

## CHAPTER 4 Implementation

The countywide system of bikeways will be developed and enhanced incrementally in a number of ways, including:

- 1) Through subdivision review/dedication, in which a developer constructs a master planned facility (e.g., shared use path along Observation Drive);
- 2) In conjunction with roadway and sidewalk improvements, in which the county or state builds or provides a bikeway as part of the project scope (e.g., shared use path along Norbeck Road extension; bike lanes on Old Columbia Pike);
- 3) As independent "retrofit" bikeway projects programmed and funded through the County's CIP (e.g., Wayne Avenue Green Trail); and
- 4) Minor "spot" improvements through DPWT's Annual Bikeways Program (i.e., filling in gaps in the bikeway network).

### Prioritization

Countywide Bikeways are organized into two broad categories of prioritization: High Priority/Short Range and Moderate Priority/Long Range. Table 2-2 identifies the recommended category for each bikeway along with other information. The criteria for determining bikeway priorities are described in detail below.

Land use patterns, development and transportation policies, funding sources and overall transportation needs are all in a constant state of change. Therefore, this plan recommends that the countywide bikeway priorities be evaluated and adjusted as necessary by the Planning Board, County Council and County Executive every two years. Montgomery County Department of Park and Planning would be responsible for initiating this process.

The following describes how routes were evaluated and placed in the high or moderate priority category.

#### *High Priority/Short Range (within 10 years)*

Bikeways in this category provide critical links to major destinations, often serve both recreational and transportation purposes and have the potential to serve a large number of residents. They could be implemented within the next ten years and do not have any potential major obstacles such as requiring additional right-of-way or easements or relocating utilities. Bikeways in this category also may:

- Provide a direct connection, or are part of a safe route, to a transit station, municipality, central business district or employment center;
- Be implemented as part, or a logical extension, of a road, intersection or streetscape improvement project;
- Correct an existing unsafe bicycling condition (where current bicycling conditions are obviously dangerous or where a bicycle accident record exists);
- Fill in or complete a major gap along a countywide bikeway;
- Require only signage improvements (e.g., signed shared roadways).

Evaluation of projects grouped in the high priority category will be based on the above criteria, although other considerations may influence the timing and order of bikeway development. In addition, lower-priority projects from this plan, or local/neighborhood level bikeways recommended in community master plans and sector plans, may be added to the high priority category in the future should land use pattern change significantly, political and fiscal priorities shift significantly, and other reasons determined by the planning board.

The county can take advantage of opportunities outside the list of priorities. For example, it may be possible to add a bikeway to the scope of another transportation project if the county has adequate right-of-way to accommodate it. Another example would involve requiring a shared use path along a local/neighborhood road as part of subdivision approval. This plan does not preclude any efforts to augment the countywide bikeway network through such opportunities.

It is also important in the High Priority/Short Range category to implement improvements for bicycle travel outside the purview of existing bikeway funding programs. For example, the county features a number of funding programs designed to improve pedestrian or motor vehicle safety. These programs also can enhance the safety of bicyclists. Examples include the county's Annual Sidewalk Program, the Sidewalk and Infrastructure Revitalization Program and the CBD Streetscape Improvements Program. The county's Department of Public Works and Transportation (DPWT) is responsible for identifying potential bikeway safety improvements as part of projects funded under these categories.

**RECOMMENDATIONS:**

- Projects in this category should be initiated within ten years.
- With the exception of SHA-initiated projects, the County Executive and the County Council should determine whether bikeways appear in the CIP as separate projects, as part of the Annual Bikeways Program or as part of a scheduled or proposed road improvement or other transportation project.
- All bikeways should be constructed in accordance with design guidelines outlined in chapter 3 of this plan, as well as any other recommended guidelines from the AASHTO Guide and the MUTCD.
- All signed shared roadways identified as part of the countywide bikeway network (key local connectors, bikeways in the agricultural crescent) are

included in this prioritization category (except those for which shoulders are needed) and should be signed as bike routes within 10 years of plan adoption.

*Moderate Priority/Long-Range (10 years +)*

Bikeway recommendations in this category should proceed after the high-priority bikeway connections to transit, activity and employment centers have been constructed or are at least in the facility planning process. Emphasis in this category is placed on constructing countywide bikeways that do not necessarily connect directly to transit, activity and employment centers, but still provide critical links in the overall countywide bikeway network. These bikeways often will involve a high degree of complexity as a result of being coupled with a long-range transportation improvement project (Georgia Avenue shared use path, part of busway study). Bikeways in this category also may:

- Require substantial investments in ROW acquisition (MacArthur Boulevard bike lanes)
- Require substantial investments in utility relocation, such as moving utility poles (Franklin Avenue shared use path)

**RECOMMENDATIONS:**

- Projects in the moderate priority category should begin facility planning and/or construction within 10 to 20 years.
- With the exception of SHA-initiated projects, the County Executive and the County Council should determine whether bikeways appear in the CIP as separate projects, as part of the Annual Bikeways Program or as part of scheduled or proposed road improvement projects.
- Bikeways should be constructed in accordance with design guidelines outlined in chapter 3 of this plan, as well as recommended guidelines from the AASHTO Guide and the MUTCD.

## On-going Implementation - Local/Neighborhood Bike Routes

The plan acknowledges and incorporates all approved and adopted local and neighborhood shared roadway bikeways in community and sector master plans. When combined, these plans identify hundreds of miles of shared roadways along neighborhood streets and residential primaries. For those shared roadways not specified under this plan, an on-going program to install bike route and/or Share the Road signs is recommended.

In 2002, DPWT hired a consultant to study and develop a bike route signing program. The final report, produced in April 2003, found 123 bike route signs currently posted throughout the entire county. The report suggests guidelines from which all Montgomery County bike route signage plans should be based. It identified 34 priority routes for improved signage. The majority of these routes are identified in this plan as Countywide Bikeways. The report does not address local or neighborhood bikeway signing needs, however.

A major outcome of the report is a GIS database that provides DPWT with an interactive medium through which sign installations, orientation, location and condition may be monitored and enhanced over time. This is important because the origin, or date of installation, for the majority of the 123 signs is unknown. This database will allow the county to better track bike route signing efforts in the future.

### RECOMMENDATIONS:

- Local/neighborhood shared roadways should continue to be signed as part of the county's Annual Bikeways Program. The DPWT Bikeway Coordinator, in consultation with the M-NCPPC bikeway planner and the Montgomery County Bicycle Action Group, will prioritize the bike routes to be signed annually. Criteria used to determine priorities are outlined below. All signs should conform to standards specified in chapter 3 and to MUTCD standards and AASHTO Guide recommendations.
- DPWT should consider developing two different bikeway signing programs: 1) local or neighbor-

hood bikeways; and 2) Countywide Bikeways. The local bikeway signing program would focus on way-finding and directional signs, helping bicyclists find local destinations, mostly along shared roadways on local streets. The Countywide Bikeway signing program would focus on mostly on warning, regulatory and directional signs along the major bikeway corridors, but could include directional and way-finding signs as necessary.

Criteria for determining implementation priorities for local bike routes include:

- Generally requires only minor improvements, such as bike route and directional signs;
- Is part of a route that connects to a transit station;
- Is part of a route that connects to a municipality, CBD, or town center;
- Is supported by majority of residents in community through which the bikeway passes.

## Funding for Bikeways

Implementing the nearly 600 miles of bikeways identified under this plan--some existing, some planned, some newly proposed--will require considerable financial investment by the county, state and others. The county will not only need to increase the amount of funding for planning, engineering and design, it also will need to increase funding for routine and systematic bikeway maintenance as well as basic roadway maintenance. Additionally, this plan urges the county to consider developing a bicycle safety education program and enhancing bicycle promotional efforts (described in Chapter 5), each of which would have ramifications for the county's operating budget as well. These costs could be offset by reducing the need or urgency for roadway projects.

Putting a price tag on this plan is difficult if not impossible. First, a critical element in estimating bikeway costs is right-of-way: how much is owned by the county or state and does additional ROW need to be acquired? These questions can only be answered during initial project planning. Second, bikeways are implemented in

numerous ways. Short segments will be built by developers as part of land development projects, segments will be built by the State Highway Administration as part of planned improvements for state highways or interchanges, segments will be built or provided by the county as part of county road improvements, and segments or entire bikeways will be built as part of independent projects. Furthermore, the county's Annual Bikeways Program will be continuously implementing local bikeways and developing small projects along Countywide Bikeways to fill in gaps, provide needed connections and correct small problem areas to improve bicycle safety.

### *Estimating Bikeway Costs*

Nevertheless, it is useful to have a basic understanding of current costs related to straightforward bikeway construction and implementation. The following calculations are estimated average cost per mile for engineering, design and construction for bikeways implemented by the DPWT. The calculations do not include costs associated with unforeseen land acquisition, utility relocation or other major issues. These issues can increase the overall project costs by a significant factor.

#### **Shared use paths**

- Major projects = \$2.1M per mile (includes Phase I & II Facility Planning, Final Design, Construction and Construction Management).
- Minor projects = \$50-\$150 per linear foot

#### **Bike lane**

- \$3,500 per mile (signing only; includes signs, posts and labor). Bike lanes are often part of the scope for larger roadway improvement projects, therefore comprehensive estimates are not available.

#### **Signed shared roadway**

- \$3,500 per mile (signing only; includes signs, posts and labor)

## Understanding Bikeway Implementation

With the exception of dedication of bikeways by developers as part of subdivision and land development, the county and the state are both responsible for implementation. The county primarily implements bikeways through its Capital Improvements Program (CIP), while the state primarily implements bikeways through its Consolidated Transportation Program (CTP).

### *Montgomery County*

The county implements and provides funding for bikeway improvements through its CIP. County code requires that every two years the County Executive submit a comprehensive six-year program for capital improvements to the County Council. The CIP includes a statement of the objectives of capital programs and the relationship of capital programs to the county's long-range development and master plans. It also recommends capital projects and a construction schedule, and provides an estimate of costs, a statement of anticipated revenue sources, and an estimate of the impact of the program on county revenues and the operating budget. County code requires the County Council to annually review, amend as necessary, and approve the CIP.

Many projects in the CIP are generated from recommendations or proposals contained in community master plans, sector plans and functional master plans. This is particular true for independent bikeway projects. Bikeway or bikeway-related projects can generally be found in at least two CIP funding categories: 1) Transportation; and 2) M-NCPPC.

Projects under the transportation category that might involve or affect bikeways include: road improvement projects; intersection improvement projects; independent bikeway projects; the annual bikeway program; the annual sidewalk program; independent sidewalk projects; and streetscape projects. Projects under the M-NCPPC category that may involve or affect bikeways include: on-road bikeways (park trail connectors); on-road bikeways (Beach Drive and Sligo Parkway), independent park trail projects (Montrose Trail), Hard Surface [Trails] Design and Construction and Hard Surface [Trails] Renovation.

Independent bikeway projects are specified in the CIP by individual project-by-project descriptions. Montgomery County DPWT and M-NCPPC annually select projects for implementation. The planning and funding of individual bikeway projects has been and will continue to be primarily a local responsibility. A substantial amount of new planning and design funding has been accomplished over the years as bicycle transportation continues to play an ever-increasing, and highly visible role in the county's transportation system.

Many projects in the CIP may appear unrelated to bikeways, when in fact, they affect or may involve bikeways in the project scope. This is often true for many road and intersection improvement projects for which bikeway improvements may only be a minor consideration in the overall design and engineering for the project.

### *State of Maryland*

The state primarily funds and implements bikeways through Maryland Department of Transportation's (MDOT) Consolidated Transportation Program (CTP). The CTP is a compilation of all transportation projects currently funded for construction or development and engineering as recommended by the Governor. These projects are funded utilizing the financial resources of the state's Transportation Trust Fund. The Transportation Trust Fund is used to pay for capital transportation

projects throughout Maryland. Revenues from state vehicle titling and registration fees, gas taxes, a portion of the corporate income taxes and federal funds fuel it.

Each fall, at the direction of the Governor, MDOT staff meets with county planners, elected officials and citizens. These meetings are opportunities for the community to comment and provide input on transportation enhancements planned over the six-year period covered by the CTP. With this input, a final CTP is developed and submitted to the General Assembly each year for its approval.

Many of the countywide bikeways identified in this plan will be implemented as part of highway improvement projects. Constructing shared use paths or adding a bike lane or shoulder as part of a road improvement project, as opposed to doing it as an independent project, is more cost effective for both the county and the state. However, there are also a number of state programs that provide limited funding for bikeways and trails, including the Access 2000 Program and the Neighborhood Conservation Program. The Access 2000 program provides funding to local governments for enhancing bicycle and pedestrian access to transit stations. Eligible projects include shared use paths, bike lanes, signage and bicycle parking. Most of the bike parking facilities at the county's Metro stations was funded through Access 2000.

### *Federal Government*

The State of Maryland administers federal funds and distributes the monies to counties on a competitive basis through programs such as Neighborhood Conservation and Access 2000. Counties annually submit to the State a list of priority projects they want to be eligible for federal funding. The state selects a certain number of projects for funding each year.

As an example of these sources, funding for bikeways and trails is typically made through a category called TEA-21 Transportation Enhancements. Several projects in the County were completed using TEA-21 enhancement funds, including the North Bethesda Trail bridges over I-495 and I-270 as well as the Capital Crescent Trail.

### *Funding for bicycle parking*

Getting bicyclists to and from destinations is the primary focus of this plan. However, providing adequate parking facilities at destinations is equally important. Bicyclists should not have to lock bicycles to lamp posts and rail-

### **About Facility Planning**

Facility planning for projects, including bikeways, is divided into three phases. Funding for these phases often are separate. Facility planning serves as the transition stage for a project between the master plan or conceptual stage and its inclusion as a stand-alone project in the CIP.

Prior to inclusion in the CIP, the DPWT performs Phase I of facility planning, a rigorous planning level investigation of the following critical project elements: purpose and need, usage forecasts, traffic impacts, community impacts, public participation, investigation of non-County sources of funding, and cost estimates.

At the end of Phase I, DPWT determines if the project has the merits to advance to Phase II, which involves preliminary (35 percent level of completion) engineering design. During this phase, construction plans are developed showing the specific alignment and detailed features of the project, from which its impacts, including environmental, and costs can be more accurately assessed.

At the completion of the preliminary engineering design, the County Council and County Executive hold project-specific public hearings to determine whether the candidate project has the merits to advance into the CIP as a fully funded stand alone project and enter into Phase III which involves final design and construction. It is important to note that this process changes every now and then, but this basic process is typically followed.

ings. In fact, doing so is often illegal. Therefore, adequate bicycle parking must be provided at all countywide bicycling and local destinations, including transit stations, employment centers and office buildings, retail and dining establishments (especially those located in municipalities and CBDs), and locally oriented destinations like schools, libraries, community centers and playgrounds.

While bicycle parking is often required as part of new developments or are included as part of new county buildings and facilities, older buildings and older developments typically do not feature any bicycle parking accommodations. Finding space for bicycle parking at these older buildings often is often not an issue. Many building owners or developers simply are not familiar with bicycle parking needs, designs and costs.

**RECOMMENDATIONS:**

- A dedicated funding source for retrofit bicycle parking should be created. The funding should be administered and managed jointly by DPWT's Commuter Services and Bikeways Program, including purchasing the bicycle racks and lockers and developing a prioritization system or program to have them installed. The DPWT bikeway coordinator, in consultation with the Montgomery County Bicycle Action Group and DPWT's Division of Commuter Services, will be responsible for determining how to distribute the bike racks and lockers.
- Enforce current subdivision regulations and ensure that community plan recommendations for bicycle parking are fully implemented.

**Funding for Bikeway Maintenance**

This plan recognizes that maintaining and preserving existing bikeways plays an important role in sustaining and increasing the levels of bicycling in Montgomery County and the region.

There are two general types of maintenance. Routine maintenance involves clearing debris and snow from the roadway surface that tends to accumulate in the curb lanes and in bike lanes. It also involves removing debris and trimming trees along shared use paths adjacent to roads. Systematic maintenance involves making physical im-

provements to a bikeway facility over time to keep it safe. These improvements may include re-striping a bike lane, replacing signs, or repaving a portion of a shared use path damaged by tree roots. The DPWT Division of Operations is responsible for routine and systematic maintenance along all county roads, including bikeways and sidewalks.

**RECOMMENDATIONS:**

- The county should develop a new program for routine maintenance of bikeways or include bikeway maintenance as part of other maintenance programs. Bikeway maintenance also could be funded and managed as part of the Annual Bikeway Program. Under this new initiative, shared use paths, bike lanes and signed shared roadways (wide curb lanes and shoulders) in the county would be swept of debris, sand and gravel at least once per year in early spring. Overhanging branches and brush along shared use paths also would be trimmed.
- Countywide hiker-biker trails in parkland should be routinely maintained. Debris, sand and gravel should be swept and overhanging branches and brush trimmed along all hard surface hiker-biker trails at least twice a year (spring and fall). Park maintenance funding should be increased so that region staff is better able to patrol and maintain hard surface hiker-biker trails.
- The DPWT Division of Operations should include both routine and systematic bikeway maintenance in their annual roadway maintenance program. All roadways for which there is an existing countywide bikeway (shared use path or bike lanes) or an existing bike route (signed shared roadway) should be swept of debris, sand and gravel at least once annually, preferably in the spring.
- The Annual Bikeway Program should continue to include adequate funding for minor safety improvements along major bikeways. The DPWT Bikeway Coordinator in consultation with the MNCPPC bikeway planner and members of MCBAG, will determine priorities for bikeway maintenance projects.