

Destinations

Ideally, the design of communities should provide and encourage pedestrian and bicycle access to all destinations. The eastern Baltimore County area was developed with very limited accommodation for bicycles, and sporadic accommodation for walking. Retrofitting the area with bicycle facilities requires careful planning to link major destinations together into a regional bicycle framework that can be built upon over time. The approach for improving pedestrian facilities is somewhat different since walking is by nature a more local activity, and a regional network is not warranted. For the pedestrian system, specific locations needing improvements are targeted.

During the workshops, and through the web survey, citizens were asked to identify the important destinations that they would like to reach by walking or bicycling, and that have problems or need improvement. These destinations could be for any kind of trip, recreational, utility (such as running errands), or commuting. They could be places where the citizen currently walks or bikes, or places where they would like to walk or bike if the proper facilities were present. They could consider trips for themselves, or for other family members.

Examples of destinations include schools, work, parks, places of worship, libraries, post offices, regional shopping centers and malls, or more locally oriented commercial establishments such as convenience stores, pharmacies, or video stores.



Citizens identified a variety of destinations where pedestrian or bicycle access could be improved including numerous parks, schools, and shopping areas.

The most common destinations reported by the workshop participants were local parks, schools, and shopping areas. Many participants were interested in creating a bicycle network where access to all areas of the county by bicycle would be possible.

Barriers to Walking and Bicycling

Citizens were asked to identify the specific problems they encountered when walking or bicycling in their communities. They were asked to report three or four of the most problematic conditions that made the trip unsafe, inconvenient, or that prevented them from walking or biking.

Pedestrian Problems

No Sidewalk: This was the most common problem reported by citizens. In many locations, a sidewalk had not been constructed, had been constructed on only one side of the street, or was constructed only partially, with significant gaps along the route.

Lack of space for a sidewalk: In a number of locations, not only was a sidewalk lacking, but the right-of-way ended at the road paving edge. Constructing a new sidewalk would entail procuring additional right-of-way or an access easement. Because of the presence of existing development, relocation or removal of utilities, trees, fences, mailboxes and the like would complicate the improvement. Adjacent property owners may object to the diminished use of their property.

Lack of crosswalks or pedestrian signals: Another common problem identified by citizens was the difficulty in crossing roads with heavy traffic. Many busy intersections were lacking crosswalks and pedestrian signals altogether, or had them on only half of the intersection.



The absence of continuous sidewalks was the most common problem reported by citizens.



Two other problems with existing pedestrian facilities that were noted by citizens were lack of right-of-way for accommodating walks, and difficulty in crossing busy roads.

Poor paving condition: The condition of the paving in some areas can make walking hazardous. In some cases, improper drainage contributed to the poor condition of the walking experience.

Obstacles: Very often, obstacles such as telephone poles or fire hydrants block the walkway and make walking uncomfortable, particularly with strollers or wheelchairs. While citizens recognized this as a problem in general, they did not comment that the presence of obstacles had an impact on their ability to walk to their destinations.

Bicycling Problems — On-Road Facilities

Inadequate area: The most common problem cited by citizens concerned the fact that there were few areas where they felt comfortable riding a bike. Most people were not comfortable riding on the roadways in their present conditions. Some felt the addition of bicycle lanes would encourage them to bicycle. Others would prefer off-road facilities.

Too much traffic: This was the most cited reason for people not to use county roadways for bicycling. Even the most experienced on-road bicycle riders noted particular routes as ones they avoid because of heavy traffic.

Narrow bridges, Interchanges: Overpasses and bridges over streams are expensive to construct, and usually are the minimum width needed to accommodate vehicle traffic lanes with no extra area for shoulders. Interchanges can also be a deterrent to



Poor paving conditions and obstacles in the walk discourage their use.



Many citizens do not feel comfortable riding bicycles on roads because of traffic, lack of space, or lack of experience.



On-road bicyclists encounter a number of problems including (clockwise from top) high-speed merging vehicles, lack of bicycle parking at the destination, and unsafe storm drain grates.

bicycle riders as traffic exits the ramps at fairly high speeds, not expecting to encounter bicycles in the roadway. While there was general agreement that bridges and overpasses presented problems for bicyclists, no specific areas were identified.

Storm drain grates: The presence of unsafe storm drain grates was cited as a general problem throughout the area. These are the older grates with bars running parallel to the road, creating slots that can easily catch a bicycle tire and throw the rider off the bike.

Secure bicycle parking: While not a deterrent to bicycle riding in general, several citizens noted that major destinations did not provide bicycle racks, and that secure parking at major destinations should be a component of any bicycle improvement.



Local trails are extremely popular, including the No. 8 & 9 Rail Trails in Catonsville (top), the North Central Rail Trail in northern Baltimore County (middle), and the B&A Trail in Anne Arundel County (bottom).

Shared Use Trails

A number of the citizens at the workshops said they would like to have shared use trails, both for walking and bicycling. These off-road facilities are generally more conducive to encouraging walking and bicycling as a recreational activity, but many said they would use trails adjacent to roads for transportation purposes as well. Since they are separated from traffic, they are more comfortable for younger riders and less experienced riders. Experienced riders generally preferred to bicycle on the road because they are able to get to their destination more directly and maintain a higher speed.

In general, the kinds of problems associated with new trail development include:

Not conveniently located to origins and/or destinations. If the trail follows an existing stream, utility or abandoned right-of-way corridor, it may not connect residential areas with potential destinations.

Perceptions that there will be increased crime and lack of privacy, and an associated decline in property values. Efforts to convert stream valleys, abandoned rail lines or utility corridors in this area, as well as around the county, frequently encounter intense opposition from adjoining property owners when first proposed. Experience has demonstrated, however, that once in place, communities embrace trails. Many trails have citizen organizations that manage and improve the trails with beautifica-



Examples of trails successfully integrated with developed areas exist locally and nationally.

tion projects. The trails become so well used that crime is not a significant problem. Proximity to trails becomes a selling point for nearby residential properties, and property values increase.

Dave Dionne, Superintendent of Trails for Anne Arundel County, notes that the presence of the B&A Trail, which traverses commercial and residential development, is seen as a major quality of life component in the community. When the trail was first built, adjacent property owners quickly put up fences to shut out the trail. A few months later, doorways began to appear in the fences as the property owners wanted their own access to the trail. Now, adjoining neighborhoods clamor for trail extensions to connect their communities to the trail. Houses along the trail have increased in value significantly. When the occasional property goes on the market, it is snapped up within days.

That being said, careful planning for an off-road trail is necessary. Designing the trail must include substantial input from the neighboring property owners and community associations. Sections of the trail should be built in phases and with appropriate access points to promote its use while providing for the privacy of adjacent property owners.

Types of Improvements

Pedestrian Improvements

Improvements for pedestrians can take a number of different forms, from basic construction of sidewalks to features that make walking more comfortable.

New construction: The most common improvement that is needed is to simply construct sidewalks. New construction can be complicated by existing utility poles and other development or when adequate right-of-way is lacking. Creative approaches may be warranted when planning for new walkways, such as narrowing the roadway to accommodate a sidewalk, placing markings on a roadway as a pedestrian “lane,” or acquiring a walkway easement across private property.

Variety of paving materials: When designing new walks, the type of paving material to be used should be given consideration. While concrete is likely to be the most cost effective, a more decorative paving such as brick or colored concrete may add extra visual interest in special locations. In a more naturalistic environment, an asphalt material may be appropriate.

Curb ramps: All new construction will include curb ramps in accordance with federal regulations. However, there are still numerous existing sidewalks in the county that lack curb ramps. These areas should be addressed systematically.



Walks can be constructed of a number of different materials, including: standard concrete (top), a more naturalistic asphalt (middle), or colorful brick (bottom).

Medians: Providing medians with pedestrian refuges is an approach to make crossing wide, heavily trafficked roads safer. Medians are also useful for traffic calming (see next page).

Crosswalks: Pedestrian crossings may be marked with reflective material or paint, or, in some locations, it may be desirable to use a specialized material or color. New materials are available to stamp and color markings in asphalt, which can be used to create a distinctive, richer visual appearance. The Maryland State Highway Administration Another is testing another approach--a flashing light mechanism similar to airport runway lights that is triggered when a pedestrian is in the crosswalk.

Pedestrian traffic signals: A number of pedestrian traffic signaling devices are available, including the standard “Walk/Don’t Walk” sign. Pedestrian push-button devices activate the “Walk/Don’t Walk” sign and extend the amount of time the walking signal remains on, giving the pedestrian more time to cross the road. Newer devices that are available include audible signals and count-down signals that display in seconds the amount of time available to cross the road before the “Don’t Walk” sign is activated.



A median offers a pedestrian refuge at the center of a wide street (top, left), paint and stamping is used to dress up a crosswalk (top, right) and, brick pavers are used to accentuate curb ramps (left).



Pedestrian crossing signals count the seconds remaining to cross the street are available (top), as well as push button devices that activate the crossing signal and extend the crossing time (right).





Long straight stretches of road encourage speeding, which creates an uncomfortable environment for walkers and bicyclists (top, left). Interspersing roundabouts (top, right), crosswalks (bottom), or other traffic calming devices slows down motorists' speeds and encourages walking and bicycling.



Providing amenities such as benches supports pedestrian activity.

Traffic Calming: Cars speeding down roadways create an unpleasant pedestrian environment. Very wide or long, straight roads entice drivers to speed. Providing obstacles, such as roundabouts or medians, induces a “calming” effect, as drivers must slow down to maneuver through them.

Intra-block crossings can double as traffic-calming devices. This involves using curb bump-outs and small medians to narrow the travel lane of the vehicles, and the amount of area where the pedestrian is exposed to moving traffic.

Pedestrian Amenities: Street trees, lighting, benches, trash receptacles and bus shelters should be incorporated into all pedestrian improvements as appropriate to support and encourage pedestrian activity. Street trees provide shade during the summer. Additionally, trees have a calming effect on traffic speed, which also makes the environment more pleasant for pedestrians. Benches and trash receptacles should be placed strategically where people are likely to pause to rest or wait for transit. Adequate lighting should be provided for all pedestrian routes along streets, and in other locations, such as parks, where night-time use occurs.

Bicycling Improvements

There is a variety of roadway improvements that can be made to accommodate bicycles. Which improvement is most appropriate will depend on the available width of the roadway, the amount of traffic and the level of bicycle use anticipated.

Under Maryland law, bicycles are vehicles that may operate on any road that is not an expressway or otherwise prohibited. Bicycles are not permitted on roads where the posted speed is more than 50 m.p.h., but riding on the shoulder is permitted. Bicycles must use shoulders or bike lanes where they are present, except to make left turns or to avoid obstacles.

While the current law gives bicyclists the ability to operate on most of the roads in Baltimore County, the design of the roads, high traffic levels, and prevalent attitudes of motorists tend to discourage the use of roads by bicyclists. To encourage bicycle use, a higher level of bicycle accommodation is needed.

The American Associations of Highway and Transportation Officials' *Guide to the Development of Bicycle Facilities* and the Federal Highway Administration's report "Selecting Roadway Design Treatments to Accommodate Bicycles" provides guidance on the planning and design of bicycle facilities. These references are used in this plan's recommendations.



Types of on-road bicycle improvements (clockwise from top left): Bike route signs, shoulder, wide curb lane, and bicycle lane

Bike route signs: The easiest improvement to make is installing signs, marking the roadway as a designated bicycle route. Bicycle route signs should be accompanied by markers identifying the destinations of the routes. The route signs encourage bicycle ridership and also indicate to motorists that bicycles are likely to be present on the road, and that they should modify their driving behavior to accommodate them.

Widened curb lanes: Extra paving width is provided in the traffic lane adjacent to the curb to accommodate bicycles. It allows for bicycle accommodation on roads at a lower cost. Many experienced bicyclists prefer this type of accommodation because it gives them the same maneuvering ability as any motorized vehicle on the street. Not marking a bike lane also allows cars to move across the whole lane (when bicyclists are not present), creating a sweeping motion that helps keep the bicycling area free of debris.

Shoulders: Generally provided as an emergency pull-off for motorists, shoulders double as bicycle lanes. Because shoulders tend to become cluttered with litter, gravel, etc., it is important to keep them clear if a shoulder is intended to be used by bicycles.

Bicycle lanes: Marked on each side of the road for the exclusive use by bicycles, bicycle lanes are typically 5 feet wide. There is much debate over the benefits and problems of striping bicycle lanes. There has not been any conclusive research that striping a bicycle lane improves safety for bicyclists on the road. It does, however, encourage greater bicycle use. Having marked lanes



Examples of bicycle lanes: one with a parking lane (top), and one without (middle). When parking needs are few and traffic is light, a parking and bicycle lane can be combined, as was done on Edmondson Avenue (bottom).

instills confidence for the rider that he/she is allowed to be on the road. However, there is also a concern that striped lanes could encourage children and less experienced bicyclists to ride on busy roadways in an unsafe manner. It is likely that bicyclists will need to mix with vehicle traffic at intersections, and may need to cross several lanes of traffic to make a left turn. It is useful to note that in areas of the country that have a large number of bicycle riders, such as San Diego, Portland, and Denver, citizens desire bicycle lanes on roads with higher levels of traffic. This desire was also expressed by Baltimore County residents at the workshops as a way to encourage more bicycle ridership. Providing bicycle lanes should be accompanied with an educational and enforcement program that clarifies the risks and responsibilities for both bicyclists and motorists.

Storm drain grates: Newer storm drain grates are configured to be safe for bicyclists. When replacing the older, unsafe grates, the area around the grate may need to be regraded to remove severe depressions.

Secure bicycle parking: Bicycle racks are available in several different styles, and are among the cheapest and easiest bicycle improvement that can be made. For long term bicycle parking, such as at park 'n rides, transit stops or places of employment, bicycle lockers are the best option.

Bike lanes can make roads wider; however, the lane striping and a landscaped median can minimize the visual effect of the extra paving.



A bicycle-safe storm drain grate (top) and bicycle parking (bottom) are two improvements that support bicycling.

Shared Use Improvements

Shared use improvements can take several different forms. Trails can be paved, usually with asphalt, or gravel. Trails through sensitive environmental areas may be constructed as boardwalks.

Generally, trails are built through natural areas and parks, which offer a pleasant experience for the user, but often don't connect to many destinations. Occasionally, trails are built adjacent to roadways. While these trails are more attractive than bicycle lanes to children and less experienced adults, there can be safety issues for this type of trail. One problem is the difficulty for bicycle users in crossing intersections. When a trail is itself crossed by driveways, there is a greater chance that drivers will not expect fast-moving bicycles from both directions as they cross the pathway.



Trails integrated into communities in a number of ways: a trail paralleling a roadway (top), a trail along a stream valley (middle), a trail in a park.

Looking for Opportunities

Retrofitting pedestrian and bicycle facilities into existing development can be difficult when land is not available to accommodate them. In addition to identifying where facilities are needed, citizens at the workshops were asked to suggest areas where opportunities to provide facilities might be available.

Similar to other suburban locations throughout the country, many state and county roads have been built with very wide cross sections. With the current trend toward more narrow streets and traffic calming, the potential exists for restriping roadways to reduce the travel lane for cars from the average of 12' wide to a minimum of 10' wide, and using the extra paving area for bicycle lanes or a widened curb lane. This type of accommodation can be done with minimal expense.

Where concrete or grassed medians exist, their widths may also be reduced to create extra surface paving for bikes. This is a more expensive solution, but the bikes are accommodated within the existing right-of-way. If the right-of-way must be widened to accommodate either bicycles or walkways, the expense is likely to be prohibitive. In addition to the cost of acquiring the land, it is likely that utility poles, storm drains, fire hydrants, driveway aprons, and numerous other items will need to be relocated or reconstructed. However, if a road widening is planned to accommodate vehicular traffic volumes, it should include appropriate bicycle and pedestrian facilities.



The computer enhanced photograph on the bottom illustrates how bike lanes can be striped on wide roadways. Adding the striping also narrows the area available to motorists, acting as a traffic calming measure.



Utility corridors can provide opportunities to construct shared use trails. Sometimes, however, the utility company does not own the land.



Stream valleys present another possibility for shared use trails, depending on the steepness of the surrounding terrain and the difficulty of getting across intersecting roads.

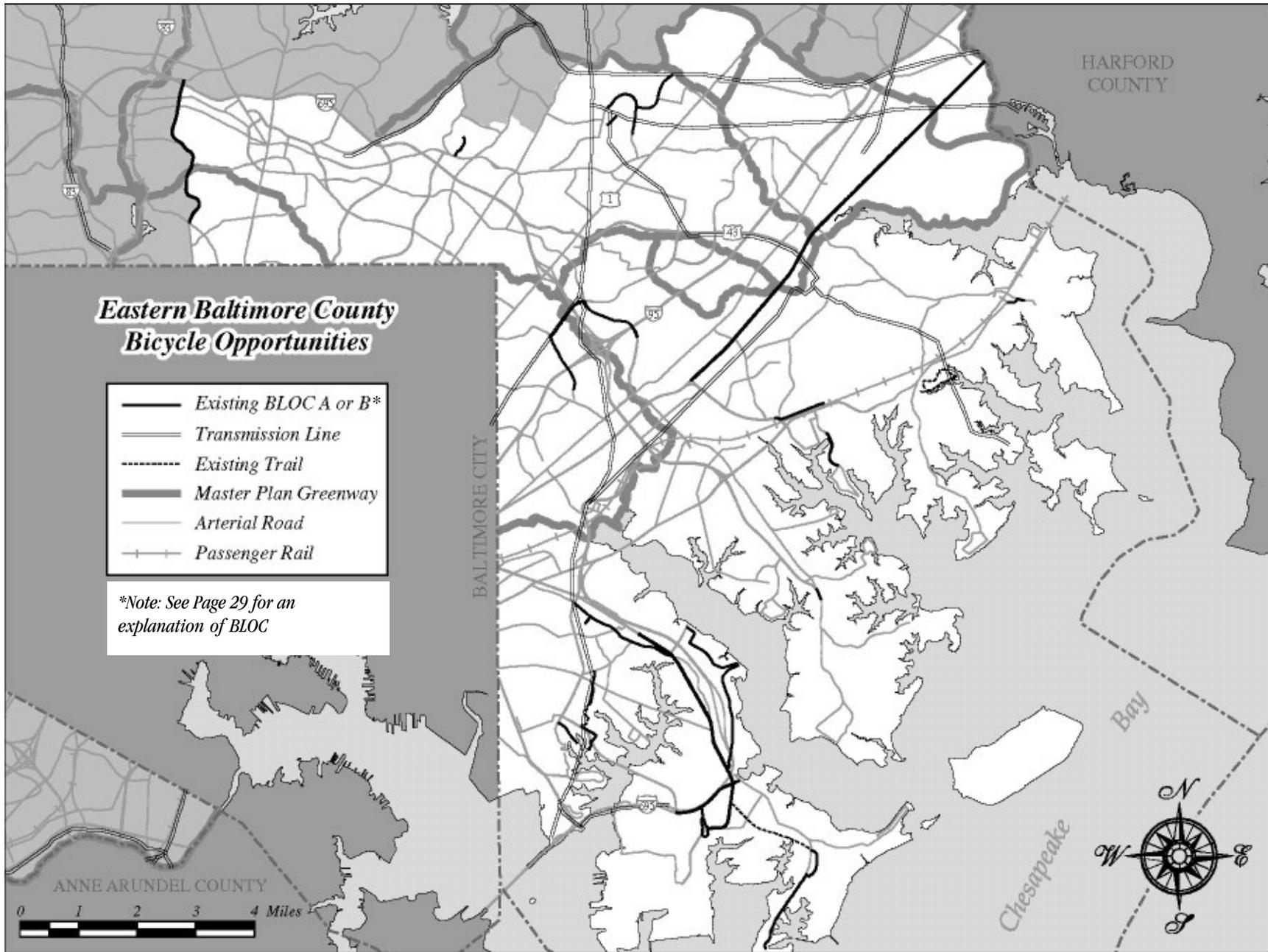


Off-road shared use trails are among the most difficult facilities to retrofit into existing development. The *Baltimore County Master Plan 2010* designates some stream valleys for future development as recreational trails (see map, next page). Existing trails in Baltimore County have been constructed on abandoned rail lines (Northern Central Rail Trail, and the No. 8 and No. 9 trolley line trails in Catonsville) or within parks such as the Eastern Regional Park.

In the study area, streams and utility transmission lines were examined for their potential to provide linear corridors for trails. In many instances, it was found that the corridors frequently crossed roadways at dangerous locations for bicycles and pedestrians, or that the topography was impassable. Additionally, the property along the stream or under the transmission lines can be owned by private parties, so land or easement acquisition is an issue.

There are several locations that appear promising, however, for portions of stream valleys or utility right-of-ways to be used within a trail network. The most extensive of these is the potential to follow the Gunpowder Falls through the Gunpowder Falls State Park, creating a trail system that would encircle the north and east plan area and link Dundee-Salt peter Park with Loch Raven Reservoir and Cromwell Valley Park.

The Minebank Run stream valley also appears promising for the development of a shared use trail. A trail adjacent to the stream would link Loch Raven High School with Cromwell Valley Park and Loch Raven Reservoir. It would also provide an alternative route for bicyclists on the scenic but hazardous Cromwell Bridge Road.



White Marsh Run between Walther Boulevard and the White Marsh Mall also looks promising as a potential route for a shared use trail. The trail could join with a combination on-road and offroad bicycle route following Campbell Boulevard, linking the mall with the county's waterfront area.

Three potential vacant or underused road rights-of-way have been identified as having potential as shared use trails—Leland Avenue, Walther Boulevard and Gunview Road. An abandoned rail line paralleling North Point Road formerly owned by United Railway and Electric may also provide an opportunity for a trail. Much of this right-of-way is now part of North Point State Park.



The Leland Avenue right-of-way paralleling the Amtrak line could be improved for a shared use trail. An extension of the right-of-way along the railroad through undeveloped properties could link to Eastern Regional Park.

East Coast Greenway

A final consideration of this plan is the potential for providing a link for the East Coast Greenway. The East Coast Greenway is a concept being promoted by a national non-profit organization, the East Coast Greenway Alliance, formed in 1991. Their goal is to link existing and planned trails to make a contiguous spine route between cities along the east coast from Maine to Florida. The 2,600-mile greenway will be an urban equivalent of the Appalachian Trail, linking urban areas that showcase the nation's industrial, intellectual, and cultural past.

The trail would be used by local residents to travel short distances from their homes to local points of interest, as well as tourists who would travel the trail for a few days or even weeks. Having this long-distance pathway linking major east coast cultural centers has the added benefits of encouraging ecotourism and adventure travel, stimulating local economic development, and providing cultural and historical education and enrichment. The East Coast Greenway will be heavily marketed by the East Coast Alliance as a tourist attraction. The proximity of the historic and cultural resources in the Baltimore-Washington area is likely to make the region a major destination of trail users.

Once a trail is designated as part of the East Coast Greenway, the East Coast Greenway Alliance will provide identification signs



and monitor trail conditions to ensure consistency in trail quality. However, each trail remains locally owned and managed.

The East Coast Alliance is a source of funding for trail facilities. Additionally, the ECG qualifies for funding through several federal programs including the Transportation Enhancement, National Scenic Byways, and Chesapeake Bay Gateway programs. The greenway has the political support of 23 senators representing the states along the eastern seaboard, including Senator Paul S. Sarbanes (D-MD).

So far, about 20% of the 2600-mile greenway is open for use. Sixty-five individual trails have been designated in 25 states. The goal of the alliance to have 80% of the greenway designated as off-road trails by 2010.

The officially designated segments of the East Coast Greenway in Maryland include the Gwynn's Falls Trail in Baltimore City, Anne Arundel County's BWI Trail (circling BWI Airport) and the Baltimore and Annapolis (B&A) Trail, the Colonial Annapolis Maritime Trail, and Prince George's Trail System, including part of the Washington, Baltimore and Annapolis (WB&A) Trail.

The East Coast Alliance is looking at other potential routes that would tie the existing trails together and provide linkage from Delaware or Pennsylvania to the north and Annapolis to the south (see map on page 28). The Route 40 corridor through Harford and Baltimore counties and Baltimore City is the most direct route



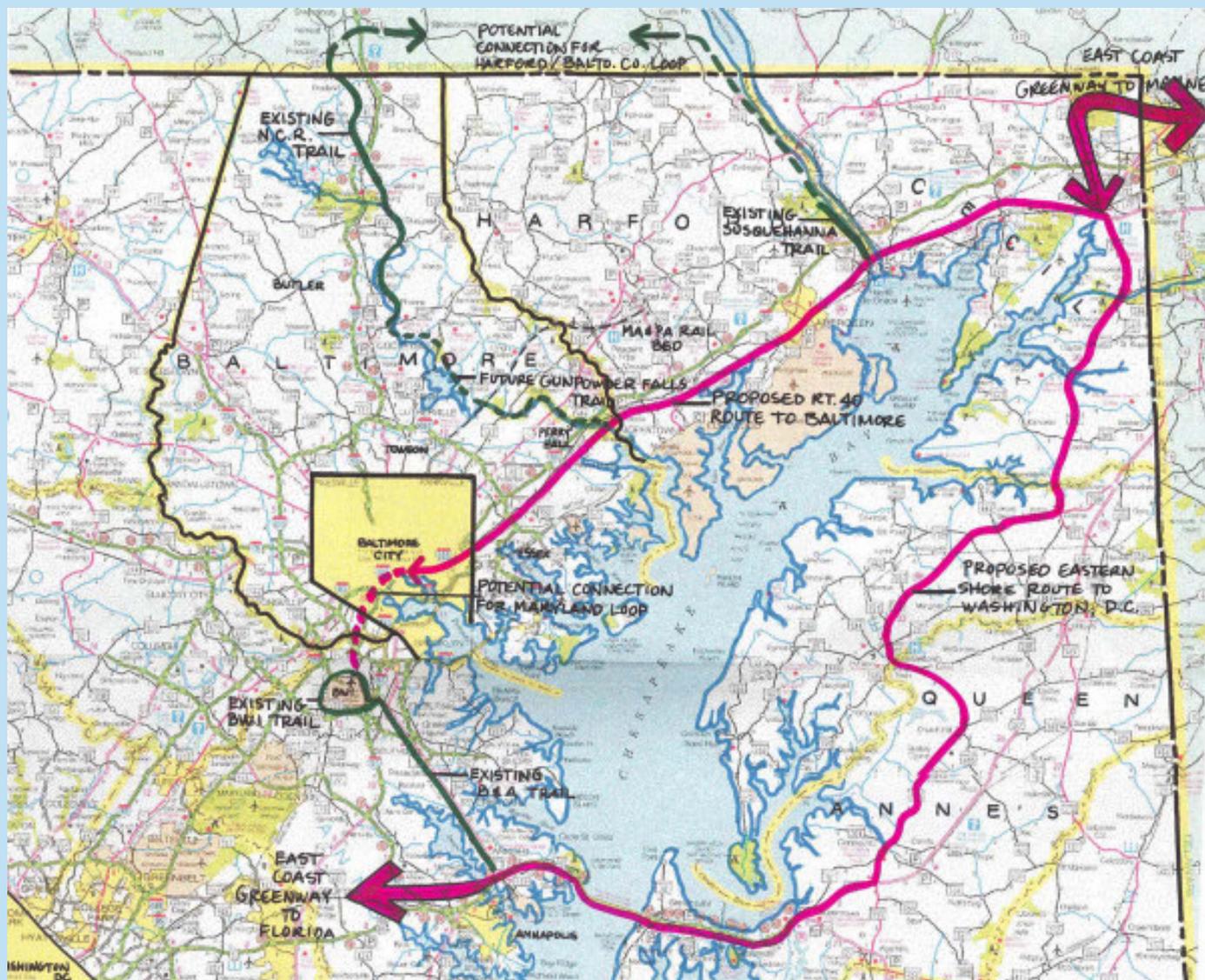
Designation of Maryland Route 40, with its wide shoulders, as a link in the East Coast Greenway will provide access to the cultural and recreational resources of Baltimore County for the trail users, and economic and other benefits for county businesses and residents.

under consideration. The visual character of the corridor is less than ideal in some areas, but new development and redevelopment is likely in the future which will improve the area's visual quality. Route 40 can provide a gateway into the Gunpowder Falls State Park, which could link to Loch Raven Reservoir and the North Central Rail Trail, the waterfront areas of Baltimore County, and the historic resources at North Point and Essex/Middle River (including Martin Marietta Aviation Museum). Additionally, the Maryland State Highway Administration is already in the process of marking the road's wide shoulders as a bike lanes.

Another ECG route under consideration is one that traverses the Eastern Shore, crossing the Bay Bridge to Annapolis, and bypassing both Baltimore County and Baltimore City. A third route would

utilize the Baltimore County's North Central Trail, linking to Pennsylvania to the north and the City's Jones Falls Trail to the south. Possibly, the eastern shore route could be combined with one or both of the other routes, thereby providing the opportunity for week-end or week-long visitors to complete a Maryland loop that would provide access to a wealth of scenic, historic and cultural experiences associated with the Chesapeake Bay.

Also under consideration is a route following the Maryland and Pennsylvania (Ma and Pa) rail line through northeastern Baltimore County and Harford County. The old railbed is still visible in many of the areas the railroad once traversed. Further study is needed to determine whether enough of the rail access rights still exists to make a rail to trail conversion feasible.



Opportunities for an East Coast Greenway route through Maryland include Route 40 through Baltimore County and Route 213 through the Eastern Shore. Designation of both routes would provide a Chesapeake Bay loop that could be marketed as a tourism destination.