



Harford County



BICYCLE AND PEDESTRIAN MASTER PLAN

2013

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Introduction

Bicycling and walking are fun, healthy, and non-polluting forms of transportation. They are sustainable choices because they do not consume natural resources, and facilities needed for them can largely be provided by modifying existing infrastructure. Increasing the levels of bicycling and walking can help to alleviate traffic congestion, improve air quality, and improve overall community health while also providing an efficient option for short trips. Nevertheless, the automobile remains a preferred transportation option for the majority of the trips in the County.

Harford County, like most of its neighbors, has seen its rural agrarian based roadways evolve into a network of major roads that crisscross the County. Often the desire to accommodate cars has resulted in obstacles to safe, efficient, and pleasurable walking and bicycling.

While bicycling and walking are popular recreational activities in Harford County, there are many places in the County where travel by bicycle or on foot are difficult. Destinations are often separated by major roadways and many developments designed around cul de sacs preclude easy connections to neighboring communities. These patterns leave people little choice but to use their automobiles when running errands, taking their children to various activities, or commuting to work.

In Harford County, walking and bicycling are envisioned as part of a community's character as well as part of its multimodal transportation network. Communities throughout the County will be areas where adults and children can choose to walk or ride their bicycles with ease to a variety of destinations – shopping centers, work, the library, schools, a nearby park, the farmer's market, or a neighbor's house.

The primary focus of this Plan is to increase pedestrian and bicycle activity throughout the County by providing improvements that offer desirable levels of accessibility, mobility, convenience, and safety. By supporting walking and bicycling for utilitarian, recreational, and commuting purposes Harford County residents will experience the environmental, economic, health, and social benefits that come from increased bicycle and pedestrian activity.

The Plan explains how local, regional, State and Federal plans and policies influence bike and pedestrian planning. It also looks at the benefits that supporting active transportation options have on the environment, community health, and sustainability. It examines existing conditions, it evaluates future needs, and it identifies projects and studies to improve the County's bicycle and pedestrian network. Building on these, the Plan establishes policies and strategies to address bicycle, pedestrian, and trail needs, and it includes an implementation section to help provide direction and accountability for the strategies included in this Plan. Also included is a series of appendices intended to provide additional information about items and programs mentioned in the Plan.

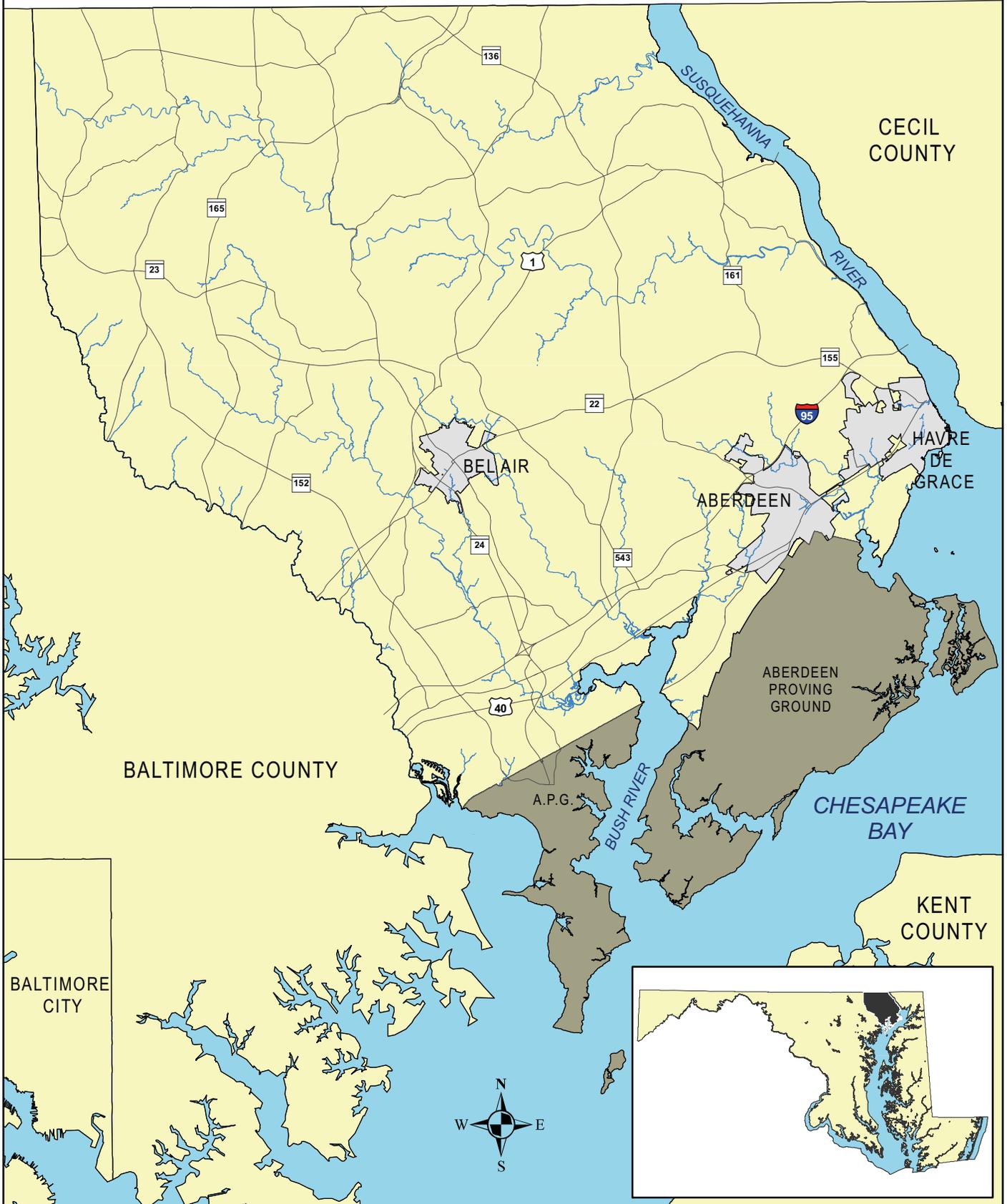
Setting

Harford County is located in the north central portion of Maryland at the confluence of the Susquehanna River and the Chesapeake Bay. It is bounded by Baltimore County on the west, the Commonwealth of Pennsylvania on the north, the Susquehanna River on the east, and the Chesapeake Bay to the south (Figure 1).

LOCATION MAP

Harford County, Maryland

P E N N S Y L V A N I A



The County has a land area of 440 square miles or 235,676 acres, and it is the 11th largest county in Maryland. Harford County is bisected by two physiographic provinces, the Piedmont Plateau and the Coastal Plain, with the Fall Line roughly following Interstate 95 (I-95). Elevations in the County range from just over 800 feet in the rolling topography of the Piedmont through the gentle slopes of the Coastal Plain to sea level.

There are three incorporated municipalities in Harford County, the County seat in the Town of Bel Air, and the cities of Aberdeen and Havre de Grace. Each of the municipalities identifies bicycle routes and pedestrian connections in their comprehensive plans.

As of the 2010 Census, Harford County had a population of 244,826. There are slightly more females than males in the County, 51% and 49% respectively. The median age in the County is 39.4 years with 12.5% of the County residents being 65 years of age or older and 25% being under 18 years. According to the American Community Survey (2006-2010), of the working population in Harford County, 83% drive alone to work, 9% carpooled, 1.6% use public transit, and just under 2.5% use another means of transportation. There are also 3.6% that work at home.

Consistency with Master Plan, Element Plans, and other regional efforts

The Harford County Charter requires the Department of Planning and Zoning to “prepare and propose Master Plans”. It also requires the inclusion of a series of elements or components which “further advances the purposes” of the Master Plan. Each of these elements needs to “describe how it relates to the other elements” in achieving the overall goals of the Master Plan. The Bicycle and Pedestrian Master Plan was prepared pursuant to the Master Plan and addresses current bicyclist and pedestrian concerns and serves as a policy guide to increasing bicycle and walking activity throughout the County. The Plan provides strategies that involve the five “Es” - Engineering, Education, Encouragement, Enforcement, and Evaluation, and it identifies bicycle, pedestrian and multi-use trail facility improvements.

Other plans adopted by the County, which are intricately related to the Bicycle and Pedestrian Master Plan, are the 2010 Transportation Element Plan, the 2013 Land Preservation, Parks, and Recreation Plan, and the 2012 Land Use Element Plan. The 2010 Transportation Element Plan recognized the importance of improving opportunities for walking and bicycling as part of a truly multi-modal transportation system and calls for the development of a Bicycle and Pedestrian Master Plan. The Land Preservation, Parks, and Recreation Plan recognizes the value of trails and supports the creation of a trail system that includes connections between activity centers – schools, employment centers, and shopping areas. It also recognizes the importance of greenways, which enhance the character of the County by providing opportunities for physical activity.

These plans recognize the importance of having a Bicycle and Pedestrian Master Plan as a part of addressing transportation, environmental, health, and sustainability issues. They call for establishing a built environment that encourages and supports active transportation choices. Trails, bikeways and sidewalks should provide safe and convenient connections to transit, and they should create linkages between residential, commercial, employment, recreational, and institutional uses.

There are many public benefits associated with having a Bicycle and Pedestrian Master Plan. Investments in bicycling and walking facilities can help to alleviate traffic congestion and reduce vehicle emissions, while also providing recreational and health benefits. The importance of providing walkable and bikeable communities was also emphasized in the 2012 Master Plan and Land Use Element Plan. Providing facilities that offer active transportation options supports the Plan’s emphasis on sustainability and overall community health. In addition, communities where high levels of bicycling and walking

occur are considered to be attractive and friendly places to live and work, and this contributes to the overall quality of life experienced by County residents.

With the development of a Bicycle and Pedestrian Master Plan, Harford County joins other jurisdictions throughout Maryland, and particularly within the Baltimore metropolitan region, in recognizing the benefits that can be derived from increased levels of bicycling and walking. In addition to these local efforts, bicycle and pedestrian planning is supported by efforts at the State level.

The Maryland Department of Transportation (MDOT) completed its 20 Year Bicycle and Pedestrian Access Master Plan in 2002. The Plan *“...is a comprehensive guide to developing, improving, and maintaining bicycle and pedestrian travel in Maryland over a twenty-year period. The Plan largely addresses the conditions for biking and walking along State highways. Yet, it also serves as guidance and a call to action to other State and local agencies that oversee local, federal and related systems that can foster better bicycle and pedestrian travel in Maryland.”*

This was followed by the 2009 Maryland Trails: Strategic Implementation Plan – A Greener Way to Grow (TSIP). The Trails Strategic Implementation Plan *“...is Maryland’s coordinated approach to plan a connected statewide shared-use trail network that serves the needs of all Marylanders. The purpose of the TSIP is to: communicate a vision for trail development in Maryland; to provide policy direction for partner agencies and local government; and to outline a coordinated and strategic approach for closing gaps in the existing system of trails, for improving existing trails and supporting eco and heritage tourism opportunities, and for ensuring smart planning for future trail development.”*

The Maryland State Highway Administration (SHA) is finalizing a draft Bicycle Policy and Design Guidelines document. This document, when completed, will provide guidance that will be beneficial to Harford County decision makers.

These State plans and initiatives impact Harford County’s Bicycle and Pedestrian Master Plan because a large portion of Harford County’s road network consists of State highways, and because of the State Parks and trail networks such as the Lower Susquehanna Heritage Greenway and the Ma and Pa Heritage Trail that are located in the County.

Planning and Public Participation Process

Recognizing the importance of encouraging bicycle commuting, Harford County has participated in national Bike to Work Day since 2003. This annual event draws cyclists from throughout the County, and helps to draw attention to cyclists as legitimate users of the roadway. Each year as part of this event, cyclists identify their commuting route. This information was combined with surveys conducted in 2005 and 2010 to serve as a starting point for understanding bicycling and pedestrian needs. Also in 2010 the Maryland Department of Transportation contracted with Toole Design Group to conduct the Maryland Statewide Student Travel Policy Study. Completed in 2011, this study provided valuable insight into why more of Maryland's students were not walking or riding their bikes to school. The information obtained from these efforts was used by Planning and Zoning staff to initiate the development of this Plan and the public participation process that is a critical element of planning in Harford County.

Harford County Bicyclist Survey

Building on a Bicyclist Survey conducted in 2005, the Department of Planning and Zoning partnered with Healthy Harford and Harford County Commuter Assistance in 2010 to conduct another bicycle survey in an effort to better understand cycling activities within the County. The survey was designed to gather information from cyclists on what they use their bicycle for, what routes they use, what issues they face, and the general conditions of cycling in the County. The survey identified general trends and provided a profile of the cycling community, as well as key issues for future planning.

The 2010 Bicycle Survey identified some clear opportunities for increasing bicycle ridership in Harford County. Significant findings included:

- 95% of survey respondents ride for recreation and nearly 60% of these cyclists leave the County to ride recreationally;
- 82% of the survey respondent's drive alone to work every day, however 42% of them indicated that they would consider cycling to work;
- 90% of respondents think that building more bikeways would encourage more cycling Countywide;
- 60% of respondents would consider allowing their children to walk or ride their bike to school if there were adequate facilities;
- Only 9% and 13% of respondents have heard of the Walking School Bus Program and the Safe Routes to School Program, however 70% would consider allowing their children to participate in these programs if they were available; and
- Only 23% of respondents were aware that Harford Transit's Link buses accommodated bicycles.

Maryland Statewide Travel Policy Survey

The principal objective of the project was to provide State officials with an understanding of walking and bicycling policies and practices at individual schools and to recommend strategies for addressing concerns. The study concluded that statewide there were no direct prohibitions against bicycling or walking to school. Approximately 60% of schools surveyed neither discourage nor encourage walking and bicycling. The remaining 40% were split; half indicating they encourage walking and bicycling, and the other half reporting they discourage or prohibit the practice. Survey respondents cited lack of infrastructure, traffic, and liability as reasons for not supporting walking or bicycling. The study recommended providing educational outreach to school officials including promoting the Safe Routes to

School Program, identifying strategies for addressing infrastructure concerns in areas near schools, and assisting in the development of policies that support walking and bicycling to and from school.

Safe Routes to School

The Safe Routes to School (SRTS) program, administered by the Federal Highway Administration (FHWA), was established in August 2005 to provide technical assistance and funds to states to improve and increase the ability of students to walk and bicycle safely to school. The SRTS program promotes walking and bicycling to school and addresses safety concerns by educating parents and children, and it partners with local law enforcement to make safer streets. The purposes of the program are:

- Enable and encourage students to walk and bike to school;
- To make biking and walking to school safer and a more appealing transportation alternative thereby promoting a healthy and active lifestyle; and
- Facilitate programs to improve safety, reduce traffic, fuel consumption and air pollution near schools.

Each state administers its own SRTS program and develops its own procedures to seek and select projects for funding. The program establishes two distinct types of funding opportunities: infrastructure projects (engineering improvements) and non-infrastructure related activities (such as education, enforcement and encouragement programs). Infrastructure projects can include lighting, traffic signs and signals, turning lanes, shoulder improvements, traffic calming, medians, pavement markings, and roadway realignments. In Harford County, the Safe Routes to School program has been administered by the Sheriff's Office. Several recent local Safe Routes to School projects include construction of a new sidewalk segment at Edgewood Elementary School and construction of a raised crosswalk with solar reflectors at Joppatowne Elementary School.

Walk & Bike to School Day

National Bike to School Day builds on the popularity and success of the International and National Walk to School Day. In the United States, National Walk to School Day, originally called "Walk Our Children to School Day", was founded in 1997. It is celebrated each October as a way to bring community leaders and children together to build awareness of the need for communities to be more pedestrian friendly. Building on the successes of National Walk to School Day, the first-ever National Bike to School Day took place on May 9, 2012, as part of National Bike Month. The event was organized by the National Center for Safe Routes to School, in partnership with the League of American Bicyclists and encourages and celebrates biking to school. Many communities and schools have been joining together to hold walking and biking events for years, however, the 2012 event was the first opportunity for communities across the nation to join together to bicycle to school on the same day. Schools, cities, bicycle groups, and public health organizations organized events to highlight and celebrate the benefits of walking and bicycling and to encourage students to walk or bicycle to school. Eleven of the County's 34 elementary schools have participated in Bike to School and Walk to School activities. Most notably, Red Pump Elementary School had over 300 participants in their inaugural Bike to School Day event in 2012, accommodating participants by storing bikes in the gymnasium for the day.

Community and Stakeholder Participation

Bicycle and Pedestrian Master Plan Advisory Committee

To help guide the development of the Bicycle and Pedestrian Master Plan a technical advisory committee was formed. The committee was appointed by the County Executive in 2011 (Appendix A). The Harford County Bicycle and Pedestrian Master Plan Advisory Committee (BPAC) included technical staff from County, State and regional departments and agencies as well as bicycle and pedestrian advocates. The role of the Committee was to assist in the identification of important destinations, connections, and needed bicycle and pedestrian networks. They were also asked to indicate where safety improvements were needed, and where additional bike and pedestrian amenities should be provided. The Committee also reviewed the draft Plan to ensure that it was a reasonable and implementable plan. In addition, the Committee was charged with encouraging public participation to help ensure that a broad range of citizen input was received.

Following the adoption of this Plan, a Bicycle and Pedestrian Advisory Group (BPAG) will be appointed, as recommended in the 2010 Harford County Transportation Element Plan. This advisory group should consist of citizen volunteers recommended by the County Executive and appointed by the County Council. This group will be charged with advising the County Executive on pedestrian and bicycling issues.

The Bicycle and Pedestrian Advisory Group will support the County's commitment to making bicycling and walking safer and more desirable, and it is a step toward getting Bicycle Friendly recognition by the League of American Bicyclists. The Bicycle and Pedestrian Advisory Group should be composed of representatives from all bicycle and pedestrian stakeholder groups, including but not limited to road cyclists, walkers - seniors, people with disabilities, a student representative from a walkable high school, runners/joggers, mountain cyclists, and municipal representatives.

The charge of the BPAG could include some of the following:

- Develop and monitor goals and indices related to bicycling and walking in the County;
- Participate in the implementation, evaluation, and update of the County's Bicycle and Pedestrian Master Plan;
- Review and comment on updates to the Development Regulations and long-range planning documents as they relate to bicycle and pedestrian matters;
- Serve as public liaison between local government staff and the public;
- Promote bicycling and walking including safety and education programs;
- Promote and participate in Bike to Work Day, Walk to School Day, Car Free Day and other similar events; and
- Identify and participate in other events to promote walking and cycling throughout the County.

Public Workshop

Building on the information provided by the Bicycle and Pedestrian Advisory Committee, the public input process for the 2013 Bicycle and Pedestrian Master Plan began with an Open House/Workshop conducted in March 2012. At this workshop participants learned about why bicycling and walking should be encouraged and supported, what a Bicycle and Pedestrian Master Plan should do, and what conditions support bicycling and walking. Participants were also able to learn about the County's

existing bikeways and trails and where community facilities are located. They were also asked to provide information on where and how communities should be connected.

Participants were also introduced to Community Walk, an interactive mapping site that allows users to designate desirable routes, roadways of concern, and also comment on a variety of issues related to encouraging safe and convenient walking and biking. The public comment period, including the Community Walk site, were open to the public for a period of two weeks following the workshop. Over 150 comments were posted on the site and these are reflected in Figure 2.

Comments posted on the Community Walk site included challenging intersections, missing sidewalks, enforcement concerns, maintenance issues, bicycle parking, etc. This online interactive map enabled participants to identify specific geographic locations where these comments applied. Participants were also able to comment on each other's posts. Information from the site was downloaded to an external database for analysis and fieldwork. It was sorted by topic, location, and community area. Many of the routes, missing sidewalks, and difficult intersections were evaluated during the fieldwork efforts.

In addition, the Department maintained a website specifically for the Bicycle and Pedestrian Master Plan. Information about the work of the Advisory Committee was posted along with information from the public input process.

A draft Plan was released for public review in January of 2013. The Plan was available online and from the Department of Planning and Zoning. Comments on the draft Plan were solicited through a combined online and public workshop process. A public workshop was also conducted in January 2013. Participants were provided with an opportunity to visit a series of stations where they could discuss the proposed Plan and its projects with staff. The information provided at the workshop was also made available on the Department's online community site. On this site, citizens were able to comment on the Plan. This process encouraged citizens to identify what they thought was best about the Plan and what items were missing or insufficiently addressed. All of the information and materials presented at the public meeting were also available on the Department's website.

Interagency and Interjurisdictional Cooperation

This Plan was developed in cooperation with the municipalities, and regional and State entities interested in bicycle and pedestrian planning. Staff from the Baltimore Metropolitan Council (BMC) served on the Advisory Committee and helped with field work efforts. In addition, a representative from the Maryland Department of Transportation also served on the Advisory Committee.

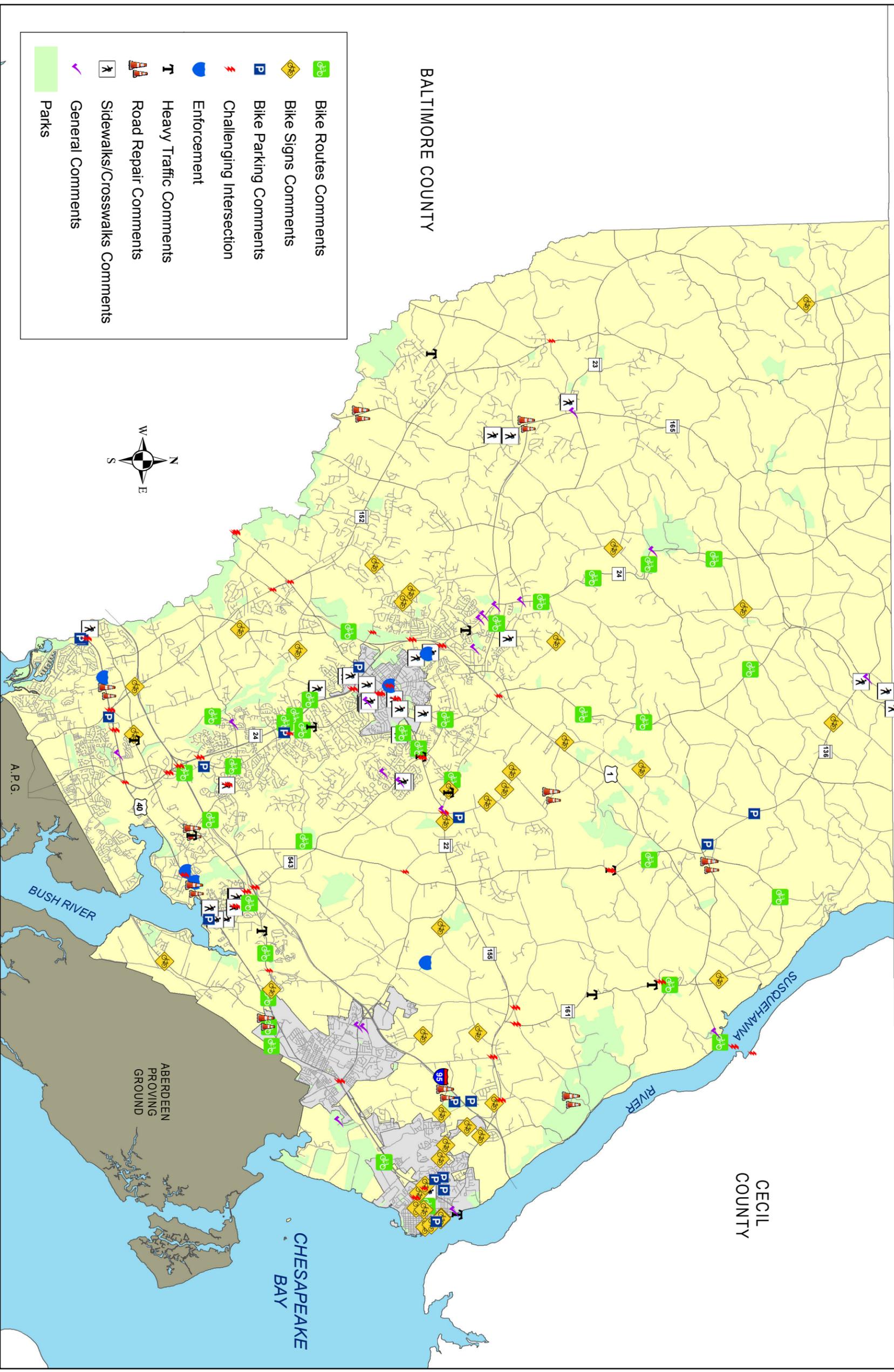
Coordination with the municipalities was also important to ensure that opportunities to provide continuous connections and consistent signage were identified and included in the Plan. As part of the planning process, meetings were held with the municipalities to help understand what facilities and services were available in each of the municipalities, what additional improvements were being planned, and where and how they would like to see the municipality and County facilities linked. Establishing and maintaining strong working relationships with all of the entities involved will facilitate the implementation of the strategies and projects identified in this Plan.

While each of the municipalities addresses bicycle and pedestrian planning in their comprehensive plans, they are also involved in other efforts that relate to the strategies put forth in this Plan. Interjurisdictional coordination will play a major role in the success of these efforts. Comments received during the Community Walk process, which apply to locations within the municipalities, have been included in Appendix B along with maps of municipal bicycle and pedestrian routes.

COMMUNITY WALK MAP

Harford County, Maryland

P E N N S Y L V A N I A



Municipal Initiatives

The City of Aberdeen is one of seven designated Transit Oriented Development (TOD) locations in the State, and it is recognized as a Sustainable Community. These designations make Aberdeen a priority for consideration for projects that address sidewalk retrofits and bikeways. The City, County, and the State worked together to complete the Aberdeen Station Square Feasibility Study as a first step toward the design and engineering for the Aberdeen Station Square. An important component of this TOD project will be the incorporation of bicycle and pedestrian facilities. In addition to providing safe and direct access for pedestrians and cyclists, bicycle parking and storage need to be addressed. Another component that could contribute to this site's success would be the provision of a bike share facility. This would be of particular benefit to commuters accessing Aberdeen Proving Ground.

The Town of Bel Air will be initiating a Bicycle and Pedestrian Plan for areas inside the corporate limits in 2013. This program will be designed to closely follow this Plan. It will build on the research, evaluations, and public input developed during the County's planning process.

The Town will coordinate connections of pedestrian trails, bicycle friendly routes, transit linkages and other alternative transportation networking opportunities to create a seamless and synchronized plan for the future. Connectivity, safety, and awareness will be the goals of the Town's plan and continued close coordination with the County is a must to achieve these objectives.

In Havre de Grace, the City's Green Team is partnering with a local bike shop to identify ways to improve bicycling in Havre de Grace. They are working to identify locations where bicycle parking is needed, along with routes that would improve connections to Aberdeen Proving Ground and Susquehanna State Park. They are also concerned with improving the safety of pedestrian and cyclists that cross U.S. Route 40 which divides the eastern and western portions of the City.

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Goal and Guiding Principles

GOAL: *Create an environment where people will choose to make riding a bicycle or walking part of their everyday life.*

Inherent in this goal are certain guiding principles that will be incorporated into the policies and strategies included in this Plan. They are an important part of creating an active transportation network that supports mobility and a healthy lifestyle. Residents and visitors should be able to walk and ride with a sense of comfort and security whether for recreation or daily activities. New and enhanced facilities will help to make these trips more convenient, and signage will help guide citizens and visitors as they move throughout the County.

Improve mobility – It should be easier and more efficient for bicyclists and pedestrians to move throughout the County. Mobility should be enhanced for all users and all types of trips – commuting, recreation and utilitarian. Facilities should also improve connections to transit, as all Harford Link buses are equipped with bicycle racks. Quality integration among travel modes is beneficial in extending the reach and catchment area of transit services particularly in lower density areas. It also will help to increase the distance that can be comfortably traveled by a pedestrian or bicyclist.

Increase physical activity and provide health benefits – Walking and bicycling provide many health benefits including enhanced cardiovascular fitness, reducing body fat, reducing stress levels, improving brain cognitive function, and helping to fight obesity. By providing Harford County residents with more opportunities to walk or ride their bikes, the County will be taking a step to help its citizens and visitors opt for a healthier lifestyle. For many adults and children, walking or biking to work or school is a viable option and can be a step toward achieving recommended exercise levels.

Provide an aesthetic, pleasant and more comfortable walking and bicycling experience – Providing a convenient and safe bicycle and pedestrian network is the first step in improving the overall user experience. However, amenities that support cycling and walking tend to encourage users to travel further distances, and they help to encourage new or non-walkers and cyclists to consider active transportation as an alternative to their motor vehicle for short trips. Convenient and safe bicycle parking, signage, and streetscape improvements can be deciding factors when trying to encourage citizens to utilize the bicycle and pedestrian network.

Monitor the number of pedestrians and cyclists – Central to the development of a Bicycle and Pedestrian Master Plan is the goal of increasing the number of walkers and cyclists. Because Harford County has never conducted bicycle or pedestrian counts there is no baseline for tracking bicycling and walking trends over time, or for evaluating the impact of projects, policies, and programs. However, the availability of automated bicycle and pedestrian counting equipment now makes gathering this data feasible. Systematic counts undertaken for cyclists and pedestrians can provide a foundation for monitoring changes in the cycling and walking community, and they can provide a framework for establishing future benchmarks.

Improve safety – All transportation projects should take into consideration the safety of pedestrians and cyclists. An emphasis should be placed on correcting conditions at identified “hot spot” intersections. Awareness of the rules of the road and recognition of bicycle and pedestrian activity should be emphasized through educational programs and media outreach. These efforts should be directed toward drivers, cyclists and pedestrians, and they should highlight walking and bicycling as viable forms of transportation while reinforcing safety for all road users.

Improve inter-jurisdictional connections – Improvements to the County’s bicycle and pedestrian network need to include connections to facilities planned by the municipalities. County and municipal representatives need to continue an active dialogue about planning for bicycle and pedestrian activity. They also need to coordinate with State and regional entities to maximize the potential for non-motorized inter-jurisdictional travel. Consistency in signage and mapping, combined with the provision of other supporting amenities, will make it easier for visitors and residents to bike or walk throughout the County and region.

Recognize walking or bicycling as viable modes of transportation - Efforts should be made to balance the needs of pedestrians and bicyclists with the needs of motor vehicles, transit, and freight. Walking and cycling should be integrated into the County’s other transportation modes. The safe co-existence of pedestrians, cyclists, and motorists on roads and bridges is an issue that needs to be addressed. Harford County is in the unique position that the Susquehanna River presents a barrier to bicycle and pedestrian travel to the east. It is an issue that has been discussed and studied for years, and addressing it is a crucial link in assuring that the East Coast Greenway is able to traverse Harford and Cecil counties as it provides a travel route for cyclists and walkers from Maine to Florida.

Community support – Bicycle and pedestrian facilities should be an amenity for the community. The establishment of new paths, lanes, sidewalks, or trails should consider community input and should be respectful of property rights. They should be planned and designed to provide convenient connections that link neighborhoods and encourage community interaction. Well planned networks form the foundation for Safe Route to School programs, Walking School Buses, and walkable and bikeable community schools, all of which require community support to be successful.

Cost/Benefit effectiveness – Projects identified in this Plan should consider cost, potential use, and need. While formulas can be applied to determine an estimated cost for providing a needed improvement, the intrinsic value of providing a bicycle and/or pedestrian amenity is more difficult to determine. Latent demand and level of comfort information, which is included in the 2010 Transportation Element Plan, provides a starting point for determining need. The potential impact that proposed improvements will have on citizens’ quality of life and associated health benefits cannot be as clearly determined.

When considering the cost effectiveness of a proposed project, consideration needs to be given to capital costs and maintenance/operational costs. Providing bicycle and pedestrian facilities generally is less expensive than motorized facilities, and they tend to be more cost efficient in the long run because they do not experience the high level of wear associated with roadways. Whenever possible, opportunities to include non-motorized improvements into scheduled road projects should be considered, and both public and private funding partnerships should be considered and supported.

Environmental benefits - Reducing the number of vehicle miles traveled helps to reduce congestion and the resulting greenhouse gas emissions. It also has an impact on water quality by reducing oil and petroleum product contaminants that enter the water system, and it reduces our dependence on non-renewable resources. Reducing the number of vehicle miles traveled, however, requires a jurisdiction to offer its citizens viable transportation options. Sidewalks and pedestrian routes help people get from their homes to their destinations and transit stops. Hiker/biker trails, bikeways, and bicycle lanes also provide citizens with the option of taking their bike instead of driving their car for many trips.

Why Walking and Bicycling

There are numerous benefits that can be derived from providing a walkable and bikeable community. Walking and bicycling are healthy and non-polluting forms of transportation. They are sustainable transportation options, plus there are economic benefits to making communities more conducive to bicycling and walking. It is in the best interest of Harford County to promote these forms of active transportation, not only as a practical necessity but also in order to enjoy the health, social, environmental, and economic benefits that are associated with bicycle and pedestrian activity.

Health

Planners and public health professionals have become progressively more conscious that a growing portion of the nation's population, including many children, lack regular daily exercise. Walking and bicycling are effective ways to increase physical activity for people of all age groups. Physical activity does not need to be very strenuous for an individual to garner considerable health benefits. Even small increases in light to moderate activity will produce measurable benefits among those individuals who are least active. Improving active transportation options and promoting an active lifestyle may help reverse chronic health conditions, high obesity rates, and improve the overall health of Harford County citizens.

With obesity being a recognized national health threat and a major public health challenge, providing these opportunities should be a priority. In Harford County, the need for increased physical activity has been substantiated by the work of Healthy Harford, a nonprofit 501c3 founded in 1993. The mission of Healthy Harford is to improve the health of Harford County citizens by helping people lead more active lifestyles and improving their daily diet. Since 1996 Healthy Harford has continually sponsored the Community Health Assessment Program (CHAP), a community health survey aimed at identifying and prioritizing the health needs of Harford County. These studies have repeatedly shown that as a community we lack adequate daily physical activity.

In addition, a report prepared by the Harford County Obesity Task Force in 2012 showed that Harford County, similar to the State and nation, has experienced an overall decline in the health of the local community. Many of the health problems are related to poor diet and physical inactivity, and supporting this was the fact that the obesity rate in Harford County increased 130% going from 11.4% in 1995-97 to 26.2% in 2006-08. The final report of the Obesity Task Force released in October 2012 recognizes the role of the built environment as a component of a healthy community and highlights the importance of providing convenient and accessible pedestrian and cyclists' networks.

Providing walking and biking opportunities could have a positive effect on the overall health of Harford County residents by improving their access to healthy foods and recreational facilities, and increasing their physical activity levels. One objective of this Plan is to improve the health of Harford County citizens by making it easier, safer and more convenient for citizens to be more physically active by walking and bicycling. The health benefits of regular physical activity are well documented and include reduced risk of coronary heart disease, stroke, hypertension, diabetes, obesity, and other chronic diseases; lower health care costs; and improved quality of life.

Environmental Sustainability

Reports show that motor vehicle emissions account for 41% of the total nitrogen oxide emissions and 32% of the total volatile organic compounds (VOC) produced. Walking and bicycling, on the other hand,

are clean modes of transportation. They can yield a reduction in transportation related air pollution emissions and traffic congestion while also increasing mobility. Land uses and connectivity play an important role in determining the emission reduction benefits associated with sidewalks and bicycle facilities. By constructing bicycle and pedestrian facilities that connect households to destination points such as schools and parks, an alternative travel mode choice can be provided for short trips. Thus providing an opportunity to reduce the number of vehicle miles traveled (VMT).

Pedestrian and bicycle facilities also satisfy sustainability goals by reducing energy consumption and greenhouse gas emissions. In most cases, utilizing bicycle and pedestrian facilities for utilitarian purposes will impact VMT. While the effects on emissions are generally modest for pedestrian and bicycle projects, some research suggests that pedestrian infrastructure – as well as transit and urban form land use-may be the most effective means of reducing household VMT and related CO₂.

Economic and Social Benefits

The economic benefits of providing safe and convenient pedestrian and bicycle access to commercial centers is self-evident, but there are quality of life benefits associated with enhanced bicycle and pedestrian activity that are also likely to generate other indirect economic benefits. Ease of access to schools and recreational facilities and opportunities to bike or walk to work all contribute to the quality of life that businesses consider when investing in a location. Streets where people are visible creates vibrancy and increases the perception of safety. Property values also tend to be higher in walkable and bikeable communities, and houses located near trails have a higher resale value than those not located near trails. Communities that offer this high quality of life are ones where people want to live.

Bicycle tourism can also contribute to the local economy. While many County residents ride recreationally, the potential exists to increase the number of recreational riders through support for the East Coast Greenway and the Lower Susquehanna Heritage Greenway, as both of these trail networks attract visitors from other areas. Bicycling and walking should be an important part of Harford County's image as a friendly and welcoming community, and it should be marketed through its tourism programs.

At the community and regional level, bicycle and pedestrian infrastructure costs a fraction of total roadway costs. Bicycle parking, for example, can be provided at a lower cost than parking for automobiles and can often be incorporated into currently unused spaces. Employees who bicycle to work reduce parking costs and leave more parking available for customers.

On a personal level, bicycling and walking can be a cost saving option for Harford County residents. They provide flexible and inexpensive transportation options. Bikes can require less money to own and operate as compared to automobiles, and both walking and cycling can provide a family with lower transportation costs in tighter economic times. Both are free to operate and bicycling requires minimal maintenance cost. Most people can easily acquire the skills necessary to maintain a bicycle.

Making improvements to the pedestrian network is especially beneficial to seniors, people with disabilities and others who are transit dependent. Approximately 27% of Harford Transit's Link ridership is elderly or disabled. Ridership among these groups has increased over 18% since 2010 so providing or improving connections to transit service will help residents maintain their independence and mobility.

The 5 Es

In order for active transportation to become an effective and comprehensive option for County residents the Bicycle and Pedestrian Master Plan must be centered on the “5Es” – Engineering, Education, Enforcement, Encouragement, and Evaluation. Increasing cycling and walking for utilitarian reasons and recreation requires that the construction of quality facilities be combined with education, enforcement, and encouragement activities. The success of these initiatives should be monitored by evaluation which tracks progress being made.

Engineering deals with bringing about changes to the built environment through the design and construction of physical facilities. It relates to creating a safe and efficient active transportation network. These projects can involve making new and existing roads, trail networks, and communities bikeable and walkable. It involves creating an environment where citizens feel comfortable cycling or walking to their destinations through the elimination of hazards and barriers, and by providing the amenities that encourage these activities.

Education should involve training for motorists, bicyclists, and pedestrians on the safe use of facilities along with raising awareness that all are legitimate users of the road network. It is also important to reducing the number and severity of accidents. Especially important for cyclists is educational outreach that promotes the use of helmets, adequate lighting, reflective gear, and the rules of the road.

Public perception must be managed so that motorists recognize the rights of bicyclists and pedestrians, however, cyclists and pedestrians must also be aware of their responsibilities when interacting with motorized vehicles. By teaching pedestrians, bicyclists, and motorists to practice safe behavior, a safer, more welcoming active transportation network can be created. The “Street Smart” campaign, which focuses on education through mass media, is an excellent example of a program designed to change driver, pedestrian, and cyclist behavior. In addition, the Maryland Department of Transportation has developed a “Safe Bicycling in Maryland” brochure along with a video geared to adult riders.

While it is important to educate citizens about safe walking, biking, and driving, there must also be effective enforcement. Enforcement is vitally important to creating a safe active transportation network. An effective enforcement program will take a balanced approach to improving the behavior of motorists, cyclists, and pedestrians. While a police presence can serve to reinforce safe behavior by motorists, it is also important that bicyclists and pedestrians follow traffic rules.

Encouragement addresses the promotion of biking and walking as a means of transportation. It is directly linked to engineering, but it can also involve signage, maps, banners, incentives, and events such as Bike to Work Day or National Walk to School Day. While engineering addresses the provision of network facilities, encouragement can also involve providing end of trip facilities such as convenient and secure bicycle parking, showers and changing rooms. For those combining walking or cycling with bus/train commuting, covered waiting areas and assurance that they can either take their bike on the bus or train or store them in long-term parking facilities is also important.

Evaluation involves a thorough analysis of existing conditions and an ongoing monitoring of changes. In addition, the strategies included in the Bicycle and Pedestrian Master Plan should be monitored and evaluated to determine if the Plan is achieving its objectives and what steps need to be taken to improve the program in the future. Regular discussions with local bicycling and walking clubs and other stakeholders along with a program to conduct bicycle and pedestrian counts will help to evaluate and monitor the success of this Plan’s strategies.

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Bicycle, Pedestrian, and Multi-Use Trail Network Analysis

Community facilities and commercial services in Harford County tend to be concentrated and centered on the I-95/U.S. Route 40 and MD Route 24 corridors because the County has supported a designated growth area since 1977. Ideally, residents living in these corridors should be able to take their bikes or walk to these services. However, development patterns have often resulted in a legacy of cul-de-sac communities, disconnected roadways, and high volume/high speed highways that make walking and bicycling challenging.

To try and determine how to encourage more non-motorized travel, a node map was developed. On the map a quarter mile radius was placed around identified community facilities and services. As the circles overlapped, the color darkened indicating a concentration of services and facilities. The results of this analysis are reflected in Figure 3.

As part of the Community Walk program, citizens were asked to identify locations where additional bicycle and pedestrian facilities or improvements were needed to link their neighborhoods to these services. This information was then combined with the Network Needs Analysis Map and available bicycle and pedestrian accident data for the period 2006-2010. Utilizing this information, a series of corridors were identified that would be the focus areas for field work. All of the State designated bicycle routes were also evaluated. A map depicting the areas evaluated is provided in Figure 4.

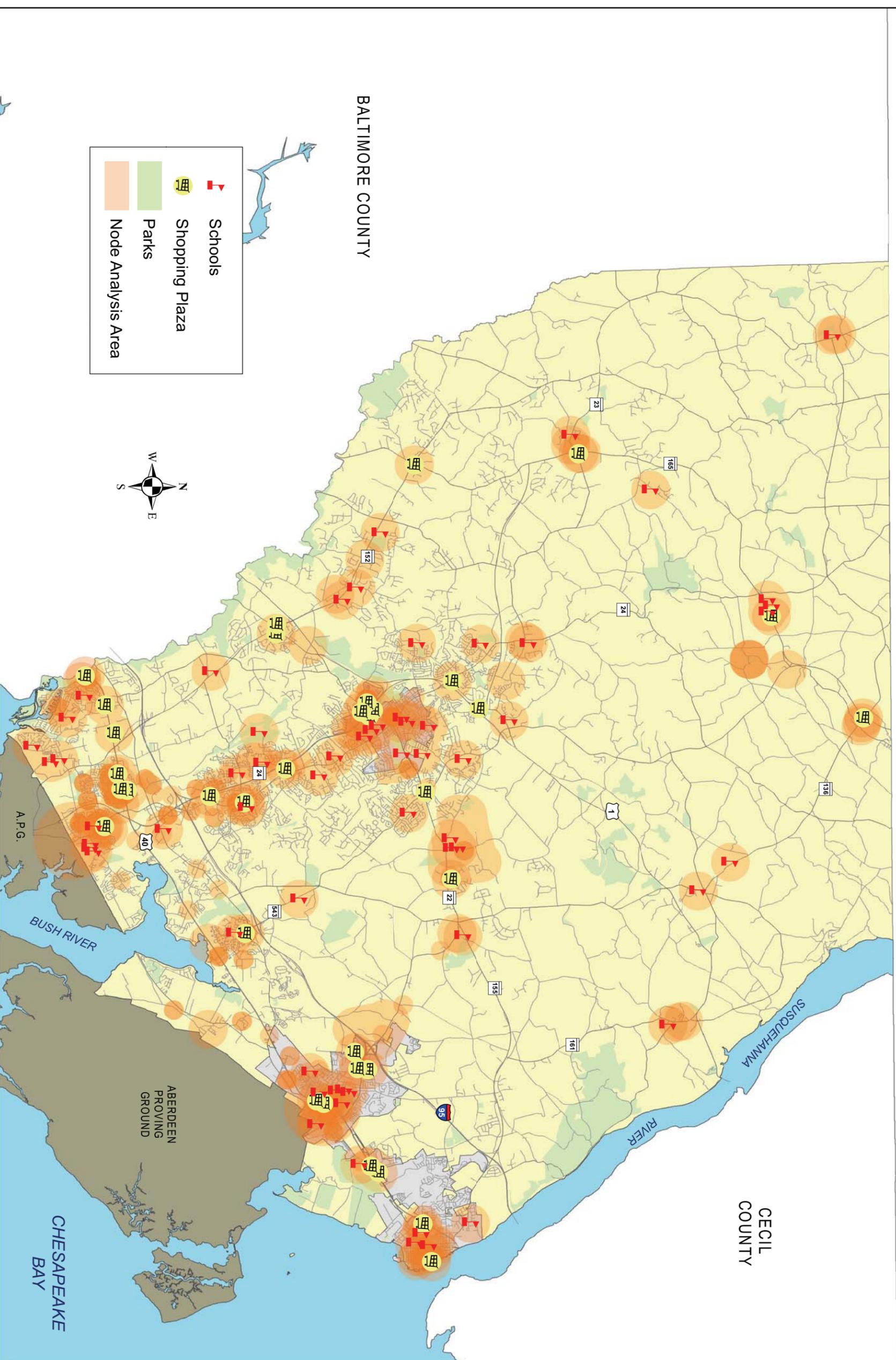
Over the course of several weeks staff worked in the field surveying and photographing these corridors. Examples of the data evaluated are detailed in Figure 5.

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NETWORK NEEDS ANALYSIS

Harford County, Maryland

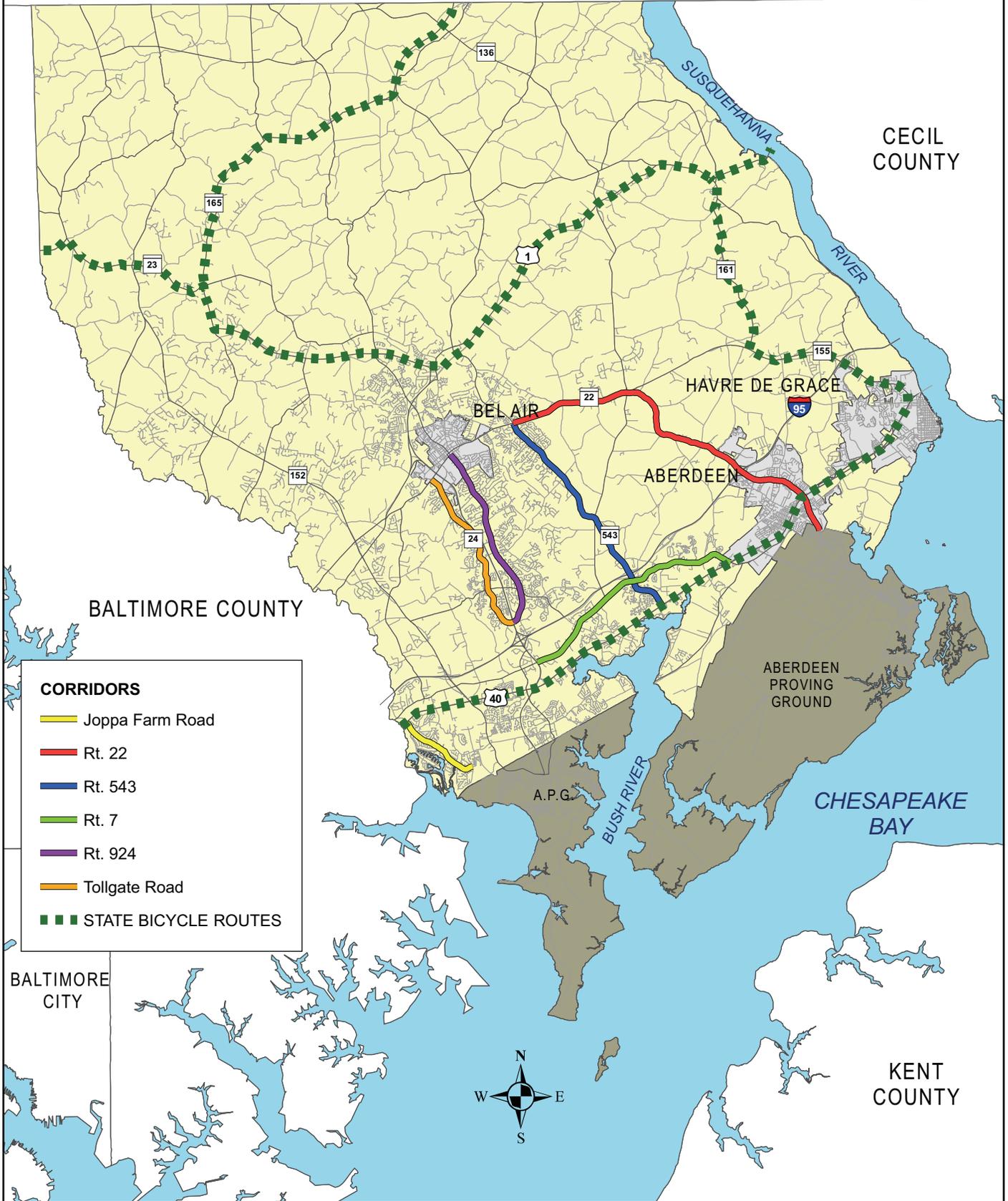
P E N N S Y L V A N I A



CORRIDOR EVALUATIONS

Harford County, Maryland

P E N N S Y L V A N I A



Field Survey Data

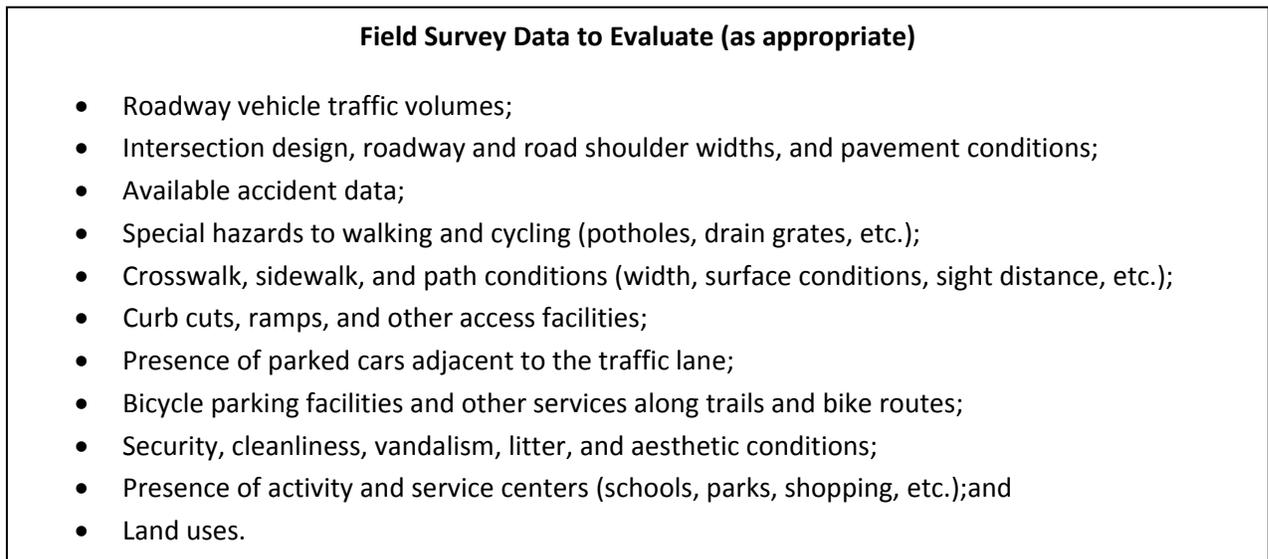


Figure 5

These findings were also compared to transit routes and other available information such as bicycle comfort levels and latent demand data.

Overview of Existing Conditions

The purpose of this section is to present an overview of existing facilities as a foundation for future improvements. The majority of the pedestrian facilities tend to be located in the County's designated growth area (Figure 6). Outside of the Development Envelope there are limited sidewalk networks, with most of these occurring within the Rural Villages. There is a clear demarcation between the rural areas of the County and Development Envelope as it relates to pedestrian infrastructure.

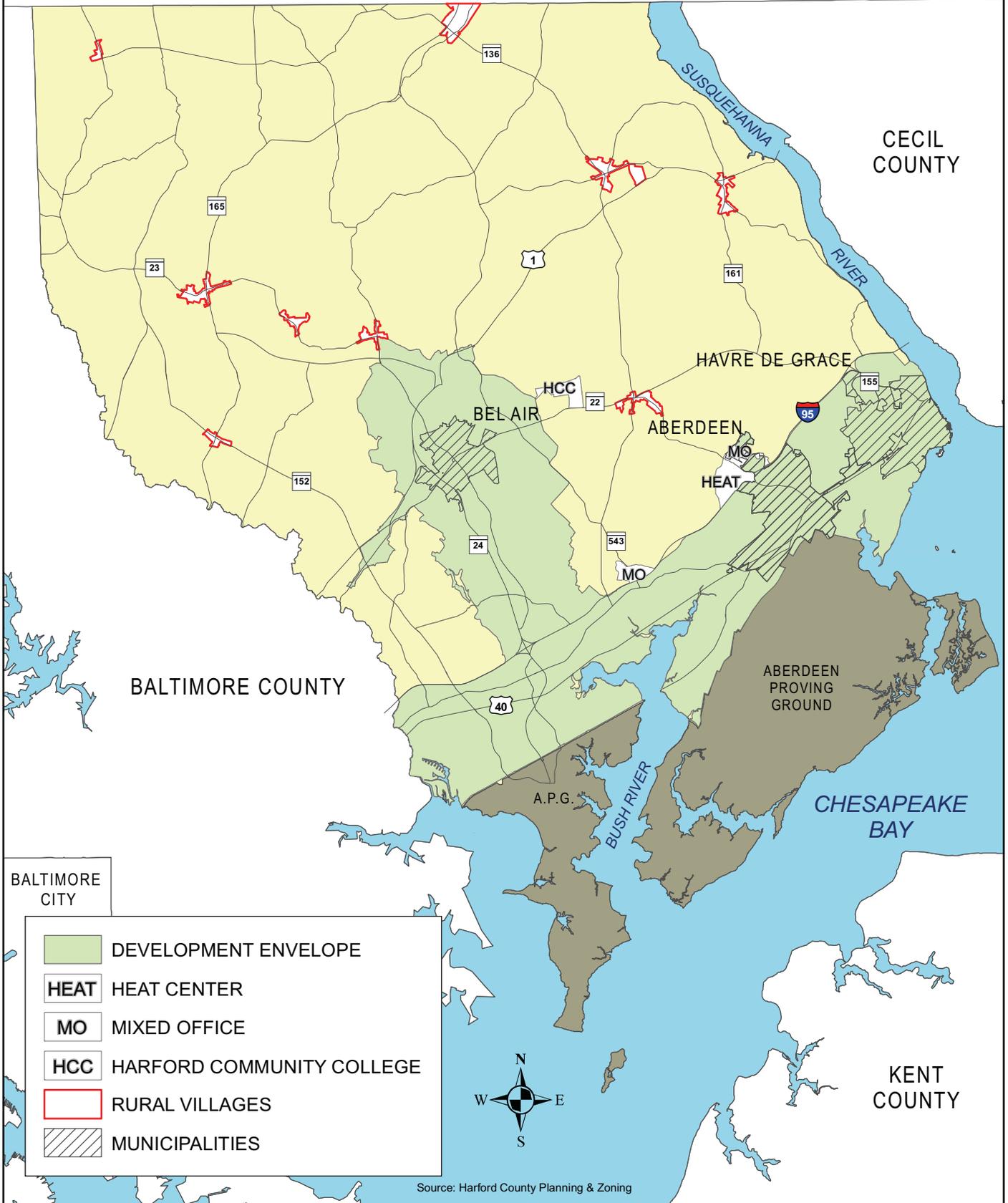
The majority of the designated bike routes in the County occur on State roads. With the exception of U.S. Route 40 and a small segment of MD Route 155, all of the State designated routes are located in the rural areas of the County (Figure7). Other State roads such as MD Route 22 and MD Route 543 are used by cyclists, and scattered Share the Road signs have been added to these roads and others that are not included in the official State Bicycle Map. There are three sections of designated bike lanes in the County. These are located on Shore Drive, Tollgate Road, and MD Route 22, but riders also use other County roads especially in the more rural portions of the County.

Multi-use trails within the County are also limited but have the potential to be part of an active transportation network. While the Department of Parks and Recreation oversees 17 trails, most of these are small local trails designed for recreational purposes. Some, such as the Ma and Pa Heritage Corridor and the Lower Susquehanna Heritage Greenway, connect different areas of the County and have the potential to be utilized for both recreation and utilitarian uses. Others, like the Riverside Community Trail, provide recreational opportunities for its community members while also providing an off-road link to shopping and community services. In 2012 the Harford County Department of Public Works and the State Highway Administration initiated a project for the extension of this trail network.

DESIGNATED GROWTH AREAS

Harford County, Maryland

P E N N S Y L V A N I A



BALTIMORE CITY

CECIL COUNTY

BALTIMORE COUNTY

KENT COUNTY

-  DEVELOPMENT ENVELOPE
-  HEAT CENTER
-  MIXED OFFICE
-  HARFORD COMMUNITY COLLEGE
-  RURAL VILLAGES
-  MUNICIPALITIES



Source: Harford County Planning & Zoning

MARYLAND STATE BICYCLE ROUTES

Harford County, Maryland

P E N N S Y L V A N I A



Pedestrian Facilities

Within the municipalities, sidewalks generally follow a grid pattern and connect to the municipal center. However, as development moves away from the “downtown area” communities tend to become more isolated - no longer directly linking residents to amenities and services.

Outside of the municipalities, sidewalks have generally been designed to serve localized community needs. Many communities are interconnected and have the potential to become neighborhoods where families could walk their children to school, playgrounds, or to visit friends. There are also other areas where communities are isolated from each other, and there is no safe or direct way to access neighborhood or community services. In addition to addressing these missing links and providing more sidewalks, there are other areas that need to be improved. Roadways with high volumes of traffic and dangerous intersections need to be addressed with facilities that support safe pedestrian activity.

Addressing needed improvements, however, can be complicated, time consuming, and costly. In some places where sidewalks are needed, the right-of-way ends and additional land acquisitions are required. Therefore, strategies should be developed to obtain cooperation from property owners to continue public access. In other locations, the topography makes it difficult if not impossible to provide a continuous sidewalk without significant grading, or the construction of retaining walls, road culverts, bridges, or elevated walkways. Utility poles, trees, fences, and mailboxes can also interfere with a desired sidewalk location. The redesign, relocation or even removal of these items can be expensive. In addition, maintenance issues must be addressed and these can range from vegetation trimming, litter and snow removal, to sidewalk repairs. Building community support for any of these projects is important, and community outreach will be included for proposed improvements.

A viable pedestrian plan seeks to address the needs and preferences of all walkers – current and potential – able-bodied and disabled. Pedestrian needs tend to be localized because walking trips generally involve shorter distances than bicycle trips.

When identifying projects to address pedestrian needs, consideration should be given to block length and roadway crossing distance. Other items to be considered should include the directness of the connection to a destination, sidewalk width, pedestrian scaled lighting, street furniture, curb ramps, crosswalks, and pedestrian crossing signals. Comments received through the public input process focused on missing sidewalk sections and the need for crosswalks or crosswalk improvements (Figure 2).

As part of the development of this Plan, the Department of Planning and Zoning completed a sidewalk inventory based on aerial photography. This information was combined with data collected by the Department of Public Works, public comments received at the workshop and on-line, and information provided by the municipalities to help generate the field work project list. A set of criteria was combined with the field work to evaluate and further refine the project list. The criteria used is shown in Figure 8.

Sidewalk Prioritization Criteria

| Criteria | Measurement |
|------------------------|---|
| Land Uses | Within 1/8 mile of a school, park, or destination (includes hospitals, libraries, and other uses) |
| | Project within 1/4 mile of school, park, or destination |
| | Project within 1/2 mile of school, park, or destination |
| | Project further than 1/2 mile to a school, park, or destination |
| Roadway Classification | Principal arterial |
| | Minor arterial |
| | Collector |
| Demand | Existing demand path |
| | No existing demand path |
| Transit | Within 1/8 mile of a bus route or rail stop |
| | Project within 1/4 mile of a bus route or rail stop |
| | Project within 1/2 mile of a bus route or rail stop |
| | Project further than 1/2 mile of a bus route or rail stop |

Figure 8

Bicycle Facilities

While cyclists ride throughout Harford County, only two types of on-street facilities exist. Bike routes, which are signed routes on roadways, and bike lanes which are a striped lane with markings on the roadway designating the lane for preferential or exclusive use by bicyclists.

Along some bike routes, the travel lane is shared with motorists while others have wide shoulders that riders can use. Signage denotes routes and destinations along the approximately 54 miles of designated bicycle routes in Harford County.

Adding more Share the Road or Bicycles May Use Full Lane (R4-11) signage would be a first step in improving conditions along these routes. They would help to increase the awareness of drivers about the potential of cyclists on the roadway, while also warning motorists that bicycles may be operating anywhere within a traffic lane. The new R4-11 signs remind road users that bicyclists may ride in the center of a travel lane when the lane is too narrow to share with motor vehicles. This is important because many drivers learned to drive (and bike) back when cyclist were supposed to keep to the right.

While “sharrows” or shared road markings in the travel lanes is another option, without appropriate driver education the markings have the potential to be misunderstood. As awareness about sharing the road improves, consideration should be given to installing “sharrows” in appropriate areas such as the municipalities where traffic speeds are lower.

There are approximately two miles of bike lanes designated in the County, and these lanes are located in Joppatowne on Rumsey Island, on Tollgate Road in Abingdon and a small section on MD Route 22 in Churchville.

Designated exclusively for bicycle travel, these lanes are separated from vehicle lanes with striping, and they are denoted by pavement markings and signs. While they help to separate bicyclists from motor vehicle traffic, the physical constraints of trying to fit bike lanes into existing rights-of-way can be a limiting factor during retrofits. The least expensive and intrusive method is to narrow vehicular travel lanes and re-stripe the road with bike lanes where possible.

To encourage more cycling, Harford County shall develop a comprehensive approach to improving its bikeway network. Consideration should be given to examining the possibilities of establishing an interconnected system of on-road and off-road bikeways. Signage and pavement markings are an important step, but longer-term improvements that are part of a comprehensive network should be addressed.

While State law gives bicyclists the right to ride on most roadways, the design of roads, intersections, and interchanges combined with the volume and speed of traffic can discourage bicycling. To encourage bicycle use, a higher level of bicycle accommodation is required. The improvement that is most appropriate will be based on a cost/benefit analysis, along with consideration of the pattern of development in the area.

In the rural areas of the County, most cyclists ride for recreational purposes. These areas often attract experienced cyclists that appreciate the challenging topography and lower volumes of traffic. These same factors, however, tend to encourage drivers to travel at speeds exceeding the posted limits, thus presenting challenges for cyclists.

Also in these areas many of the roads have narrow or no shoulders forcing riders to share the road with motor vehicles. In the rural portion of the County, most of the improvements will be achieved via signage and education. In some places, however, the need for lane widening and/or shoulders will be identified and provided where deemed appropriate. To best determine the approach to take, it would be helpful to conduct bicycle counts and to evaluate crash and injury records to see whether or not higher than expected incidents occur on these rural roadways. The studies could provide insight into the most appropriate way to accommodate all users.

Within the Development Envelope, signage and education are also important. Initial improvements to the bike network should focus on safety, filling gaps in the system, formalizing routes used by cyclists, and improving access between residential, employment, civic, and commercial destinations. The impacts of traffic volume and speed along with identified difficult intersections should also be considered. Comments received on the Community Walk site verified these points (see Figure 2).

In addition to the physical network, bicycle needs and preferences also vary based on skill levels and trip types. The tendency to bicycle varies from person to person and can provide insight into how to potentially increase bicycling rates. Generally, bicycling levels are classified into four categories:

- People who will ride on almost any roadway despite the traffic volume, speed and lack of bikeway designation. Studies indicate this is the smallest percentage of riders.
- People who will ride on most roadways if traffic volumes and speeds are not high. These riders are confident in positioning themselves to share the roadway with motorists.

- People who will ride if bicycle facilities are provided on roadways with low traffic volumes and speeds. These riders are typically not confident cycling with motorists. Studies indicate this is the largest percentage of riders.
- People who will not consider cycling as part of their transportation or recreational options.¹

Implementation of engineering improvements along with effective educational and encouragement programs can convert non-cyclists into bicycle riders and less skilled novice riders into competent and confident bicyclists.

Designated bike routes, suggestions made through the Community Walk process, and information provided by the municipalities were combined and then evaluated against accident data, latent demand information, level of comfort data, and the Department’s node analysis to identify areas where bicycle improvements had the potential to provide the most benefits. This analysis was used to generate a fieldwork project list. A set of criteria, along with fieldwork, were then used to evaluate projects. The criteria used are shown below in Figure 9 .

Bicycle Project Criteria

| Criteria | Measurement | Technical Notes |
|---------------------|---|--|
| System Connectivity | Project within ¼ mile of existing bicycle facilities | Used radial distance for all determinations |
| | Project within ½ mile of existing bicycle facilities | Used radial distance for all determinations |
| | Project provides partial connection where no facilities exist | Visual analysis of locations where street connectivity is poor |
| | Project further than a ½ mile from existing facilities or does not connect to the existing system | Visual analysis of locations where street connectivity is poor |
| Land Uses | Project within ¼ mile of school, park or destination | Based on Node Map analysis |
| | Project within ½ mile of school, park or destination | Based on Node Map analysis |
| | Project further than ½ mile from a school, park, or destination | Based on Node Map analysis |
| Benefit | Provides connection to community services and facilities, transit, or neighboring community | Based on map review |
| | Provides connection to a municipality | Based on map review |
| | Provides connection within community | Based on map review |
| | Does not provide community benefits | Based on map review |
| Cost Effectiveness | Sufficient space for a bike route | Based on proposed project type |
| | Other on-street facility (additional review required) | Based on proposed project type |
| | Off-street facility | Based on proposed project type |

Figure 9

¹ Roger Geller, Bicycle Coordinator, Portland Oregon in The Transportation Agency for Monterey County Bike/Pedestrian Master Plan 2011

Multi-use Facilities

Trails in Harford County are generally considered recreational amenities; however, they can be an integral part of the County's bicycle and pedestrian network. The presence of these facilities tends to increase the community's interest in walking and bicycling, and the ability of additional facilities to attract new users is high. Ideally, multi-use trails should be planned to serve multiple goals – recreation, transportation, and economic development while also being an amenity for the surrounding neighborhoods.

While trail planning is incorporated into the Land Preservation, Parks, and Recreation Plan, its role as a component of an active transportation network cannot be overlooked. The 2010 Transportation Element Plan recognizes this fact and includes specific policies and strategies to address future trail needs. The Lower Susquehanna Heritage Greenway for example, supports the East Coast Greenway network, and the Ma and Pa Heritage Corridor could provide an off-road route into Bel Air, thereby providing access to local services, and County and commuter bus services.

Planning for and ultimately constructing these facilities, however, is often difficult. Many times the corridors that appear suitable for multi-use trails do not provide the most direct routes between population centers and in-demand destinations. In addition, once a location is identified then land acquisitions have to occur – often from multiple owners, and environmental issues must be addressed. Another major issue that frequently arises is community opposition. While studies have shown that properties adjacent to or in proximity to trail networks have increased in value and are considered an attraction by homebuyers, winning community support can be difficult and time consuming.

Input received during the Community Walk process emphasized the need for the completion of the Ma & Pa trail in Bel Air and the establishment of a northern section in the Whiteford area. Also identified were other areas where trail networks were suggested. Located inside and outside of the County's designated growth area, all of these trails could provide opportunities for physical activity and serve as a connection to services.

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Project Recommendations

Even when bicycle and pedestrian infrastructure can be incorporated into a project, maintenance and possibly retrofitting of the built environment remain as issues needing to be addressed. Maintenance requires an ongoing commitment by all parties, and retrofitting facilities to better accommodate bicyclists and pedestrians requires careful planning and the consideration of where users want to go, how far they are willing to walk or bike, and the feasibility of providing missing connections. Citizen input must also be considered, and the Departments of Public Works and Planning and Zoning will work together to solicit input as appropriate.

With these considerations and the analysis discussed in the previous section, this section identifies some initial steps for improving the County's system of walkways and bikeways. The recommended projects build upon existing conditions and on-going local and regional planning efforts, and they reflect the input received from the Bicycle and Pedestrian Advisory Committee (BPAC) and the community during the public input process (Figures 10, 11 and 12). While this is not a comprehensive list of needed improvements, it does provide a starting point for addressing bicycle and pedestrian needs, and it focuses on:

- Connecting neighborhoods to transit, adjacent activity centers, and closing gaps between existing facilities; and
- Facilitating travel between residential neighborhoods and key employment, recreation, and educational facilities.

In putting together a list of projects for this plan, it was not possible to specifically identify needed improvements in some areas. As a result of the scope of the potential projects and the multiple parties that would need to be involved, a series of studies are also recommended. In addition, Appendix B includes a list of comments and related project needs within the municipalities that were identified during the public input process.

Recommended Walkway Improvements

The recommended improvements for the pedestrian network build upon the County and municipal system of sidewalks and focus on creating pedestrian friendly communities that support an active lifestyle. The projects include new construction where sidewalks are lacking and individual "spot" improvements such as crosswalks, signage, pedestrian signals, curb cuts, pedestrian refuge islands, or transit pads (Figure 13). The pedestrian project list should be reevaluated and reprioritized every two years to ensure that needed improvements and projects are being addressed.

Tollgate Road Harford County, Maryland

Tollgate Road (from Rt. 1 to Rt. 24)
Conduct a corridor study to reconfigure the road to better accommodate bicyclists and manage traffic speed.



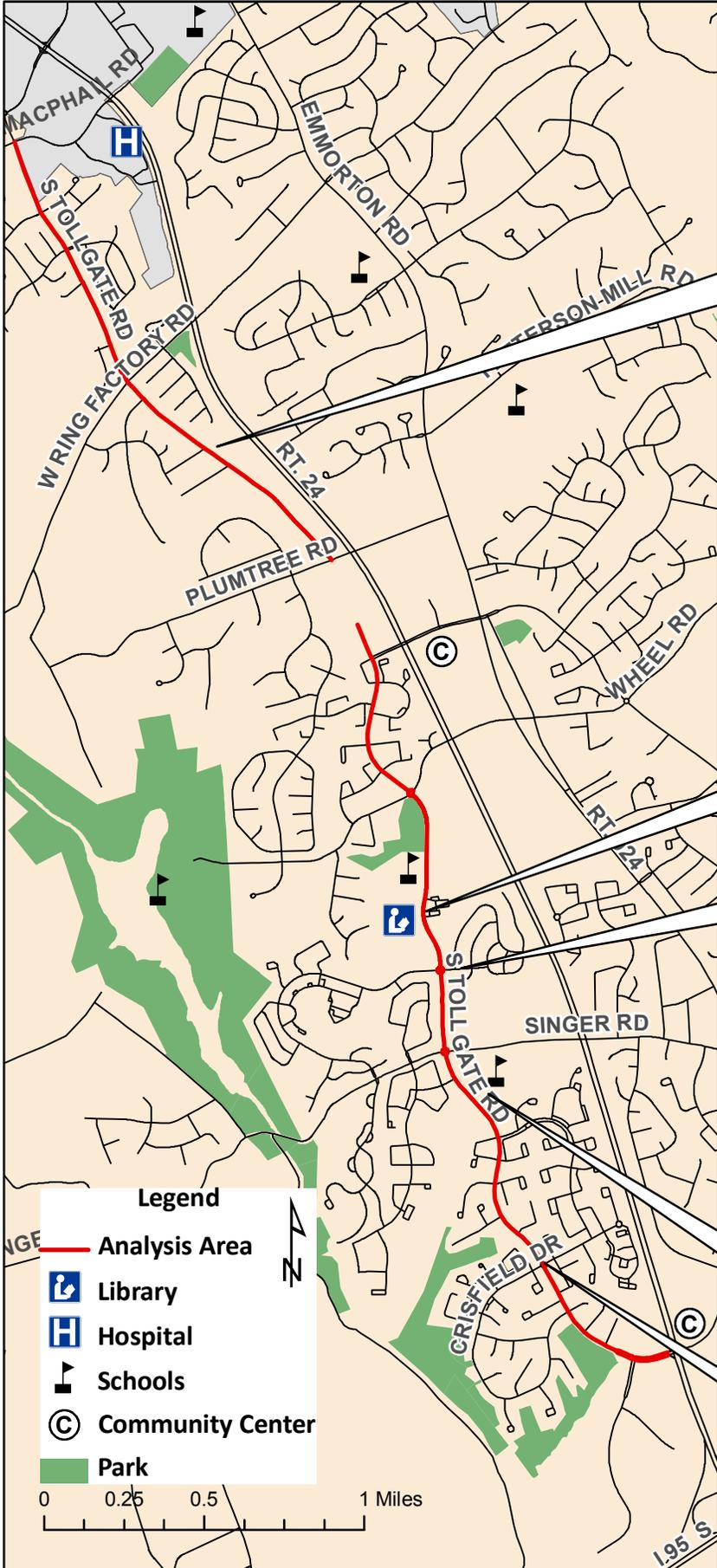
Ensure multi-use path at Abingdon Library meets ADA regulations.

Improve pedestrian and bicycle crossings at roundabouts and throughout corridor.

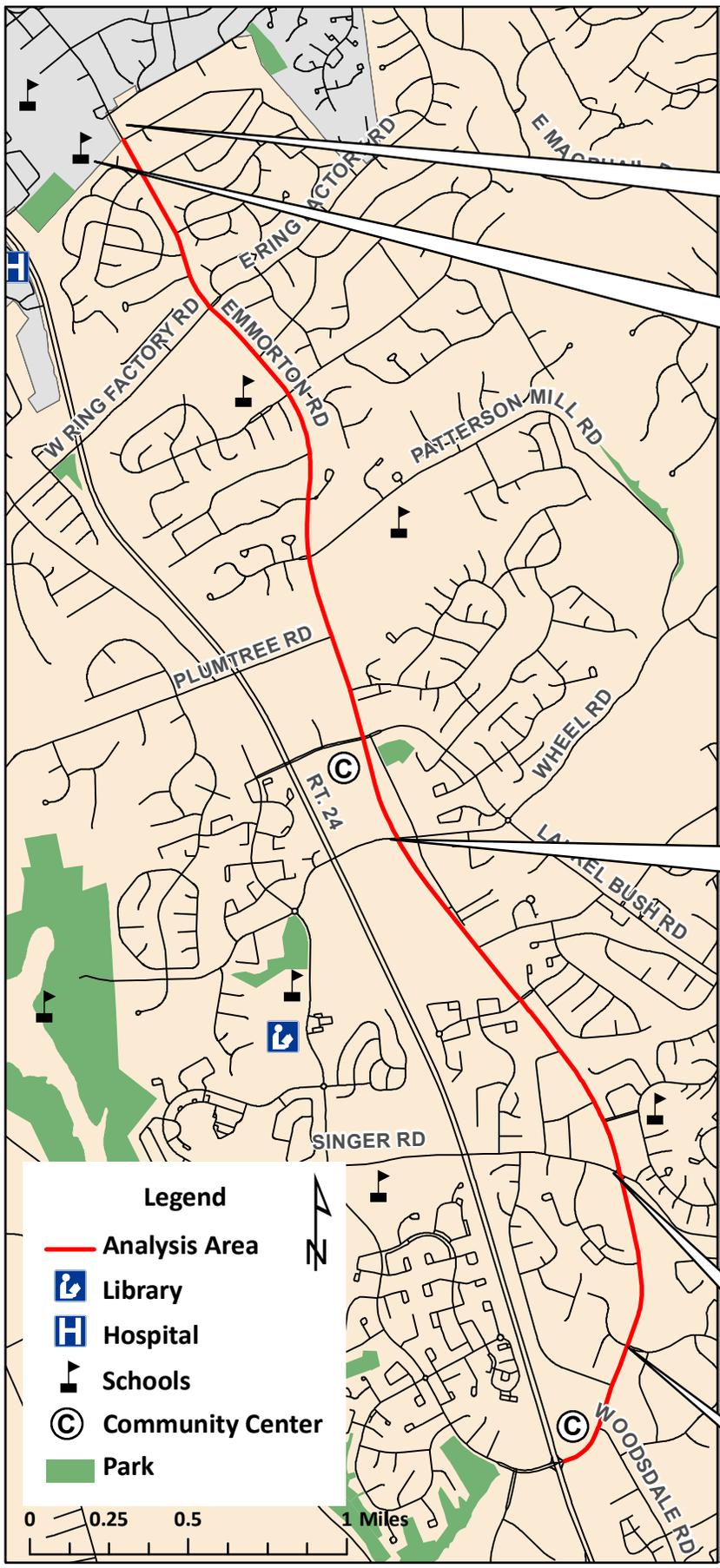


Complete sidewalk from Singer Road to Ashton Lane near Abingdon Elementary School.

Complete sidewalk from Crisfield Drive to Constant Friendship.



RT. 924 - Emmorton Road Harford County, Maryland



Complete sidewalk along MacPhail Road from Rt. 924 to Edgehill Drive.

Study: MacPhail Road (from Rt. 924 to Rt. 24) as a potential bicycle/pedestrian path.



Complete crosswalk improvements along Rt. 924 at Wheel Road and Bel Air South Parkway.



Make pedestrian improvements at Rt. 924 and Singer Road to ensure intersection meets ADA regulations.

Complete crosswalk improvements at Rt. 924 and Box Hill Center.

Joppa Farm Road/Trimble Road Harford County, Maryland

Ensure intersection at Joppa Farm Road and Trimble Road meets ADA regulations.

Make pedestrian improvements to encourage students to safely walk to school (at Hinton Road and Joppa Farm Road intersection).

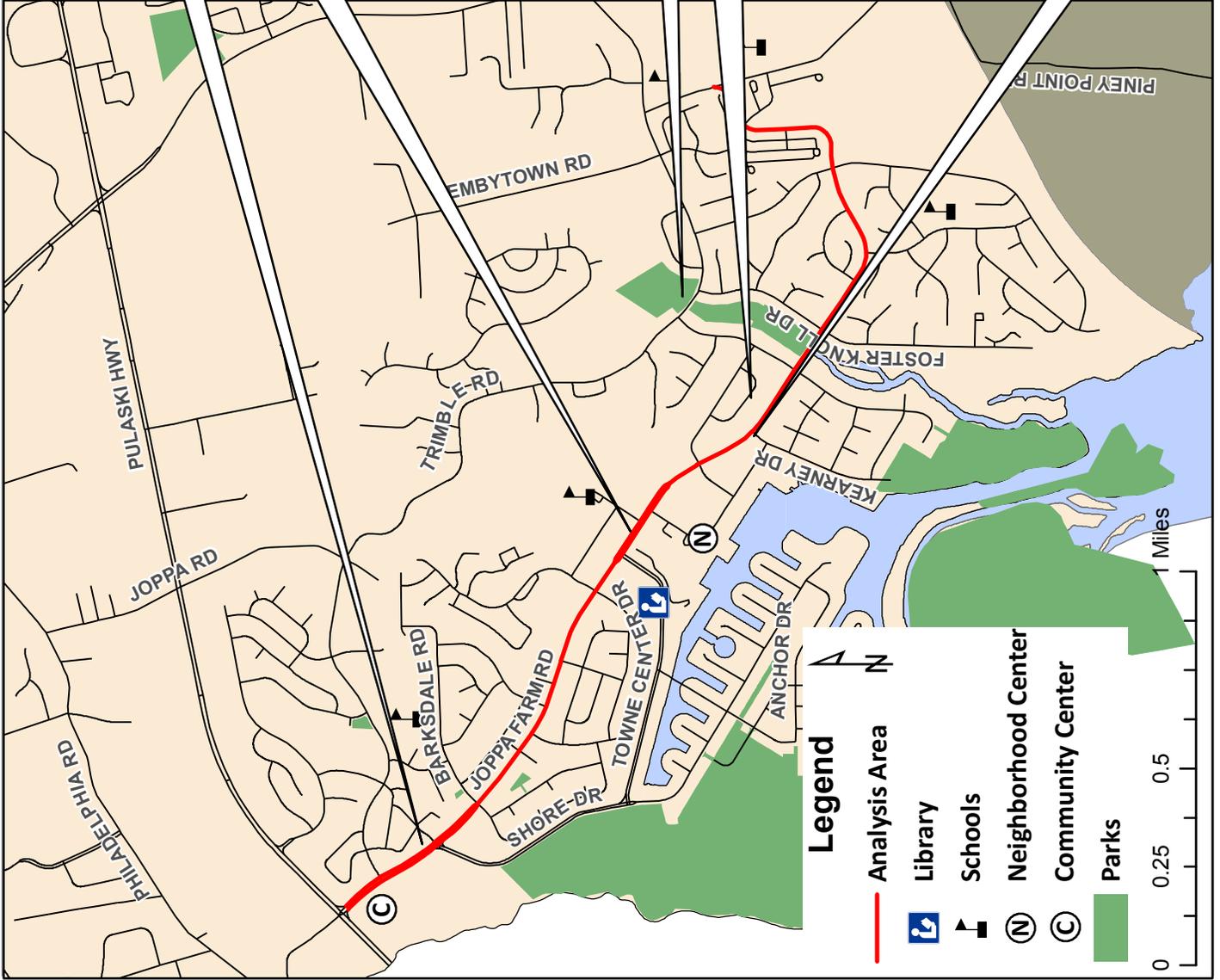


Place Pedestrian Crossing signage on Trimble Road at Copenhagen Park.

Complete a corridor study to improve walking and cycling conditions along Joppa Farm Road (from US Rt. 40 to Haverhill Road).



Intersection of Kearny Drive & Joppa Farm Road - Paint a crosswalk and place Pedestrian Crossing signage.



Legend

— Analysis Area



Library



Schools



Neighborhood Center



Community Center



Parks

0 0.25 0.5 1 Miles

PEDESTRIAN PROJECTS

| Location | Project Description |
|--|---|
| Tollgate Road | Throughout corridor add missing sidewalk segments and update/improve pedestrian crossings (ex. Bel Air South Parkway, Singer, etc.) |
| Tollgate Road | Improve multi-use path at Abingdon Library by correcting uneven surfaces and realigning crosswalks |
| Singer Rd. to Ashton Lane | Construct approximately 1500 linear feet of sidewalk on the east side of Tollgate Road and approximately 1700 linear feet of sidewalk on the west side of Tollgate Road to serve Abingdon Elementary School |
| Crisfield Dr. to Constant Friendship Blvd. | Construct approximately 1500 linear feet of sidewalk on the east side of Tollgate Road and approximately 1600 linear feet of sidewalk on the west side of Tollgate Road |
| Macphail Road | Construct approximately 600 linear feet of sidewalk from MD Route 924 to Edgehill to serve Homestead/Wakefield Elementary School |
| Trimble Road | Construct approximately 900 linear feet of sidewalk on the east side from MD Route 152 to Magnolia Elementary |
| Trimble Road at Copenhaver Park | Add crosswalk improvements (signage, markings or signals) |
| Vanguard and Todd | Establish a walkway along the existing path to shopping center |
| MD Route 543- Henderson to Leeswood | Construct approximately 2000 linear feet of sidewalk on the east side to serve C. Milton Wright High School |
| MD Route 755 | Construct sidewalk from Willoughby Beach Road to MARC station |
| MD Route 543 | Construct approximately 1400 linear feet of sidewalk from Gilmer Way to Church Creek Road |
| Joppa Farm Road and Hinton | Add crosswalk improvements (signage, markings, or signals) to serve Joppatowne High School |
| Riverside Community Trail at Greys Run Circle | Add crosswalk improvements (signage, markings, or signals) |
| Riverside Declaration Way at playground | Add crosswalk improvements (signage, markings, or signals) |
| Church Creek Road and Banebury Drive | Add crosswalk improvements (signage, markings, or signals) to serve Church Creek Elementary School |
| Stafford Road | Add crosswalk improvements (signage, markings, or signals) to serve Darlington Elementary School and Francis Silver Park |
| MD Route 136 from Main St to MD Route 165 (Whiteford) | Construct approximately 1400 linear feet of sidewalk on the north side |
| MD Route 440 (Dublin Road) and MD Route 136 | Improve crosswalk (signage, markings or signals) and construct missing sidewalk link |
| MD Route 22 | Add pedestrian improvements as noted in Route 22 Corridor Study |
| Beretta Way and Redfield Road | Improve crosswalk (signage, markings, or signals) to serve Fountain Green Elementary School |
| Weatherby and Derringer | Add crosswalk improvements (signage, markings, or signals) to serve Fountain Green Elementary School |
| Box Hill South Parkway to Boulevard at Box Hill | Add crosswalk improvements (signage, markings, or signals) |
| US Route 40 at Bata Blvd. | Add crosswalk improvements (signage, markings or signals) to serve MTA commuter bus service |

PEDESTRIAN PROJECTS

| Location | Project Description |
|--|---|
| MD Route 24 and US Route 1 | Add crosswalk improvements (signage, markings or signals) |
| MD Route 24 and Wheel Road | Add crosswalk improvements (signage, markings, or signals) |
| US Route 1 from MD Route 152 to Connolly Road | Evaluate road for sidewalks and crosswalk improvements |
| Business 1 at Atwood | Improve crosswalk (signage, markings or signals) |
| MD Route 924 and Bel Air South Parkway | Add crosswalk improvements (signage, markings or signals) to serve MTA commuter bus service |
| MD Route 924 and Singer | Add crosswalk improvements (signage, markings or signals) |
| MD Route 924 and Wheel Road | Add crosswalk improvements (signage, markings or signals) |

Figure 13

Recommended Bicycle Improvements

Many of the roadways in Harford County can be modified to be more bicycle friendly. Several options to consider are marking shoulders for bike use, bike lane striping, shared lane markings, and other signage. Where the existing paved shoulders are wide enough to accommodate cyclists it may be feasible to identify these areas as bicycle routes.

Within the Development Envelope, Harford County has a large number of lower volume streets with posted speed limits of 25 mph. With the addition of some relatively small scale treatments, many of these could become cyclist friendly thereby providing opportunities to connect neighborhoods and communities with nearby services and facilities.

Another option for improving the County’s bicycle network would involve dedicated shared use paths. While this plan tends to focus on the development of an on-street network, in some locations an off-road option would be ideal. This would be areas where the volume and speed of traffic are too high to safely accommodate cyclists.

In rural areas, the County should evaluate roads for the addition of share the road signage. As part of this evaluation, the County should develop criteria that take into consideration a variety of factors such as road speed, width, and the usefulness of this designation. Routes being considered should generally be low volume and low speed roads. They may also be roadways that are constrained by other factors such as topography or their proximity to streams or other environmentally sensitive areas, thus making widening impractical. As maintenance work is done on the roads, designations to support bicycle use should be retained and enhanced to the maximum degree possible.

Because the potential of constructing new roadways in the County is limited, bicycle facility improvements are most likely to occur in conjunction with an upgrade or other improvement project. The provision of bike lanes should also be considered as potential mitigation for needed vehicular level of service improvements in areas where studies have identified a need for bicycle improvements as part of a multimodal approach to reducing vehicle miles traveled.

The projects identified in Figure 14 provide an initial step for improving the County’s bicycle network. They build upon existing conditions and on-going local and regional planning efforts, and they reflect the

input received from the BPAC and the community during the public input process. The projects recommended address two perspectives – improving conditions for utilitarian trips and recreational riding. As with the pedestrian project list, these projects should be reevaluated and reprioritized every two years to ensure that needed improvements and projects are being addressed.

BIKE PROJECTS

| Location | Project Description |
|--|---|
| Tollgate Road from US Route 1 to MD Route 24 | Reconfigure road to accommodate bicyclists by providing minimum bike lane widths, improved roundabouts, reduced vehicle lane widths, etc. |
| Todd Road from Brierhill to Brunswick | Consider adding edge line striping |
| Brierhill Dr/East MacPhail from MD Route 22 to MD Route 924 | Consider adding edge line striping |
| Econ Drive from Agora Drive to Moores Mill Road | Consider adding edge line striping |
| Thomas Run Road | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| Prospect Mill Road | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| Ruffs Mill Road | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| Chapel and Robinhood Road | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| Castleton Road between Paddrick and Day | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| Pleasantville Road between MD Route 152 and MD Route 23 | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| Johnson Mill near Bower Lane | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| MD Route 146 and Schuster Road | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| MD Route 543 St. Anne Drive to Highland Road | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| MD Route 23 and Jolly Acres | Evaluate for R4-11 or Share The Road signage and add as appropriate |
| MD Route 22 | Add bikeway improvements as identified in Route 22 Corridor Study |
| Willoughby Beach Road | Add Bicycles May Use Full Lane (R4-11) or Share The Road sign where the painted shoulder divider ends |
| MD Route 755 from MD Route 24 to Willoughby Beach Road | Add R4-11 or Share The Road signage |
| MD Route 755 from Willoughby Beach Road and MARC station | Add bike lane as identified in State plans |
| MD Route 7 from Stepney Road to Short Lane | Evaluate road to identify potential for accommodating bicyclists and address as appropriate |
| US Route 40 at Woodbridge Center Way | Conduct road safety audit and identify safety improvements needed |
| Maryland State Bicycle Routes | Improve signage and maintenance; re-evaluate MD Rt. 161 |

Figure 14

Recommended Multi-Use Trail and Regional Long Distance Bikeway Improvements

The County’s Land Preservation, Parks, and Recreation Plan is the primary document guiding the provision of trails in Harford County. The project recommendations included in this Plan are meant to support and complement the initiatives identified by the Department of Parks and Recreation. In addition to the projects listed below, there are other trail projects and recommendations for trail networks that should be considered during the update of the Land Preservation, Parks, and Recreation Plan.

The evaluation of potential trail and regional and long distance bikeway projects for inclusion in this Plan were based on comments received from citizens and trail networks identified in other County plans and community plans. These recommendations are identified in Figure 15. The recommended projects include new construction along with upgrades designed to improve the safety and usability of existing networks. Implementation of these projects will require cooperative efforts involving the County, SHA, the municipalities, community groups, and non-profit organizations.

An example of this is the completion of the Ma and Pa trail in the Town of Bel Air. Currently, the Ma and Pa trail exists as two separate sections of 3.3 and 1.7 miles each. The completion of the identified section will provide the Town and the County with more than an eight mile long trail from Forest Hill Friends Park to Edgely Grove in Benson (Figures 16 and 17). This trail provides for recreational walking and biking and connects destinations in and around Bel Air. It is anticipated that the completion of the trail will generate a great deal of usage not only for recreation and leisure activities, but also enable users to walk and bike to work, shopping, and school.

The East Coast Greenway, on the other hand, is part of a regional trail network that stretches from Maine to Florida. Its passage through Harford County includes the crossing of the Susquehanna River, and provides an opportunity for connections with other counties and metropolitan regions.

As with the other project lists, these projects should be reevaluated and reprioritized every two years to ensure that needed improvements and projects are being addressed.

MULTI-USE TRAIL AND LONG DISTANCE BIKEWAY PROJECTS

| Location | Project Description |
|-------------------------------------|---|
| Ma and Pa Trail | Complete section between Williams Street and Blake’s Venture |
| Riverside Community Trail | Extend to Church Creek Road |
| MD Route 165 trail (Whiteford) | Conduct feasibility and alignment studies |
| East Coast Greenway | Install signage and needed amenities |
| Lower Susquehanna Heritage Greenway | Continue to support scenic byway efforts along Lapidum and Stafford Roads |
| Susquehanna River Crossing | Continue to investigate possible solutions |
| Winters Run Trail | Extend to Harford Glen |

Figure 16

TRAIL NETWORKS

Harford County, Maryland

P E N N S Y L V A N I A

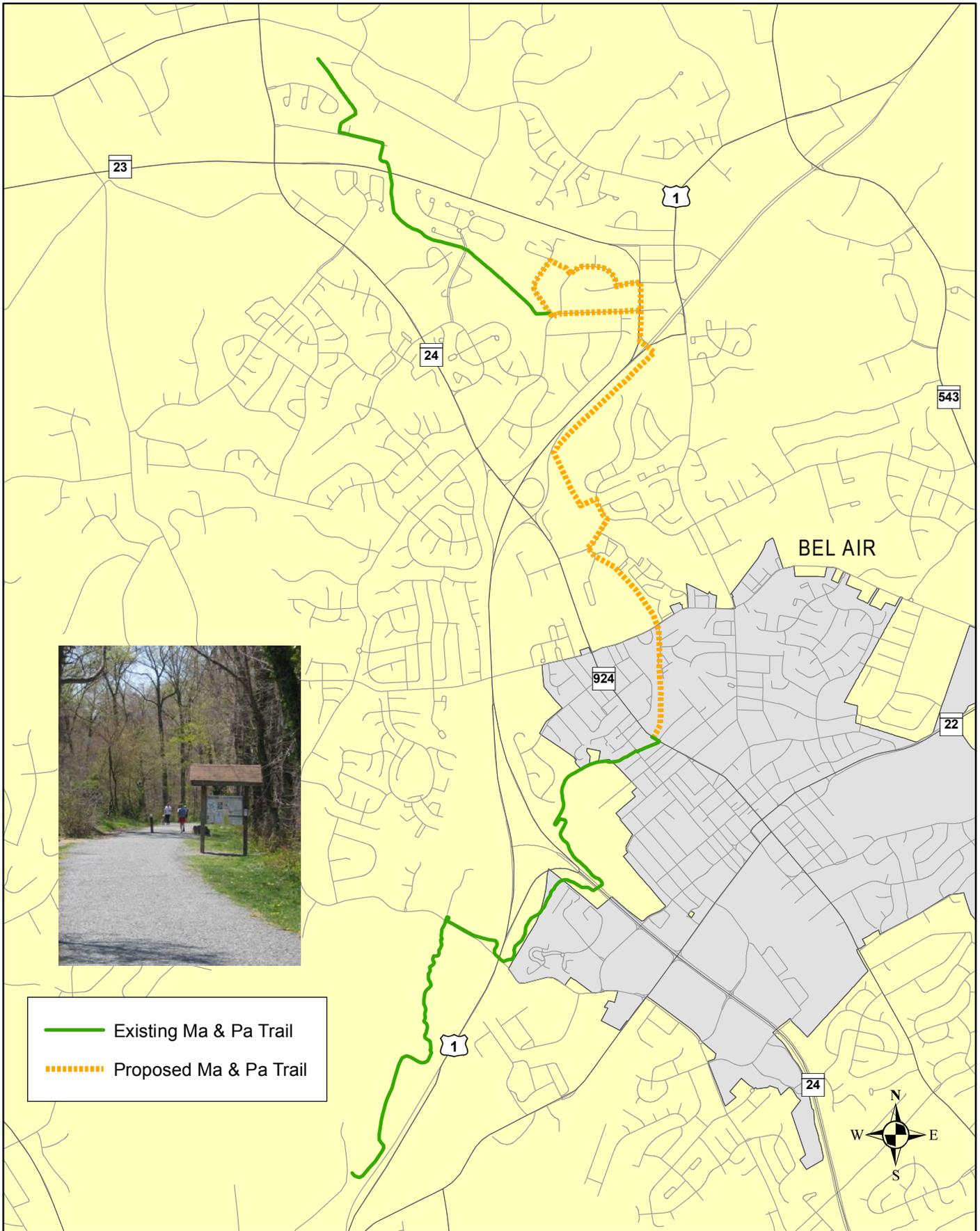


- Church Creek Trail
- - - East Coast Greenway
- Lower Susquehanna Heritage Greenway
- Ma & Pa Trail
- Whiteford Trail (Proposed)
- ▣ Winters Run Greenway



MA & PA TRAIL

Harford County, Maryland



- Existing Ma & Pa Trail
- - - Proposed Ma & Pa Trail

Recommended Studies

For some corridors, such as along Joppa Farm Road, additional studies and community input would be needed to ensure that certain projects meet community needs and have community support. In some instances, specific needs were identified but ascertaining the project details could not be completed in time for inclusion in this Plan. Therefore, all of these projects were listed as needing additional study so that progress could continue to be made, and the improvements identified in the studies could be included in future updates of the project list (Figures 18 and 19).

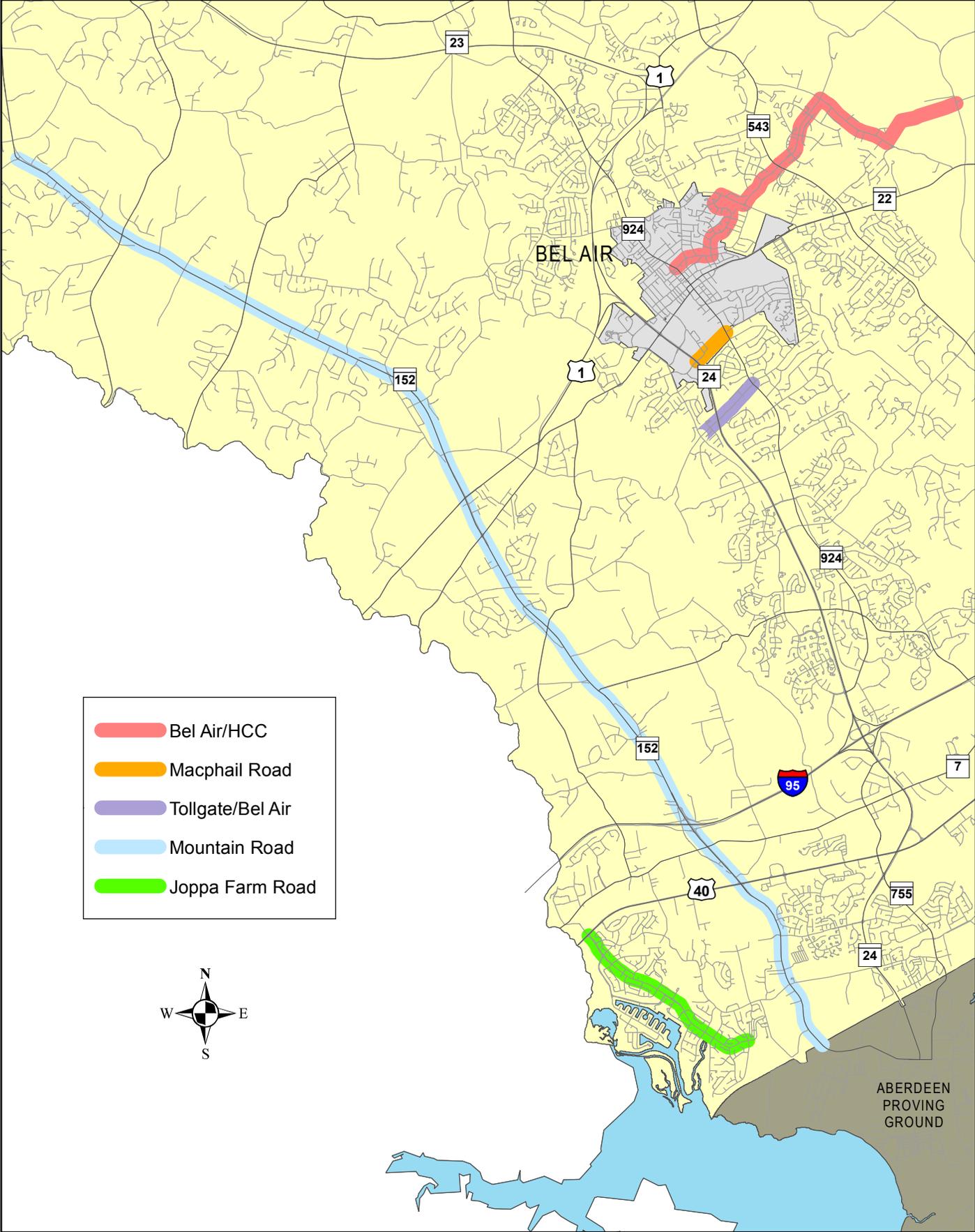
RECOMMENDED STUDIES

| Location | Project Description |
|---|---|
| Joppa Farm Road from US Route 40 to Haverhill Road | Initiate a corridor study to improve walking and cycling conditions |
| MD Route 152 from Hess Road to Magnolia Road | Initiate a corridor study to improve walking and cycling opportunities |
| Town of Bel Air to Harford Community College | Conduct a corridor study to provide an alternative bicycle/pedestrian route off of MD Route 22 to include a bicycle/pedestrian trail from Prospect Mill to Thomas Run Road and to connect the east and west campuses of Harford Community College |
| MacPhail Road from MD Route 924 to MD Route 24 | Initiate a study to provide a bicycle/pedestrian route |
| Tollgate Road to MD Route 924 | Conduct a study to determine a bicycle and pedestrian route that would provide better access to schools, services, and facilities and the Town of Bel Air via an east/west connection |

Figure 18

PROPOSED STUDY AREAS

Harford County, Maryland



Policies and Strategies

Identifying specific needs and projects is an important part of a bicycle and pedestrian plan. However, policies and strategies should also be included. Policies and strategies form the foundation of a comprehensive approach to ensuring that the County becomes, and continues to be, a place where people want to walk and ride their bicycles. They help guide the selection of future projects while also ensuring that these projects are adequately designed. They also provide specific criteria that can be monitored over time to ensure that the Plan's goal is being achieved.

Developing and maintaining a comprehensive network of on and off-road facilities does not automatically mean people will use the network. The network needs to be promoted, users need to feel comfortable and safe, and they should have access to adequate trip-end facilities at strategic locations. Therefore the 5 "Es" of engineering, education, enforcement, encouragement, and evaluation have been interwoven in the policies and strategies presented in this section. The strategies included in this Plan strive to address these by focusing on four areas – the bicycle and pedestrian network, the support facilities that sustain door-to-door travel, way-finding and signage, and programs that promote education, awareness, and safety.

Bicycle and Pedestrian Networks

Policy: Improve bicycle and pedestrian mobility throughout the County by providing a system that is suitable for all users and offers access to major destination areas.

To ensure that the Bicycle and Pedestrian Master Plan is implemented, it must contain projects and strategies that can be incorporated into the day-to-day activities of transportation and land use planning in Harford County. Likewise, they must be incorporated into the State's and County's design, funding, construction, and maintenance process. Alternative funding sources must also be pursued. Completing bicycle and pedestrian projects is a step in recognizing their role in contributing to the County's overall health, sustainability, and economy.

Each link in these networks should serve one or a combination of purposes: recreation, fitness, commuting, and other utilitarian uses. On-street facilities should be continuous and direct, and off-street facilities should have a minimum number of arterial crossings and uncontrolled intersections. Crosswalks should connect sidewalks using well positioned curb ramps that allow all users to stay entirely within the bounds of the sidewalk and crosswalk. Appropriate signage and signal crossings should also be provided. Special attention should be given to providing adequate crossing time for seniors, children, and those with special needs.

Establishing a comprehensive bicycle and pedestrian network will take time. Improvements to the network will be completed in phases, with the initial focus being on improving connections between neighborhood nodes and linking communities to services with the goal of reducing the number of vehicle miles traveled. Many of the sidewalks and curb crossings have been in place for years, and because of this the County should evaluate the benefit of establishing a transition plan for replacing substandard areas. While the County and the State have an ongoing program to retrofit curb cuts as part of road projects, a transition plan will help to ensure that these improvements are provided in a timely and consistent manner while still taking into consideration requested upgrades.

To ensure that needed improvements related to bicycling and pedestrian conditions are identified, all roadways should be evaluated using "Complete Streets" guidelines. By following "Complete Streets"

guidelines roadways will consistently be designed with all users in mind (Appendix C). Creating “Complete Streets” does not mean providing separate bike lanes and other facilities in all cases. Rather it will require changes to the policies and practices of the departments and agencies responsible for State and County roadways. This approach should take into consideration local context and needs.

Another focus of improving the County’s bicycle and pedestrian network will be on providing facility improvements that encourage County residents to increase their levels of physical activity because the network is convenient for them. Convenience applies not only to location and directness, but also to the qualities that make a network comfortable and easy to use - is it relatively flat, is it free of obstacles or gaps? Inconvenient or poorly connected facilities can cause users to choose alternative less safe routes or other modes of transportation.

An important consideration of network planning involves providing access to and from transit providers. Improving the cycling/pedestrian-transit link can help make walking and cycling a part of daily life. In areas such as Harford County the population densities are often too low to offer comprehensive transit, which is service within the typical walking distance for most transit users. While Harford Link buses are fitted with bike racks, more residents could utilize the service if the stops were within easy cycling distance. Likewise, the MTA should be encouraged to provide bike racks on their commuter buses and provide secure bike lockers to encourage riders to cycle versus driving to the stops.

To improve access to transit, sidewalks should connect bus stops with intersections or other land uses, and the stops should also be fully accessible to all passengers. Consideration also needs to be given to ensure that appropriate pedestrian crossings are provided, especially if stops are located in mid-block. Bus shelters or pads should be provided at the bus stops, where appropriate. Care must be taken to make sure that these amenities do not pose hazards to pedestrians nor sight-line obstructions for vehicular traffic.

Implementation Strategies

1. Review and update the projects list every two years, prioritizing projects that connect destinations such as schools, neighborhoods, parks, and other community services.
2. Develop a comprehensive approach to improving the County’s on-road bike network including development of criteria for designating share the road routes.
3. Work with the Community Councils to identify areas where Road Safety Audits are needed and use this information to identify potential bicycle and pedestrian projects.
4. Develop and implement a process for working with the State, the municipalities and the Department of Public Works to ensure that bicycle and pedestrian facilities are provided consistent with the priorities established in this Plan.
5. Continue to work with the State Highway Administration to add bicycle and pedestrian facilities as identified in the MD Route 22 Corridor Study.
6. Pursue capital improvement funding or grant funding for pedestrian and bicycle improvements and facility maintenance.

7. Ensure that all transportation projects, where appropriate, are planned utilizing a Complete Street approach to the maximum extent possible.
8. Ensure that new developments include pedestrian, bicycle, and trail facilities that connect to adjoining properties.
9. Evaluate redevelopment projects' impact on bicycle and pedestrian travel, and require that sufficient right-of-way facilities are provided in areas where a need has been identified.
10. Maintain the County's digital inventory of sidewalks.
11. Develop an interdepartmental team of County staff to focus on the implementation of the five "Es" – education, encouragement, engineering, enforcement and evaluation.
12. Develop a transition plan to bring curb cuts, sidewalks, and street crossings into ADA compliance.
13. Add or upgrade crosswalk markings and signage to improve pedestrian safety.
14. Continue working with the State and the East Coast Greenway to ensure that facilities and roadway improvements are provided to accommodate cyclists and pedestrians as appropriate.
15. Ensure that transit stops are served by sidewalks and that pedestrian crossing signage is provided.
16. Continue to work with the State and the City of Aberdeen on the provision of bicycle and pedestrian needs as part of the development of the Aberdeen Station Center.
17. Continue to coordinate with Harford Transit Link to provide pedestrian and cycling options for crossing areas such as the Susquehanna River and the I-95/MD Route 24 interchange.
18. Continue efforts to designate a bicycle route between Aberdeen Proving Ground and Bel Air that bypasses the I-95/MD Route 24 interchange.
19. Develop a network of bikeways on County and municipal roadways to compliment and connect with State designated bikeways.
20. Evaluate the possibility of utilizing utility right-of-ways and easements for use as hiker/biker trails.

Support Facilities

Policy: Ensure that features and amenities that support bicycle and pedestrian activity are provided in a manner that sustains door-to-door travel.

While a convenient and well maintained bike and pedestrian network encourages people to choose an active transportation option, there are other features and amenities that help to attract and retain a more diverse population of users. Walkers and cyclists should feel comfortable with their surroundings. Crosswalks should be clearly marked and higher volume or “hot spot” intersections should have appropriate crossing signals. In addition, the provision of network amenities is often a key element that is overlooked.

Litter and debris, along with storm drains and utility covers, can be potential obstructions to cyclists. Bicycle friendly grates should be used, and grates and covers should be located in a manner which will minimize severe and/or frequent maneuvering by the cyclist. Conflicts with grates may result in serious damage to the bicycle wheel or frame as well as injury to the cyclist. Likewise, walkways should be obstacle free with good sight visibility. Street furniture, shade trees, and lighting should also be provided to enhance the pedestrian network, but they should be located in a manner that does not impinge on the accessible pathway required for users with disabilities.

Along regional trail networks and bicycle routes such as the East Coast Greenway, rest areas should be provided. Interpretive stations, restaurants, museums and other attractions or services are logical locations for rest areas. For the trail networks, staging areas should be provided. Potential amenities might include restrooms, small picnic areas, and parking for recreational users and “Park and Bike” commuters.

Without adequate bicycle parking, people may not feel encouraged to bicycle to a destination. This is especially true when trying to promote errand type use or family trips to shopping centers, restaurants, libraries or parks. The fear of leaving a bicycle unattended, even for short periods, can easily become the reason people opt not to ride their bike. In addition, installing the appropriate type of bicycle parking facility is also important. In general, bicycle racks are appropriate for shorter parking periods, and ideally secured and protected bike parking should be provided for longer durations, such as those associated with leaving a bike at a commuter stop or a place of employment. Information on the types and location requirements for bicycle parking are provided in Appendix D.

For special events such as First Friday, Aberdeen’s Earth Day Festival, the Maryland State Barbeque Bash, or the Havre de Grace Seafood Festival bike valet parking could be offered. Local government officials should work with the local bike clubs or other service organizations to provide this service.

As a first step to increasing the availability of bicycle parking in Harford County, the Health Department, Harford County Government, and Harford County Public Schools have partnered to utilize funding available from a Community Transformation grant to purchase bike racks at key locations in the community. In May 2012, 35 bike racks were purchased, and they will be installed throughout the community at schools, parks, recreational sites, and government buildings to promote healthier lifestyles. Based upon the usage, and the success of these bicycle facilities to encourage cycling, the Sustainability Office and the Department of Planning and Zoning will evaluate the expansion and development of a bicycle parking infrastructure program.

End of trip facilities are also an important part of the bicycle and pedestrian network. Showers and changing facilities accommodate cyclists and walkers who need to freshen up after their trip or lunch

hour activity. Lockers can be used to store personal belongings such as a change of clothes and cycling accessories. While it may not be immediately feasible for all businesses to offer these facilities, opportunities should be explored to find ways to share facilities that might be available in adjoining or nearby athletic clubs or other venues that would tend to already provide these facilities. Incentives from employers to utilize these facilities should also be considered. In the interim, educational programs can help instruct riders how to best travel by bicycle in all weather conditions.

In addition to the features and amenities discussed above, consideration should also be given to improving the cycling-walking-transit link. This can be an important step in helping to make walking and cycling part of daily life. Harford Transit is developing a Quick Response (QR) code program and once a bicycle map is developed the two should be linked.

Implementation Strategies

1. Work with State and County agencies to ensure that crossing signals are timed to allow all users to safely cross the road.
2. Routinely maintain bicycle facilities so they can provide usable, safe, and comfortable conditions for bicyclists.
3. Identify and prioritize short and long term bicycle parking needs and work with the appropriate entities to provide the needed facilities.
4. Develop and implement a program to provide bicycle parking on public properties.
5. Adopt a bicycle parking ordinance that establishes guidelines for bicycle parking linked to land uses.
6. Work with the municipalities to develop a valet bike parking program for special events.
7. Work with the business community to provide showers and changing rooms as part of the County's Healthy Workplace initiative.
8. Develop a program that provides for the regular inspection and maintenance of pedestrian facilities.
9. Continue to use Harford County Connect for the reporting of facility maintenance and repair issues specifically related to bicycle and pedestrian facilities.
10. Improve access to and provide amenities along public trails as appropriate.
11. Improve the walking environment by providing design elements that include shade trees, appropriate street furniture, lighting, water fountains, trash facilities, and landscaping.
12. Link the County's bicycle map to a Quick Response (QR) code and make it available at various locations including transit and MARC stops.

Way-finding and Signage

Policy: Assist bicyclists and pedestrians by offering signage and maps that clearly identify directions, destinations, and services while also promoting awareness of bicycle and pedestrian activity.

One of the most effective ways of encouraging people to bike or walk is through the use of maps and guides to show that the infrastructure exists, and to demonstrate how easy it is to access different areas by bike or by foot. They can also be used to highlight unique areas, shopping districts, schools or recreational areas. Maps will be made available online and distributed at community events and at stores that support bicycling and walking activities. However, maps are just part of the process and to be truly effective they must be accompanied by good signage as part of a comprehensive way-finding program.



Way-finding is defined as all of the ways in which people orient themselves and navigate from place to place. It also includes how they interpret their surroundings. Signage is an important part of way-finding, and it should have a uniform look that allows for easy navigation - highlighting destinations and providing distance information. It should also help to improve driver awareness of bicycle and pedestrian activity.

Signs along the pedestrian and bicycle network can communicate various kinds of information. This includes regulations, warnings, and interpretive information. Bicycle route and pedestrian signs can be used to brand or identify the routes that make up the County's network.



For trail networks, way-finding signs should include the network logo or brand, if appropriate, and they should communicate information to users such as directional arrows and distances to specific locations or attractions. These signs are generally located at trailheads, access points or gateways or along a designated route. Interpretive signs on the other hand, provide specific information about points of ecological, historical, cultural and general interests.



Regulatory signs are designed to control particular aspects of travel and use along the road or off-road network such as where a bike route begins or ends or pedestrian crossings occur. Warning signs are used to highlight conditions that pose a potential safety or convenience concern to network users. Examples include Share the Road, Watch for Pedestrians, Pavement Changes, or Steep Slopes.

The signs used throughout the bicycle and pedestrian network should be economical, adaptable, durable and identifiable. They should also follow standards established by the Maryland Manual on Uniform Traffic Control Devices (MD-MUTCD).

Implementation Strategies

1. Develop a countywide Bicycle Map and brochure that includes safety information.
2. Develop and implement a consistent system of pedestrian and bicycle signage to direct users to major landmarks, parks, and other facilities and services.
3. Sign County roads for bicycle use where appropriate.

4. Work with the State Highway Administration to update and improve signage along all State designated bike routes.
5. Work with the East Coast Greenway and the State Highway Administration to sign designated greenway route.
6. Work with the State Highway Administration to add bicycle and pedestrian signage as identified in the MD Route 22 Corridor Study.
7. Ensure that signs are located and maintained to ensure maximum visibility.
8. Continue to ensure that all school crossing and pedestrian crossing signage meets MD-MUTCD code requirements.
9. Establish a “Racks with Plaques” program.

Programs

Policy: Promote education and awareness about the value of bicycle and pedestrian travel and encourage safe bicycle, pedestrian, and motor vehicle interaction.

In addition to providing infrastructure to support bicycling and walking, a variety of programs are needed. Programs that provide and promote education, encouragement, enforcement, and evaluation incorporate the 5 “Es” that are critical to the success of a bicycle and pedestrian plan. These programs assist people in making the transition to walking and bicycling after years of being auto dependent. Everyone, including motorists, can benefit from programs that promote safe practices and rules of the road. Ideally programs and policies should be implemented concurrently with infrastructure improvements. However, many programs can be initiated before infrastructure improvements are completed. Examples of some of the programs are detailed in Appendix E.

Safe Routes to School, Walking School Buses, or just having school staff that encourage students to walk or ride their bikes to school are examples of efforts that can be initiated while network improvements are being completed. For most schools in the Development Envelope, walking or cycling is an option for at least a portion of the school population. However, an increasing number of school trips involve the automobile which creates a number of problems including traffic congestion, reduced exercise for children, and a potential for dangerous conditions where pedestrians, cyclists and motor vehicles interact.

To address this problem, Harford County Government, Harford County Public Schools, Healthy Harford, and the Obesity Task Force are partnering together to design a pilot bicycling and walking program to improve the overall wellness of Harford County students. The pilot program selected three schools: one elementary, one middle school, and one high school to launch a new wellness goal based upon actively moving to and from school. The pilot program will require involvement by members of the school and the surrounding community to make it a success. In addition, this pilot program will require collaboration with the Department of Public Works to ensure that bicycle and pedestrian infrastructure improvement programs support safe and healthy routes to school. As another part of this effort, the Board of Education should incorporate safe walking and bicycling programs into their physical education curriculum.

To further support walking and bicycling to school, the County should establish a committee that would be responsible for coordinating and managing the various components of the Safe Route to Schools grant program that is now part of the transportation alternatives section of Moving Ahead for Progress in the 21st Century program (MAP-21). At a minimum, the committee should include representatives from the Board of Education, the Department of Public Works, the Sustainability Office, the Sheriff’s Office and the Health Department. A list of potential projects should be prepared for future grant opportunities thereby assuring that funding opportunities are not missed.

In addition to programs for school aged children, there is a need for programs that educate adult users – pedestrians, cyclists, and motorists. Adults need the skills, knowledge, confidence, and motivation to set a good example for children. These can be obtained through classes at either at the Community College or through the League of American Bicyclists and by working with local cycling organizations. The Maryland Department of Transportation has also developed adult bicycle education materials which include a brochure and video, and various other State agencies including the Maryland Vehicle Administration are promoting educational materials about bicycle, pedestrian, and motor vehicle safety and interaction.

Cooperation and respect between motorists and cyclists and pedestrians is an important part of reducing the number of conflicts and collisions that occur. As the number of cyclists and pedestrians increases, a better understanding of the rules of the road by all users must be emphasized. Safety campaigns such as “Street Smart” can be used to reach all segments of the population. This campaign uses a variety of mediums along with personal contact to spread a safety message. The campaign is geared to all users of the road. Public service messages along with driver education training can also help to expand awareness of what various bicycle and pedestrian road markings and signs mean.

Equally important to promoting awareness about road users’ rights and regulations is enforcement. The Maryland State Police and the Maryland Department of Transportation have partnered to produce a training video for Maryland law enforcement officers on bicycle and traffic safety enforcement. This video is expected to be completed in 2013, and it will be subject to Maryland Police Training Certification. Local enforcement agencies should incorporate this video into their in-service and entry-level training.

Speeding and failure to obey traffic laws often result in conflicts between motorists and other users. While crash data locations can supply a starting point for enforcement efforts, areas with higher pedestrian volumes could be a focal point for future enforcement and education efforts. Safety experts recommend targeting the following violations:

- Motorist’s failure to yield or stop for pedestrians and cyclists when required by traffic law;
- Excessive motor vehicle speed;
- Intoxicated drivers;
- Distracted drivers and walkers;
- Cyclist’s failure to yield when required by traffic law;
- Cyclist riding in the wrong direction against traffic;
- Cyclist riding at night with inadequate lighting.²

Better documentation of violations combined with improved reporting on bicycle and pedestrian accidents can help to direct future education and enforcement efforts. This information can also be used to help identify possible safety interventions such as additional pedestrian and bicycle facility improvements, and traffic management and calming measures that help to reduce vehicle speeds and volumes.

Implementation Strategies

1. Provide educational opportunities for children and adults to learn about safe riding and walking behaviors.
2. Work with the Board of Education to develop a bicycle and pedestrian safety curriculum and include bicycle and pedestrian information in the drivers’ education curriculum.
3. Coordinate with the Board of Education to establish a baseline count of students and faculty walking or bicycling to school, and use this data as a starting point for monitoring the success of a Walkable/Bikeable School program.

² NHSTA, *Resource Guide on Laws Related to Pedestrian and Bicycle Safety*, The National Highway Traffic Safety Administration

4. Work with the Board of Education to develop Safe Routes to Schools as well as safe unloading and loading areas.
5. Establish a committee to apply for and manage Safe Route to School grants.
6. Encourage cycling and walking for seniors through pilot programs at Senior Centers.
7. Become a recognized Bicycle Friendly Community.
8. Encourage the municipalities to become Walk Friendly Communities.
9. Establish a Harford County Bicycle and Pedestrian Webpage.
10. Work with the municipalities to hold cycloviva events.
11. Continue to support Bike to Work Day, Walk to School Day and other national events which promote bicycling and walking.
12. Continue to work with Healthy Harford to expand outreach activities associated with walking and bicycling as part of a healthy living initiative.
13. Work with Harford Community College and Aberdeen Proving Ground to develop and implement a bike share program and a commuter bike program.
14. Work with the business community to promote and support bicycle use and walking.
15. Encourage corporations, institutions, and private donors to support existing and proposed bikeway, multi-use trails, and walkway systems.
16. Develop and promote a public awareness campaign to increase public recognition and to educate the general public about the rights and responsibilities of bicyclists, pedestrians, and motorists.
17. Develop a bilingual educational campaign for bicycle and pedestrian safety messages.
18. Sponsor design contests for posters and web materials publicizing walking and cycling as means of transportation.
19. Expand the "Adopt-a-Trail" program in coordination with the Department of Parks and Recreation and other trail related non-profit organizations to ensure that existing and new trails continue to be incorporated in the existing program.
20. Provide bicycle and pedestrian education for law enforcement personnel to promote bicycle safety and reduce conflicts between motorists, pedestrians, and cyclists.
21. Increase enforcement of traffic laws for motorist, pedestrians, and cyclists especially as a follow-up to safety campaigns.

22. Compile and analyze reported bicycle and pedestrian collision statistics on an annual basis.
23. Work with the County Council to enact legislation that allows bicycle use on sidewalks within a three mile radius of schools.

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IMPLEMENTATION

The 2013 Bicycle and Pedestrian Master Plan establishes a series of strategies that serve as the framework for implementation. The strategies of the Bicycle and Pedestrian Plan include improvements to the bicycle and pedestrian network, the provision of support facilities that sustain door-to-door travel, way-finding and signage improvements, and programs that promote education, awareness, and safety. Successfully implementing these will require the cooperation of local and State agencies and officials, community leaders, and citizens. Harford County will strive to address these strategies in a fiscally responsible manner while also supporting the County’s sustainability goals.

A work program has been developed that prioritizes these initiatives and identifies the primary departments responsible for the implementation. Finally, it identifies which of the implementation measures involve capital budget expenditures.

To help provide direction and accountability for the implementation strategies included in this Plan, an implementation matrix was developed. This matrix addresses each of the strategies identified in the Plan and assigns a timeframe to the task. The timeframe is intended to indicate the general interval during which the strategy is to be completed. Three timeframes are used: short-term (0-3 years), intermediate (3-6 years), and long-term efforts that must be addressed on an on-going basis throughout the life of this Plan. The timeframe and extent to which a particular action item is completed is dependent on many factors, including but not limited to, available resources, including personnel and finances, public support, and required coordination and support from State agencies for projects that involve their rights-of-way. The abbreviations included in Figure 20 below are used in the “Responsibility” column of the Implementation Matrix.

All of the strategies included in the matrix will be reviewed annually, and the Director of the Department of Planning and Zoning shall prepare an annual report identifying accomplishments and recommended revisions to the timeframes assigned. This will be included in the Department’s annual report to the County Council.

| | |
|--|--|
| ADMIN Harford County Administration/ Sustainability Office | HH Healthy Harford |
| APG Aberdeen Proving Ground | MUN Municipalities |
| BOE Board of Education | OED Office of Economic Development |
| DCS Department of Community Services | P&R Department of Parks and Recreation |
| DPW Department of Public Works | P&Z Department of Planning and Zoning |
| HCC Harford Community College | SHA State Highway Administration |
| HD Health Department | SHO Sheriff’s Office |

Figure 20

| Strategy | ● = Lead Role | | | | | | | | | | | | | | ○ = Support Role | | Timing |
|---|------------------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|------------------|--|--------------|
| | Implementation Partner | | | | | | | | | | | | | | | | |
| | Admin | APG | BOE | DCS | DPW | HCC | HD | HH | MUN | OED | P&R | P&Z | SHA | SHO | | | |
| 11. Develop an interdepartmental team of County staff to focus on the implementation of the five “Es” – education, encouragement, engineering, enforcement, and evaluation. | ○ | | ○ | | ○ | | | | | | ○ | ● | | ○ | | | Short term |
| 12. Develop a transition plan to bring curb cuts, sidewalks, and street crossings into ADA compliance. | ○ | | | | ● | | | | | | | | ○ | | | | Short term |
| 13. Add or upgrade crosswalk markings and signage to improve pedestrian safety. | | | | | ● | | | | | | | | ○ | | | | Long term |
| 14. Continue working with the State and the East Coast Greenway to ensure that facilities and roadway improvements are provided to accommodate cyclists and pedestrians as appropriate. | | | | | ○ | | | | | | | ● | ○ | | | | Long term |
| 15. Ensure that transit stops are served by sidewalks and that pedestrian crossing signage is provided. | | | | ● | ○ | | | | ○ | | | | ○ | | | | Intermediate |
| 16. Continue to work with the State and City of Aberdeen on the provision of bicycle and pedestrian needs as part of the development of the Aberdeen Station Center. | ○ | ○ | | | | | | | ● | ○ | | ○ | ○ | | | | Long term |
| 17. Continue to coordinate with Harford Transit Link to provide pedestrian and cycling options for crossing the Susquehanna River and I-95/MD Rt. 24 interchange | ○ | | | ● | | | | | | | ○ | ○ | | | | | Long term |
| 18. Continue efforts to designate a bicycle route between Aberdeen Proving Ground and Bel Air that bypasses the I-95/MD Rt. 24 interchange. | | ○ | | | ● | | | | | | | ○ | ○ | | | | Intermediate |
| 19. Develop a network of bikeways on County and municipal roadways to compliment and connect with State designated routes. | | | | | ● | | | | ○ | | | ○ | ○ | | | | |
| 20. Evaluate the possibility of utilizing utility right-of-ways and easements for use as hiker/biker trails. | | | | | ○ | | | | | | ○ | ● | | | | | Intermediate |
| Support Facilities | | | | | | | | | | | | | | | | | |
| Policy: Ensure that features and amenities that support bicycle and pedestrian activity are provided in a manner that sustains door-to-door travel. | | | | | | | | | | | | | | | | | |
| 1. Work with State and County agencies to ensure that crossing signals are timed to allow all users to safely cross the road. | | | | ● | | | | | | | | | ○ | | | | Long term |

| Strategy | ● = Lead Role | | | | | | | | | | | | | | ○ = Support Role | | Timing |
|--|------------------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|------------------|--|--------------|
| | Implementation Partner | | | | | | | | | | | | | | | | |
| | Admin | APG | BOE | DCS | DPW | HCC | HD | HH | MUN | OED | P&R | P&Z | SHA | SHO | | | |
| 2. Routinely maintain bicycle facilities so they can provide usable, safe, and comfortable conditions for bicyclists. | ○ | | | | ○ | | | | ○ | | ○ | | ○ | | | | Long term |
| 3. Identify and prioritize short and long term bicycle parking needs and work with the appropriate entities to provide the needed facilities. | ● | | | | | | ○ | ○ | ○ | | | | | | | | Intermediate |
| 4. Develop and implement a program to provide bicycle parking on public properties. | ● | | ○ | | | ○ | | | | | ○ | | | | | | Intermediate |
| 5. Adopt a bicycle ordinance that establishes guidelines for bicycle parking linked to land uses. | | | | | | | | | | | ● | | | | | | Intermediate |
| 6. Work with the municipalities to develop a valet bike parking program for special events. | | | | | | | | ○ | ○ | | ● | | ○ | | | | Short term |
| 7. Work with the business community to provide showers and changing rooms as part of the County's Healthy Workplace initiative. | | | | | | | ● | | ○ | | | | | | | | Long term |
| 8. Develop a program that provides for the regular inspection and maintenance of pedestrian facilities. | | | | | ● | | | ○ | ○ | | | ○ | | | | | Short term |
| 9. Continue to use Harford County Connect for the reporting of facility maintenance and repair issues specifically related to bicycle and pedestrian facilities. | ○ | | | | ○ | | | ○ | ○ | | | ○ | | | | | Short term |
| 10. Improve access to and provide amenities along public trails as appropriate. | ○ | | | | | | | | | | ● | | | | | | Intermediate |
| 11. Improve the walking environment by providing design elements that include shade trees, appropriate street furniture, lighting, water fountains, trash facilities, and landscaping. | | | | | | | | ○ | | | ● | | | | | | Long term |
| 12. Link the County's bicycle map to a Quick Response (QR) code and make it available at various locations including transit and MARC stops. | | | | ● | | | | ○ | | | ○ | ○ | | | | | Short term |
| Way-finding and Signage | | | | | | | | | | | | | | | | | |
| Policy – Assist bicyclists and pedestrians by offering signage and maps that clearly identify directions, destinations, and services while also promoting awareness of bicycle and pedestrian activity. | | | | | | | | | | | | | | | | | |
| 1. Develop a countywide Bicycle Map and brochure that includes safety information. | | | | | ○ | | | | | | ○ | ● | | ○ | | | Short term |

| Strategy | • = Lead Role | | | | | | | | | | | | | | o = Support Role | | Timing |
|---|------------------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|------------------|--------------|--------|
| | Implementation Partner | | | | | | | | | | | | | | | | |
| | Admin | APG | BOE | DCS | DPW | HCC | HD | HH | MUN | OED | P&R | P&Z | SHA | SHO | | | |
| 2. Develop and implement a consistent system of pedestrian and bicycle signage to direct users to major landmarks, parks, and other facilities and services. | | | | | o | | | | o | | • | • | o | | | Intermediate | |
| 3. Sign County roads for bicycle use where appropriate. | | | | | • | | | | | | | | | | | Short term | |
| 4. Work with the State Highway Administration to update and improve signage along all State designated bike routes. | | | | | o | | | | o | | | • | o | | | Short term | |
| 5. Work with the East Coast Greenway and the State Highway Administration to sign designated greenway route. | | | | | o | | | | o | | | • | o | | | Long term | |
| 6. Work with the State Highway Administration to add bicycle and pedestrian signage as identified in the MD Route 22 Corridor Study. | | | | | o | | | | o | | | • | o | | | Long term | |
| 7. Ensure that signs are located and maintained to ensure maximum visibility. | | | | | • | | | | | | o | | o | | | Long term | |
| 8. Continue to ensure that all school crossing and pedestrian crossing signage meets MD-MUTCD code requirements. | | | o | | • | | | | o | | | | o | o | | Long term | |
| 9. Establish a "Racks with Plaques" program. | • | | o | | | o | | | o | | o | | | | | Short term | |
| Programs | | | | | | | | | | | | | | | | | |
| Policy: Promote education and awareness about the value of bicycle and pedestrian travel and encourage safe bicycle, pedestrian, and motor vehicle interaction. | | | | | | | | | | | | | | | | | |
| 1. Provide educational opportunities for children and adults to learn about safe riding and walking behaviors. | o | | • | | | • | o | o | | | | | | | o | Long term | |
| 2. Work with the Board of Education to develop a bicycle and pedestrian safety curriculum and include bicycling and pedestrian information in the driver's education program. | o | | • | | | | o | o | | | | | | | o | Short term | |
| 3. Coordinate with the Board of Education to establish a baseline count of students and faculty walking or bicycling to school, and use this data as a starting point for monitoring the success of a Walkable/Bikeable School program. | o | | o | | | | o | • | | | | | | | | Long term | |
| 4. Work with the Board of Education to develop Safe Route to Schools as well as safe unloading and loading areas. | | | o | | | | | | o | | | • | o | o | | Long term | |

| | | ● = Lead Role | | | | | | | | | | | | | | ○ = Support Role | |
|----------|---|------------------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|------------------|--------------|
| Strategy | | Implementation Partner | | | | | | | | | | | | | | Timing | |
| | | Admin | APG | BOE | DCS | DPW | HCC | HD | HH | MUN | OED | P&R | P&Z | SHA | SHO | | |
| 5. | Establish a committee to apply for and manage Safe Route to School grants. | ● | | ○ | | | | ○ | | | | | | | | | Short term |
| 6. | Encourage cycling and walking for seniors through pilot programs at Senior Centers. | | | | | | | ○ | | | | ● | | | | ○ | Long term |
| 7. | Become a recognized Bicycle Friendly Community. | ● | | | | ○ | | ○ | | | | | ○ | | | | Intermediate |
| 8. | Encourage the municipalities to become Walk Friendly Communities. | ● | | | | | | | ○ | | | | ○ | | | | Intermediate |
| 9. | Establish a Harford County Bicycle and Pedestrian webpage. | ○ | | | | | | ○ | | | | ○ | ● | | | | Short term |
| 10. | Work with the municipalities to hold cyclovia events. | ● | | | | | | | ○ | | | | ○ | | | | Short term |
| 11. | Continue to support Bike to Work Day, Walk to School Day, and other national events which promote bicycling and walking. | ○ | | | ● | | | ○ | | | | | ○ | | | ○ | Long term |
| 12. | Continue to work with Healthy Harford to expand outreach activities associated with walking and bicycling as part of a healthy living initiative. | ○ | | ○ | | | | ● | ○ | | ○ | ○ | | | | ○ | Long term |
| 13. | Work with Harford Community College and Aberdeen Proving Ground to develop and implement a bicycle share program and a commuter bicycle program. | ● | ○ | | | | ○ | | | | | | | | | ○ | Short term |
| 14. | Work with the business community to promote and support bicycle use and walking. | ○ | ○ | | | | | ○ | ● | ○ | ○ | | | | | | Long term |
| 15. | Encourage corporations, institutions, and private donors to support existing and proposed bikeway, multi-use trails, and walkway systems. | ○ | | | | | | | ○ | | ○ | ● | | | | | Long term |
| 16. | Develop and promote a public awareness campaign to increase public recognition and to educate the general public about the rights and responsibilities of bicyclists, pedestrians, and motorists. | ○ | | | | | | | ○ | | | | ● | | | ○ | Long term |
| 17. | Develop a bilingual educational campaign for bicycle and pedestrian safety messages. | ● | | | | | | ○ | | | | | | | | ○ | Short term |
| 18. | Sponsor design contests for posters and web materials publicizing walking and cycling as means of transportation. | ● | | | | | | | | | | | | | | | Intermediate |

| Strategy | ● = Lead Role | | | | | | | | | | | | | ○ = Support Role | | |
|---|------------------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|------------------|--|------------|
| | Implementation Partner | | | | | | | | | | | | | Timing | | |
| | Admin | APG | BOE | DCS | DPW | HCC | HD | HH | MUN | OED | P&R | P&Z | SHA | SHO | | |
| 19. Expand the “Adopt-a-Trail” program in coordination with the Department of Parks and Recreation and other trail related non-profit organizations to ensure that existing and new trails continue to be incorporated into the existing program. | | | | | | | | | | | ● | ○ | | | | Long term |
| 20. Provide bicycle and pedestrian education for law enforcement personnel to promote bicycle safety and reduce conflicts between motorists, pedestrians, and cyclists. | | | | | | | | | | | | | | ● | | Short term |
| 21. Increase enforcement of traffic laws for motorists, pedestrians, and cyclists especially as a follow-up to safety campaigns. | | | | | | | | | | | | | | ● | | Long term |
| 22. Compile and analyze reported bicycle and pedestrian collision statistics on an annual basis. | | | | | ○ | | ○ | | | | | ○ | | ● | | Long term |
| 23. Work with the County Council to enact legislation that allows bicycle use on sidewalks within a three mile radius of schools. | ○ | | | | | | | | | | | ● | | ○ | | Short term |

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Appendix A Bicycle and Pedestrian Master Plan Advisory Committee

Walter Biller – Biller’s Bikes, Havre de Grace

Robert Buchanan – Harford Velo ; League of American Bicyclists certified instructor

Erin Ferriter – Sustainability Coordinator, Harford County Sustainability Office; Pedestrian advocate

Matthew Heller – Chesapeake Spokes

Michael Jackson – Director, Bicycle and Pedestrian Access, Maryland Department of Transportation

Paul Magness – Chief of Capital Planning and Development, Harford County Department of Parks and Recreation

Hudson Myers – Deputy Director, Harford County Department of Public Works

Ginny Popiolek - Supervisor, Elementary/Middle School Physical Education and K-12 Health Education Curriculum, Instruction, and Assessment, Harford County Public Schools

Bari Klein Rubinoff – Grants Coordinator, Harford County Health Department and Upper Chesapeake Health

Sid Steelman – Harford Velo

Heather Strassberger- Bicycle, Pedestrian & Coordinated Mobility Planner, Baltimore Metropolitan Council

Jean Vettel – Aberdeen Proving Ground bicycle commuter

Keith Warner – Harford County Sheriff’s Department

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APPENDIX B Community Walk Municipal Comments

ABERDEEN

| LOCATION | PROJECT COMMENT |
|-------------------------------|--|
| Mullins Park | Pedestrian trail needed |
| W. Bel Air Avenue & MD Rt. 22 | Difficult intersection for cyclists |
| Beards Hill & MD Rt. 22 | Difficult route |
| MD Rt. 7 & Stepney Road | Difficult intersection |
| Baker Street | Need pedestrian link to schools |
| CSX Railway Crossing | Pedestrian safety improvements needed |
| W. Bel Air Avenue | Need pedestrian crossing for Fairbrooke Senior Apartments |
| MD Rt. 132 & Bush Chapel Road | Intersection improvements needed |
| Aberdeen Train Station TOD | Provide bicycle and pedestrian connections, bike storage, and bike share program |
| Aberdeen Thwy | Extend bike route to APG |

BEL AIR

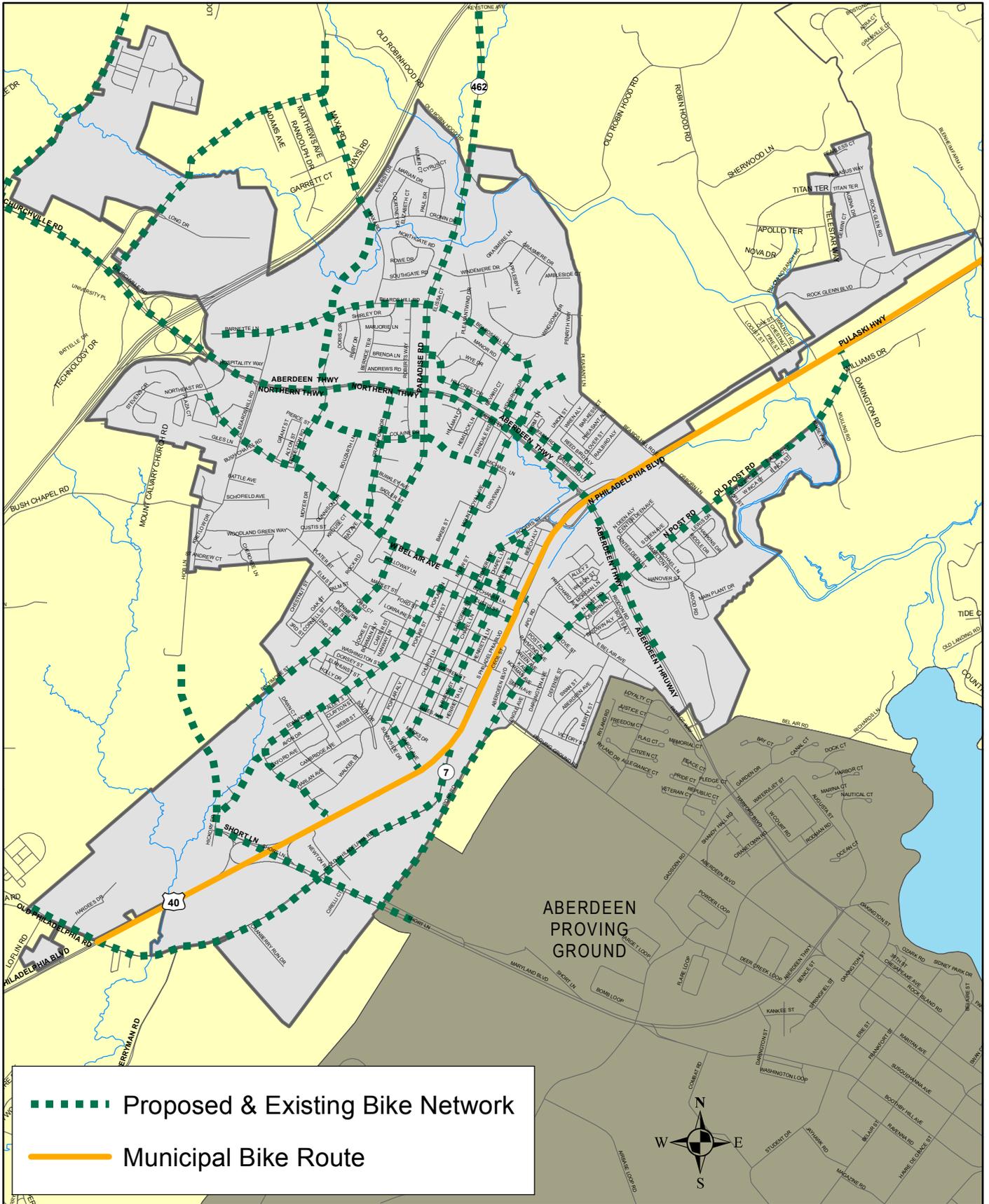
| LOCATION | PROJECT COMMENT |
|--|--|
| MD Rt. 22 & Bynum Run Park | Narrow shoulder dangerous for cyclists |
| Moore's Mill Road | Narrow shoulder dangerous for cyclists |
| S. Atwood Road & Marketplace Drive | Missing sidewalk and crosswalk needed |
| MD Rt. 22 & Rockfield Manor | Pedestrian crosswalk needed |
| MD Rt. 924 & Moore's Mill Road | Pedestrian crosswalks needed |
| MD Rt. 22 & Lee Street | Sidewalk needed for Harford Transit Link stop |
| S. Hays Street & Churchville Road Ext. | Pedestrian crosswalk needed |
| Courtland & Hickory Avenue | Pedestrian crosswalk signage needed; storm grate upgrade needed |
| Giles Street | Trail connection to Rockfield Park |
| Linwood Avenue | Trail connection to Rockfield Park |
| Jackson Boulevard | Trail connection to Rockfield Park |
| S. Main Street and MD Rt. 22 | Difficult intersection for pedestrians |
| Linwood Road & MD Rt. 924 | Difficult crosswalk for pedestrians |
| US-Rt. 1 & Tollgate (Mall) | Bike parking needed |
| Gateway Drive | Trail connection to Ma & Pa trail |
| Ma & Pa Trail | Complete missing trail segment |
| Majors Choice & Moore's Mill Road | Connection to alternative Rt. 22 link to Harford Community College |

HAVRE DE GRACE

| LOCATION | PROJECT COMMENT |
|--|---|
| St. John & Franklin Street | Bike parking needed |
| Lewis Lane and Grace Manor Drive | Bike parking needed |
| Chapel Rd. & Grace Manor | Bike parking needed |
| Ontario St. & St. James Terrace | Bike parking needed |
| Pennington Avenue near RR tracks | Bike route needed |
| Otsego Street & Pearl Street | Signage needed watch for pedestrians and cyclists |
| Otsego Street & Freedom Lane | Signage needed watch for pedestrians and cyclists |
| Otsego Street & Water Street | Signage needed watch for pedestrians and cyclists |
| Bourbon & Market Street | Bike route signage needed (East Coast Greenway) |
| Lewis Lane (US-Rt. 40 to MD Rt. 7) | Bike route signage needed (East Coast Greenway) |
| Lewis Lane west of US-Rt. 40 | Bike route signage needed (East Coast Greenway) |
| Lewis Lane | Add bicycle/pedestrian link from Community Center to Pennington Ave. & Market St. |
| Bourbon Street & S. Juniata Street | Bike route signage needed (East Coast Greenway) |
| Revolution Street & S. Juniata Street | Bike route signage needed (East Coast Greenway) |
| Market & Green Street | Bike route signage needed (East Coast Greenway) |
| MD Rt. 155 & Bulle Rock Parkway | Signage needed and link to future hospital campus |
| Bulle Rock Parkway | Signage needed |
| Bulle Rock Parkway to North Park Trail | Linkage needed |
| Pennington Avenue | Bicycle route needed |
| North Park Loop Trail | Trail to Lapidum Rd. |
| Clark Road | Trail connection needed to Swan Harbor Farm |

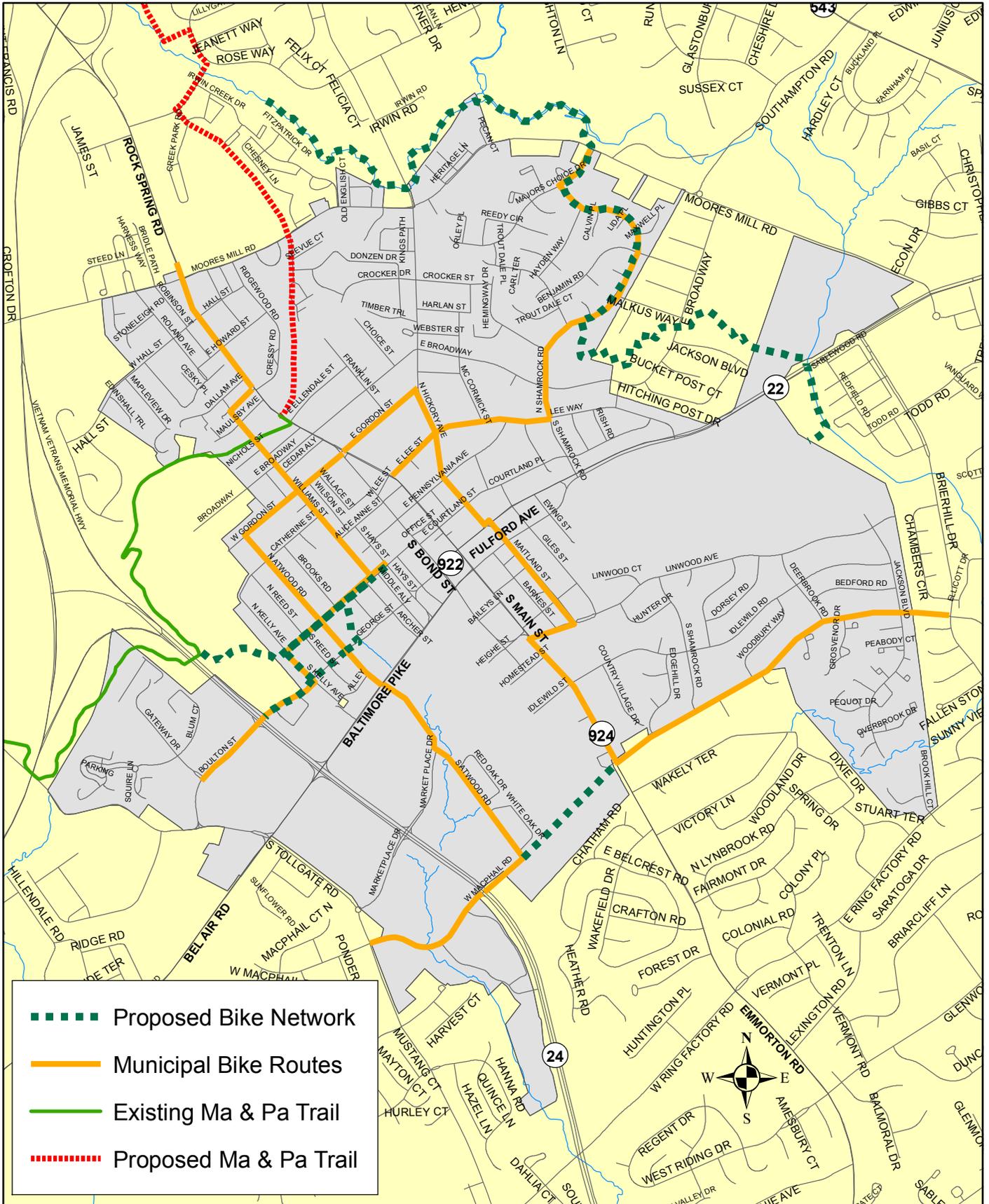
CITY OF ABERDEEN

Harford County, Maryland



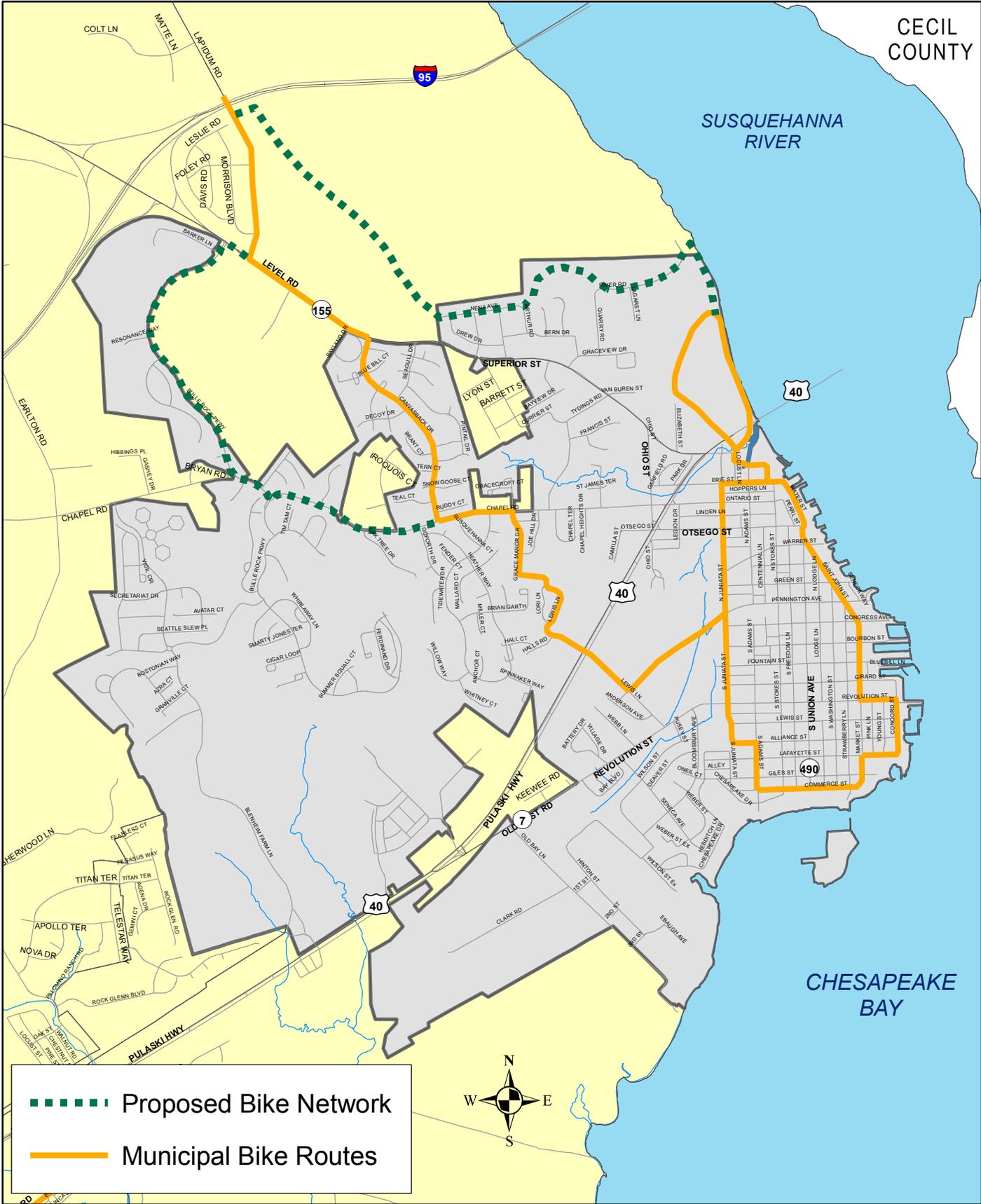
TOWN OF BEL AIR

Harford County, Maryland



CITY OF HAVRE DE GRACE

Harford County, Maryland



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Appendix C Complete Streets Guidelines

The National Complete Streets Coalition has identified ten elements of a comprehensive complete streets policy. An ideal policy would:

1. Include a vision for how and why the community wants to complete its streets.
2. Specify that “all users” includes pedestrians, bicyclists, and transit passengers of all ages and abilities as well as trucks, buses, and automobiles.
3. Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all users.
4. Is adoptable by all agencies to cover all roads.
5. Applies to both new and retrofit projects, including design, planning, maintenance, and operations for the entire right of way.
6. Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
7. Direct the use of the latest and best design standards while recognizing the need for flexibility in balancing user needs.
8. Directs that complete streets solutions will complement the context of the community.
9. Establishes performance standards with measurable outcomes.
10. Includes specific next steps for implementation of policy.

Complete streets policies should result in the creation of a complete transportation network for all modes of travel. Instead of trying to make each street perfect for the traveler, communities can create an interwoven array of streets that emphasize different modes and provide quality accessibility for all users. It is important to provide basic safe access for all and networks should not require some users to take long detours.

Rather than treating multi-modal streets as “special projects,” complete streets’ intent is to view all transportation improvements as opportunities to create safer, accessible streets. Under this approach, even small projects can be an opportunity to make meaningful improvements. In repaving projects, for example, an edge stripe can be shifted to create room for cyclists. In routine work on traffic lights, the timing can be changed to better accommodate pedestrians walking at a slower speed. A strong complete streets policy will integrate complete streets planning into all types of projects, including new construction, reconstruction, rehabilitation, repair and maintenance.³

³ www.completestreets.org/changing-policy/policy-elements.

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Appendix D Bicycle Parking Facilities



Bicycle parking is an important part of a bicycle plan. It provides security for bicycle users at their destinations. Both the type of rack and where racks are located must be considered when providing these facilities. Parking for bicycles can be either long-term or short-term.

Long-term parking is needed at employment centers and transportation terminals to safely store bicycles for several hours or days at a time. It must be fully protected from the weather, and enclosed in a secure space. This type of facility generally includes lockers, storage rooms, or fenced areas with restricted access.

Short-term parking, provided by racks, is the most frequently used form of bicycle parking. It is needed at commercial and recreation centers and at schools, libraries and other similar facilities. It should be as close to the destination as possible. At least some short-term bicycle parking should be protected from the weather (a portion can be unprotected, since demand tends to increase during dry weather), and it should be visible to by-passers to discourage theft.

A good bike rack will support the bicycle by its frame at two points. It should prevent the wheel of the bike from tipping over, and it should provide for the frame and one or both wheels to be secured. An inverted “U”, an “A” or a Post and Loop rack, also known as a Post and Ring rack are acceptable options. Another option is artistic bike racks that combine form and function. This concept works well in municipal areas as a venue for artwork. Comb, Wave, and Toast racks, which are frequently used, are discouraged because of the potential of damage to the bike, and their inability to properly support bikes without kickstands. The location of the rack area in relation to the building it is serving is very important. Racks should be located as close as possible to the entrance without impeding access to the building. Efforts should be made to locate them closer than the nearest automobile parking space, and they should be visible by passersby. Racks located away from the entrance are perceived to be vulnerable to tampering or theft, and they tend not to be used by most cyclists. In addition to proximity to the entrance, the location should provide for adequate room for the cyclist to approach, dismount, and secure their bike.

Bicycle racks and lockers must be well anchored to the ground to avoid vandalism and theft. They should be located where cycles already tend to park, or where recommended by bicycle advisory groups. Signs may be needed to indicate bike rack locations. The following factors should be considered when locating bike parking facilities:

- **Visibility** – Racks should be highly visible so cyclists can spot them immediately when they arrive from the street. They also should be visible from the building entrance it is serving. A visible location discourages theft and vandalism.
- **Security** – Adequate lighting and surveillance is essential for the security of the bicycles and the users.
- **Weather Protection** – Where possible, coverage should be provided to protect bicycles from the weather. Recommendations include using an existing overhang or covered walkway, or construction of a freestanding roof.
- **Adequate Clearance** – Racks should be located so that parked bicycles do not block the pedestrian path. Adequate clearance around the racks is required, to give pedestrian clearance and clearance from the curb or parked cars. Racks should not be placed at loading areas, near a fire hydrant, and should not block building entrances or obscure sight lines.

Rack Style Examples



Inverted "U"

One rack element supports two bikes



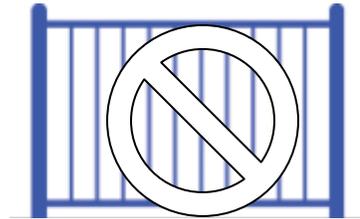
"A"

One rack element supports two bikes



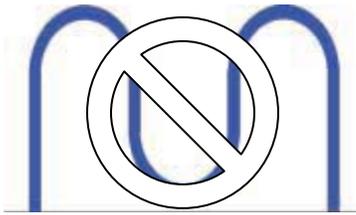
Post and Loop

One rack element supports two bikes



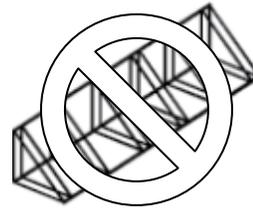
Comb

One rack element is a vertical segment of the rack



Wave

One rack element is a vertical segment of the rack



Toast

One rack element holds one wheel of a bike ⁴

⁴ Association of Pedestrian and Bicycle Professionals. Bicycle Parking Guidelines www.apbp.org

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Appendix E Education and Encouragement Programs

Bicycle Friendly Community



The League of American Bicyclists has a respected Bicycle Friendly Community program (www.bicycleleague.org). To be recognized in this program, a community must complete a detailed application that covers bike related facilities, plans, education efforts, promotion initiatives, and evaluation of work that has been completed in the jurisdiction. Awards are given in four categories – Bronze, Silver, Gold and Platinum. In Maryland, Baltimore, Bethesda, Frederick, and Rockville have achieved bronze level Bicycle Friendly Community designation. In addition, the State of Maryland received bronze level recognition in 2011. Other areas such as Annapolis have identified that they would like to achieve this goal as part of their Bicycle Master Plan strategies, and Harford County can consult with these communities and Maryland DOT for advice on receiving bicycle friendly community recognition.

The program is designed to recognize progress that a jurisdiction has made, as well as assist communities in identifying priority projects to improve bicycling conditions. The first step would be to complete the Bicycle Friendly scorecard that evaluates the five Es – Engineering, Education, Encouragement, Enforcement, and Evaluation. Harford County should consider applying for bicycle-friendly community status after several of the improvements recommended in this Plan have been implemented. This process can be used to highlight bicycling initiatives and get recognition for implementing the Bicycle and Pedestrian Master Plan

Bicycle and Pedestrian Safety/Awareness Campaign

A marketing campaign that highlights bicyclist and pedestrian safety is an important part of creating awareness about bicycling and walking in Harford County. A high profile campaign is an effective way to reach the general public, highlight bicycling and walking as viable forms of transportation, and reinforce safety for all road users.

A well-produced safety campaign can be memorable and effective. Because the Baltimore Metropolitan Council supports the “Street Smart” campaign and has utilized it in the Baltimore region since 2009, the tagline already has established some degree of recognition among County residents. Harford County, in cooperation with Healthy Harford, introduced the campaign locally in the fall of 2012 at the first annual Healthy Harford Day. Harford County will continue to promote “Street Smart” through its inclusion in the Baltimore Metropolitan Council’s 2013 campaign.



“Street Smart” promotes smart walking, driving, and cycling through public awareness and behavioral change. The program emphasizes the education of motorists, pedestrians, and cyclists through mass media and street teams that distribute information. “Street Smart” is also aimed to direct local enforcement to locations where enforcement can raise awareness of the rights and responsibilities of drivers, pedestrians, and cyclists to look out for one another on the roadway.

Bicycle Rodeo

A Bike Rodeo is a safety clinic that can feature bicycle safety inspections, safety talks, and the riding course. It is designed to provide opportunities for educating parents and children about the safety aspects of riding a bicycle on streets and roads. The goal is teach young children the basic skills needed to control their bicycle.

Because the physical ability of the children involved varies widely, a series of stations help the children develop their coordination and reflexes. Participants are usually escorted through the course by knowledgeable adult cyclists and/or police officers who point out hazards, safety tips, and explain how to apply the rules of the road. Stations can include mounting and dismounting, circling and changing direction, stopping, and slow speed control. The repetitive nature of the program – lecture followed by “doing” combined with take home materials has proven to be a very good teaching method.

Bike Share Program

A bicycle sharing program is a service where bicycles are made available for shared use. The central concept of these systems is to provide free or affordable access to bicycles for short-distance trips as an alternative to private vehicles, thereby reducing traffic congestion, noise, and air pollution. In a bike share program, users “check out” a bike and then return it to that location or another bike share station. In Harford County, Aberdeen Proving Ground, the Aberdeen Station Square, and Harford Community College are sites where this program could prove beneficial. While bike sharing systems have been cited as a way to solve the “last mile” problem by providing a means for those using transit to conveniently complete their trip to places of employment, the program can also provide options for lunchtime errands or exercise.

Bikesploration

Bikesploration is cycling-based program designed to introduce high school students to their community. The curriculum is crafted to allow students to safely explore their community by bicycle while encouraging them to become active in shaping the places they live, work and play.

Participants learn how public spaces, such as parks and streets are important to their community. They also explore the past, present, and consider the future of various public spaces through bike rides, visits to cultural resources, and mapping exercises. Instructors will encourage students to become engaged citizens and to advocate for changes they would like to see take place in their community.



Create a Commuter Program

A “Create a Commuter Program” provides basic bicycle safety education and outfitted commuter bicycles to low-income adults striving to help them connect to work, workforce development, or do other daily needs. The purpose of the program is to provide a safe active transportation option to low-income residents.

Bicycles can be donated by members of the community and refurbished with volunteer or local community support. The program can work with the County’s Department of Community Services or other local social service agencies to identify possible candidates. Candidates should complete a bicycle safety course and a commuting basics course before receiving their bicycles.

Cyclovia

Cyclovia is a Spanish word signifying the temporary closing of a road or network of streets so that they can become “open” to people for walking, running, riding their bikes, or skating. Originating in Bogota, Columbia the concept is increasing in popularity worldwide. For most events a specific day and time are set aside for the event. Locally, a cyclovia was held in Baltimore along Roland Avenue. The general goals of such an event are to promote an increased awareness of cycling and walking as acceptable and safe modes of travel on public streets, increasing awareness of neighborhood mobility, livability, and access, while providing a unique fun experience that supports healthy activities.



Harford Community College (HCC) Bike Program

College students are the ideal candidates for bicycling outreach programs, and the Harford Transit Link buses that service the campus are equipped with bike racks. As previously mentioned, HCC is an ideal site for a bike share program. With such a program, students could use bikes to travel around the campus, including the proposed west campus, as well as to leave the campus for offsite services and facilities. To improve safety, bike education classes could be added to the physical education curriculum, and bike clinics and mentoring programs could be offered in cooperation with local cycling clubs.

National Bike Month Activities

Harford County has participated in National Bike to Work Day since 2003. The annual event is held in May, and County staff welcomes morning commuters with energizing food and drinks, gifts and prizes. Participants are also able to visit a vendor area where information on services, health issues, and other bicycle related activities are presented. Part of a regional effort supported by the BMC, registered participants received commemorative tee shirts and friendly rivalries exist among the jurisdictions to have the largest number of participants. Mentors are available to lead groups from various parts of the County to the rally point. As part of the Bike to Work Day event, a bicycle parade is conducted. The parade travels through downtown Bel Air, and it is designed to draw attention to the cyclists as legitimate road users, as the route follows major commuting roadways. Also part of the event is the annual commuter challenge, a contest which recognizes the companies with the largest number of registered participants. Some years, essay and poster contests are sponsored to expand awareness of National Bike Month to the school age population.



The first National Bike to School day occurred in May 2012, and Red Pump Elementary School was the first Harford County School to celebrate the day. The purpose of the event is to build enthusiasm for biking to school and involving the community to support this option. This event can serve as the foundation for changing the built environment to become more amenable to active transportation. Teaching students safe biking skills is also an essential part of starting a bicycle program. As part of the work of Harford County's Obesity Task Force, the Board of Education is working with Harford County's Office of

Sustainability to promote more participation in this event as part of an overall effort to improve student health. Additional bike racks are also being provided to schools to encourage more ridership.

Racks with Plaques: Bicycle Rack Donation Program

Similar to a memorial brick program, the "Racks with Plaques" program would provide new bicycle parking racks by allowing the donors of the racks to be permanently recognized. The program works by providing opportunities for a donor to purchase a rack for a specific location. A dedication plaque would be attached to the rack recognizing the donor. Donors pay for the rack, plaque, and installation. The dedication plaque is an excellent way to recognize people, organizations, or businesses in the community. The racks would be a standard design and could vary in size to accommodate from two to eight bikes. While the program could be used anywhere in the County, initial efforts might be focused within the municipalities.



Safe Routes to School

The purpose of Safe Routes to School is to encourage and educate students and their parents about walking and biking to school. The program supports providing physical improvements and programs that connect the trip to school with safety, health, community and choice. Helping children walk and bicycle to school is good for children's health and can reduce traffic congestion and air pollution associated with parents driving their children to school. A sound Safe Routes to School program addresses all five of the "Es" – engineering, education, encouragement, enforcement and evaluation.

Even with improved infrastructure there will be a definite need to educate and encourage parents about the benefits of this program. Programs that teach children how to walk and bicycle safely are important. Likewise, parents, the school, and the community need to work together to ensure that children are safe as they travel to schools.

To be a successful Safe Route to School applicant and to maintain an ongoing program that supports this initiative, the County needs to involve multiple agencies. The Board of Education, the Sheriff's Office, The Department of Public Works, and the Sustainability Office need to work together to ensure that County has an organized process to apply for and implement grants associated with program.

Share the Trail Campaign

Conflicts between trail users can be a major issue on popular trail networks. Communities throughout the country have used "Share the Path" or "Share the Trail" programs to educate users about safety and courtesy. The program can be run by agencies, non-profits, or other user group. The purpose of the campaign is to educate users about expected behavior and how to limit conflicts. Volunteers often give out brochures, and they can be taught how to engage users in a non-confrontational way when witnessing non-respectful behavior. Another benefit of this program is that the volunteers can also report back to the responsible trail agency about maintenance issues or safety/security issues. Media outreach about the program should also be conducted. In addition to educational efforts, consideration should be given to hosting special events that promote considerate use or that reward good practices.

Valet Bike Parking



Valet bike parking is a service that can be offered at various events. When attending an event cyclist can leave their bike with someone who is going to keep an eye on it rather than chaining it to a post or even using racks that may not be close to the event. Valet parking not only ensures the safety of the bike, but it creates a centralized gathering point (aka social spot) for all the cyclists attending the event - this encourages people to ride. The event itself also benefits because of the decreased

demand for car parking and the organization running the valet bike parking has great exposure to the local cycling population.

Walking and Bicycling Maps/Webpage

One of the most effective ways to encourage biking and walking is through the use of maps and guides. These show where the facilities exist and where they are planned. They help to demonstrate how users

can access various services and areas of the County by walking or biking. The map should contain clear symbols and graphics. Destinations for services and attractions should be highlighted, and safety information should also be included. In addition to printed copies, the map should be available on a walking and cycling webpage.

A walking/cycling webpage will make information easier to find by placing resources in one central place. Many current and potential bicyclists and pedestrians do not know where to access information about laws, events, or groups. Such a website could contain information about local groups including clubs, racing teams, and advocacy groups, and the website should also connect to the County's bicycle mentor program.

Walking School Buses

A walking school bus is a form of transportation for school aged children. The children are chaperoned by two adults – a “driver” who leads and a “conductor” who follows. They walk to school in much the same way that a school bus would drive them. Like a traditional bus, the walking school bus follows a fixed route with designated stops and pick up times. A walking school bus can be as simple as two families taking turns walking their children to school or it can be neighborhood based using a rotating schedule of trained volunteers.



Because parents often cite safety issues as a reason their children cannot walk to school, providing adult supervision may help to reduce these worries for families that live within walking or bicycling distance to school. This program can raise awareness of how walkable a community is and where improvements can be made. The program also offers other benefits such as encouraging physical activity while teaching children safe walking skills.