A Plan for Walking and Bicycling in the Town of Perryville

PERRYVILLE GREENWAY PLAN

Developed by
WILMAPCO

In partnership with
The Town of Perryville, Maryland
Cecil County

With technical assistance from
Design Collective

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INTRODUCTION

The Town of Perryville recognizes that bicycling and walking enhance the quality of life for residents, commuters and visitors, and that safe routes should connect neighborhoods, parks, schools, transit and commercial areas. Developed in coordination with the *Perryville Transit Oriented Development (TOD) Plan*, this Greenway Plan provides a coordinated and strategic approach to the development of a network of off-road bicycle and pedestrian greenways, and connecting sidewalks and bicycle routes. Located along the Lower Susquehanna Heritage Greenway and East Coast Greenway, the Town of Perryville is interested in expanding facilities for walking and bicycling for local transportation, recreation and regional tourism.

The Plan identifies projects and strategies to improve quality of life for residents and visitors by expanding transportation choice and opportunities, providing safe, healthy and convenient facilities for pedestrian and bicycle commuting and recreation for residents and visitors of all ages. The Town will increase walking and bicycling use and safety by providing a network with links to other modes of transportation, and developing education programs and encouragement activities.

This Plan seeks to guide the enhancement of greenways, bicycle routes and pedestrian facilities in Perryville by:

- Identifying best practices and their possible use in Perryville
- Evaluating existing conditions and identifying gaps in the network
- Identifying potential greenways, sidewalks, and bike routes that include links to other modes of transportation
- Proposing programs, policies and projects for fostering development, maintenance and use of the network
- Identify possible funding sources and partnerships

This Plan is guided by state, local and regional policies and was developed under the direction of the Town's Greenway Committee, comprised of local elected officials, nonprofits, Town staff and residents.

GOALS AND OBJECTIVES

Goals and objectives of this Plan include:

- **Increase Walking and Bicycling for Transportation**: Enhance the user experience as well as access to schools, places of employment, shopping, parks and recreation, natural areas, community centers and other key destinations:
  - Expand greenway accessibility and connectivity
  - Foster intermodal linkages and amenities to support trips by walking and cycling
  - Integrate walking and bicycling with public transit facilities and services
  - Provide adequate and secure bicycle parking at all major trip destinations
  - Provide capital and engineered safety enhancements for safe travel across the town's nonmotorized network
  - Maintain existing trails

- **Develop a Coordinated Network for Walking and Bicycling That is Safe, Accessible, Convenient and Provides Intermodal Connections**: Systematically develop and enhance greenways, sidewalks and bike routes where residents and visitors live, learn, work, and play:
    - Explore greenway development in underutilized rail and utility corridors
    - Focus greenway development on linkages with existing infrastructure
    - Provide safely designed, well-marked and maintained on and off street bicycle routes
    - Integrate greenways into existing communities
    - Promote greenway design standards
    - Routinely inventory greenway, pedestrian and bicycling assets
- **Expand Partnerships and Coordination to Support Walking and Bicycling**: Facilitate collaborative relationships among stakeholder groups and pursue new approaches to promoting greenway, sidewalk and bicycle route development:
    - Attract state agency, local, and non-traditional partners in greenway development and promotion
    - Practice coordinated inter-agency and inter-jurisdictional planning
    - Incorporate pedestrian and bicycle elements into planning and development activities
    - Refine roles and responsibilities of state agencies, the Town government and outside stakeholders
    - Engage in innovative marketing and outreach techniques
    - Provide connectivity to county, regional and national bicycle and greenway routes
    - Teach children and adults safe bicycling techniques and motor vehicle operations
    - Provide enforcement of traffic laws related to bicycling and pedestrians
    - Maximize resources to support private and nonprofit sponsors
    - Foster preplanning and engineering to address future maintenance needs

The 2010 Town of Perryville Comprehensive Plan laid out a vision and strategies for a walkable, transit-friendly community. This Plan supports several strategies from the 2010 Town of Perryville Comprehensive Plan including:

- Link the residential, commercial and tourism sites through expansion of the transportation network
- Encourage use of public transit – the MARC Train System
- Plan for improvements to existing and creation of new pedestrian access to the waterfront. Within this strategic context the Town has established the following priority initiatives:
    - Perryville Boat Ramp
    - Boardwalk along the shore at Rodgers Tavern
    - Greenway Trail System
    - Sidewalk retrofit along MD 7
    - Improvements to the Perryville Community Park

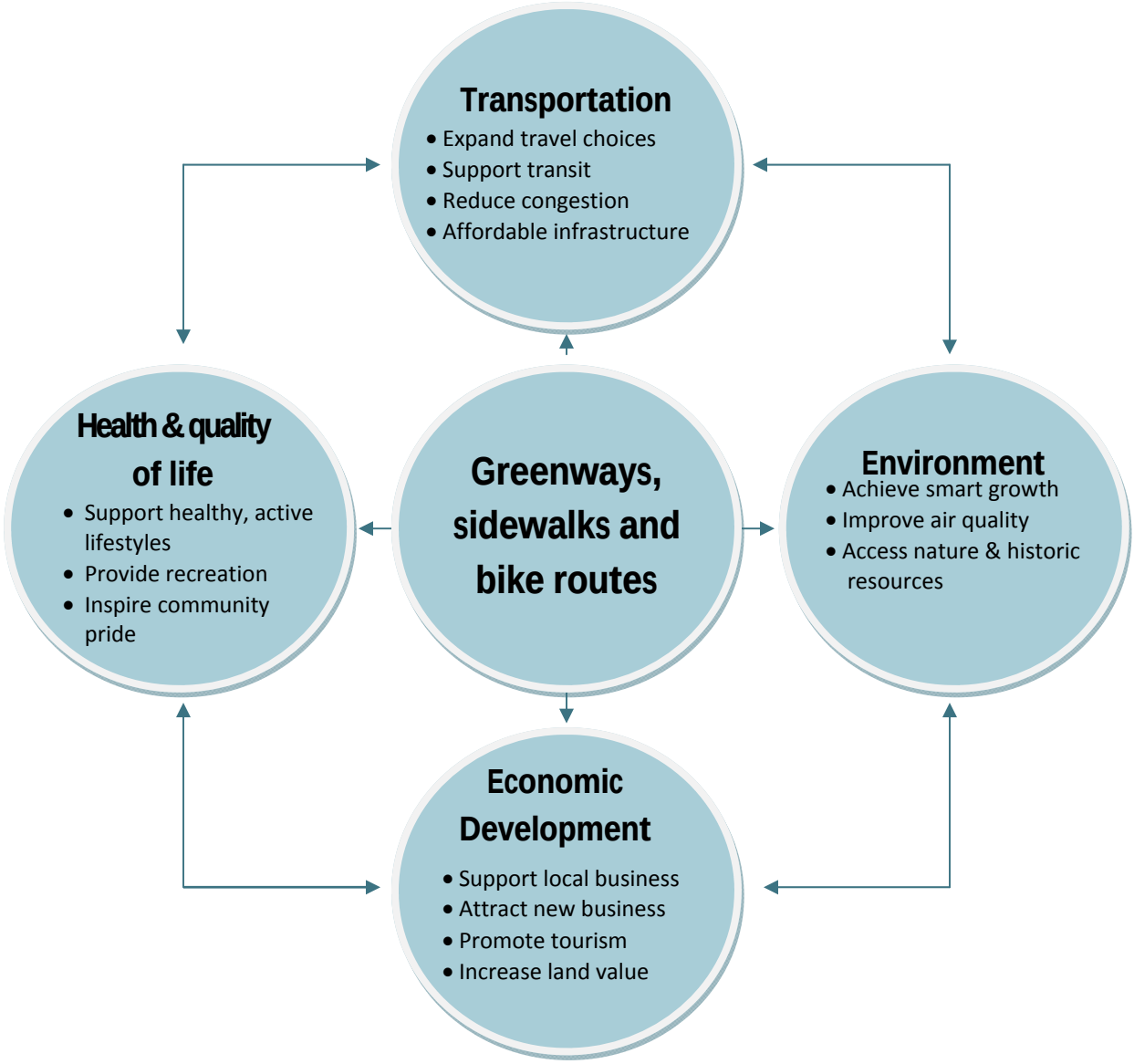
Objectives in the Comprehensive Plan's transportation section include the following that are addressed by this Plan:

- Provide a balance of transportation facilities meeting the needs of Perryville
- Coordinate various modes of transportation so that they complement each other
- Improve pedestrian and bicycle opportunities in the Town
- Provide adequate transportation network with minimal Town expense
- Maximize the desired use of transportation systems while minimizing possible effects upon neighborhoods, the environment and the general public
- In conjunction with County efforts, encourage the improvement of an efficient, convenient public transportation system to serve the specialized needs of residents and encourage new development and redevelopment activities to facilitate pedestrian and non-vehicular traffic or to integrate with public transportation systems

WHY WE DEVELOPED A PERRYVILLE GREENWAY PLAN

Walking and bicycling facilities are an important part of Perryville's community, serving not only as a low-cost means of transportation, but providing economic, environmental, health and quality of life benefits.

GREENWAYS, SIDEWALKS AND BIKE ROUTES CONTRIBUTE TO STATE, REGIONAL AND LOCAL GOALS



Source: Adapted from 2009 Maryland Trails: Strategic Implementation Plan

TRANSPORTATION BENEFITS

Primary transportation benefits of walking and bicycling include:

i) Expanded travel choices
ii) Support for transit
iii) Reduced congestion
iv) Provides affordable infrastructure

Pedestrian and bicycle facilities—both parallel to roads and along greenways—are a necessary part of the transportation system in Perryville and the surrounding region. Walking is the most basic form of transportation, and almost everyone is a pedestrian. Walking and bicycling are ideal, but underused, modes of travel for short trips between where we live, work, learn, shop, and play. Facilities to walk and bike are particularly critical for transit riders, those too young to drive, those for whom physical or financial conditions limit the ability to drive, and those choosing not to drive. According to the Census Bureau, 19 percent of Perryville residents are younger than age 16 and 8 percent of Perryville households have no vehicle available[1].

Fostering transit-oriented development and convenient transit service requires good pedestrian and bicycle access around the train station and bus stops. Ridership on Cecil County Community Transit and the Perryville MARC service has seen steady increases in recent years. Bus transit riders depend on walking to access bus stops and destinations. Cecil County Community Transit is also in the process of adding bike racks to buses which will allow for longer trips combined with transit. While many using the MARC service drive to the station, parking at the station is often at capacity and riders within walking and bicycling distance can reduce the demand for parking. The overflow park and ride lot at the Perryville United Methodist Church requires a short walk.

For longer trips, using greenways and bike routes connect people to surrounding areas. Interregional routes have been identified as part of the Lower Susquehanna Heritage Greenway and East Coast Greenway plans and a *Cecil County Bicycle Plan* is under development beginning in 2011. Access to Aberdeen Proving Ground (APG) can be achieved with a reasonable bicycle ride, if access is provided across the Hatem Bridge and bicycling is being encouraged to avoid congestion by the base entrance. According to the APG, the base is ideal for bicycling because of the flat terrain, well marked roads, and employees that are used to sharing the road with soldiers, cyclists and pedestrians. In addition, federal employees who commute by bicycle are eligible for a $20 tax-free federal transit subsidy per month.

In addition to being a form of low cost transportation for residents, walking and bicycling facilities are a low cost way of providing transportation infrastructure for the town and state as well. Shifting even a small percentage of short distance driving trips to walking and bicycling can reduce congestion. According to the National Household Travel Survey, 29 percent of all trips are one mile or less; of these, currently only 35 percent are walked and 2.25 percent are biked. Providing walking and biking routes for these short trips represents the greatest opportunity to reduce the amount driving.

Construction costs for building sidewalks, pathways and bike lanes are much less than those of expanding roads. On-road bike routes often can be added at almost no additional cost if striping is done when a road is resurfaced.

[1] U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

ENVIRONMENTAL BENEFITS

Primary environmental benefits of walking and bicycling include:

i) Part of achieving smart growth
ii) Improves air quality
iii) Provides access nature and historic resources

Smart growth and quality facilities for walking and bicycling must work as one. Mixed-use, higher density development provides the option of trips by walking and bicycling by locating homes, jobs, shopping, services and recreation within close distance of each other. Yet high density development without transportation choices, including transit, sidewalks and crosswalks, can lead to areas with excessive traffic congestion.

Greenways, sidewalks and bike routes play a part in improving the region's air quality. Cecil County is federally-classified for ozone as moderate non-attainment. Ozone forms when air pollution, including emissions from cars, mixes with heat and sunlight. As a region we are required to take steps toward reducing the transportation impact on regional pollution; the mix of tools to achieve this includes walking and bicycling facilities.

In addition to more regional environmental benefits, greenways provide important access for children and adults to the natural and historic resources that Perryville offers. The "No Child Left Inside" movement advocates that access to these resources is critical to our children's development and fosters a lifelong appreciation for the nature and history in the community and beyond. In 2011, Maryland became the first state in the country to require its high school seniors be environmentally literate in order to graduate. Greenway links between schools and natural areas provides Perryville opportunities for hand-on environmental education.

ECONOMIC BENEFITS

Primary economic benefits of walking and bicycling include:

i) Support local business and attract new business
ii) Promote tourism
iii) Increase land value

Developing greenway, bike and pedestrian connections will support Perryville's economy. Access to recreation and transportation are key factors when choosing where to live or locate a business. Access to rail and I-95 already make Perryville a desirable location, but this can be enhanced by improving pedestrian and bicycle facilities as well.

Perryville's location along the planned East Coast Greenway and Lower Susquehanna Heritage Greenway make it an ideal community to promote active recreation and tourism as part of the economy. A model to examine is that of the "Trail Towns" along the Great Allegheny Passage Greenway in Pennsylvania. The nine small towns along the trail report over $40 million in direct annual spending is attributed to trail user spending. Similarly, a substantial section of greenway connecting Perryville to the greater region would foster demand for overnight lodging, restaurants, bike shops, and water based services (water taxi, boat rental, etc.).

No doubt because of the desirability to live near quality walking facilities, national research has found that houses in more walkable neighborhoods—those with a mix of common daily shopping and social destinations within a short distance—have a higher value compared to similar houses in less walkable areas. Research found that this walkable premium ranges from about $4,000 to $34,000 over houses with just average levels of walkability in the typical metropolitan areas studied[2]. The research also finds that this premium exists for commercial property.

[2] http://blog.walkscore.com/wp-content/uploads/2009/08/WalkingTheWalk_CEOsforCities.pdf, http://www.u.arizona.edu/~gpivo/Walkability%20Paper%208_4%20draft.pdf

HEALTH AND QUALITY OF LIFE BENEFITS

Primary health and quality of life benefits of walking and bicycling include:

i) Support healthy, active lifestyles
ii) Provide recreation
iii) Inspire community pride

Countless research exists regarding the health benefits of exercise and the negative impacts of not getting enough physical activity. Those who live within walkable, bikeable communities are able to get sufficient physical activity through normal activities within the community. For instance, a daily walk to the post office, a bicycle ride to the store or a hike to the park can provide the recommended level of exercise, all at little or no cost.

What is harder to quantify is the tremendous sense of community pride that is fostered within walkable communities. Greenways provide for access to recreation that is affordable for all ages and incomes. Walking combined with transit provides access to social interaction, jobs, and services needed by all physical abilities. Walkable neighborhoods have a greater sense of community as residents are better able to get to know one another and interact. More people walking and bicycling provides "eyes on the street" so that the community can remain alert to crime and other issues.

Photo by Frank Chan, www.peoplepoweredmovement.org

EXISTING CONDITIONS

This Plan builds upon past plans and coordination, and seeks to identify a seamless network for walking and bicycling by connecting existing facilities with proposed projects. First settled in 1622 and incorporated in 1882, Perryville dates back to a time when walkable community centers were needed prior to the advent of the automobile. Over the years, this walkable town center has grown and travel routes have become auto-oriented, as roads have been built and widened to modern standards without the accompanying bicycle and pedestrian facilities needed to serve all travel needs. Major gaps force people to walk in the street, ride bicycles on sidewalks, or choose not to walk or bike at all. Major roads lack crosswalks which limit the ability for residents to reach shopping and other destinations. North of US 40, in particular, there are few walking and bicycling connections. Currently, Maryland Transportation Authority (MdTA) and Maryland State Highway Administration (MD SHA) are completing the I-95/MD222 Concept Study, which includes options for bicycle and pedestrian facilities. Funding for future planning, engineering and construction beyond the initial Concept Study is not in place.

CURRENT CHALLENGES

FRAGMENTED SIDEWALK NETWORK

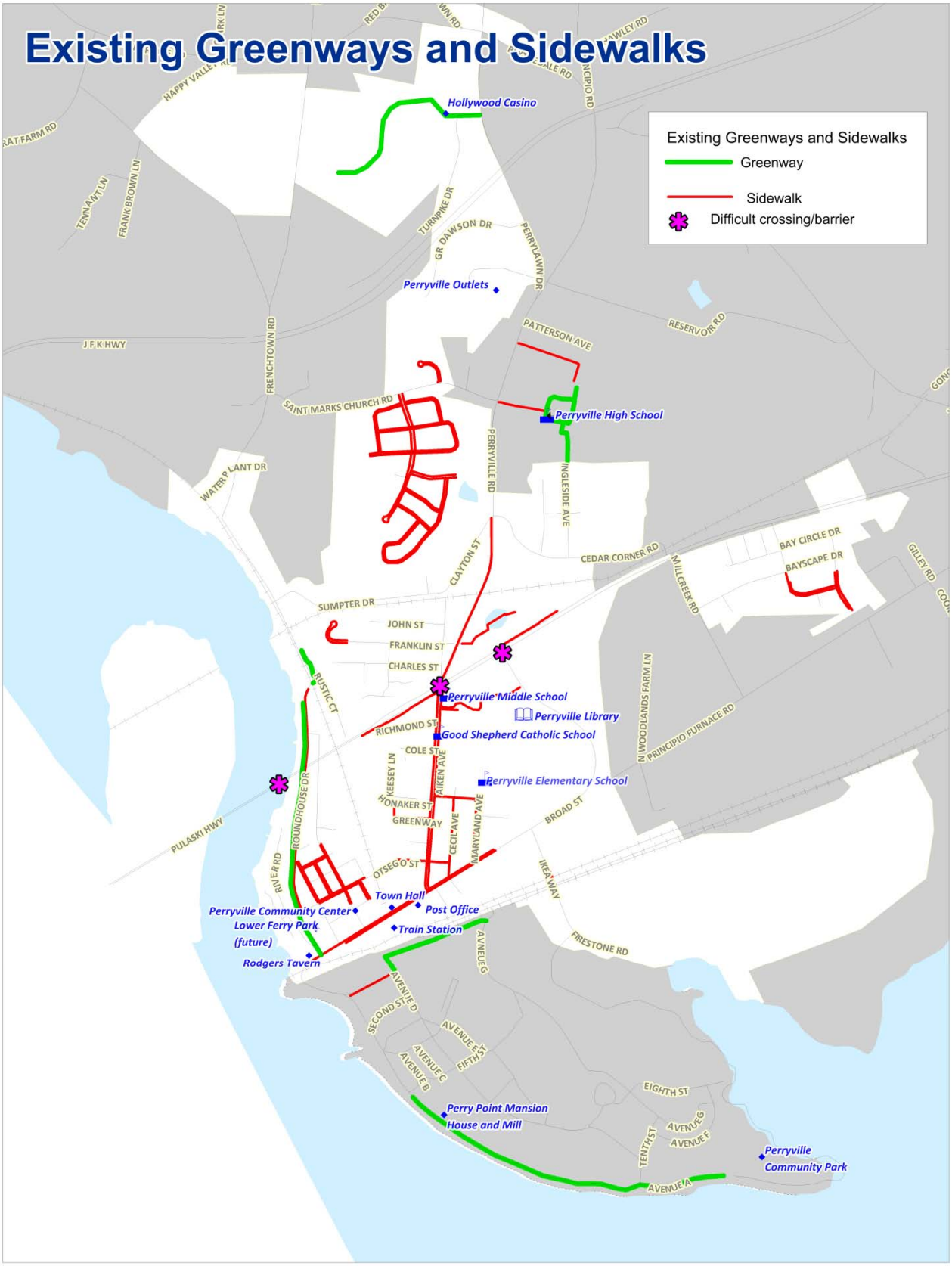
Perryville currently has an incomplete network of walking routes in many parts of the town (Map 1: Existing Greenways and Sidewalks). Sidewalks exist on most of the busier streets within the historic downtown as well as in recently developed neighborhoods. Other areas have sidewalks on one side only or no sidewalks. Aiken Avenue has a model design and attractive streetscaping, but many other sidewalks lack good design features and ADA accessibility.

BARRIERS AND DIFFICULT CROSSINGS

Natural and man-made barriers impact pedestrian travel in and beyond Perryville and limit the ability to provide direct routes. Major barriers include:

- **Rail lines (Norfolk Southern, CSX and Amtrak**). Two east/west rail lines (CSX and Amtrak) and one north/south line (Norfolk Southern) cross Perryville and offer limited locations at which to cross the tracks. Within Perryville, roads pass under Amtrak in three locations (Avenue A, Avenue G, and an unnamed access road) and over at Ikea Way. Roads pass under the NS track at Broad Street, US 40 and Frenchtown Road and cross at grade at Otsego Street. Across CSX, Frenchtown Road passes over and MD 222 under. Rail providers seek to limit pedestrian access near tracks due to safety concerns but the extensive rail network in Perryville limits direct pedestrian and bicycle travel.
- **Major roads, including I-95 and US 40.** Three roads provide access across I-95, Frenchtown and Bythedale roads under and MD 222 over, limiting north/south travel in the northern part of Perryville. Crossing US 40 offers more potential for improvements. The Lower Susquehanna Heritage Greenway and local roads pass under US 40's bridge approaches. To the east, however, there is currently only one marked crosswalk, which is on only one side of the US 40/MD 222 intersection. Despite high traffic volumes and fast speeds, frequent jaywalking has been observed in other areas where pedestrians wish to access commercial areas along US 40.
- **Susquehanna River.** Currently bicycles and pedestrians are prohibited from using the Hatem Bridge along US 40. Taxi service is available and transit began 2012. According to the Maryland Transportation Authority, shuttle service across might be provided upon request depending on availability of staff. Biller's Bikes, located in Havre de Grace, provides shuttle service for cyclists.

Pedestrians and bicyclists face a variety of street crossing conditions. While some crosswalks are well marked, many are not well designed for pedestrian and bicycle safety and comfort, with overly large turning radii that facilitate faster traffic speeds, lack of curb ramps, and lack of marked crosswalks and pedestrian signals. Most intersections do not meet national guidelines for ADA accessibility.



Map 1: Existing Greenways and Sidewalks

LACK OF DESIGNATED BICYCLE FACILITIES

Most respondents to the Perryville Planning Survey distributed at the public workshops rated bike paths and lanes as bad or very bad and indicated that lack of bikeways was a primary reason for not bicycling or bicycling more. Maryland's state Bicycle Map identifies US 40 and MD 222 as bicycle routes. US 40 is signed as a bicycle route and has shoulders, however on MD 222 there are only narrow shoulders and no bike route signs. While a small percentage of cyclists are confident enough riders to travel on a road with faster traffic and no shoulders, the vast majority of potential cyclists require marked bicycle lanes or low volume neighborhood streets to feel comfortable riding.

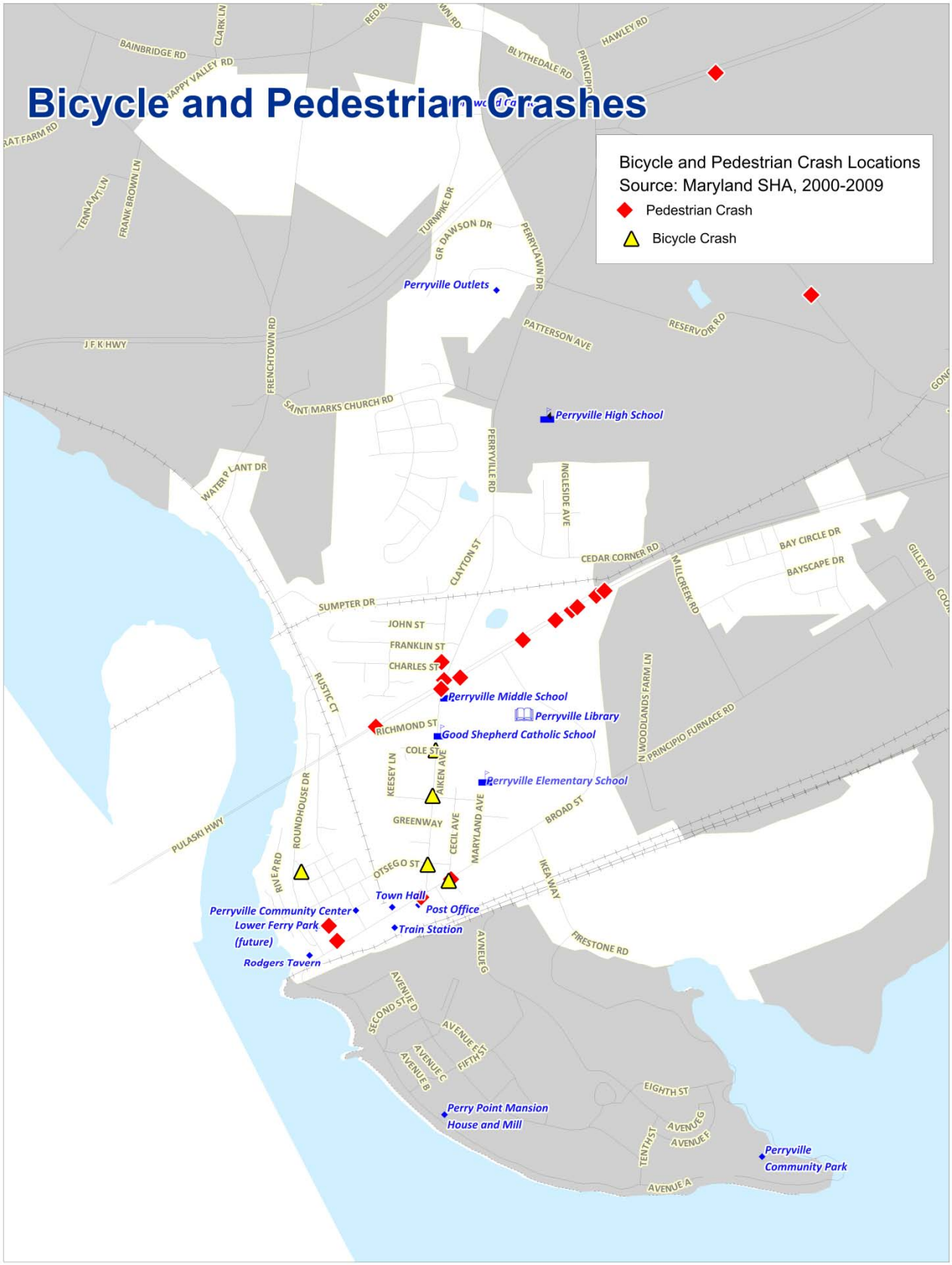
OTHER CHALLENGES

Safety of pedestrians and cyclists is always a concern when planning for nonmotorized travel. Pedestrian and bicycle crashes make up a small percentage of total crashes but account for a larger percentage of injury crashes. Between 2005-9, 86 percent of pedestrian crashes in Cecil County resulted in an injury and 3.7 percent were fatal. In 2009, pedestrian crashes accounted for 23 percent of total fatalities; Cecil County ranked sixth out of Maryland counties based on pedestrian fatalities per capita (Map 2: Bicycle and Pedestrian Crashes). Data also indicates that travel by walking and bicycling in Perryville is infrequent. Currently, we only have travel data for commute trips that is supplied by the U.S. Census. The 2000 Census indicated that 1.2 percent of commute trips are made by walking. During 2006-10, the American Community Survey found less than one percent of Perryville residents walk or bicycle to work.

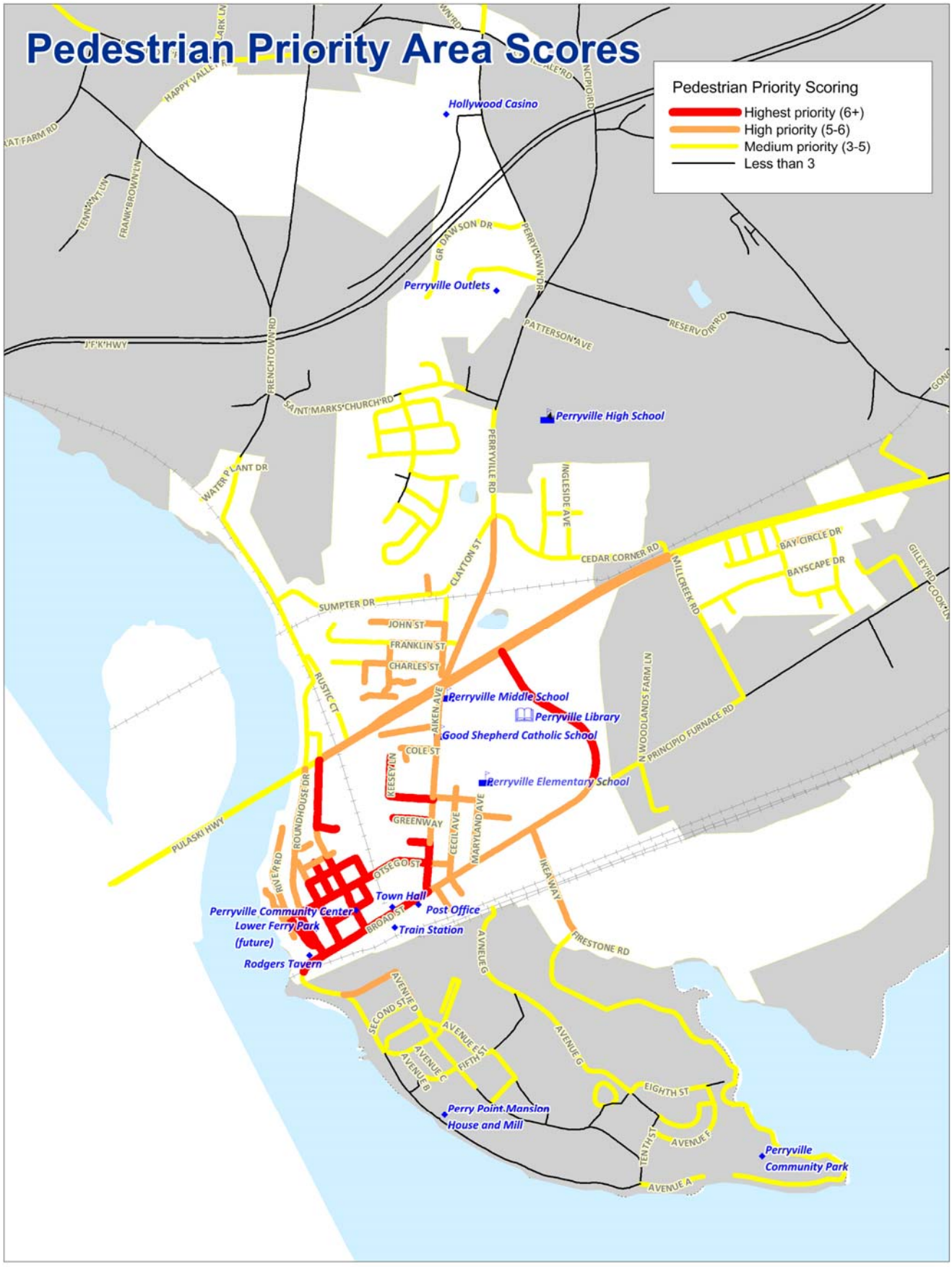
Many road segments score as medium, high or very high priorities for pedestrian travel based on the WILMAPCO pedestrian priority area analysis (Map 3: Pedestrian Priority Areas). Using this analysis, roads are awarded one point for segments within:

- A municipality
- 1 mile of a school (except rural schools in Cecil Co.)
- ¼ mile of a transit stop, commercial zone, community center, library, and park
- Dense population and employment within a Transportation Analysis Zone
- Environmental Justice Area (concentration of low income or minority population)
- Transportation Justice Area (concentration of elderly, disabled and zero-car household population)
- ½ mile of an existing/planned greenway

WILMAPCO supports the funding of projects to address gaps within the identified pedestrian priority areas.



Map 2: Bicycle and Pedestrian Crashes



Map 3: Pedestrian Priority Areas

CURRENT OPPORTUNITIES

REGIONAL GREENWAY ROUTES

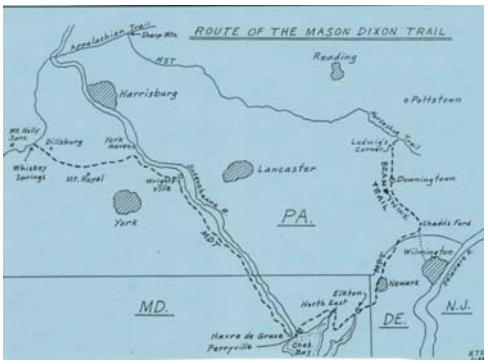
EAST COAST GREENWAY

The East Coast Greenway, or ECG, is a 3000-mile traffic-free trail being developed to connect cities and towns from Calais, Maine to Key West, Florida. Linking together publicly-owned, firm-surface trails, the ECG is emerging as a safe route for exercise, recreation & transportation for the thirty million Americans who live near the route and as a tourism destination for millions of visitors. Through Cecil County, the planned route was identified in the 2003 East Coast Greenway Plan. Travelling through the most populated areas of Cecil County, the identified route connects Perryville, Charlestown, North East and Elkton before continuing to Wilmington, Delaware and Baltimore, Maryland. To date, the only section of the ECG built in Cecil County is the trail through Perryville Community Park and Perry Point, and no sections have been designated by the ECG Alliance. An interim-on-road route has been identified for travelers who wish a continuous bicycle route; cue sheets and a user guide (under development) are intended to promote use of the on-road route. Currently, the only weekend and off hour connection to Hartford County, where the trail continues southbound, is using Billers Bikes shuttle service or taxi. Bicycle racks are available on buses between Perryville and Harford County on weekdays. A water taxi is also planned to serve as an alternative river crossing. More information is available at www.greenway.org.

Lower Susquehanna Heritage Greenway

LOWER SUSQUEHANNA HERITAGE GREENWAY

The Lower Susquehanna Heritage Greenway (LSHG) is a nonprofit organization whose mission is to stimulate local economic activity by developing a linkage between our natural, historic and cultural resources. This linkage is a series of land and water recreational trails along both banks of the Susquehanna River. Currently, the greenways in the Perryville Community Park, Perry Point and paralleling Frenchtown Road are part of the LSHG network. As with the ECG, currently only Billers Bikes shuttle service and taxi connect the two sides of the river for nonmotorized use. In 2012, however Harford and Cecil counties have teamed up to being transit service across the river using buses equipped with bike racks. Plans are also under development for water taxi service. Long-term, the LSHG plans 40 miles of interconnected public recreation trails connecting Harford and Cecil Counties as detailed in the 2000 LSHG Management Plan. The Management Plan lists “old town” Perryville as one of four target investment zones. Information may be found at www.hitourtrails.com.



MASON-DIXON TRAIL

The Mason Dixon Trail (M-DT) links the Appalachian Trail and Brandywine Trail. This 193-mile trail starts at Whiskey Springs on the Appalachian Trail and ends in Chadds Ford, PA on the banks of the Brandywine River, passing through Pennsylvania, Maryland and Delaware. The M-DT crosses the Susquehanna River and travels through Perryville near the southernmost section of the route. Maintained primarily be volunteers, the M-DT is a walking trail that prefers unpaved, off-road facilities. Information may be found at www.masondixontrail.org.

OTHER OPPORTUNITIES

STATE LEVEL SUPPORT FOR WALKING AND BICYCLING

The Maryland Department of Transportation, through the *Maryland Trails Strategic Implementation Plan* and *Maryland Bicycle & Pedestrian Access Master Plan* lays out actions that can be accomplished in coordination with the state to promote additional walking and bicycling facilities and their use.

PERRYVILLE GREENWAY COMMITTEE

Having an established Greenway Committee is a large advantage towards implementing this plan. A key to having a plan that does more than stay on the shelf, is having a dedicated group to monitor progress and adjust recommendations over time.

WALKABLE LAND USE

Most important destinations—schools, the town hall, post office, shopping—fall within a 20 minute, one mile walk of most residential areas, particularly south of US 40. Perryville is also blessed with natural areas, parks and historic sites that, when combined with active recreational opportunities, can attract tourism to the community.

RECOMMENDED PEDESTRIAN, BICYCLE AND GREENWAY ROUTE NETWORK

The recommended bicycle, pedestrian and greenway network provides a comprehensive network of trails, pathways and bikeways that connect to schools, parks, community centers, the library and retail areas. The following three maps show both existing and recommended facilities. Some of the recommended facilities exist in previous planning documents including the *Lower Susquehanna Heritage Greenway Management Plan* and *East Coast Greenway Feasibility Study*, while other recommendations are presented for the first time in this document.

Alignments shown are conceptual in nature and subject to adjustment, field verification and additional studies. Greenways shown are intended as all-weather transportation spines; additional single track nature trails or mountain bike trails might connect to these to increase the variety of recreational experiences offered in Perryville. Some segments show sidewalk and greenway options, for which the preferred design should be determined through additional engineering analysis.

Types of facilities described as part of the routes include, with more details included in the Strategies and Actions section:

PATHWAY: A multi-use bicycle and pedestrian path separated from motorized vehicular traffic by an open space, barrier or curb (Map 4). Multi-use paths may be *within the highway right-of-way* or *within an independent right-of-way*, such as on an abandoned railroad bed or along a stream valley park. Multi-use paths typically accommodate two-way travel and are open to pedestrians, bicyclists, in-line skaters, wheelchair users, joggers and other nonmotorized users. They are typically surfaced in asphalt or concrete, but may have hard-packed/all weather gravel or dirt surfaces. To safely accommodate a range of users, multi-use paths should be a minimum of 10' wide (but may be less in constrained conditions). Greenway trails and sidepaths are types of pathways.

GREENWAY TRAIL: A linear park *outside of roadway right-of-way* which accommodates pathways principally for foot traffic and/or bicycles (Map 4). Typically, greenway trails are planned along creeks, streams, rivers or other natural features and managed as natural environments. In many cases, the term "greenway" refers to pathways such as the Lower Susquehanna Heritage Greenway or East Coast Greenway.

SIDEPATH: A pathway *within the roadway right-of-way or near the road* within an easement for multi-use nonmotorized travel (Map 4). Sidepaths should be a minimum of 10' wide (but sidewalks may be substituted in constrained conditions).

SIDEWALK: That portion of a highway, road or street specifically constructed for the use of pedestrians on the outside edge of the vehicular travel way (Map 5). Sidewalks are typically, but not always, curb-separated from the roadway and made of concrete, brick, asphalt or another hard surface material. Sidewalks should be a minimum width of 5 feet if set back from the curb or 6 feet if at the curb face. Five foot paved sidewalks are not always feasible due to Critical Areas and other environmental factors.

MULTI-USE: Refers to multiple transportation options sharing a system or corridor (Map 4). Multi-use routes allow for travel by walking, bicycling, and other nonmotorized uses.

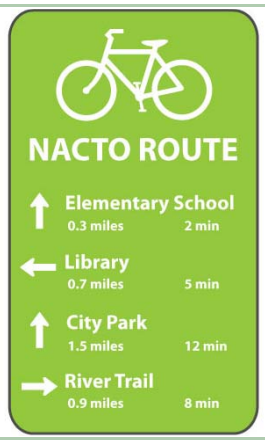
SHARROWS OR SHARED LANE MARKING: On urban roads without sufficient width for bicycle lanes, sharrows are a pavement marking showing a bicycle with a chevron that is placed in the travel lane (Map 6). Sharrows serve to assist bicyclists with proper lane positioning relative to the curb and on-street parallel parking in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane, alert road users of the lateral location bicyclists are likely to occupy within the lane, encourage safe passing of bicyclists by motorists, and reduce the incidence of wrong-way bicycling.

BICYCLE LANE: A portion of a road that has been designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs (Map 6). The preferred width is 5 feet, or 6 feet when on-street parking is present.

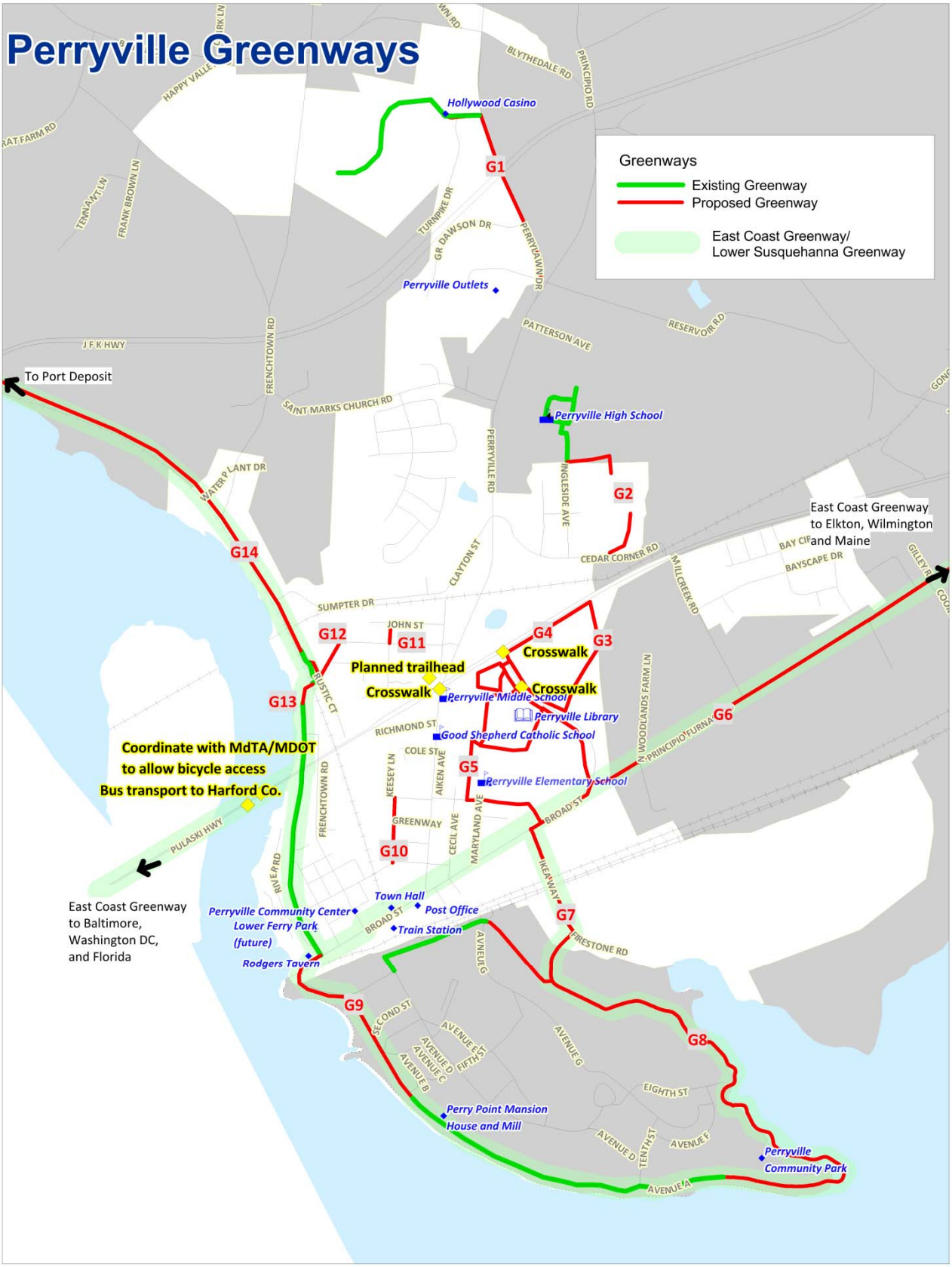
CROSSWALK: A designated point on a road at which some means are employed to assist pedestrians who wish to cross a road or intersection. They are designed to keep pedestrians together where they can be seen by motorists, and where they can cross most safely.

KEY RECOMMENDATIONS Project or Program	Description
Susquehanna River Crossing	The Susquehanna River is a barrier to bicycle and pedestrian travel along the East Coast Greenway and Lower Susquehanna Heritage Greenway as well as regional destinations in Harford County. A dedicated bicycle and pedestrian crossing would increase access to Cecil and Harford counties without the time-of-day and mode of travel constraints of the short-term options. Short-term options include (1) pedestrian and bicycle access using transit or water taxi, (2) signing and marking bridge for bicycle travel, and/or (3) subsidizing cost of taxi/shuttle service to make bicycle and pedestrian travel costs no more that the toll. Reconstruction of the railroad bridge over the Susquehanna offers one potential opportunity for a dedicated bicycle and pedestrian crossing. Planning for a reconstructed railroad bridge should examine the feasibility of providing a pedestrian and bicycle facility adjacent to freight or commuter rail tracks that is safe, provides adequate separation and addresses security concerns. Trailheads can serve to support those crossing the Susquehanna. Trailhead facilities after the Hatem Bridge and near the pier can have bicycle/pedestrian route information, parking, and transfer facility for other travel modes.

Enhanced Bridge marking options: The graphic on the right shows the use of sharrows and signs to indicate that the bridge is shared with bicycle traffic. On the left, bicyclists push a button, similar to a crosswalk button, to trigger flashing lights on the bridge.

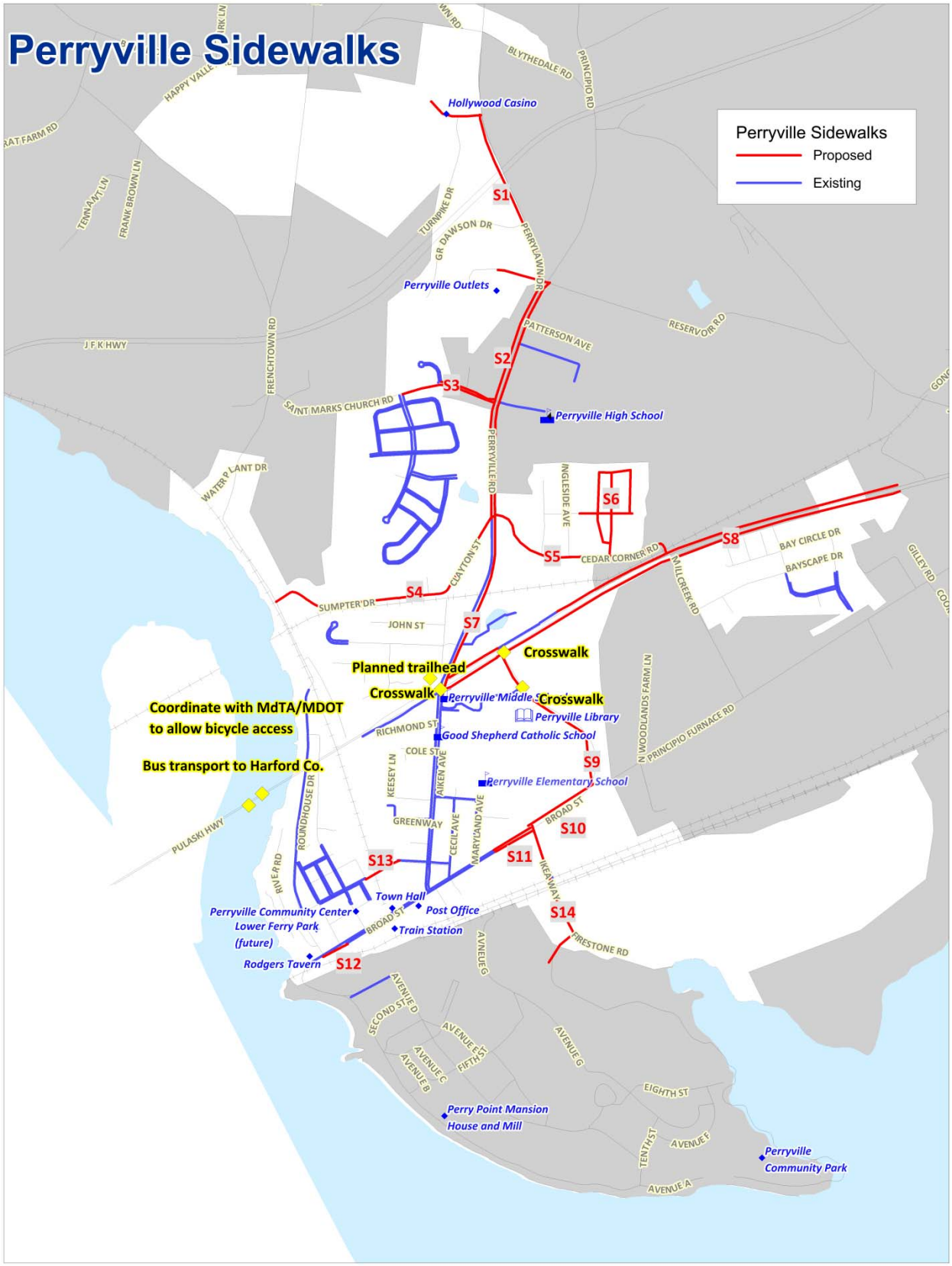
Wayfinding/signing program	Pedestrian and bicycle scale directional signing to key destinations will promote walking and bicycling by residents and visitors. The example to the right, provided in the *NACTO Urban Bikeway Design Guide*, shows direction of locations of interest to pedestrians and bicycles, distance and estimated travel time by bicycle. Additional walk/bike directional signs should complement the existing driver wayfinding sign at the intersection of Broad and Aiken as pedestrians will arrive from other areas including the train station and town pier. Wayfinding to greenways is important as some trailheads, such as the greenway south of the Amtrak rail, are not easy to find for those unfamiliar with them. Additional signing can be oriented towards fitness users by marking distances along greenways and loop walking and bicycle routes for exercise.	

KEY RECOMMENDATIONS	
Project or Program	**Description**
Safe Routes to School	Establish a Safe Routes to School (SRTS) program to bring together parents, school administrators, teachers, and other community groups and agencies, to improve the safety of children who walk or bicycle to school. The program enables and encourages children in grades K-8 to walk and bicycle to school. Through the promotion of walking, Safe Routes to School also bolsters child health by encouraging physical activity and enhances the environment by reducing traffic, fuel consumption and air pollution near elementary and middle schools. WILMAPCO can provide planning assistance to interested schools. Participants in a SRTS program are eligible for federal funding for implementing associated programs and physical improvements.
Complete Streets Policy	Complete Streets are streets for designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, emergency vehicles and transit riders of all ages and abilities must be able to safely move along and across a complete street. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations. According the the National Complete Streets Coalition, an ideal complete streets policy: • Includes a vision for how and why the community wants to complete its streets • Specifies that 'all users' includes pedestrians, bicyclists and transit passengers of all ages and abilities, as well as trucks, buses and automobiles. • Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way. • Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions. • Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes. • Is adoptable by all agencies to cover all roads. • Directs the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs. • Directs that complete streets solutions will complement the context of the community. • Establishes performance standards with measurable outcomes. • Includes specific next steps for implementation of the policy
Greenway Committee	The existing Greenway Committee should continue to work towards implementing the Plan, monitoring its effectiveness and modifying its recommendations as needed. Committee membership should be expanded to include additional state and local partners who can assist with the Plan implementation.
Regional Greenway Network	The Lower Susquehanna Heritage Greenway and East Coast Greenway provide important regional and interregional connections. Continue to work with these organizations to develop the routes and then market their use.



Map 4: Recommended Greenways

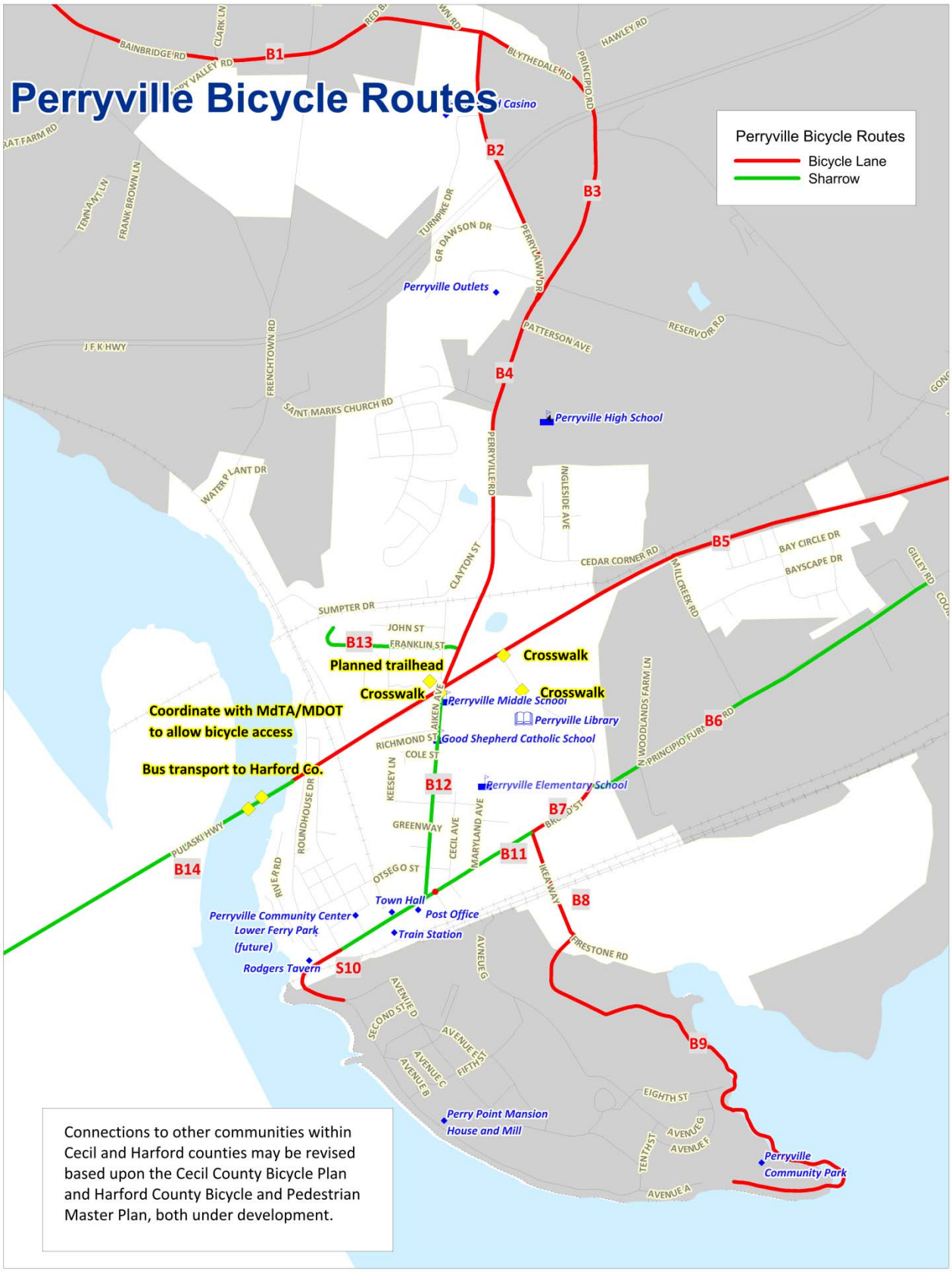
ID	Project	Road	From - To	Description	Length	Lead
Greenway						
G1	Casino to Outlets Connector	MD 222	Turnpike Dr. - Heather Ln.	Sidepath connecting Hollywood Casino and Perryville Outlets. An alternative would be sidewalks and bicycle lane.	0.56	MD SHA
G2	Perryville High School Connector		Cedar Corner Rd. - Ingleside Ave.	Greenway connects sidewalks in planned Cedar Corner subdivision to existing greenway around high school	0.35	Perryville
G3	Woodlands			Greenway within the planned Woodlands subdivision connecting residential to transit center, commercial areas, parkland and library.	approx 1.8	Town Point Development
G4	Woodlands Connector	US 40	Couden Blvd. - Woodlands property	Sidepath extends Woodlands planned route further along US 40 to Couden Blvd, connecting to additional Woodlands greenway here.	2.6	MD SHA
G5	Schools and Library Connector			Greenway connects Perryville Elementary School, Good Shepherd Catholic School, Perryville Middle School and the Perryville Library, through Cecil County Board of Education Property.	0.38	Perryville, Cecil County Board of Education
G6	MD 7, East Coast Greenway	MD 7	Principio Station Rd. - Ikea Way	Planned East Coast Greenway route into Perryville is proposed as a sidepath parallel to MD 7.	1.64	MD SHA
G7	Ikea Way, East Coast Greenway	Ikea Way	MD 7 - Marion N. Tapp Parkway	Planned Lower Susquehanna Heritage Greenway and East Coast Greenway. Sidepath connecting to park access road.	0.36	Perryville
G8	Marion N. Tapp Parkway, East Coast Greenway	Marion N. Tapp Parkway	Ikea Way - Avenue A	Planned Lower Susquehanna Heritage Greenway and East Coast Greenway. Greenway paralleling park access road.	1.96	Perryville
G9	Avenue A, East Coast Greenway	Avenue A	Marion N. Tapp - Frenchtown Rd	Planned Lower Susquehanna Heritage Greenway and East Coast Greenway. Greenway parallel to Avenue A.	0.67	LSHG/VA
G10	Town Hall Connector		Honaker St. - Otsego St.	Greenway along public right of way connecting to Town Hall.	0.2	Perryville
G11	Franklin to John Connector		Franklin St. - John St.	Greenway along public right of way providing connection through neighborhood.	0.06	Perryville
G12	Frankin-LSHG Connector		Franklin St. - Rustic Court	Greenway along utility line connecting neighborhood to Lower Susquehanna Heritage Greenway. Would require coordination with utility and an at grade crossing of Norfolk Southern Delmarva Secondary Track.	0.12	Perryville
G13	Lower Susquehanna Heritage Greenway	Frenchtown Rd.		LSHG gap in greenway near NS railroad overpass.	0.07	LSHG
G14	Lower Susquehanna Heritage Greenway	Frenchtown Rd.	N. of Rustic Court - Perryville Line	Continuation of LSHG north of existing sections.	0.73	LSHG



Map 5: Recommended Sidewalks

ID	Project	Road	From - To	Description	Length	Lead	Pedestrian Priority Area[3]
Sidewalk							
S1	MD 222	MD 222	Turnpike Dr. - Heather Ln.	Construct sidewalk on west side of road if recommended greenway (G1) is not feasible.	0.56	MD SHA	
S2	MD 222	MD 222	Heather Ln. - Cedar Corner Rd.	Construct sidewalk on both sides of road.	1.56	MD SHA	Medium
S3	St. Marks Church Rd.	St. Marks Church Rd.	MD 222 - Beacon Point Dr./Penny Ln.	Construct sidewalk to Beacon Point Drive on south side and to Penny Lane on north side. Sidewalk should extend further west if development occurs.	0.49	Cecil County	
S4	Sumpter Dr./Clayton St.	Sumpter Dr./Clayton St.	Frenchtown Rd. - MD 222	Construct sidewalk on at least one side of the road.	0.84	Perryville	Medium
S5	Cedar Corner Rd.	Cedar Corner Rd.	MD 222 - US 40	Construct sidewalk on north side of the road at minimum.	0.63	Perryville	Medium
S6	Cedar Corner Rd. development			Construct sidewalk within planned development off of Cedar Corner Rd.	0.8	Developer	Medium
S7	MD 222	MD 222	Cedar Corner Rd. - US 40	Construct sidewalk on east side of the road.	0.58	MD SHA	High
S8	US 40	US 40	East Perryville boundary - MD 222	Construct missing sidewalk on both sides of road.	2.96	MD SHA	High
S9	Coudon Blvd.	Coudon Blvd.	US 40 - Broad St.	Construct sidewalk on west side of road if recommended greenway (G3) is not feasible. SHA would consider Coudon Blvd./US 40 crosswalk upon implementation of S9.	0.54	Perryville/ Cecil Co.	Highest
S10	Broad Street	Broad Street	Coudon Blvd. - Ikea Way	Construct sidewalk on north side of the road at minimum.	0.25	MD SHA	High
S11	Broad Street	Broad Street	Ikea Way - existing sidewalk	Construct sidewalk on both sides of road.	0.26	MD SHA/ Developer	High
S12	Broad Street	Broad Street	Roundhouse Dr. - existing sidewalk	Construct missing sidewalk on south side of road.	0.09	MD SHA	Highest
S13	Otsego Street	Otsego Street	Evans Street - existing sidewalk	Construct missing sidewalk on north side of road.	0.12	Perryville	Highest
S14	Ikea Way	Broad Street	Park entrance	Construct sidewalk to provide access to the park	0.5	Perryville	Medium

[3] WILMAPCO 2011 Pedestrian Priority Area scoring adjusted for Perryville. Scores may not reflect town priorities or opportunities to combine pedestrian facilities with other transportation or development projects.



Map 6: Recommended Bicycle Routes

ID	Project	Road	From - To	Description	Length	Lead
Bicycle						
B1	Bainbridge Rd.	Bainbridge Rd.	Port Deposit - MD 222	Restripe road to provide bicycle lane.	2.5	MD SHA
B2	MD 222	MD 222	Bainbridge Rd. - Blythedale Rd.	Restripe road to provide bicycle lane. Limits might be reduced if Greenway G1 is constructed.	0.85	MD SHA
B3	Blythedale Rd.	Blythedale Rd.	Bainbridge Rd. - MD 222	Restripe road to provide bicycle lane.	1.07	MD SHA
B4	MD 222	MD 222	Blythedale Rd. - US 40	Restripe road to provide bicycle lane.	1.31	MD SHA
B5	US 40	US 40	Winch Rd. - Hatem Bridge	Mark shoulder as bicycle lane. Remark intersections to include bike facilities through turn lanes	2.51	MD SHA
B6	Principio Furnace Rd.	Principio Furnace Rd.	Cook Ln. - Coudon Blvd.	Mark with shared lane markings or narrow lanes to include bike lane. Might be eliminated if Greenway G6 is implemented.	1.25	MD SHA
B7	Broad Street	Broad Street	Coudon Blvd. - Ikea Way	Restripe to provide bike lanes. Might be eliminated if Greenway G6 is implemented.	0.24	MD SHA
B8	Ikea Way	Ikea Way	Broad St. - Marion N. Tapp Park.	Mark with shared lane markings. Might be eliminated if Greenway G7 is implemented.	0.35	Perryville
B9	Marion N. Tapp Parkway	Marion N. Tapp Parkway	Ikea Way - Avenue A	Mark with shared lane markings. Might be eliminated if Greenway G8 is implemented.	1.86	Perryville
B10	Avenue A	Avenue A	Avenue A - Front St.	Restripe to provide bike lanes. Might be eliminated if Greenway G9 is implemented.	0.33	Perryville
B11	Broad Street	Broad Street	Front St. - Ikea Way	Mark with shared lane markings. Space might exist to combine shared lane markings on one side with a bicycle lane on the other	0.69	MD SHA
B12	Aiken Avenue	Aiken Ave.	Broad St. -US 40	Mark with shared lane markings.	0.66	MD SHA
B13	Franklin St.	Franklin St.	MD 222 - end	Mark with shared lane markings.	0.66	Perryville
B14	Hatem Bridge	US 40		Coordinate with Maryland DOT and MDTA to determine preferred option for bicycle access.	1.3	MDTA

SHA will require further study to assess the feasibility of B1, B2, B3, B5, B6, B7 and B11. SHA shares the Plan goal to increase bicycle facilities on SHA maintained roads and is working to take advantage of available road width when roads are resurfaced by restriping with bicycle facilities.

STRATEGIES AND ACTIONS

DEVELOP A COORDINATED NETWORK THAT IS SAFE, ACCESSIBLE, CONVENIENT AND PROVIDES INTERMODAL CONNECTIONS

INCREASE THE USE OF WALKING AND BICYCLING FOR TRANSPORTATION

A ***Complete Streets Policy*** is a key approach towards providing facilities along important transportation corridors. Complete Streets are streets designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.

A Complete Streets Policy directs Perryville, working with Maryland State Highway Administration and Maryland Department of Transportation, to routinely design and operate the entire right of way to enable safe access for all users, regardless of age, ability, or mode of transportation along both state and locally maintained roads. Every transportation project should make the street network better and safer for drivers, transit users, pedestrians, and bicyclists where feasible. This approach provides transportation by walking and bicycling to the destinations served by existing roads. The National Complete Streets Coalition has additional guidance at www.completestreets.org.

EXPAND BICYCLE, PEDESTRIAN AND GREENWAY ACCESSIBILITY AND CONNECTIVITY

Bordered by the Susquehanna River and Chesapeake Bay, and bisected by I-95 and Amtrak, Norfolk Southern and CSX rail lines, Perryville's geography limits its connections within the town and to surrounding areas. Rail and utility corridors offer potential alignments for greenways with minimal road crossings. The recommended ***Bicycle, Pedestrian and Greenway Route Network***, described earlier in this plan, includes projects which provide new connections for bicycle and pedestrian access. Priority connections include working with MDOT and MDTA to provide access across the Susquehanna River and coordinating with SHA on connections along and across MD 222 and US 40. Other priority projects include completion of the Lower Susquehanna Heritage Greenway and East Coast Greenway. The proposed network should be incorporated into future Comprehensive Plan updates. The town should seek funding for identified priority gap projects; suggested funding sources are included in the Funding, Implementation and Evaluation section of the plan.

The bridge at Harpers Ferry is an example of a combined rail and pedestrian bridge

Planning for ***Safe Routes to Schools*** is an important component of access and connectivity. In 1969, about half of all students walked or bicycled to school nationwide, while today fewer than 15 percent of all school trips are made by walking or bicycling, one-quarter are made on a school bus, and over half of all children arrive at school in private automobiles. This decline in walking and bicycling has had an adverse effect on traffic congestion and air quality around schools, as well as pedestrian and bicycle safety. In addition, a growing body of evidence has shown that children who lead sedentary lifestyles are at risk for a variety of health problems such as obesity, diabetes, and cardiovascular disease. Safety issues are a big concern for parents, who consistently cite traffic danger as a reason why their children are unable to bicycle or walk to school. The Safe Routes to School Program (SRTS), at both the state and federal levels, seeks to promote safe walking and bicycling around schools by funding infrastructure improvements (sidewalks, crosswalks, pedestrian signals/signage, school zone signage) as well as a variety of outreach, education and promotional programs.

FOSTER INTERMODAL LINKAGES AND AMENITIES TO SUPPORT TRIPS BY WALKING AND CYCLING

Ensuring a strong bicycle and pedestrian link to transit is important for the success of transit service in Perryville. The ***integration of walking and bicycling facilities with public transit facilities and services*** allows users to reach transit stops and destinations; indeed, most transit riders are pedestrians at either one or both ends of the trip. Four primary components of bicycle and pedestrian integration with transit include:

- ***Allowing bicycles on transit.*** Cecil County is working towards installing bicycle racks on all buses, allowing longer trips to combine bicycling and transit. These racks will equip buses to carry two bikes on the front of the bus. MARC's current bicycle policy allows for the transportation of folding bicycles only and the existing fleet offers no designated storage areas for bikes.
- ***Offering benches, shelters, schedule information and bicycle parking at transit.*** Bus ridership benefits from having information about the routes and facilities to make riders comfortable at bus stops. Currently Perryville has some of these amenities at bus stops, but Perryville should work with Cecil County transit to monitor ridership and provide amenities at the better performing stops as warranted. Currently the MARC station has a bicycle rack, but this rack should be upgraded to a preferred design and supplemented with bicycle lockers or secure parking for longer-term storage. The transit center planned for the Woodlands development is a good example of this integration and includes bicycle racks and lockers.
- ***Improving connections to transit.*** Priority projects for implementation include improved and additional crosswalks near transit stops and the train station, as well as additional sidewalks to bus stops. As most transit riders will need to cross the street for the return trip, safe crosswalks are particularly important. At the train station, a crosswalk between overflow parking at the Methodist Church and pedestrian facilities within the parking lot should be added.

Perryville should continue to explore the potential bicycle and pedestrian access via a ***water taxi***. In additional to providing a transportation to Havre de Grace and Port Deposit, the water taxi itself, has the potential to attract active recreation tourism to the area when combined with connecting bicycle and pedestrian pathways.

PROVIDE END OF TRIP FACILITIES FOR BICYCLISTS AND GREENWAY USERS

Adequate and secure ***bicycle parking*** should be provided at all major trip destinations to encourage travel by bike. Bicycle parking should be provided as part of multi-family residential developments and all commercial, industrial and institutional developments and park-and-ride lots. Perryville's zoning code does currently require parking for commercial and mixed-use development but *ARTICLE XVI PARKING* does not give specific detail for meeting the requirement; www.bicyclinginfo.org/engineering/parking.cfm provides links to suggested zoning code. The zoning code should be updated to:

- Specify number of bicycle spaces by land use. For all workplaces, transit stations and multi-unit residential, this should include secure long-term parking such as bicycle lockers or indoor parking. Other land uses should require adequate short-term parking.
- Provide site planning requirements. Bicycle parking should be located as close as possible to building entrances. Where this is not possible, signs should direct cyclists to the location of bicycle parking, especially if the rack is not visible from the entrance or street. Ideally, rack should be located in a covered area.
- Provide rack and locker design requirements; suggested designs are described in detail at www.bikeparking.com/bikepark101. Inadequate racks put bikes at risk of theft because they can't be properly locked and may damage bikes by bending the wheels. Racks should:
    - support the frame of the bicycle, not just one wheel
    - allow the frame and one wheel to be locked to the rack when both wheels are left on the bike and both wheels to be locked if the front wheel is removed
    - allow the use of either a cable or U-shaped lock
    - be securely anchored
    - be usable by a wide variety of sizes and types of bicycles including those with no kickstand and bikes with water bottle cages

Old-fashioned schoolyard racks do not provide secure parking for modern style bikes. Bikes shown here have wider tires and are unable to use rack as designed.

In addition to bicycle racks, provision of showers and changing areas at worksites will encourage commute trips using bicycle routes and greenways.

1. The Rack Element

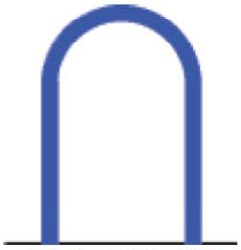
Definition: **the rack element is the part of the bike rack that supports one bicycle.**

The rack element should:

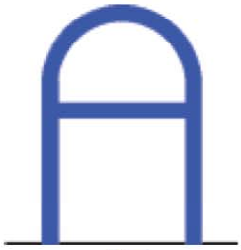
- Support the bicycle upright by its frame in two places
- Prevent the wheel of the bicycle from tipping over
- Enable the frame and one or both wheels to be secured
- Support bicycles without a diamond-shaped frame with a horizontal top tube (e.g. a mixte frame)
- Allow front-in parking: a U-lock should be able to lock the front wheel and the down tube of an upright bicycle
- Allow back-in parking: a U-lock should be able to lock the rear wheel and seat tube of the bicycle

Comb, toast, school-yard, and other wheel-bending racks that provide no support for the bicycle frame are NOT recommended.

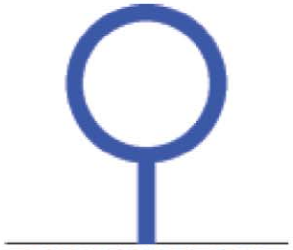
The rack element should resist being cut or detached using common hand tools, especially those that can be concealed in a backpack. Such tools include bolt cutters, pipe cutters, wrenches, and pry bars.



INVERTED "U"
One rack element supports two bikes.



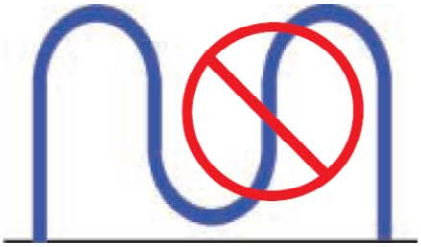
"A"
One rack element supports two bikes.



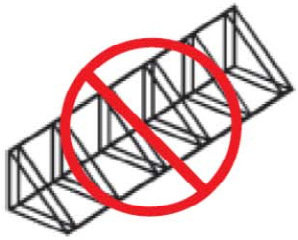
POST AND LOOP
One rack element supports two bikes.

COMB
One rack element is a vertical segment of the rack.

Not recommended



WAVE
One rack element is a vertical segment of the rack.



TOAST
One rack element holds one wheel of a bike.

Bicycle Parking Guidelines | www.apbp.org |

Source: Association of Bicycle/Pedestrian Professionals

USE BEST PRACTICES FOR ENGINEERING SAFE TRAIL, SIDEWALK AND BICYCLE FACILITIES

Perryville and SHA should draw upon existing design standards to design new facilities and improve those that fall short of modern standards, most notably the *SHA Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways* and *SHA Pedestrian and Bicycle Design Guidelines*. In addition, existing guidance can be found in the *Architectural and Transportation Barriers Compliance Board* (Access Board), *AASHTO Guide for the Planning, Design, and Operation of Bicycle Facilities* (update currently draft), and *Manual on Uniform Traffic Control Devices* (MUTCD). The *NACTO Urban Bikeway Design Guide*, while not accepted design by Maryland DOT, is used to design bicycle facilities in Baltimore and other urban locations around the country. Links to design resources can be found at www.wilmapco.org/perryville.

In addition, MD SHA has developed design guidelines for the preferred accommodations to benefit bicycling and walking along State highways and SHA Pedestrian and Bicycle Design Guidelines. It is SHA's goal to provide the preferred accommodations as part of all roadway projects where feasible and reasonable. Providing bicycle and pedestrian accommodations is especially important where the existing or proposed land use supports cycling and walking. This includes trip generators and destinations such as employment, education, residential, commercial, recreation, and transit centers.

A short summary of preferred route design is as follows:

Perryville Pedestrian, Bicycle and Greenway Route Types

Design Type	Width	Surface	Primary User	Treatment	Function
Sidewalk	5-16 ft	Concrete, brick	Pedestrian	Located along streets, preferably separated by curb, planting strip, parking lane, etc.	Provides access to homes, businesses and local destinations for pedestrians and wheelchair users.
Bicycle lane	4-6 ft	Asphalt	Bicyclist	Striped lane for bike travel on road.	Bicycle travel along roads.
Sharrow/Shared Street	NA	NA	Bicyclist	Share lane marking and/or signage for shared use of lane	Accommodates bicyclist on lower volume roads or roads without sufficient width for bicycle lanes.
Pathway, Sidepath or Greenway	10-16 ft	Asphalt, concrete, stone dust	Pedestrian and bicyclist	Provides a route completely separated from motor vehicles and shared by bicycles and pedestrians.	Provides linear park space and desirable, traffic-free connections to key destinations. May parallel roads where traffic speeds or limited right-of-way make providing sidewalks and bicycle lanes infeasible or undesirable.
Trail	Less than 10 ft	Earth or stone dust	Pedestrian and mountain bike	Provides a primarily recreational route that should connect with larger bicycle and pedestrian network.	Provides more natural trail for recreational use.

SIDEWALKS

Sidewalks provide the most fundamental element of the walking network in a town setting, and in a smart growth community, the end of the sidewalk typically signals the boundary between town and country. Main elements include the curb and buffer, which separate the sidewalk from vehicular traffic and the sidewalk itself. The buffer can also include on street parking or a bike lane. Street trees make attractive buffers but care should be taken to select trees whose roots will have minimum impact of the sidewalk. The "pedestrian zone" should be free of obstructions such as utility poles but can wind around trees and poles. The minimum five-foot width enables uses by two people walking side-by-side, passing other users, and wheel chair users. Concrete sidewalks offer smooth surfaces and long lifespans, but brick or asphalt may also be used. In addition, the "shy zone" provides separation between pedestrians and adjacent land use; this shy zone can be wider to accommodate window shopping, benches, or outdoor dining. The SHA Pedestrian and Bicycle Design Guidelines include desired minimum widths for these elements, shown on the next page.

Sidewalks ideally are installed as part of individual development projects because retrofitting sidewalks can be difficult and costly for several reasons. New sidewalks typically require drainage improvements such as undergrounding roadside culverts and installation of curb and gutter. Obtaining needed right-of-way presents another challenge and even when sufficient width exists the adjacent property owners may object if they see the public land as part of their front yard. Building gaps in sidewalks however is important to creating a continuous pedestrian routes and can save the community over time by reducing personal transportation expenses and reducing the need for school bussing.

Driveways present another challenge for building sidewalks. Sidewalks that remain level are preferred to sidewalks that dip down at each driveway. Sidewalks that slope with the driveway may not meet ADA guidelines if the grade of the slope is more than 2%. The sidewalk can wrap around the driveway ramp if needed to remain level, however this presents a challenge for those who have visual impairments. The photos[4] below show example driveway designs.

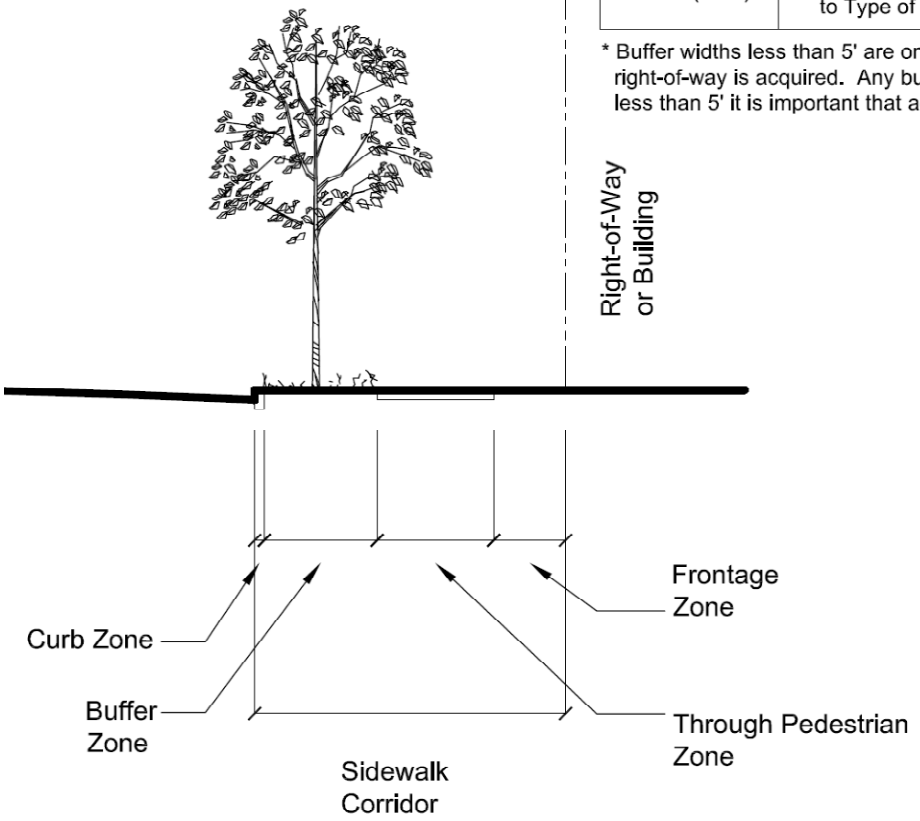
Example of level sidewalk with driveway apron using the planting strip

Example of sidewalk wrapped around driveway

It is also desirable to use access management between adjacent land uses to reduce the number of curb cuts interrupting sidewalks. This includes shared driveways between properties and pedestrian connections from one development to the next.

[4] Photo source: www.pedbikeimages.org/ Dan Burden

NOT TO SCALE



RECOMMENDED BUFFER AND SIDEWALK WIDTHS

Location	Buffer Zone Width	Through Pedestrian Zone Width
Residential Street	5'	Min. 5'
	0*	Min. 6'
Local/Collector Street- Non CBD	5'	Min. 5'
	0*	Min. 7'
Arterial Street- Non CBD	5-6'	6-8'
	0*	8-10'
Central Business District (CBD)	Buffer to Correspond to Type of Street	Min. 10'

* Buffer widths less than 5' are only acceptable in retrofit situations where no new right-of-way is acquired. Any buffer width is better than none. Where buffer width is less than 5' it is important that additional sidewalk width be provided.

DEFINITIONS:

Curb Zone - The horizontal surface of the curb

Buffer Zone - The area between the through pedestrian zone and the street. May contain street trees, newspaper boxes, street signs, etc.

Through Pedestrian Zone - The area where pedestrians walk

Frontage Zone - The area between the through pedestrian zone and the right-of-way line. In downtown areas, this is the **shy area** next to a building where pedestrians tend not to walk. It is typically 2' in width.

DESIGN OF THE THROUGH PEDESTRIAN ZONE:

- Minimum clear width of 5' (Width measurement should not include curb)
- It is undesirable for the through pedestrian zone to be located immediately adjacent to the roadway
- Shall be completely free of protruding objects
- Ground surface shall be firm, stable, and slip resistant
- 2% max. cross slope
- Running slope must be equal or less than that of the adjacent roadway

DESIGN OF THE BUFFER ZONE:

- Width is measured from the face of curb to the nearest edge of the sidewalk
- Street trees are recommended where possible (30-60' on center)
- On-street parking and bike lanes can act as a buffer
- Utilities should not be placed directly beneath the buffer zone if trees are present

Source: SHA Pedestrian and Bicycle Design Guidelines

BICYCLE LANES

A Bicycle Lane is a dedicated travel lane for bicycles that is separated from vehicle travel lanes with striping and pavement stencils. Properly designed bicycle lanes can increase safety and promote proper riding. They define the road space for all users and discourage cyclists from riding on the sidewalk.

Bicycle lanes are most appropriate on arterial and collector streets where the higher speeds and traffic volumes warrant greater separation for the safety and comfort of bicyclists. Depending on the speed and volume of traffic, the SHA Pedestrian and Bicycle Design Guidelines, shown on the next page, recommend a minimum of 4-6 feet in width for bike lanes. Additional width is needed where there is on-street parking so that cyclists can avoid car doors. A maximum width of 7 feet is preferred because wider bike lanes may get blocked by delivery vehicles, turning cars, etc. Parking spaces can also have a marked buffer zone to indicate the door zone to cyclists as shown in the image on the right.

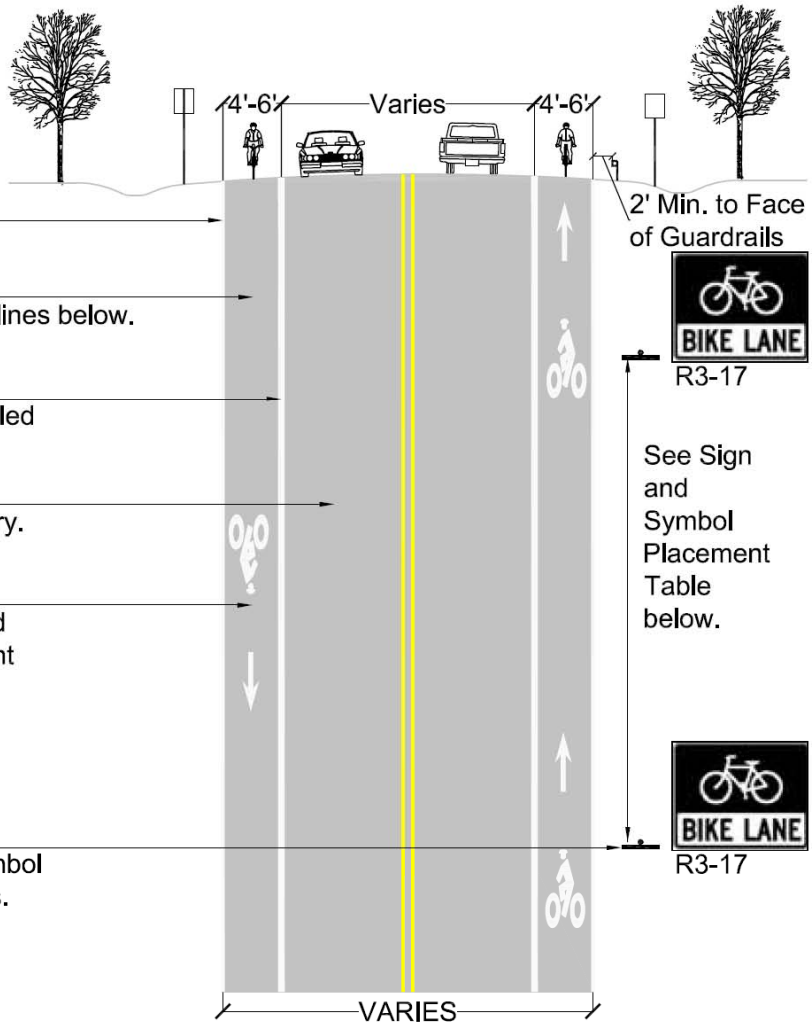
Bicycle lane with marked door zone

Where additional width exists or vehicle/bicycle conflicts are a concern, some communities have begun using buffered bicycle lanes and colored bicycle lanes. Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered lanes provides greater shy distance between motor vehicles and cyclists, allow bicyclists to pass one another without encroaching into the motor vehicle travel lane, and provide greater space for bicycling without making the bike lane appear so wide that it might be mistaken for a travel lane or a parking lane. Green coloring may be used to highlight bike lane at conflict points with cars, such as driveways. Color draws attention to the bike lane but may quickly wear off in high traffic areas.

Buffered bicycle lane

As with retrofitting sidewalks, retrofitting bicycle lanes onto existing streets presents challenges. The recommended bicycle lanes should be incorporated into land use development projects or transportation projects when these occur. To reduce expense, retrofitting bicycle lanes is least expensive when done at the same time as roadway resurfacing and restriping. Retrofitting bicycle lanes may be achieved with:

- Remarking shoulders as bicycle lanes. This presents the easiest conversion because sufficient width is in place. Special care must be taken to redesign facilities at intersections and where shoulders are eliminated due to turning lanes.
- Narrowing the width of motor vehicle lanes. Many existing roads are far wider than standards suggest and striped motor vehicle lanes can be narrowed to allow for bike lanes. Road design standards allow 11 foot motor vehicle lanes in most town settings and in some cases 10 foot lanes are sufficient.
- Parking reduction or narrowing. While an 8 foot parking lane is desirable, a 7 foot parking lane will accommodate most vehicles and when combined with lane narrowing, provides space for bike lanes. Due to the high demand for parking in Perryville, this plan does not recommend eliminating on street parking.
- Widening the road to add bicycle lanes. This option can be quite costly and is only recommended on high volume roads without width to mark bike lanes.



OPTION: EDGE LINE
5" solid white line.

DESIGNATED BICYCLE LANE
4' minimum width. See Facility Width Guidelines below.

BICYCLE LANE LINE
5" solid white line. Wider lines may be installed at the discretion of the engineer.

TRAVEL LANE
The number and width of travel lanes will vary.

BICYCLE LANE SYMBOL
Place in center of bicycle lane. See Sign and Symbol Placement Table below for placement details.

BICYCLE LANE SIGN
Use MUTCD Sign R3-17. See Sign and Symbol Placement Table below for placement details.

FACILITY WIDTH GUIDELINES

OPERATING SPEED	VOLUME RANGE	MIN. SHOULDER WIDTH
≤35 MPH	<10,000 ADT	4 FEET
36-45 MPH	10,000-20,000 ADT	5 FEET
>45 MPH	>20,000 ADT	6 FEET

SIGN AND SYMBOL PLACEMENT

	SIGN SPACING	SYMBOL SPACING
RURAL	1-3 MILES	0.5-1 MILES
SUBURBAN	0.5-1 MILES	0.1-0.5 MILES
URBAN	VARIES*	2-4 PER BLOCK

* In urban areas, the use of bike lane signs should be kept to a minimum. Generally a sign may be utilized at the beginning and end of a bike lane.

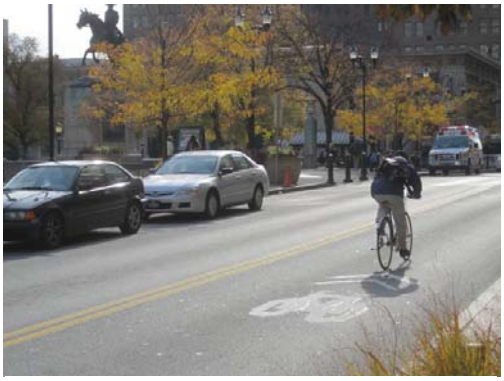
DESIGN OF BIKE LANES ON OPEN SECTION ROADWAYS WITH NO PARKING:

- Bike lanes may be wider than the recommended widths.
- For roadway sections with guardrails, walls, or other obstructions adjacent to roadway, maintain a minimum of 2' of shy space between face of object and edge of the bicycle lane.
- In areas where parking violations frequently occur, the use of the R7-9 NO PARKING/BIKE LANE sign may be used in place of the NO PARKING sign (R7-1) or similar. If desired, a sign with "EMERGENCY STOPPING OK" or similar message may be placed below the R7-9 or on a separate post

Source: SHA Pedestrian and Bicycle Design Guidelines

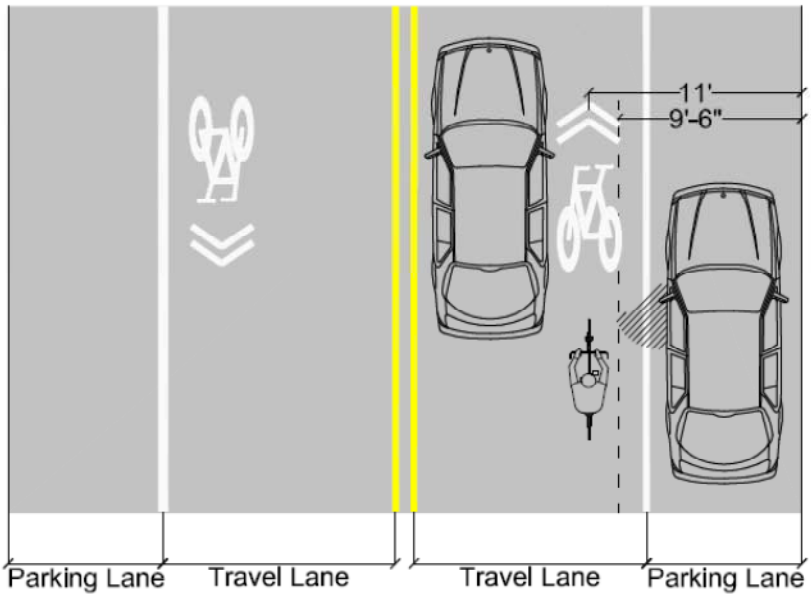
SHARROW/SHARED STREET

According to the *SHA Pedestrian and Bicycle Design Guidelines*, in Maryland, shared roadways include all roadways EXCEPT those with posted speed limits greater than 50 mph and no shoulder, and controlled access freeways. In a town setting, streets with higher traffic benefit from shared lane markings, also known as "sharrows," when there is not sufficient width for bicycle lanes. Sharrows are pavement markings that help position bicyclist within the travel lane and alert motorist to the presence of bicycle traffic. Along streets without on-street parking, sharrows should be 4 feet from the curb or edge of street; with on-street parking present, sharrows should be at least 11 feet from the curb or at least 2.5 feet from the edge of the parking lane. This shows cyclist the correct position to ride to avoid car doors. Perryville and SHA may wish to position sharrows near the center of the lane; placing markings between vehicle tire tracks will increase the life of the markings.



Sharrow or shared lane marking

SYMBOL PLACEMENT - PARKING:



SUITABLE LOCATIONS FOR SHARED LANE MARKING:

- Symbols may be used on roadways that are too narrow for bicycle lanes.
- Symbols may be used on narrow roadways to connect disconnected bicycle facilities such as bicycle lanes, designated routes, and shared use paths.
- Symbols should only be used on roadways with posted speeds less than 40 mph.

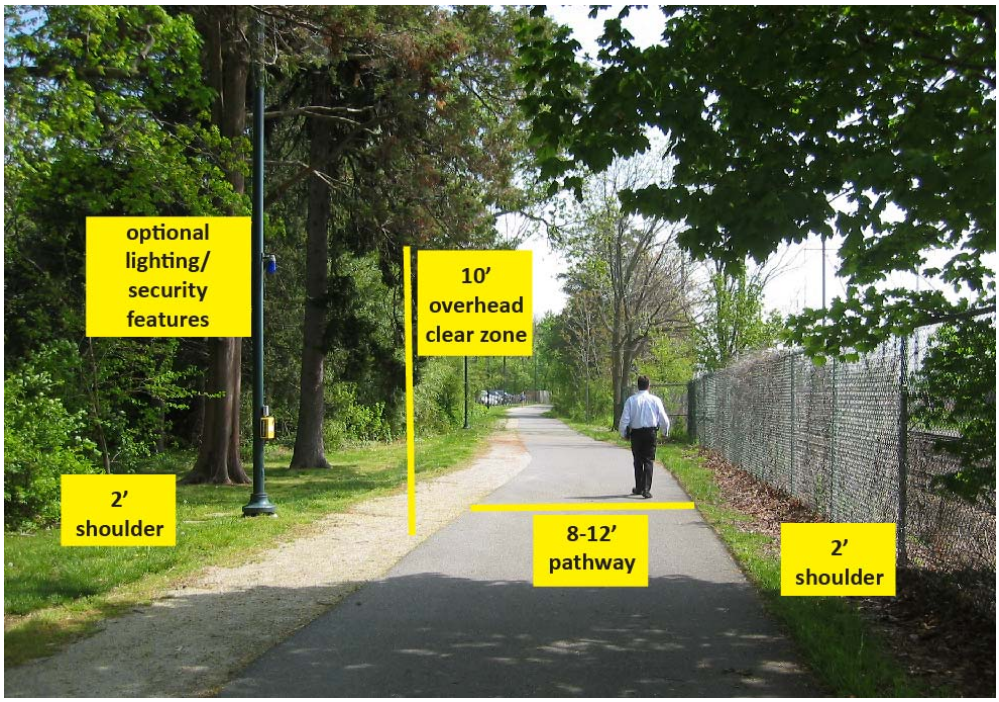
DESIGN OF SHARED LANE MARKINGS:

- Symbols shall be placed after each intersection. Symbols shall be placed no closer than every 250' thereafter.
- If used on roadways with on-street parking, symbols shall be placed so that their centers are a minimum of 11' from the adjacent curb face.
- Symbols placed in a shared lane without parking shall be placed so that their centers are a minimum of 4' from the adjacent curbface.
- Do not place symbols on lane lines.

Source: SHA Pedestrian and Bicycle Design Guidelines

PATHWAYS, GREENWAYS AND TRAILS

Pathways provide a community far more than just a means of transportation. A pathway is a route shared by pedestrians, bicycles, wheel chair users and often other nonmotorized users including equestrians. They provide direct links between destinations with fewer road crossings than sidewalks and bike lanes. Children and novice bicyclists find pathways a safe place to learn to ride and people of all ages find them a convenient place to recreate. For many communities, pathways generate tremendous community pride for residents and draw visitors from the surrounding region.



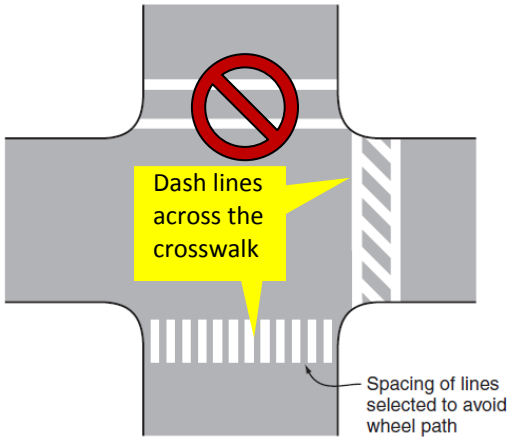
To safely serve both bicycles and pedestrians, pathways should provide addition width over a standard sidewalk. Pathways may be sidepaths build adjacent to roads or greenways through parks or open space. Sidepaths should be a minimum of 10 feet wide to allow two-way shared use with 12 feet recommended for as the minimum for most facilities. Where there are space constraints, the path may narrow to 8 feet but should be accompanied by signs warning that the trail narrows. Sufficient clearance along the sides and overhead is needed with a minimum of 2 feet on each side and 10 foot clear zone overhead.

Additional elements can enhance a pathway's design including:

- Frequent access points with directional signs on how to reach the path. Paths that are built away from the road may be hard for potential users to find without directional signs.
- Build path to a standard that will allow heavy maintenance equipment and emergency vehicles. This higher upfront cost will result in a longer lasting path with lower maintenance expense.
- Limit the number of road crossings. The joy of using a pathway is having a direct route away from interaction with vehicle traffic.
- Identify and address potential safety issues. If a pathway is likely to be used for commuting and shopping trips, lighting is needed for year round use. Paths in more remote location may benefit from having emergency blue light phones.
- Consider the sight distances for bicycles. Sharp turns or heavy vegetation may limit faster moving cyclists from seeing oncoming bikes or pedestrians.
- For sidepaths, a 5 foot buffer between the road is desirable or a physical barrier should be considered.
- Asphalt is the most common surface however concrete or stone dust surface are alternatives.
- Intersections with roads need careful design and are discussed in more detail on the next page.
- Provide amenities for pathway users. Amenities include trail heads, public art, maps, interpretive kiosks, water fountains, bike parking, benches, restrooms, and other features to make the facility unique to Perryville.

INTERSECTION DESIGN

Intersection design is a critical part of planning for safe pedestrian and bicycle travel. Crosswalks must be conveniently located as pedestrians are not willing to travel very far out of the way to get to a designated crossing or cross multiple legs or traffic when not all sides of the intersection have crosswalks. Within mixed-use streets and high pedestrian areas, crosswalks should be provided between 150-300 feet apart. Intersections should:



- Have good visibility for motorists. At signalized intersections, all crosswalks should be marked. Parallel line markings are not desirable because lines are hard for drivers to see and may be confused with the stop bar. Instead, ladder or piano key marking offer much better visibility.
- Meet modern crosswalk standards. Crosswalks should have clear space at corners with room for curb ramps. ADA curb ramps have textured/colored surface for those with limited sight. Ramps should be designed to accommodate wheel chairs, baby strollers, and those who may have mobility limitations that limit ability to step up onto a curb.
- Pedestrian signal heads now are required to give clear instruction with count down time shown so pedestrians can judge how much time they have to cross.
- Midblock or unsignalized crossings may warrant additional measures to increase driver compliance and pedestrian visibility.

MAINTAIN EXISTING TRAILS

Ongoing maintenance of existing facilities is needed so that they remain safe and comfortable for pedestrians and bicyclists and to reduce Perryville and MDOT's exposure to liability claims. Along on-road facilities, potholes and debris can lead to cyclists swerving toward traffic while buckled or cracked sidewalks may prevent their use by persons with disabilities.

Maintenance should be addressed through three processes:

1. Maintenance of sidewalks and on-road bicycle routes should be completed in conjunction with roadway paving and rehabilitation projects. Scope of work for roadway preservation should account for needed bike lane paving and striping, sidewalks, crosswalks and curb ramps. Any paving project should upgrade curb ramps to be ADA accessible and add pedestrian countdown signals.

   Future maintenance and operations should be incorporated into the planning and design of all transportation projects. Public works and emergency response personnel should be involved in project design to ensure the consideration of maintenance and operations issues that impact these agencies. Each new project should establish a management and operations plan during the initial planning which accounts for who will complete each maintenance and operations task and how they will be funded.

2. Establish a schedule for routine maintenance activities. Details about recommended maintenance activities are show in the Funding, Implementation and Evaluation section of this plan. Funding for ongoing operations and maintenance should be including in the Town's annual budget. Many routine activities can be supported by an Adopt-a-Greenway program. Scouting troops and other community service organizations can also support routine maintenance and operations. For example a Trail Stewards program can train volunteers hit the trail to become ambassadors and provide eyes-and-on the greenway. Trail Stewards can assist trail users with directions and advice, promote use of the trail and report on trail conditions, visitor needs and safety concerns.

3. Establish a program for facility users to report maintenance issues. Publicizing phone contacts for bike lane, greenway and sidewalk issues is important. Phone-in reporting can be supplemented by using a web site such a www.seeclickfix.com. This web site offers free service that allows users to report issues directly onto a map using a computer or smart phone. Perryville then

receive alerts and respond to issues through the service. A successful citizens reporting program should also have funds for addressing issues raised and a means of reporting back on the status of the request.

4. Along State roads, SHA is responsible for sweeping and maintenance from curb to curb only. Local jurisdictions are responsible for maintenance of s

EXPAND PARTNERSHIPS AND COORDINATION TO SUPPORT WALKING AND BICYCLING

Perryville should expand upon its collaborative relationships among stakeholder groups to pursue new approaches for promoting greenway, sidewalk and bicycle route development and use. Growing use of walking and bicycling serves the goals of many state and local nonprofit organizations and agencies for a variety of purposes including transportation, recreation, health, economic development and outdoor education. The Perryville Greenway Committee represents a tremendous resource which can be expanded to bring in a wider coalition of partners. Expanding the coalition working to achieve a more walkable and bikeable Perryville helps to build community buy-in, foster a wider sense of ownership, and get support of a variety of funding sources.

Possible government partners to bring into the committee include bicycle and pedestrian professionals from MDOT and trail staff from Maryland Department of Natural Resources (DNR). Within Maryland SHA, staff are dedicated to supportive program such as Transportation Enhancements, Recreational Trails Programs and Safe Routes to School. Cecil County tourism and planning staff also can be a resource to coordinate connections to areas surrounding Perryville.

Federally, assistance may be available from the Rivers, Trails, and Conservation Assistance (RTCA) program; this provides technical assistance to build partner relationships, develop consensus, prepare plans, and teach "hands-on" conservation and other technical skills necessary to successfully realize conservation and outdoor recreation projects. Assistance is provided for one year and may be renewed for a second year, if warranted.

However interest in sidewalks, bike routes and greenways now goes beyond traditional government partners. New partners for active transportation and recreation include:***Residents and businesses***—Those who live and work in Perryville have the most at stake with the Plan's implementation. Residents should continue to have opportunities to comment and stay informed as individual projects move ahead. Businesses can promote cycling by participating in Bike Month and Bike to Work Day, held each May. Employers can also take advantage of the Bicycle Commuter Act; this allows employers to reimburse workers up to $20 per month ($240 per year) tax-free for "reasonable" expenses related to your bike commutePublic safety agencies—Perryville's police department is a key partner in promoting safe travel by pedestrians, cyclists and drivers. Already, the Perryville police have included educational materials in the town's newsletter. This should be a continuing feature in the newsletter, addressing key topics like why wrong way/sidewalk bicycling is less safe and explaining the recent 3 foot passing law to drivers. This can be supplemented by targeted enforcement of motorist behavior that poses the greatest threat to pedestrian and bicycle safety and in high-crash areas and around schools. Additional training on safe walking and bicycling should be done to stay informed on changes to the laws applicable to bicyclists and pedestrians.. Training of police and EMS bicycle patrols and is available from The Law Enforcement Bicycle Association (www.leba.org) and International Police Mountain Bike Association (www.ipmba.org). ***Public Health Professionals*** – The Maryland Healthy Eating and Active Lifestyle Coalition coordinates efforts and resources to increase the number of Maryland residents who eat healthfully and engage in physically active behaviors (www.healthyactivemaryland.org). This coalition works towards the implementation of the Maryland Nutrition and Physical Activity Plan which includes many of the same strategies and actions in this Plan. Local hospitals, school nurses, and community health organizations are all potential partners for Perryville.

Transportation and Land Use Advocacy – Organizations ranging from Bike Maryland to Cecil County Land Use Alliance, can support the implementation of this plan. Groups with both transportation and smart growth missions and interested in pedestrian and bicycle friendly communities. Environmental groups can also support Perryville's work; for instance the Maryland Sierra Club chapter can assist with developing a Climate Action Plan that includes green transportation choices.

Education partners—Safe routes to school partnership can be established between school administrators, teachers, PTAs, parents and the students. An organized partnership is best able to pursue Safe routes to school funding as well as organize special events, and ongoing events such as "walking school buses" or organized groups that walk together. Students can take part in walking audits around schools to identify issues, and "bicycle rodeos" can teach children better cycling skills.

Land use development partners—As discussed earlier in this report, bicycle facilities (including parking), greenways and sidewalks can be challenging to add to a completed development. Thus, Perryville Code should clearly lay out how developers are responsible to construct recommended facilities in this plan, connections to the recommended network, and bicycle parking. Pedestrian and bicycle circulation should be part of the development and redevelopment review process.

Regional partners—In addition to using WILMAPCO as a continued resource, Perryville should take a proactive role at coordinating with regional and interregional plans and partnerships. Currently, an emphasis should be on coordinating with the development of Cecil County Bicycle Plan. Ongoing coordination with the LSHG, and Maryland committee of the ECG would also be valuable.

After expanding participation in the Greenway Committee, next the committee should identify priority tasks each year and assign lead responsibility for each priority. Through this process the committee can refine roles and responsibilities of state agencies, the town government and other stakeholders on an ongoing basis. Within Perryville, a Bicycle and Pedestrian Coordinator should be identified, whose job responsibilities include coordinating implementation of the Plan recommendations.

The committee should consider applying for the Walk Friendly Community (www.walkfriendly.org) and Bicycle Friendly Community (www.bikeleague.org) programs. Both the application process and resulting feedback can be planning tools for Perryville to identify what it is doing well and what should be improved.

Responsibilities of the committee may include:

- Monitor the condition of facilities to insure that they remains safe and attractive for the users
- Create and sustain partnerships with local officials; and to encourage volunteer-minded civic associations and clubs to become involved in greenway management and activities
- Develop short term and long term strategies for managing and preserving the greenways and bike routes as outstanding recreation resources
- Oversee trail maintenance
- Conduct fundraising programs
- Promote public awareness about the bicycle and pedestrian network and its benefits
- Evaluate the network and associated programs annually to determine if they are fulfilling the mission and goals

Members of the Advisory Committee should have designated responsibilities. These should include maintenance, marketing, fundraising, and safety. Unless individuals are delegated specific responsibility, these responsibilities will become so diffused that no one will be accountable. Each of these areas ideally needs to have a management plan with associated tasks and a time schedule to insure that necessary actions are accomplished. The Advisory Committee would be responsible for monitoring the overall efforts of these functional areas.

FUNDING, IMPLEMENTATION AND EVALUATION

The final section of this Plan addresses potential funding sources, issues for implementation and ongoing evaluation of progress.

FUNDING

State and Federal transportation funds, typically matched by local and/or private funds, are the primary source of for constructing much of the recommended active transportation network. In competitive funding processes, projects are considered more viable if a variety of local, state, federal and private sources can be used. This section outlines common types of funding used.

FEDERAL FUNDING PROGRAMS

Federal funding primarily comes from transportation programs established in the Surface Transportation Program legislation, currently known as SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act—a Legacy for Users). Reauthorization of SAFETEA-LU, currently under development, is likely to bring changes to these programs.

TRANSPORTATION ENHANCEMENTS

The Transportation Enhancement (TE) Activities offer funding opportunities to help expand transportation choices and enhance the travel experience through 12 eligible TE activities related to surface transportation, including pedestrian and bicycle infrastructure and safety programs, scenic and historic highway programs, landscaping, historic preservation, and environmental mitigation. TE projects must relate to surface transportation and must qualify under one or more of the 12 eligible categories.

TE Activities Defined:

1. Provision of facilities for pedestrians and bicycles.
2. Provision of safety and educational activities for pedestrians and bicyclists.
3. Acquisition of scenic easements and scenic or historic sites (including historic battlefields).
4. Scenic or historic highway programs (including the provision of tourist and welcome center facilities).
5. Landscaping and other scenic beautification.
6. Historic preservation.
7. Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals).
8. Preservation of abandoned railway corridors (including the conversion and use of the corridors for pedestrian or bicycle trails).
9. Inventory, control, and removal of outdoor advertising.
10. Archaeological planning and research.
11. Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.
12. Establishment of transportation museums.

Information can be found visiting www.sha.state.md.us and selecting “Community and Environment” and then “Community Improvement” from the menu. Applications should be submitted between January and March annually. In Maryland, project sponsors must provide a match of at least 50 percent of a project’s total costs. This must include a non-federal, cash match of at least 20 percent which may include the costs of project development, design, and right-of-way acquisition. Funds provided on a cost reimbursement basis.

Maryland TE Coordinator

Keith Kucharek
Assistant Division Chief
Regional and Intermodal Planning Division

Maryland State Highway Administration
Mail Stop C-502
707 North Calvert Street
Baltimore, MD 21203-0717
Tel: 410-545-8792
Fax: 410-209-5014
Email: KKucharek@sha.state.md.us

Jessica Silwick
Transportation Enhancements Program Liaison
SHA, Regional & Intermodal Planning
Mail Stop C-502
707 North Calvert Street
Baltimore, MD 21202
Tel: 410-545-8042
Fax: 410-209-5025
Email: jsilwick@sha.state.md.us

SAFE ROUTES TO SCHOOLS

The SRTS Program was established in August 2005 as part of the most recent federal transportation legislation--SAFETEA-LU. SAFETEA-LU provides more than $3 million annually for the program in Maryland.

The Program provides funds to the States to substantially improve the ability of primary and middle school students to walk and bicycle to school safely. The purposes of the program are:

1. To enable and encourage children, including those with disabilities, to walk and bicycle to school
2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age
3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately 2 miles) of primary and middle schools (Grades K-8)

Call for applications are publicized typically once per year. Grants are distributed to state, local and regional agencies, as well as nonprofit organizations. In order to apply for SRTS funds, an organization representative must attend a workshop that details the process and program.

Maryland Safe Routes to School Coordinator

Joseph B. Pelaia
Maryland Highway Safety Office
State Highway Administration
7491 Connelley Drive
Hanover, MD 21076
Phone: (410) 787-7620
Fax: (410) 787-4020
Email: jpelaia@sha.state.md.us
www.saferoutesinfo.org

NATIONAL RECREATIONAL TRAILS PROGRAM

The Recreational Trails Program provides funds to the States to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, and equestrian use. The program matches federal funds with local funds or in-kind contributions to implement trail projects. Projects can be sponsored by a county or municipal government, a private nonprofit agency, a community group or an individual (non-governmental agencies must secure an appropriate government agency as a co-sponsor).

Funds must be matched by at least 20% funding from the project sponsor which must be committed and documented in the local jurisdiction's budget. Prior property acquisition may be counted as an in-kind contribution if it occurred within two years of the proposal submission. A Memorandum of Understanding outlining funding and project implementation responsibilities will be prepared by SHA and signed by all parties before the project funds are released.

Eligible projects and activities include:

- maintenance and restoration of existing recreational trail
- development and rehabilitation of trailside facilities and trail linkages
- purchase and lease of trail construction equipment
- construction of new trails
- acquisition of easements or property for recreational trails or recreational trail corridors
- implementation of interpretive/educational programs to promote intrinsic qualities, safety, and environmental protection, as those objectives relate to the use of recreational trails

Maryland gives preference to projects which:

- have broad-based community support
- provide linkages to or complete existing trails
- provide improvements to a trail in order to benefit or mitigate impacts to the natural environment
- will be accomplished with youth conservation or service groups to perform construction and maintenance

Information can be found visiting www.sha.state.md.us and selecting “Community and Environment” and then “Hikers and Bicyclists” from the menu.

Maryland National Recreational Trails Contact

Terry Maxwell, Recreational Trails Coordinator
Maryland State Highway Administration
Mail Stop C-303, PO Box 717
Baltimore MD 21203-0717
Phone 410-545-8637 or 800-446-5962
Fax 410-209-5003
tmaxwell@sha.state.md.us

OTHER FEDERAL PROGRAMS

SAFETEA-LU – In addition to the specific programs outlined above, SAFETEA-LU includes several other programs for which bicycle and pedestrian projects may be eligible. Applications for Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Program (CMAQ) funds can be discussed with MDOT and WILMAPCO. Typically, these programs are used for larger, multimodal projects that include bicycle and pedestrian elements.

Rivers, Trails and Conservation Assistance Program—The RTCA is a program offered through the National Parks Service. It provides technical planning assistance in the establishment of greenways, trails and related open space. For information visit www.nps.gov/rtca.

MARYLAND FUNDING PROGRAMS

MARYLAND BIKEWAYS PROGRAM

The Maryland Bikeways Program is an initiative that began in 2012 to support planning, design and construction of projects that create and improve bicycle connections in Maryland. The objective of this program is to facilitate travel by bicycle in Maryland, by better connecting communities with key destinations, like work, school and shopping. Eligible activities include:

- Creation or update of a bicycle plan or feasibility study
- Design of bicycle infrastructure to better connect communities to transit and other destinations
- Linkage of a local bicycle route to a state bike facility
- Minor retrofits, signing, striping, or grate replacement to enhance use and visibility of on road bike facilities

Contact:

MDOT Office of Planning and Capital Programming
410-865-1277
MDBikeways@mdot.maryland.gov
www.cycle.maryland.gov

SIDEWALK RETROFIT PROGRAM

The Sidewalk Retrofit Program was established in 1995 to provide funding for the construction of new and the reconstruction of existing sidewalks and pathways on State roads. In State Designated Neighborhoods/Sustainable Communities, projects are eligible for 100% funding by SHA while other may require a 50% local match. Local jurisdictions should discuss and prepare potential project proposals with the SHA District Engineer. Proposals are accepted on an ongoing basis. The Chief Engineer's Office will review and select projects.

Contact:

Russ Anderson, SHA Innovative Contracting Division
410-545-8839

BICYCLE RETROFIT PROGRAM

The Bicycle Retrofit Program was initiated by the SHA in 2000 to fund minimal on-road improvements on state highways that would benefit bicycling. Eligible improvements include projects that can be completed quickly and without the need for permits or right-of-way.

Contact:

Russ Anderson, SHA Innovative Contracting Division
410-545-8839

ADA COMPLIANCE PROGRAM

This SHA program seeks to provide accommodations for persons with disabilities through a commitment to remove barriers that impede free movement for all pedestrians along State roadways. Funds may be used for1) Awareness and Technical Training sessions, 2) support of ADA asset management database, and 3) reconstruction of existing sidewalks to meet ADA Compliance. Over $56 Million has been allocated for this program in FY 2011-FY 2016.

Contact:

John Gover, SHA Innovative Contracting Division
410-545-8839

PROGRAM OPEN SPACE

Program Open Space provides dedicated funds for state and local parks and conservation areas. Funds can be used for trail land acquisition in Maryland. Funds may be used for acquisition, planning and facilities. A 25% match may be required.

James W. (Chip) Price, Program Open Space
Tawes State Office Bldg., 580 Taylor Ave., E-4, Annapolis, MD 21401-2397
Phone: 410-260-8426
Fax: 410-260-8404
cprice@dnr.state.md.us
www.dnr.maryland.gov/land/pos

LOCAL, NON-PROJECT AND PRIVATE

Examples of local funding sources used in other Maryland jurisdictions include:

- General Obligation Bonds
- Impact Fees
- Local Motor Vehicle Revenue
- General Funds
- Tax increment financing
- Local improvement districts

Projects should piggyback on other projects when possible, and all infrastructure and development projects should consider bicycle and pedestrian improvements. Many improvements can accomplished for reduced cost when administered through Public Works or SHA along with road construction and widening, street rehabilitation and resurfacing, bridge projects, intersection projects, etc.

A priority for local funds might be to develop design plans for priority improvements. Having “shovel-ready” projects will position Perryville to take advantage of special grants and programs such as the Federal TIGER grants, and Livability Grants.

Developers should provide bicycle and pedestrian improvements recommended, to be built according the SHA design guidelines. In addition, other bicycle and pedestrian connections should be considered during the development proposal review process, to tie future land use into the bicycle and pedestrian network.

Other jurisdictions use nonprofit grants and foundation funding for maintenance, operations and encouragement projects. One annual bicycling grant program is offered by Bikes Belong (www.bikesbelong.org). An annual greenways grant is the Kodak American Greenways Award (www.conservationfund.org).

MAINTENANCE AND MANAGEMENT PLAN

Prior to construction of each facility, an entity should be identified to own and operate the facility. This can be a partnership between the MDOT, SHA, DNR, Perryville, Perry Point VA, private land owners, and Cecil County. For instance, an adjacent property owner may be responsible for day-to-day mowing and snow removal of a sidewalk, as well as routing repairs of cracks and damage, while Perryville or SHA may be responsible for long-term reconstruction of pedestrian and bicycle facilities.

A Maintenance and Management Program will not only ensure a quality recreational or travel experience for the network user but is also an essential ingredient of a risk management plan for the State and Town. Sufficient manpower and resources must be devoted to a regular maintenance schedule in order to meet these goals.

Maintenance requirements are directly linked to the nature and quality of capital improvements. The maintenance guidelines that follow are necessarily somewhat generalized, and will need to be re-evaluated at such a time when a detailed capital improvement program has been defined. The maintenance implications of trail improvements should be reviewed carefully when considering capital improvements. Money saved during the trail development process may be spent many times over if inadequate design and development creates a greater than normal maintenance burden.

ORGANIZATIONAL STRATEGIES

The managing agency needs to develop a planned maintenance management system for the network. The elements of this system should include:

- Inventory of the routes and its related facilities
- Setting of maintenance goals and standards for the quality of maintenance
- Developing the tasks necessary to achieve maintenance quality levels
- Assigning the maintenance tasks to designated groups or individuals
- Monitoring the quality of the work
- Implementing a control system for tracking accomplishments and relevant costs
- Evaluating the maintenance management program

Effective maintenance requires that an individual be delegated responsibility for this function. Because maintenance is a major program that is related to greenway, sidewalk and bicycle route safety, attractiveness, and image as well as in affecting potential liability for crashes, it should be a function of a paid staff person. This person would oversee maintenance management operations, coordinate volunteerism, work with the employees and volunteers who do maintenance, develop a maintenance program, track costs, and project future requirements.

The most practical thing to do to get started on greenway maintenance is to enter into agreements with clubs and organizations to adopt segments of the trail. These should be formal cooperative agreements that clearly define roles and responsibilities of each party.

Developing an effective maintenance management system is an on-going process. As Perryville works with these groups, new and more effective maintenance methods and techniques can be developed. It will be important for people to recognize that creativity and experimentation with different approaches will help to improve maintenance operations.

The overriding maintenance program goal for the networks should be to provide for safe, clean, attractive routes for use by cyclists, hikers, commuters, and recreational users.

GREENWAY MAINTENANCE REQUIREMENTS

A description, frequency and general comments for each activity are outlined. Both short term periodic maintenance tasks such as mowing and long term tasks such as trail resurfacing are provided. A discussion of key maintenance tasks follows.

Vegetation Management

The principal purpose of a vegetation management program is to keep the trail clear of vegetation, both horizontally and vertically, to permit the safe passage of greenway users. Control of vegetation is also required to help keep swales and drainage structures clear of debris, and to minimize mechanical damage by tree roots to trail structures such as walls and bridges.

In addition to these basic functional criteria, vegetation management can also address the following objectives:

- Enhance the aesthetic quality of the greenway
- Maintain or enhance desirable views from the greenway
- Minimize long term maintenance

- Encourage diverse native plant communities

The following vegetation management practices should be employed.

Mowing: Herbaceous material should be mown three to four times a year, a minimum of four feet from the trail edge. A flail type mower is recommended as rotary types blow the screenings off the trail.

Herbicide use: Herbicides may be used selectively to remove vegetation from the trail surface on an annual basis, as required. Sunny areas are the most susceptible to weed growth. Weeds should be treated promptly, before the integrity of the trail is affected.

Woody vegetation control: Trees and shrubs should be controlled by an annual mowing of the entire width of graded rail-bed. Removal of woody vegetation to this width should minimize the need for frequent mechanical or hand pruning to maintain adequate horizontal and vertical clearances. Selective removal or "limbing up" of trees should also be scheduled to maintain or create desirable views from trail. Trees and shrubs should also be kept clear of all drainage structures, bridges and walls which may be subject to mechanical damage by tree roots.

Invasive Vines: Moreover, vegetation control should include removal of invasive vines, such as poison ivy. A continuing effort to remove poison ivy, whose growth often increases after clearing, from the trail area will make the trail and its immediate environment more "user-friendly."

These recommendations are guidelines. Site specific conditions as well as aesthetic issues must also be considered. For example it may be desirable to leave trees in certain areas within the graded rail bed to provide shade or reduce the linear monotony of the trail corridor. The shade provided by a dense overhead canopy might be well worth the additional maintenance activity created by leaves and branches on the trail.

Bridges

MDOT/SHA already inspects the bridges along state maintained roads on an annual basis. We recommend this responsibility continue. Bridges along off-road sections of the network should be inspected by Perryville, Cecil County or natural resource agencies.

Litter and Trash

Litter problems tend to occur at access points/trailheads to greenways. These areas are more intensively used, and are often used by individuals who are not greenway users. Providing trash receptacles offers only a partial solution to this problem and in fact creates a new one. Some greenway managers recommend that trash receptacles not be provided because in their experience it tends to generate non-trail user trash.

This problem would appear to be on the increase as trash pickup fees continue to rise. Several managers reported that as a group, greenway users seem to be willing and accustomed to 'packing out' their trash, reducing the need for trashcans at access points. Costs for such receptacles are shown, however, in our cost estimate. The design of bollards and gates at trail access points will help to limit dumping from vehicles while retaining access for trail users.

Vandalism and Graffiti

Vandalism tends to be concentrated at the most accessible part of a greenway, specifically access points. The Delaware and Raritan Canal State Park staff anticipates a yearly replacement cycle of about 10% of the total number of access control gates along that trail. These gates, as well as other custom fabricated items subject to vandalism and wear, are purchased in quantity to reduce costs.

Past experience shows bridge overpasses often attract graffiti, and some repainting of the bridges should be included in a yearly maintenance program. Painting of the overpasses, as has been done in some locations in the past, is a good way to denote the

greenway, and make these structures less attractive to vandals. Alternatively, initial application of an anti-graffiti coating will make cleaning easier.

Greenway Surface Maintenance

Asphalt is most often used on multi-use pathways because of its long-term cost effectiveness, and desirable appearance. Special paving, crushed stone and natural surfaces will require much more maintenance.

Drainage Structures

If structures such as pipes inlets and swales are not properly restored during the construction phase, increased maintenance costs will result from continuous periodic maintenance of the structures and possible damage to the greenway due to poor drainage or erosion. This problem continues to plague the managers of the Delaware and Raritan Canal Trail in New Jersey.

SECURITY AND RISK MANAGEMENT PLAN

Experience at other locations shows that greenways have not experienced significant safety, crime or liability problems. Research suggests that when a greenway is more used, there will be fewer problems regarding safety and risk. However, in a litigious society, the government entities must take the necessary steps to provide both a safe route for the users and to protect themselves from liability claims wherever possible.

Safety in Design and Development

Greenway must be designed and developed in accordance with federal and state standards for trails. As noted earlier, these include the standards of AASHTO (American Association of State Highway and Transportation Officials), and of the SHA. All hazardous conditions and attractive nuisances should be identified and removed where possible during the original construction of the route. Those that cannot be removed should have warning signs posted.

Existing structures with safety devices that are in poor condition should be a top priority. For example, loose bridge railings need to be repaired expediently. They are more dangerous than no railing at all, as they create the perception of safety. As entrances are developed with signage, and when pamphlets and guidebooks are published, clear mention should be made that the trail or portions thereof, while open to the public, are not yet fully developed, and that users must exercise necessary care when using the route.

Tree Trimming for Sight Lines and Safety

Most vehicular collisions occur at intersections, often because one or both parties did not see the other. Trees and brush should be cut back as necessary at this and other intersections where sight lines are impaired. Special attention should be paid at points where the links join roads at grade at a sharp angle. In addition, trees adjacent to the trail should be evaluated annually for the removal of unhealthy, dead and hazardous limbs, or entire trees.

Maintenance

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

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

Facility managers report that professional, well-trained staff are key in keeping the greenway safe and secure. Well-trained people are in the best position during the course of their normal work functions to identify and report hazards.

Liability

All states except Alaska have laws which limit the liability of property owners who make their land available to the public for recreational use. Although this law does protect the managing agencies to a large extent, they still need to be concerned with this issue.

A recent case in Philadelphia challenged this law with the courts finding in favor of the plaintiff and holding the City of Philadelphia responsible for the injury. However, the decision was based upon the view that the injury resulted from a poorly maintained element of a developed recreational facility. Because this is a recent case, the impact of the case on the limitation of liability act is not known. Thus, a good risk management plan, including maintenance needs, is imperative for the trail operating agency.

Public/private partnerships regarding trail ownership and management are common. A public agency owns the greenway while local and/or private organizations manage and maintain it.

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

Law Enforcement

The managing agency should work out cooperative agreements regarding police protection for the greenway. The local police department should determine how the trail should be patrolled within their own jurisdiction.

Telephone numbers for police and emergency personnel should be posted at major access points. Alternatively, "911 Call Boxes" could be installed in a future phase of work at road crossings where telephone lines are likely to exist.

The recommended design includes easily operable gates for access by emergency and law enforcement vehicles. These gates should be lockable in either the open or closed position.

SIDEWALK MAINTENANCE REQUIREMENTS

Sidewalk maintenance will be necessary and should involve periodic sweeping, edging and mowing, as well as snow removal by adjacent property owners combined with inspection by Perryville. SHA provides only curb to curb maintenance along state roads, so sidewalk maintenance will be the responsibility of the property owner and local jurisdiction.

Surface cracking should be addressed quickly, as small cracks can deteriorate quickly from winter freezing and vegetation. Sidewalk condition assessments should be completed annually, on a rotating schedule for each street. Assessment should require repair of all cracks, vertical displacements of ¾ inch high or greater and horizontal displacements of ½ inch or greater. Sidewalks should be kept clear of litter and leaves by adjacent property owners and winter snow and ice. Some communities have initialed “snow angel” programs to assist elderly and persons with disabilities with these maintenance tasks.

Street trees are a desirable part of the pedestrian-friendly street, but roots can cause sidewalks to heave. Tree selection guidelines are available at www.green.maryland.gov/greendowntown/Street_Trees.asp and include varieties most suited for use as street trees.

Grates and utility covers should be located outside of the pedestrian through zone when possible. If not, grates must be flush with the sidewalk. Ventilation and tree well grates should have openings no greater than ½ inch wide.

Intersections should be checked yearly for condition of curb ramps, worn crosswalks and other issues.

Suggested schedule for maintenance is as follows:

- Regular inspection – 2 x per year
- Sidewalk sweeping, snow removal, debris removal – as needed. Additional attention will be needed in the Fall
- Sidewalk repairs – as needed. Early, proactive repairs will save money by reducing major deterioration
- Intersection inspection—2 x per year. Including assessing pedestrian signal timing and function
- Curb ramp inspection—2 x per year and as needed. Additional debris removal may be needed following storms
- Signs and markings—2 x per year and as needed to replace missing signs

BICYCLE ROUTE MAINTENANCE REQUIREMENTS

Bicycle routes need regular sweeping and maintenance so that they remain safer for users. Approximately 50 percent of bike crashes are from falls, often caused by poorly kept road surfaces and debris. Critical maintenance includes regular sweeping and periodic restriping.

Primary activities include:

- Inspections – 2 x per year
- Sweeping – as needed
- Pavement sealing, potholes—as needed-15 years
- Culvert and drainage grate inspection—before Winter and major storms
- Pavement marking replacement—1-3 years
- Sign replacement—as needed

EVALUATION

The Greenway Committee should establish specific targets for projects, complete annual evaluation and report the results to the community. Measures might address:

- Network
    - Miles of sidewalk
    - Miles of bike routes
    - Miles of greenways
    - Number of bike racks
- Education and Encouragement
    - Number of programs presented to children and adults
    - Number of commute trips by cycling and walking
- Enforcement
    - Safety campaigns related to nonmotorized travel
    - Training programs for enforcement professionals

The Greenway Committee and Town of Perryville should also work to refine local priority projects. Priority projects can be submitted for funding through programs described in this Plan or communicated to MDOT in the annual priority letter or MDOT Tour.

Wilmington Area Planning Council

850 Library Avenue, Suite 100
Newark, Delaware 19711
302-737-6205; Fax 302-737-9584
From Cecil County: 888-808-7088
e-mail: wilmapco@wilmapco.org
web site: www.wilmapco.org

RESOLUTION

BY THE WILMINGTON AREA PLANNING COUNCIL (WILMAPCO) TO ENDORSE THE PERRYVILLE GREENWAY PLAN

WHEREAS, the Wilmington Area Planning Council (WILMAPCO) has been designated the Metropolitan Planning Organization (MPO) for Cecil County, Maryland and New Castle County, Delaware by the Governors of Maryland and Delaware, respectively; and

WHEREAS, the WILMAPCO Council recognizes that encouraging bicycle travel is consistent with the strategies of the 2040 Regional Transportation Plan (RTP); and

WHEREAS, the Town of Perryville requested WILMAPCO's assistance in developing a comprehensive pedestrian, bicycle and greenway plan that would expand transportation choice and opportunity for walking and bicycling commuting and recreation; and

WHEREAS, the Perryville Greenway Plan was developed with input from an the Perryville Greenway Committee, member agencies, residents and other stakeholders; and

WHEREAS, the Perryville Greenway Plan makes recommendations to increase bicycle and walking usage and safety by providing a safe network with links to other modes of transportation, and developing education programs, and encouragement activities; and

NOW, THEREFORE, BE IT RESOLVED that the Wilmington Area Planning Council does hereby endorse the final report and recommendations of the Perryville Greenway Plan.

March 8, 2012
Date:

Joseph Fisona
Joseph Fisona, Acting Chairperson
Wilmington Area Planning Council

Your continued interest and feedback on the Perryville Greenway Plan, and future transportation planning and decisions are important to us. To learn more or submit comments, contact:

WILMAPCO

Heather Dunigan, Principal Planner
850 Library Ave., Suite 100
Newark, DE 19711
302/737-6205 ext. 1-18
hdunigan@wilmapco.org
www.wilmapco.org

Or

Town of Perryville

Mary Ann Skilling, Town Planner
515 Broad Street, P.O. Box 773
Perryville, MD 21903
401/642-6066
mskilling@perryvillemd.org

Or visit the project website: www.wilmapco.org/perryville