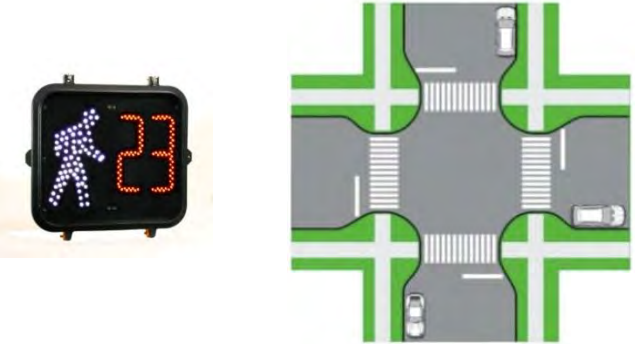
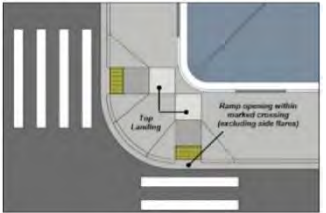
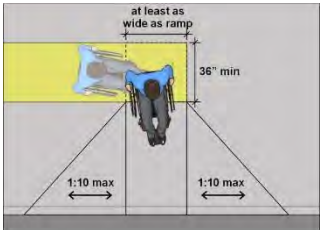
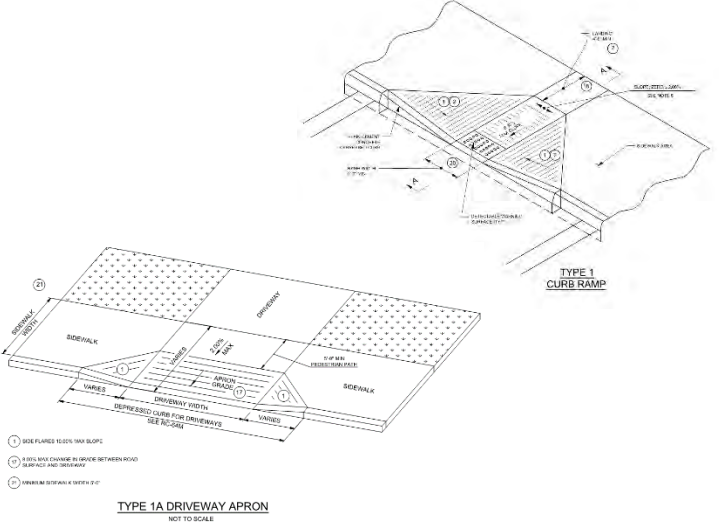
The information on the following pages identifies pedestrian and bicycle facility type along with benefit, guidance and illustrations. The following is a menu of options.



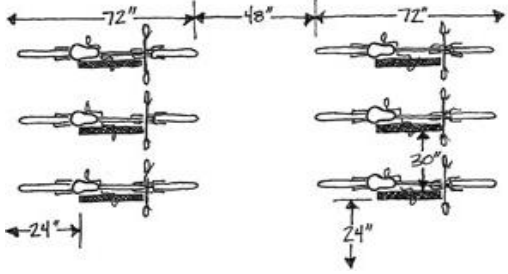

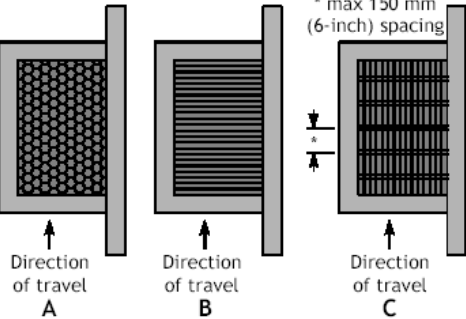


Pedestrian & Bicycle Facilities and Amenities	
Facilities	
Sidewalks	Bike Lanes/Buffered Bike Lanes
Internal Walkways	Contra-Flow Bike Lanes
Path/Trail	Left-Side Bike Lanes
Shared Use/Multi-Use Trails	Cycle Tracks
	Use of Alleyways
	Greenways & Bicycle Boulevards
Intersection Treatments	
Crosswalks	Bicycle Signals and Detection
Curb Extensions	Bike Boxes
Curb Ramps	Intersection Crossing Markings
Pedestrian Signal Upgrades	Median Refuge Islands
Pedestrian Refuge Islands	Combined Bike/Turn Lanes
Warning Beacons	Warning Beacons
	Two Stage Turn Queue Boxes
Streetscape Amenities	
Street Trees & Landscaping	Shared Lane Markings
Street Furniture	Colored Bike Lane Markings
Pedestrian-Scale Lighting	Bike Route Wayfinding Markings
Textured Paving	Bicycle Parking (On- and Off-Street)
Transit Stop Facilities	Wayfinding Signage
Wayfinding Signage	
Traffic Calming	
Speed Humps and Tables	Curb Extensions/Bulb-Outs
Chicanes	
Traffic Circles	
Shared Streets	




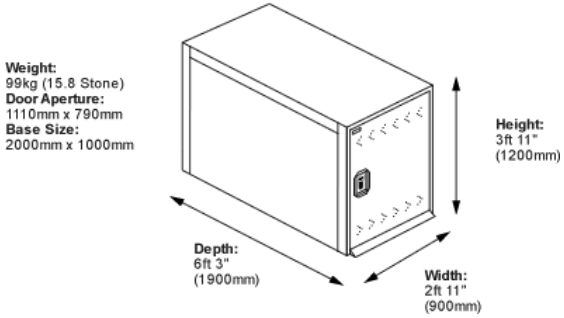


Pedestrian Design Guidelines


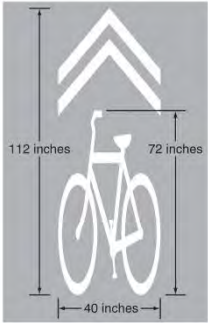


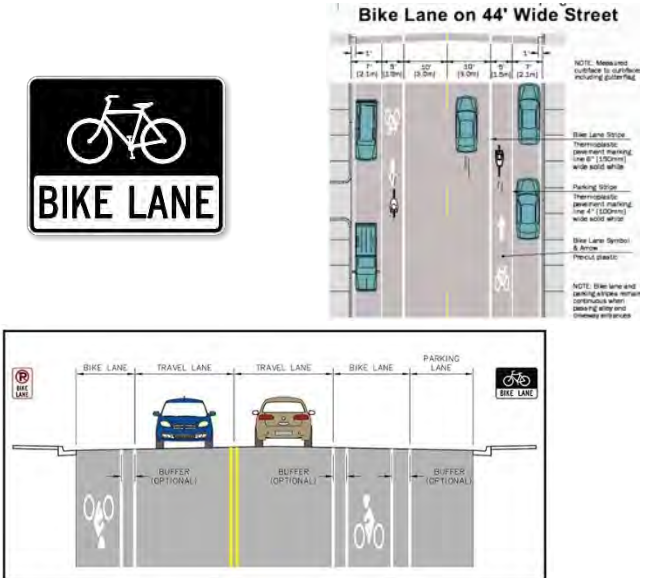
Facility/Amenity	Benefit	Guidance	Illustration
Solutions to Achieving Pedestrian-Friendly Goals & Objectives			
<p>Streetscape Zones</p> 	<p>Low Cost with High Benefit</p>	<p>Design guidelines for sidewalks in high pedestrian areas such as the downtown should account for:</p> <ol style="list-style-type: none"> 1. Edge Zone – The area used by people getting in and out of vehicles parked at the curbside. 2. Furnishings Zone – The portion of the sidewalk used for street trees, landscaping, transit stops, street lighting and street furniture. 3. Throughway Zone – The portion of the sidewalk for pedestrian travel along the street – 4' minimum per ADA clear of obstacles accessible walking surface. 4. Frontage Zone – The area adjacent to the property line where transitions between the public sidewalk and the space within the buildings occur. <p>Note: Gettysburg, PA has Streetscape Enhancement Overlay Zone in Zoning Ordinance.</p>	
<p>Crosswalks Marking and Signing</p> 	<p>Low Cost with High Benefit</p>	<p>Crosswalks should be installed at signalized intersections or locations where crosswalks are typically marked such as at key crossings in neighborhoods with designated school walking routes, and at certain types of uncontrolled crossings. Crosswalks should be used with signing to provide maximum instruction and/or warning to motorists.</p>	


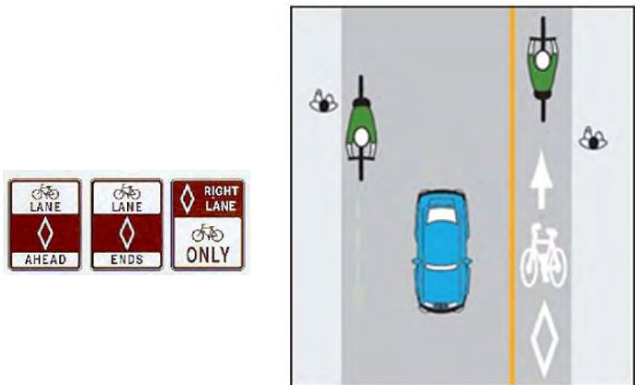

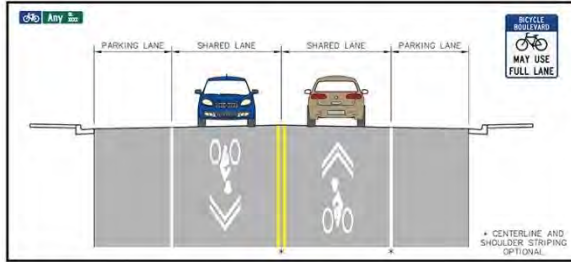


Pedestrian Design Guideline


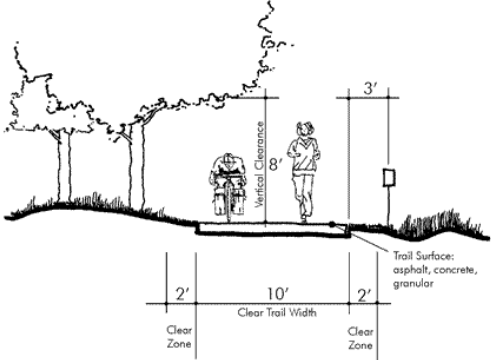
Facility/Amenity	Benefit	Guidance	Illustration
Solutions to Achieving Pedestrian-Friendly Goals & Objectives			
<p>Pedestrian Count Down Signals and Bulb-Outs</p> 	<p>Low Cost with High Benefit</p>	<p>Pedestrian signals are placed for the management of sidewalk-to-sidewalk traffic. On any two-lane street (one lane of traffic going in either direction), countdown timers are not necessary because the street is narrow enough for a pedestrian to cross in just a few seconds. Reducing the distance to cross the street using bump or bulb-outs with or without count down signals is a safety measure. Other solutions include flashing warning signals and signage and camera controlled signals.</p>	
<p>ADA Compliant Curb Ramps and Driveway Aprons</p>  	<p>Low Cost with High Benefit</p>	<p>Sidewalks are part of the public right-of-way and are typically designed for pedestrians, not for bicycles or other recreational purposes.</p> <p>Curb ramps provide basic access at intersections and pedestrian crossings. Curb ramps at marked crossings must be wholly contained within the crosswalk, excluding side flares. The required landing at the top of curb ramps allows an accessible route to connect to the ramp opening. Compliant curb ramps make sidewalk travel safer allowing people with mobility impairments to gain access to sidewalks and safely cross streets.</p> <p>Source: US Access Board</p>	 <p>Source: PennDOT, Design Manual</p>

Bicycle Design Guidelines			
Facility/Amenity	Benefit	Guidance	Illustration
Solutions to Achieving Bicycle-Friendly Goals & Objectives			
Bicycle Parking Standards 	Low Cost with High Benefit 	Bicycle parking should be provided as part of on-street parking with appropriate level of protection/separation from vehicular traffic as well as provided as in public and private parking lots and garages.	
Drainage Grates 	Medium Cost with High Benefit	Drainage inlet grates on roadways shall have openings narrow enough and short enough to prevent bicycle tires from dropping into the grates, regardless of the direction of bicycle travel. Vane type grates are preferable surface type grates. Pavement marking to identify and warn cyclists about unsafe grates may be a temporary solution.	 <p>Source: FHWA</p>
Signalized Intersection 	Medium Cost with High Benefit	Intersections with traffic signals, detection loops should be adjusted to detect bicycles. Installation of bicycle-sensitive loops within the bicycle lane is desirable, and is particularly important where signals are vehicle-actuated and may not change for a bicycle unless a car is present, or unless the bicyclist leaves the lane to trip the signal within the traffic lane.	

Bicycle Design Guidelines			
Facility/Amenity	Benefit	Guidance	Illustration
Solutions to Achieving Bicycle-Friendly Goals & Objectives			
Bicycle-Friendly Transit Stops 	Low Cost with High Benefit	As transit service is established, safe and easy access transit stations and secure bicycle parking facilities are necessary to encourage commuters to access transit via bicycle. Bicycle to transit reduces the need to provide expensive and space consuming car parking spaces.	
Bicycle Locker 	Low Cost with High Benefit	Employers can promote bicycling by offering lockers as an employee "green" benefit. Lockers provide a secure, end-of-trip locker to protect bicycles from theft, damage or inclement weather as well as provide a space to get equipment out of the building. Selection of a vandal and graffiti resistant material is recommended. Location should be within 50 feet of front entrances in a location that is illuminated.	
Alleyways 	Low Cost with High Benefit	Use of one-way alleyways with exception to access by bicycles and local deliveries. Alleyways provide connections for pedestrians and bicycles and when improved provide quality public space and opportunities for green streets solutions. Additional signage may be used to provide notification to motorists about oncoming bikes.	

Bicycle Design Guidelines			
Facility/Amenity	Benefit	Guidance	Illustration
Solutions to Achieving Bicycle-Friendly Goals & Objectives			
<p>Shared Road Bicycle Pavement Markings and Signage – Sharrows</p> 	<p>Low Cost with High Benefit</p>	<p>Shared Lane Markings or sharrows are used to indicate a shared lane for bicycles and automobiles and denotes a designated bicycle route. Sharrows work best on roadways with a speed limit of less than 35 mph. This form of signage helps with wayfinding for bicyclists. Sharrows combined with traffic calming solutions make cycling safer.</p>	 
<p>Cycle Tracks, Separated Bike Lane or Protected Bike Lane</p> 	<p>High Cost with Marginal Benefit for Small Communities</p>	<p>Cycle tracks, separate bike lane and protected bike lanes are designed to encourage bicycling by reducing vehicular congestions and pollution while increasing bicycle safety. These facilities are located within or next to the roadway, but is made distinct from both the sidewalk and general-purpose roadway by vertical barrier or elevation differences. The facility can be one-way or two-way and may be at road level, at sidewalk level or at an intermediate level.</p>	

Bicycle Design Guidelines			
Facility/Amenity	Benefit	Guidance	Illustration
Solutions to Achieving Bicycle-Friendly Goals & Objectives			
<p>Contra-Flow Bike Lane</p> 	<p>Low Cost with High Benefit</p>	<p>Contra-flow bicycle lanes are bicycle lanes designed to allow bicyclists to ride in the opposite direction of motor vehicle traffic. A one-way traffic street is converted into a two-way street: one direction for motor vehicles and bikes and the other for bikes only. Contra-flow lanes are separated with yellow center lane striping. This facility provides connectivity and access to bicyclists traveling in both directions, reduces dangerous wrong-riding and decreases sidewalk riding.</p>	
<p>Bicycle Boulevards</p> 	<p>Low Cost with High Benefit</p>	<p>A bicycle boulevard is a signed bike route on a residential street with low-volume and low-speed motorized traffic that has been optimized for travel by bicyclists including: gaps are addressed with bridges and cut-through paths for pedestrians, controlled motor traffic volumes, stop signs removed along the bicycle boulevard and wayfinding signage is present.</p>	
<p>Shoulder Bikeways and Advisory Lanes</p> 	<p>Low Cost with High Benefit</p>	<p>Shoulder bikeways include bike routes, paved shoulders and wide shoulder bike lanes with or without pavement markings. Shoulder striping defines lanes. Advisory lanes or a suggested lane is a bicycle lane into which motor vehicles may legally encroach – the line demarcating the lane is dashed. This solution is used when there is not width for mandatory lanes.</p>	

Pedestrian & Bicycle Design Guidelines			
Facility/Amenity	Benefit	Guidance	Illustration
Solutions to Achieving Bicycle-Friendly Goals & Objectives			
<p>Shared-Use Paths</p> 	<p>High Cost with High Benefit</p>	<p>Shared use paths provide a means of off-road transportation for pedestrians, bicyclists, skaters and others including people with disabilities.</p> <p>US Access Board apply right-of-way guidelines, which address access to sidewalks, streets, and other pedestrian facilities, and provide requirements for pedestrian access routes, including specifications for route width, grade, cross slope, surfaces, and other features to shared-use paths.</p>	



6.4 RESOURCES & TOOLS

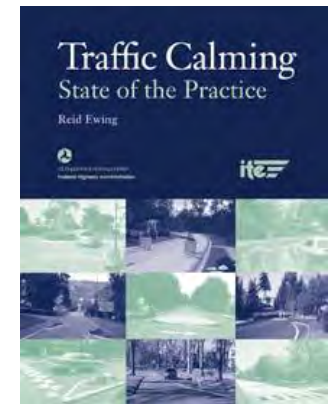
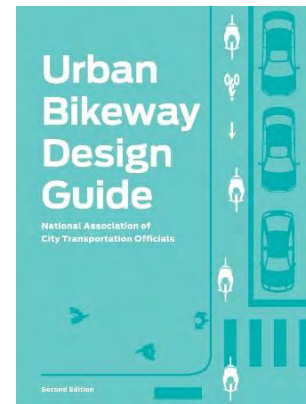
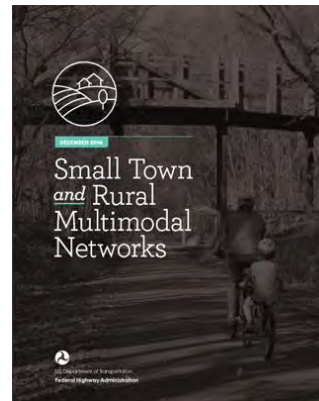
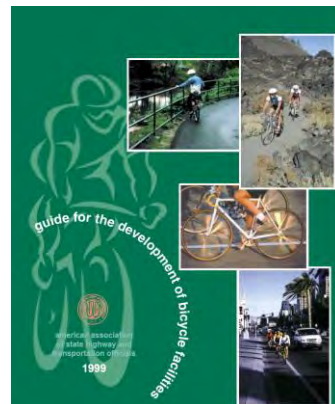
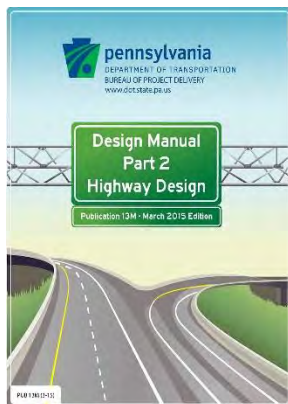
The following is a list of available resources providing acceptable design guidelines:

- PennDOT Design Manual 2 (DM-2), Chapter 16 Bicycle Facilities
- PennDOT Publication 149 – Traffic Signal Design Book
- PennDOT Publication 111 – Pavement Markings and Signing Standards
- PennDOT “Bicycle and Pedestrian Checklist”
- PennDOT Publication 383 – Traffic Calming Handbook
- Manual of Uniform Traffic Control Devices (MUTCD), Bicycle Facilities and the Manual on Uniform Traffic Control Devices
- American Association of State Highway Transportation Officials (AASHTO), Guide for the Development of Bicycle Facilities
- FHWA Separated Bike Land Planning & Design Guide

- FHWA Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts
- FHWA Small Town and Rural Multimodal Networks

Application of guidelines from the following resources may require special approval by PennDOT if standards are applied to state routes:

- National Association of City Traffic Officials (NACTO), Urban Bikeway Design Guide
- NACTO, Urban Street Design Guide
- NACTO, Transit Street Design Guide
- Institute of Transportation Engineers (ITE), Guide Designing Walkable Urban Thoroughfares: A Context Sensitive Approach



Links to Publications:

http://www.dot.state.pa.us/public/pdf/BOCM_MTD_LAB/PUBLICATIONS/PUB_35/PennDOT%20Publication%20Links.pdf

American Planning Association, *Making Great Communities Happen* – Healthy Community Design Toolkit:

<https://www.planning.org/nationalcenters/health/communitydesigntoolkit.htm>

Urban Bikeway Design, National Association of City Transportation Officials

<https://nacto.org/publication/urban-bikeway-design-guide/>

Pennsylvania’s Traffic Calming Handbook, PennDOT Publication No. 383

<https://www.dot.state.pa.us/public/pubsforms/Publications/PUB%20383.pdf>

7.0 PUBLIC EDUCATION CAMPAIGN



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7.0 – PUBLIC EDUCATION CAMPAIGN

Goal: Promote walking and bicycling as a means of improving transportation circulation, transit access, public health, environmental quality, recreation and wellness to advance both green community and healthy community initiatives.

Objectives:

- Work with Summit Health, school district, Wilson College, the Police Department and local organizations to encourage and promote existing walking and bicycling programs, new programs, regulations, activities and events.
- Develop and promote a walking and bicycling campaign working with partners accounting for communications with a diverse community.
- Promote walking and bicycling as an alternative form of transportation that results in a healthy lifestyle.

7.1 APPROACH TO PEDESTRIAN & BICYCLE SAFETY EDUCATION CAMPAIGNS

Much of the literature on this subject suggests that communities are conducting seasonal and annual programs. The desired results is to reduce fatalities using the three E's: engineering, education and enforcement. The approach is to implement a community-based program involving local organizations and law enforcement with the Borough's Police Department taking the lead. Recommended components of the program include:

Step 1: Establish a Pedestrian & Bicycle Advisory Committee

Involve a wide array of representatives from the community. This group will be responsible for assisting with implementation of the Plan through education and outreach. Potential members of this Committee include the following:

- School District Representative (possibly School Crossing Guard Coordinator)
- Parent-Teachers Association
- Parents and Students (Student Council representative)



Safe Streets and Healthy People

Walk, bike and drive smart!

A campaign to increase awareness, education and encourage walking and bicycling.

- Elected Officials (Mayor and others)
- Police Department (Bicycle & Traffic Safety Units)
- Neighborhood Representatives
- Neighborhood Watch Groups
- Borough and County Planners
- Borough Engineer and Local Engineers
- Summit Health Representative
- Wilson College
- Parks & Recreation Department
- Bicycle Shops (i.e. Family Cycling Center, Quick Release Bicycles, etc.)
- Franklin County Cyclists
- Non-Profit Organizations
- Chamber of Commerce
- Business and Community Leaders
- Transit Provider



Step 2: Create an Action Plan

Review, modify and implement recommendations and actions from this plan to create a Task Force Action Plan. The Task Force will drill down in greater detail to

- Most effective strategies to get more students walking and bicycling.
- Identify areas of concern for students, parents and administrators (e.g. safety hazards on the route to school)
- Address the engineering, education and enforcement issues as well as three additional E's – evaluation, encouragement and equity.
 - **Evaluation** – Why are parents driving students to school? – A sample parents survey can be used to obtain this level of input.
<http://www.saferoutesinfo.org/program-tools/evaluation-parent-survey>
 - **Engineering** – A detail walking and bicycling audit of potential routes with identification of safety and accessibility solutions.
http://www.saferoutesinfo.org/sites/default/files/resources/ITE_SRTS_Briefing_Sheet_03_WalkingBicyclingAudits.pdf
 - **Education** – Making the case for walking and bicycling. Curricula Guide:
http://www.saferoutespartnership.org/sites/default/files/pdf/Curr_Guide_2011_lo.pdf
 - **Encouragement** – Organize, schedule and promote events and activities such as: walk to school day, bike to school day, walking school bus and bike trains:
<http://www.saferoutespartnership.org/healthy-communities/101/6Es>
 - **Enforcement** – Assure that traffic laws and school safety policies for drop-off, pick-up and bicycling to school are enforced. Develop a strong partnership with the Police Department.
 - **Equity** – Address the needs and obstacles for children and adults in low-income neighborhoods.

Step 3: Implement the Plan

The Pedestrian & Bicycle Advisory Committee will be responsible for assisting with implementation and modification of the Plan as needed to meet the needs of youth and the community. Part of the plan should include an education, awareness and encourage campaign outlined below followed by a year-round program with annual celebration and emphasis during national walk to work/school and bike to work/school months.

Annual Walk, Bike and Drive Smart Campaign

A four -week education and enforcement program.

Involvement of the Mayor

- Kick-off in Downtown
- Featured Events at Schools, Parks, Rail Trail, Hospitals and other locations

Promotion

- Radio/TV Coverage
- Social Media
- Public Service Announcements
- Posters at Schools/Flyers in Kid's Backpacks

Components of the Campaign

- Walking School Bus
- Biking to School
- Pedestrian & Bicycle Safety
- Bicycle, Bicycle Locks and Helmet Giveaways
- Bicycle Registration Program through Police Department
- Sharing the Road Education (Drivers and Bicyclists)
- 2 Weeks of Education
- 2 Weeks of Warnings & Enforcement

Note: Town Council members can participate to support the Mayor.

Walk and Bike to School Day

Participate in the national celebration during National Bike to School Day. Register your event to be counted and enter for drawings for free giveaways such as bikes and helmets. The program is free and open to all schools. There is a series of guidance on how to participate along with downloadable materials to help promote your event. The National Center for Safe Routes to School provides information, guides and resources to assist with this event. Source: <http://www.walkbiketoschool.org/learn-more/about-the-events/about-walk-to-school-day/>

Year-Round Activities to Promote Bicycling and Walking

Coordinate, partner and sponsor a range of year-round activities in coordination with Annual Campaign components. Provide posters, announcements, contests and giveaways along with

- ① **Year-Round Biking and Walking School Bus and Bicycle Trains** to encourage students and to provide a safe environment and oversight of students walking and bicycling to school routinely under supervised conditions. Provide **Safe Routes to School** for children including: presence of sidewalks in good condition, ADA compliant ramps, appropriate signage, crosswalks, crossing guards and education through the schools with support from the Police Department.
- ② **Pedestrian and Bicycle Safety Curriculum for Children** – The National Highway Traffic Safety Administration (NHTSA) provides lesson plans for grades K-5 to be used in the classroom. Partner with the School District to incorporate this topic as part of special events, clubs and annual events to foster better understanding of safety by students. Additional bicycle safety curriculum for youth has been provided by SHAPE America in partnership with NHTSA. Source: http://www.shapeamerica.org/publications/resources/teachingtools/qualitytype/bicycle_curriculum.cfm



Source of graphics: Program agencies.



- ③ **Driver Safety Training & Awareness** – Borough Police Department sponsored training and awareness program for local traveling public and coordinated through the School District’s Driver Training Program for student drivers. Awareness and education through proactive enforcement and dissemination of educational materials.

Borough/School District Crossing Guard Program & Bike to School
Continuation of the Borough/School District Crossing Guard Program with emphasis on the following:

- Apply for grants and increase local funding/sponsorships to staff more crossing guards and enhanced recruitment of crossing guards.
- Staff enough of crossing guards to implement the walking school bus for all elementary schools. Currently only one walking school bus is being implemented due to shortages of crossing guards. Two (2) crossing guards are required for each walking school bus.
- Sponsors to assist with coordination and conducting bicycle to school events annually as part of National Bike to School Day as well as year-round and



financial support for bicycle, helmet and bike lock giveaways; safety events and promotional materials.

7.2 RESOURCES TO ASSIST COMMUNITIES

A variety of national agencies, organizations and advocacy groups offer resources to communities to achieve walking and bicycling goals. A sampling of groups includes the following resources to assist the Borough and partners to implement campaigns and actions plans.

- National Safe Routes to Schools National Partnership
- National Highway Traffic Safety Administration
- SHAPE America
- National and Local Walking & Bicycling Organizations
- Safe Kids Worldwide

8.0 IMPLEMENTATION PLAN



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Priority-Based Implementation Strategy

The planning process included the prioritization of initiatives to meet a vision, goals and objectives to be a pedestrian- and bicycle-friendly community.

Priority	Initiatives
1	Off-Road Facilities
2	On-Road Bike Lanes
3	Sharrows
4	Bike Parking/Racks
5	Education and Awareness
6	Complete Streets Policy
7	Bike Share Program
8	Signage and Traffic Signals



Source: <http://bikeleague.org/community>

8.0 IMPLEMENTATION PLAN

A sustainable transportation system is one that achieves mobility needs of residents through equitable, affordable options with limited impact on the environment.

Implementation of this plan will improve walking and biking conditions throughout the Borough with emphasis on providing connections to important everyday destinations such as parks, libraries, schools, work, shopping, community facilities and other important places. By making walking and bicycling safer and more convenient, there will be greater incentive to walk and ride bicycles for health and recreation, as well as for transportation. The **Pedestrian & Bicycle Advisory Committee**, identified in Chapter 7, will guide implementation of the plan working with a range of partners.

Items in this portion of the plan will be considered for inclusion in the Borough’s Capital Improvement Program (CIP) and the Franklin County MPO’s Transportation Improvement Plan (TIP) and Statewide Improvement Plan (STIP). Additionally, the Borough should consider incorporate the policy recommendations contained in Section 4.0 and Appendix B of the plan into the curb and sidewalk policy as well as create a parcel based ADA Transition Plan (sidewalk and ramp inventory and assessment) that is further detailed in this section.

The ability of people to safely walk and bicycle is a vital part of what makes a community thrive.

As you will see in this section, the total estimated cost of all identified projects and improvements is significant. It is unrealistic to expect that all improvements will be implemented in the near term. In order to devise a phased implementation plan, various initiatives were prioritized to guide this work such as priority initiatives identified in the table to the left. The following criteria were used to identify specific pedestrian and bicycle programs and improvements that:

- Serve key origin and destinations including community facilities and basic goods and services.
- Provide enhanced Safe Routes to School as well as enhanced safety of pedestrians and bicycle movement throughout the town and promote cycling as an alternative for of transportation.
- Close critical gaps in existing facilities and improvement of facilities in poor and/or non-compliant situations.
- Address areas of concern with respect to pedestrian and bicycle safety.
- Incorporate community input as expressed through identified needs.
- Connect/extend shared-use facilities

The **Advisory Committee** with input from stakeholders and the public **suggest the following priority initiatives and projects** based upon the above criteria with emphasis on addressing pedesrian and bicycle safety, mobility and accessibility deficiencies and needs.

8.1 PHASED ACTIONS, COST ESTIMATES AND POTENTIAL FUNDING

Pedestrian Solutions

Strategy: Create a pedestrian-friendly town by improving mobility, safety and accessibility.

Actions: Create, maintain and implement an ADA Transition Plan for the public right-of-way to identify existing structural barriers impeding access to people with disabilities for curb ramps, sidewalks, paths and trails. Conduct a parcel-based ADA ramp and sidewalk condition inventory and Transition Plan. Program and implement a range of projects Borough-wide. Maintain and track progress of implementation.

Responsible Departments/Agencies/Partners: Engineering Department, Land Use & Community Development, Curb & Sidewalk Policy Compliance Committee, PennDOT, Franklin County MPO, Police Department, Property Owners and others.

Priority	Problem/Issue/Concern	Priority Project / Location	Estimated Unit Costs	Potential Funding Sources	Phased Implementation
1	ADA Transition Plan for Public Right-of-Way	Borough-wide inventory and assessment of public right-of-way with phased implementation (GIS Mapping & Tracking of Improvements App)	\$50,000 - \$70,000	<ul style="list-style-type: none"> ➤ General Funds ➤ Surface Transportation Block Grant ➤ Transportation Alternatives (TA) 	2018-2019 Ongoing Living Document
2	Safe, accessible sidewalks and mobility for all users	ADA ramp improvements at locations Borough-wide (ramps and detectable warning mats)			
3	Gaps in sidewalks	<ol style="list-style-type: none"> 1. Loudon Street (south side) 2. Fifth Avenue 3. Industrial Drive & Progress Road 4. Grant Street (north side) 5. Locations as identified in parcel-based ADA Transition Plan 6. Sidewalk connections to priority destinations identified in this plan and the parcel-based ADA Transition Plan 	<p>ADA Ramps & Mats \$8,000 - \$10,000/ Intersection</p> <p>Crosswalks \$5,000 - \$6,000</p> <p>Curb & Sidewalk \$45,000 - \$50,000/500 LF</p> <p>Streetscape Amenities \$15,000 - \$30,000/500 LF</p>	<ul style="list-style-type: none"> ➤ CDBG (Eligible Neighborhoods/ Community Development Projects) ➤ Federal/State Transportation Funding Programs ➤ PennDOT Multimodal Transportation Fund ➤ Commonwealth Financing Authority -(CFA)/DCED Multimodal Transportation Fund ➤ Transportation Alternatives (TA) (Safe Routes to School-SRTS, etc.) ➤ PA Department of Community & Economic Development (DCED), Residential Reinvestment Grants ➤ Growing Greener II ➤ Greenways, Trails and Recreation Program (GTRP) ➤ General Fund ➤ Development/Redevelopment Improvements ➤ Property Owners 	<p>2017-2018 (\$500,000)</p> <ul style="list-style-type: none"> • Downtown Pedestrian Network Integration • Rhodes Drive Reconstruction – Green Streets Concept <p>2019-2021 (\$120,000)</p> <ul style="list-style-type: none"> • Install 41 crosswalks with signage <p>2019-2023</p> <ul style="list-style-type: none"> • Ward 2 ADA Curb Ramps – 125 new ramps and 350 detectable warning mats (\$350,000) • Other Wards Combined (\$1M+) <p>2020-2025+ (\$2M+)</p> <ul style="list-style-type: none"> • Traffic signal upgrades
4	Existing sidewalk condition/repair-replace sidewalk in poor condition, high priority pedestrian connections and downtown streetscape improvements	<p>Various locations Borough-wide</p> <ul style="list-style-type: none"> • Chambersburg Multimodal Integration Project • Borough Curb & Sidewalk Policy Compliance Committee priorities • Downtown Master Plan priorities • Borough Elm Street Plan Sidewalk Inventory/Assessment • Develop ADA Transition Plan for public ROW • PennDOT Transition Plan-Borough Projects 	<p>Traffic Signals w/Pedestrian Count Down \$150,000/Signal</p> <p>\$20,000 - \$30,000/Count Down Signal</p> <p>Signal timing (unknown)</p>		
5	Intersection improvements with countdown signals and crosswalks	<ol style="list-style-type: none"> 1. Orchard Drive and Wayne Ave 2. Stouffer Ave/Walker Road and Lincoln Hwy 3. Walker Road and Norland Ave 4. Fifth Ave and Norland Ave 5. Other intersections and those listed in County LRTP w/out pedestrian count down signals 	<p>Benches \$1,000 - \$1,500</p> <p>Trash Receptacles \$500 - \$700</p>		

Priority	Problem/Issue/Concern	Priority Project / Location	Estimated Unit Costs	Potential Funding Sources	Phased Implementation
6	Staff Training – Law Enforcement and ADA Compliance	Training & Refresher Courses – Free Webinars, In-House and Vendor Training	\$1,000 - \$2,000 Annually	<ul style="list-style-type: none"> ➤ General Fund for Consultant Training ➤ TA/SRTS Funds 	Schedule training and refresher as needed

ADA Transition Plan

The Americans with Disability Act (ADA) requires that the Borough’s ADA Transition Plan clearly identify deficiencies of physical assets, policies and procedures with the plan including the following components:

- A self-evaluation to identify all facilities that are barriers to accessibility.
- Guidance on the steps to be taken to remove accessibility barriers, and estimates of budget and schedule for remove of barriers based on current resource commitments.
- Methods used to make facilities accessible along with internal standards, specifications and procedures.
- Recommendations for a monitoring program to track progress, an annual progress report to the Borough Council and online information on the status of all accessibility features to increase transparency.
- Identification of those responsible for leading the removal of barriers to accessibility.

- Designate an ADA coordinator and implementing official.
- Establish a process by which the public can request improvements or call deficiencies to the attention of the Borough.

This plan provides a cursory self-evaluation using easy methods to determine areas where pedestrian and bicycle facilities exist. A more detailed evaluation and process is recommended that meets specific requirements of an ADA Transition Plan for facilities within the public right-of-way is recommended.

ADA Transition Plan References

- <https://www.fhwa.dot.gov/civilrights/programs/ada.cfm>
- https://www.fhwa.dot.gov/civilrights/programs/ada_sect504qa.cfm



Connection to Future Transit Service

The following are implementation recommendations with respect to connections to future transit service.

Priority	Problem/Issue/Concern	Priority Project / Location	Estimated Unit Costs	Potential Funding Sources	Phased Implementation
1	Lack of Transit Service for individuals to access to jobs, social services and local/regional amenities	Fixed Route(s) servicing key neighborhoods in needs of service, Downtown/Government Centers and Social Service Providers	TBD by Transit Provider	FTA & State Funded	2019-2020 (limited service) Ongoing Growth of Service
2	Bus Shelters	Key neighborhoods, Downtown/Government Center, Shopping Centers and Social Service Providers			
3	Buses Equipped with Bike Racks and ADA accessible	See item 1 and 2. All buses come equipped with bike racks.			

Bicycle Solutions

Strategy: Create a bike-friendly town by improving mobility, safety and accessibility.

Actions: Create, maintain and implement a transportation network (on- and off-road) with safety features, facilities and amenities for bicyclists.

Responsible Departments/Agencies/Partners: Engineering Department, Land Use & Community Development, Curb & Sidewalk Policy Compliance Committee, PennDOT, Franklin County MPO, Police Department, Property Owners, Commonwealth Financing Authority and others.



Priority	Problem/Issue/Concern	Priority Project / Location	Estimated Unit Costs	Potential Funding Sources	Phased Implementation
1	Bicycling Events/Activities	Continue to Participate in Bike to School and Work Annual Events, increase bicycling events in and around the Downtown (races, etc.)	Unknown (TBD)	School, Bicycling Clubs, Chamber of Commerce, Downtown, Inc. and private donations	Annual events year-round Ongoing
2	Bicycle Parking / Racks	Downtown, Major Destinations, Shopping Centers and Employers – Existing parking lots, on-street parking space and parking garages	\$150 - \$750 / rack depending upon size and capacity (includes mounting costs)	TIGER, FTA, ATI, CMAQ, STBG, TA, Recreation Trails Program, SRTS, MPO Funds, Fundraising and Private Investment	2018-2019 Downtown 2018-2025 Other Locations
3	Traffic Calming Solutions	Downtown and corridors adjacent to schools, parks and other target locations	Various depending upon solution	TIGER, FTA, HSIP, STBG, TA and SRTS	2018-2025
4	Signed Pedestrian and Bicycle Routes	Downtown Walking Loop and Bicycle Loop and Alleyways (place on existing sign channels)	\$25-\$50 / sign including installation	TIGER, FTA, ATI, CMAQ, STBG, TA,	2018-2020
5	Sharrows, Share the Road and Wayfinding Signage	Downtown and Along Major Corridors – Sharrows and Share the Road Decals	Reference TPD Study of Downtown	Reference TPD Study of Downtown	2018 Downtown (Spring) 2018 Borough (Fall)
6	Safety Enforcement	Borough-wide with target enforcement in Downtown and adjacent to Schools and Parks	Part of Police Department Operation Costs	SRTS, General Funds	Ongoing
7	Safety Education & Awareness Campaign	Child, youth and adult bicyclists. Driver awareness	\$5,000 - \$7,000 Annually	SRTS, Fundraising and Private Donations	Ongoing
8	Bicycle Lockers	Downtown parking lots, parking garages and major employer parking lots.	\$1,300 - \$2,000 each	FTA, ATI, CMAQ, STBG, TA, General Fund, Fundraising and Private Investment	2019-2020 Key Locations
9	Downtown, Trailside and Trailhead Facilities	Restrooms and Jug Fillers (Urban Restroom connected to public water and sewer)	Restroom – \$45,500 + \$15,000 Installation / Unit Jug Fillers – \$2,500 - \$4,000 each	TA, DCNR, fundraising, donations and other potential sources Purchase of equipment from State Contract may save 8%-10%	2019-2025
10	Bicycle Donation/Library Program or Bike-Share Program	See details below	See details below	See details below	2018-2020 Ongoing
11	Bicycle Lanes	Locations to be determined based upon further study (primarily in existing right-of-way).	Study/Analysis – \$50,000 - \$75,000	TA, STBG, SRTS, General Fund and other potential funding sources	2020

Bicycle Donation and Bike-Share Lending Program

As an initial strategy to gain awareness and measure level of interest in bicycling, the Borough is contemplating a Bicycle Donation and Bike-Share Lending Program sponsored through Coyle Free Library in partnership with the Police Department and local bicycling clubs. The following provides a **potential framework for a program that requires additional research, development and support** by the Library and partners. The program could include:

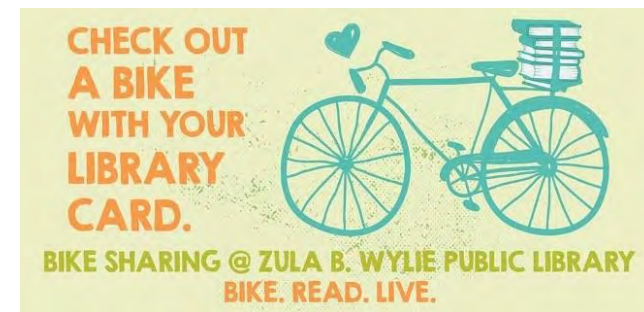
- Donated new and used bicycles and unclaimed stolen bicycles located by the Police Department.
- Fundraisers conducted by the local bicycling clubs can provide financial resources to refurbish, repair and maintain bicycles, helmets and cable locks.
- Bicycle may be checked out to current residents similar to book check out at the library with proper identification.
- All borrows must complete a bicycle borrow agreement. If under 18 years of age, a parent or guardian must complete a borrow agreement.
- Bicycles may be checked out for up to 7 days with all bicycles checked out on a first-come basis during normal library hours.



- All checkouts include a bicycle, helmet, cable lock and safety guidance and local bicycling regulations.
- Bicycles will be fitted to each rider to the best of the bike's suitability.
- A borrower wishing to extend a check out period can do so provided no other participants are on a waitlist.
- If check out is for an extended period of time, the borrower must return the bicycle briefly for a tune-up and to update any required paperwork.
- Coyle Free Library reserves the right to deny rental to anyone who has a history of abusing borrowed bicycles.
- Fees may be charged for damage/repairs beyond normal use as well as for lost/stolen equipment.
- Late fees per day may be charged for bicycles not returned on time.

Implementation for Bike Donation and Bike-Share Lending Program

This type of program can start with minimal to moderate investment and annual cost by using unclaimed bicycles from the Police Department and donations from local bicycling clubs for routine maintenance and purchase of new bicycles, helmets and bicycle locks. Currently, Wilson College operates a bike-share lending program for students. Additional study to determine feasibility is necessary as next steps.



Example of a Bike-Share Lending Program through local library and source of graphic above: <http://www.cedarhilltx.com/2228/Bike-Share-Lending-Program>

Simple, Low-Cost Bike-Share Programs Promote a Healthy Community

Smaller cities are increasingly adopting bike-share programs with these programs different than those in large cities. Bike share programs are recognized as a cost effective and sustainable strategy to expand transit options increasing mobility. Benefits of these programs include:

- Low-cost public transit option for users
- Cost-effective infrastructure investment
- Congestion reduction and less fuel consumption
- Less wear and tear on roadways
- Improved access to jobs
- Increased retail exposure and home values
- Decreased air pollution
- Increased physical activity and healthy living

Source: National League of Cities, Center for Research & Innovation

A bike share system is an automated, public bicycle rental program comprised of a network of stations housing commuter bicycles and/or bicycles for tourists. The pricing of this service is generally free for the first 30 minutes with a sliding fee system to encourage short trips keeping the maximum use.

Individual economic and health benefits are coupled with the long-term reduction of investment and amount of land devoted to vehicle infrastructure.

Studies suggest that the keys to a successful bike-share program is that the program is properly studied, planned, funded, implemented and aligned with measurable goals. This supports the program to become part of a permanent multi-modal transportation system and sustainability plan for a healthy community. The goal is for the bike-share program to become a safe, reliable, convenient and affordable transportation alternative.

Many communities come to realize that bike-share programs from the very sophisticated to those that are simple in design and operation typically require some level of subsidy beyond user fees through private-public partnerships for start-up as well as ongoing maintenance and operations.

Bike Share Grant Programs

Better Bike Share Grants – to increase a bike share program:
<http://www.peopleforbikes.org/pages/better-bike-share-grants>

Pedestrian and Bicycle Information Center:
http://www.pedbikeinfo.org/programs/promote_bikeshare.cfm





Bike-Share Program Options

There are lease and ownership programs to deploying and operating cost-effective bike-sharing. The following table provides information and cost estimates for two vendors offering cost-effective solutions for smaller cities. Research and comparison of additional vendor programs is recommended as part of a more detailed needs analysis and feasibility assessment prior to phased implementation of a bike-share program. Other options exist and can be explored as part of implementation of this plan. Additional study is necessary to determine if feasible to implement.

Wilson College Yikes Bikes Program

The College offers a **free bike share program for students** to use for recreation and transportation. Students use bicycles to travel to the downtown and to access shopping along Norland Avenue, health services and other points within and around the Town. The College is interested in exploring options to partnering with the Borough to establish a Town bike-share program. If establishing a program is feasible and participation by the College is possible, the College may donate all existing bicycles to the bike-share lending program if feasible to be established through the Coyle Free Library. The College in partnership with the Borough could be considered a hub for potential location for a rack mount of 8-10 durable bicycles as part of a Borough-wide bike-share program. The College is interested in working collaboratively to determine the possibility for participation both the bike-share program and bicycle leading program. Additional study is necessary to determine next steps.

Company	Website	Summary of Information
Zagster (full-service, lease program)	http://www.zagster.com/	Lease Program with Revenue Sharing – Full service model that covers everything involved in planning, building and operating a system. Annual Lease Fee for 1-2 Stations with 10-15 Bikes - \$20,000 Routine maintenance would be through a local bike shop. Technology is on the bike with use of smart phone and standard text messages.
On Bike Share (ownership program)	http://www.onbikeshare.com/index.html	Ownership Program with 2 options -- Ride & Return or Point-to-Point Cost for Ride & Return for 10-15 Bikes with racks - \$12,150.00 Billing Option after first year \$100/Bike annually Cost for Point-to-Point for 10-15 Bikes with individual racks - \$12,150 additional \$800 for 16 more racks (double the amount of racks is required). Borough staff would be required to balance the bikes by moving them between racks. Billing Option after first year \$100/Bike annually Revenue opportunity for either option - 94% of Revenue/Fee is Borough's. Routine maintenance for either option would be through Borough or local bike shop. Bike is designed for low maintenance with no special tools or skills required. Racks have no technology nor energy requirements. All technology is on the bikes – blue tooth technology and use of smart phone. Racks must be mounted on concrete not asphalt. Rack Mount option for areas without concrete for six bikes that will fit into a single parking space in a parking lot or on-street with signage and can be moved if needed. \$4,800



Phase Implementation for Bike-Share Program

Implementation Steps	Timeframe	Potential Partners/Funding Sources
Step 1: Needs Assessment & Feasibility Study	2018	\$10,000 - \$18,000 Borough, Chamber of Commerce, FCADC, Wilson College, Target, Wal Mart, local Bicycle Clubs and others.
Step 2: Public-Private Partnership Development & Fundraising	2018/2019	Develop a formal partnership with agreements to guarantee \$10,000 initially with fundraising associated with annual walking/biking events. Wilson College has expressed an interest in partnering for this type of program.
Step 3: Grants Writing / Application	2019	In-house grants writing for capital and equipment costs augmented by fundraising for annual maintenance and operations. Grants for capital and equipment only includes sources such as: TIGER, FTA, Associated Transit Improvement (ATI); CMAQ, National Highway Performance Program, Surface Transportation Block Grant Program and FTA.
Step 4: Implementation	2020 – 2025	\$15,000 Start-up investment and \$20,000 fleet expansion/rack parking.
Step 5: Funding, Grants writing for M/O	2021+	\$2,000 annual maintenance and 3-year cycle for fleet replacement.

Potential Multi-Use Connections (On- and Off-Road Projects)

Smart solutions for on- and off-road multi-use connections include the following projects that are further detailed on individual project sheets in this section.

- A – Greene Township Trail Connection
- B – Rail Trail “Gravel Road” Extension
- C – Norland Avenue to Future Redevelopment
- D – 3rd Street Greenway
- E – 3rd Street to Summit Health Campus
- F – Trailhead Gateway and Alley Enhancement Projects from the Downtown Master Plan – Reference the following link for details.
https://media.wix.com/ugd/104979_6456cc2bdfdd47ac9337eb03680a1d9e.pdf
- G – McKinley Street East/West Connection
- H – Rail Trail to Stevens Elementary
- I – Southern Rail Trail Extension

Overtime, additional connectors may be identified that is consistent with the vision of this plan that may be considered for implementation.

PARTNERSHIPS



Public Workshop Scorecard Identify Preferred Linkages

	Preferred Linkages	Score with 1 as Highest			TOTAL Votes
		1	2	3	
A	Greene Township Trail Connection	6	10	7	23
B	Rail Trail “Gravel Road” Extension	9	8	4	21
C	Norland Ave to Future Re-Development	7	4	5	16
D	3rd Street Greenway	5	1	2	8
E	3rd Street to Summit Health Campus	4	2	5	11
F	Harrison Avenue	2	-	2	4
G	McKinley Street East-West Connection	3	11	7	21
H	Rail Trail to Stevens Elementary	4	5	2	11
I	Southern Rail Trail Extension	7	6	10	23
J	Other	-	1	4	5

The Public Workshop provided opportunity for attendees to review and score various on- and off-road connections to gain a sense of preferences for prioritizing improvements and the level of improvement expected. The above results were used to prepare cost estimates for this section of the plan.

Item F, Harrison Avenue (above) was ranked very low on the preference ranking and was replaced with two priority pedestrian/bicycle projects from the Downtown Master Plan.

Projects A-I are considered **capital improvement projects** which require additional planning and/or engineering, budgeting, grants writing and/or financial partnerships to implement. The projects as identified can be modified to include lower cost solutions and/or more robust solutions.

A – GREENE TOWNSHIP TRAIL CONNECTION



Location: Rail corridor north of borough between Wilson College and Northwood Park in Greene Township

Implementation Partners: Borough, Green Township, Franklin County, Pedestrian and Bicycle Improvements Plan Advisory Committee, Recreation Advisory Committee and Chambersburg Municipal Area Authority.

Potential Funding Sources: TIGER, TIFIA Loans, Transportation Alternatives (TA), DCNR grants, DCED GTRP grants, PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant and Capital Campaign.

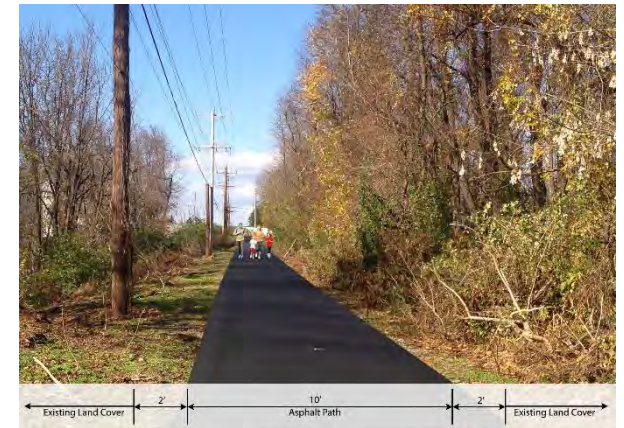
Engineering Cost:
\$120,000 - \$150,000

Construction Cost:
\$700,000 - \$800,000



Project Overview:

The Green Township Trail Connection project begins within the borough, approximately 500 ft. east of S. Penn Hall Drive and would continue along the rail corridor to Northwood Park in Greene Township. The approximately 1-mile long trail would include 10 – 12 ft. shared-Use path with 2 ft. buffers on each side of the trail. The major crossings along the trail are Siloam Road and Philadelphia Avenue.



B – RAIL TRAIL “GRAVEL ROAD” EXTENSION



Location:

Links northern terminus of rail trail to Wilson College Equestrian Complex

Implementation Partners:

Borough, Pedestrian and Bicycle Improvements Plan Advisory Committee, Wilson College, Recreation Advisory Committee and Chambersburg Area Municipal Authority.

Potential Funding Sources:

TIGER, TIFIA Loans, Transportation Alternatives (TA), DCNR grants, DCED GTRP grants, PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant and Capital Campaign.

Engineering Cost:

\$50,000 - \$70,000

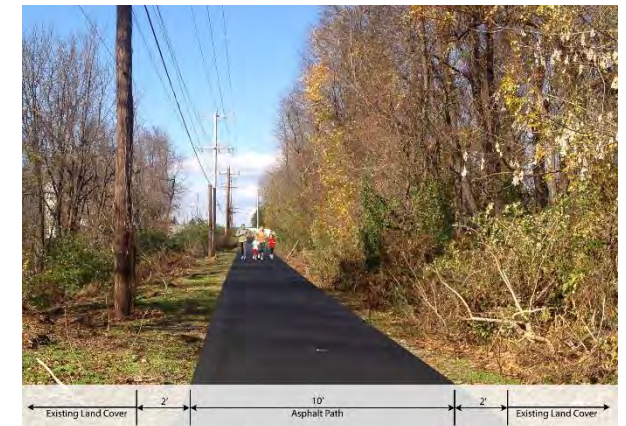
Construction Cost:

\$300,000 - \$400,000



Project Overview:

The Rail Trail “gravel Road” Extension links the northern terminus of the existing rail trail to Wilson College Equestrian Complex and Wilson’s internal trails. This portion of the trail extends approximately 0.5 mile. The proposed rail trail extension will include a 10 – 12 ft. shared-Use path with 2 ft. buffers on each side of the trail. This connection includes one roadway crossing at the W. Commerce Street/Hood Street intersection.



C – NORLAND AVENUE TO FUTURE REDEVELOPMENT



Location: Rail corridor between Norland Avenue and future Grant Street commercial development

Implementation Partners: Borough, Franklin County, Pedestrian and Bicycle Improvements Plan Advisory Committee, Recreation Advisory Committee and Chambersburg Municipal Area Authority.

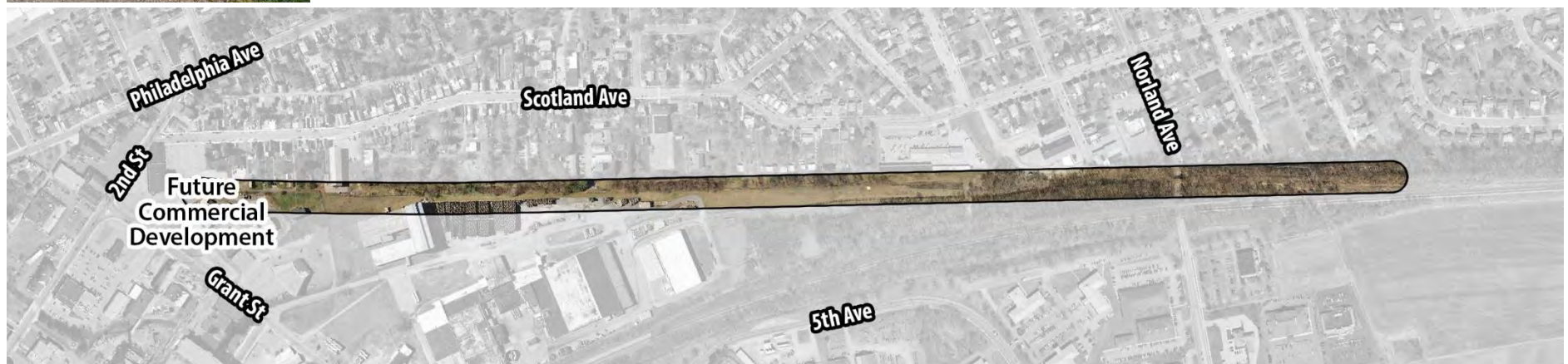
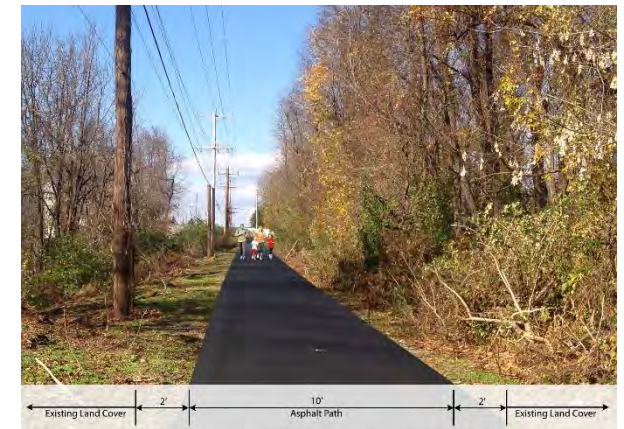
Potential Funding Sources: TIGER, TIFIA Loans, Transportation Alternatives (TA), DCNR grants, DCED GTRP grants, PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant and Capital Campaign.

Engineering Cost:
\$130,000 - \$160,000

Construction Cost:
\$750,000 - \$850,000



Project Overview:
The Norland Avenue to Future Redevelopment trail will be constructed between Norland Avenue and the future Grant Street commercial development, which is approximately 1.1 miles in length. The proposed trail will utilize a 10 – 12 ft. shared-use path with 2 ft. buffers on each side of the trail. The proposed trail connection will evaluate a potential link from the trail down to Norland Avenue.



D – 3RD STREET GREENWAY



Location: 3rd Street north of Lincoln Highway to Grant Street

Engineering Cost:

\$40,000 - \$60,000

Implementation Partners: Borough, Pedestrian and Bicycle Improvements Plan Advisory Committee, Recreation Advisory Committee and Chambersburg Municipal Area Authority.

Construction Cost:

\$250,000 - \$300,000

Potential Funding Sources: TIGER, TIFIA Loans, Transportation Alternatives (TA), DCNR grants, DCED GTRP grants, PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant and Capital Campaign.



Project Overview:

The 3rd Street Greenway trail begins 900 ft. north of Lincoln Highway and terminates at Grant Street. The trail would run approximately ¼ mile in length. The proposed trail will utilize a 10 – 12 ft. shared-Use path with 5 ft. buffers on each side of the trail.

Rendering to the right prepared by Derk & Edson (Source: Downton Master Plan).



E – 3RD STREET TO SUMMIT HEALTH CAMPUS



Location: Alleyway connection between 3rd Street and Summit Health campus, parallel to Lincoln Highway

Implementation Partners: Borough, Summit Health, Pedestrian and Bicycle Improvements Plan Advisory Committee and Chambersburg Municipal Area Authority.

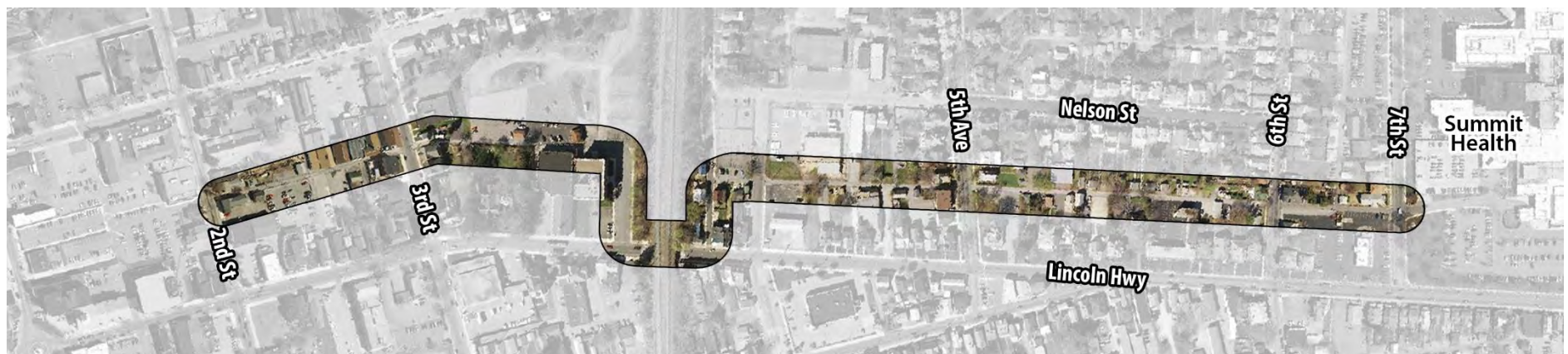
Potential Funding Sources: Transportation Alternatives (TA), PennDOT and DCED Multi-modal Funds, General Funds and Capital Campaign.

Project Overview:

Provision of a “signed” connection between the Summit Health campus and the downtown district. Improvements would include proposed signage. The critical road-block associated with this connection is the existing rail line. A potential solution would be to incorporate signing and pavement marking improvements along Lincoln Highway. This would include removal of small segment of on-street parking along Lincoln Highway and pavement markings.

Engineering Cost:
\$5,000 - \$10,000

Construction Cost:
\$25,000 - \$50,000



F – TRAILHEAD GATEWAY AND DOWNTOWN ALLEYWAY ENHANCEMENTS



Location: Trailhead Gateway at Rail Trail and Alleyway enhancements next to Olympia Candy Kitchen.

Implementation Partners: Downtown Chambersburg Inc., Borough and Property Owners.

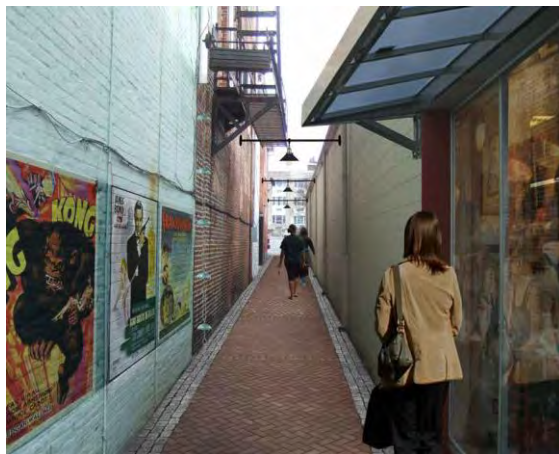
Potential Funding Sources: Main Street Grant Funding Sources, Transportation Alternatives (TA), PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant and Capital Campaign.

Engineering Cost:
\$10,000 - \$15,000

Construction Cost:
\$30,000 - \$60,000

Project Overview:

The Downtown Master Plan identifies a series of projects, two of which directly relate to providing enhanced bicycle and pedestrian connections to and from the downtown and to the Rail Trail and other destinations / attractions.



Images above prepared by Derk & Edson. (Source: Downtown Master Plan).

G – MCKINLEY STREET EAST – WEST CONNECTION



Location: McKinley and South Streets between Chambersburg Middle School/Memorial Park and Chambersburg Rail Trail at Hollywell Avenue

Implementation Partners: Borough, School District, Pedestrian and Bicycle Improvements Plan Advisory Committee and Chambersburg Area Municipal Authority.

Potential Funding Sources: Safe Routes to School (SRTS), TIGER, TIFIA Loans, Transportation Alternatives (TA), PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant and Capital Campaign.

Engineering Cost:
\$200,000 - \$250,000

Construction Cost:
\$1,500,000 - \$1,700,000



Project Overview:

This critical connection would include on-road or off-road improvements, or a combination of both to provide a bicycle friendly link between the Middle School Campus/Memorial Park, the High School Campus, Mike Waters Park, and the existing Rail Trail. Improvements could include removal of existing on-street parking, bicycle lane, sidewalk improvements, cross walks, intersection improvement, pavement markings and signage.



H – RAIL TRAIL TO STEVENS ELEMENTARY



Location: Link through private property from Rail Trail to back of Stevens Elementary School campus

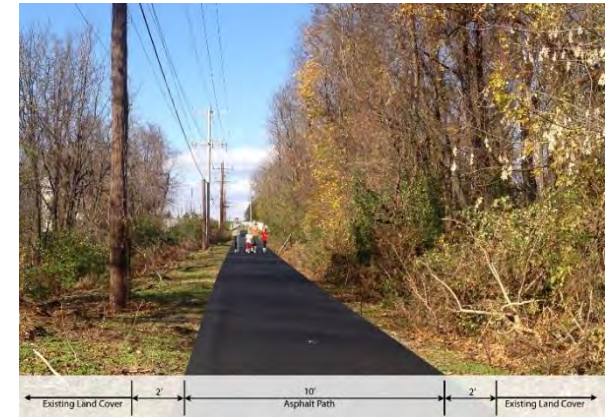
Implementation Partners: Borough, School District, Pedestrian and Bicycle Improvements Plan Advisory Committee and Chambersburg Area Municipal Authority.

Potential Funding Sources: Safe Routes to School (SRTS), TIGER, TIFIA Loans, Transportation Alternatives (TA), DCNR grants, DCED GTRP grants, PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant, Donation of Right-of-Way and Capital Campaign.

Project Overview: Provide a multi-purpose (10'-12') shared use path connection between the existing Rail Trail and Stevens Elementary School Campus. The connection would also include a link to the cul-de-sac at Progress Road improvements and signage.

Engineering Cost:
\$15,000 - \$25,000

Construction Cost:
\$100,000 - \$150,000



I – SOUTHERN RAIL TRAIL EXTENSION



Location: Southern terminus of Rail Trail to Fifth Ward neighborhoods and commercial area (Wayne Avenue)

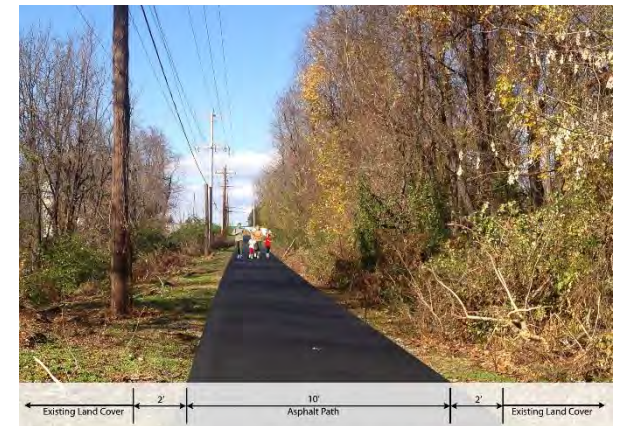
Implementation Partners: Borough, Pedestrian and Bicycle Improvements Plan Advisory Committee and Chambersburg Municipal Area Authority.

Potential Funding Sources: TIGER, TIFIA Loans, Transportation Alternatives (TA), DCNR grants, DCED GTRP grants, PennDOT and DCED Multi-modal Funds, General Funds, Municipal Bonds, Tourism & Quality of Life Enhancement Grant and Capital Campaign.

Project Overview: Multi-purpose 10'-12' shared use path improvements extending the existing rail trail to the Wayne Avenue. Improvements could also include some on-road improvements, crossings and signage.

Engineering Cost: \$125,000 - \$150,000

Construction Cost: \$850,000 - \$950,000



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PEDESTRIAN AND BICYCLE IMPROVEMENTS PLAN 2017

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