

Twenty Year

Bicycle & Pedestrian Access Master Plan



Making Maryland
the Best State for
Bicyclists and Pedestrians

Governor, Lt. Governor & Secretary



At the dawn of the 21st Century, Maryland is giving renewed attention to improving two time-tested travel options...bicycling and walking. Our reasons for encouraging greater use of these alternatives include reducing traffic congestion, air and water pollution, travel costs, travel delays

and dependence on fossil fuels for transportation. Increased bicycling and walking can also improve the physical fitness of Maryland residents, thus reducing health costs and improving our quality of life and economic well-being.

Maryland's Statewide 20-Year Bicycle and Pedestrian Access Master Plan provides a vision of the role that bicycling and walking will play in our future. It lists a series of goals, strategies, and actions for achieving that vision. This Master Plan marks a milestone in Maryland's history as it represents the first concerted planning effort to incorporate bicycling and walking into the mainstream of our long-term transportation planning vision.

This will not be a stand-alone plan. It is designed to be compatible with and complementary to other transportation planning documents such as the Maryland Transportation Plan and our Smart Growth philosophy.

Our success at achieving our non-motorized transportation vision will depend in part on continued cooperation between State government agencies, local governments, the private sector, and our citizens in implementing these strategies. I invite you to join us as we realize the vision where bicycling and walking are part of a seamless and efficient State transportation network.

Parris N. Glendening
Governor of Maryland

Kathleen Kennedy Townsend
Lt. Governor of Maryland

The Maryland Department of Transportation's principal mission is moving people and goods to their destinations in a safe and efficient manner. Bicycling and walking are important modes of transportation that help us realize this goal. The Statewide 20-Year Bicycle and Pedestrian Access Master Plan will serve as a blueprint to achieving our vision of Maryland becoming the best state in the nation for bicycling and walking.

This plan is the logical next step to tie together the State's many efforts to make bicycling and walking viable alternatives to driving, including: putting bicycle racks on buses and at transit stations, widening traffic lanes to better accommodate bicyclists, considering bicycle lanes in the planning of every highway and transit project, educating citizens on bicycle and pedestrian safety, establishing regular communication with the bicycling and pedestrian community, and identifying the gaps in sidewalks and trails.

Maryland has more than 600 miles of trails. One of our key goals in this Master Plan is to identify all the missing links and connect these existing trails from the Allegany Highland Trail in Western Maryland and the Washington-Baltimore-Annapolis Trail in Central Maryland to the Assateague Island Bicycle Trail on the Eastern Shore. The Department is working with its partners to ensure that trails and other bicycle and pedestrian access will be seamless across city, county or State lines.

As we move forward with putting this 20-Year Master Plan into action, we understand that we cannot accomplish these goals without continuing to work with our partners on every aspect. Bicycling and walking are important tools in our toolbox for building and maintaining a safe and efficient transportation network. The Department of Transportation's structure of overseeing all modes of transportation allows us to accomplish these goals with intermodal planning, and the Transportation Trust Fund's flexibility of resources will help us fund these important projects.

The Master Plan elevates our desire to take advantage of the numerous benefits of bicycling and walking into a specific plan of action, consistent with the attention given to other travel modes.

This plan also reflects the input of citizens, elected officials, and government staff in how to achieve our vision of having Maryland as the role model for building the best bicycle/pedestrian program in the nation.

John D. Porcari
Secretary of Transportation



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Introduction

Maryland is a great State in which to walk, use a wheelchair, ride a bicycle or other form of non-motorized transportation, from the vibrant pace of downtown Baltimore, Annapolis and Bethesda, to the tranquility of historic small towns and older suburban communities. Maryland is striving to be the best State in the nation for pedestrians and bicyclists. The Maryland Department of Transportation, in consultation with a wide range of representatives from all levels of government, special interest groups, design professionals and citizens came up with the following vision Statement to describe what it means to be the “best”:

Maryland will be a place where people have the safe and convenient option of walking and bicycling for transportation, recreation, and health. Our transportation system will be designed to encourage walking and bicycling, and will provide a seamless, balanced and barrier-free network for all.

MDOT’s increased commitment to pedestrian and bicycle transportation is an outgrowth of Maryland’s “Smart Growth” planning initiatives, which seek to improve quality of life for Maryland’s citizens by promoting development policies that support existing communities and contain suburban sprawl. The benefits of promoting Smart Growth policies include reduced roadway congestion; enhanced access between homes, workplaces, schools, shopping and recreation areas; and reduced pollution of Maryland’s air and water, including the sensitive Chesapeake Bay watershed. MDOT’s role in this effort, as provided in the *2002 Maryland Transportation Plan*¹, is to increase the availability of cost-efficient modes of transportation such as public transportation, bicycling and walking to access major activities. To support these initiatives, the Maryland Transportation Plan emphasizes investment in alternatives to automobile travel, including walk-

Benefits of Increased Levels of Walking and Bicycling

Mobility - Bicycling and walking contribute to the safe and efficient movement of people and goods to their destinations.

Safety - Developing a connected and cohesive system of pedestrian and bicycle facilities on State-owned roadways and increasing educational and enforcement activities can help reduce the percentage of injuries and fatalities.

Smart Growth - Maryland leads the nation in Smart Growth initiatives that include promoting development that provides citizens with transportation choices. The Plan is an important component of the Smart Growth program because it ensures the availability of opportunities for bicycling and walking.

Quality of Life - A system of sidewalks and bikeways and improved access for these modes makes it possible for more people to choose bicycling and walking over other modes, more often. Throughout the nation residents place a high value on the availability of sidewalks and walking paths.

Health - There is documented evidence that bicycling and walking provide health benefits and are excellent methods to add activity to increasingly sedentary lifestyles.

Environmental Benefits - Each time a person chooses to make a trip by bicycling or walking instead of driving that person prevents the creation of air and water pollution, consistent with the Chesapeake 2000 Agreement.

¹ The Maryland Transportation Plan (MTP) is the Department of Transportation’s long-range transportation policy plan. The MTP sets policy for the department over a twenty-year period and is updated every three years, consistent with federal requirements.

ing and biking. This policy direction both supports and is supported by the State's Smart Growth initiatives.

In response to increased public interest in bicycle and pedestrian travel and Statewide and federal transportation policy direction², the Maryland General Assembly created the *Bicycle and Pedestrian Access Act of 2001* during the 2000 legislative session. This law mandated the development of a twenty-year bicycle and pedestrian master plan that would systematically direct resources to bicycle and pedestrian projects using both new and existing programs. State law is reinforced by federal direction contained in the Intermodal Surface Transportation Efficiency Act of 1991 and the Transportation Equity Act for the 21st Century that requested that States develop bicycle/pedestrian plans to guide investments in these modes and to encourage Statewide approaches to them.

The planning effort was divided into three phases. In the first phase, key stakeholders (public citizens, advocates, business, community and government representatives throughout the State) were consulted to identify a vision and goals for bicycle and pedestrian transportation in Maryland. This was followed by a technical study of existing conditions as well as the challenges and opportunities facing bicycle and pedestrian transportation in the State. The planning process concluded with the identification of specific recommendations for implementation. These recommendations are the cornerstone of the master plan.

The documents and technical reports listed below are the products of the technical process used to develop this master plan. They are available through the project website which can be found at www.smarttransportation.com:

- *Plan Development Report - Policy Vision Plan*
- *Plan Development Report - Overview of Greenways and Long Distance Routes*
- *Plan Development Report- Overview of State Agency Policies and Programs for Pedestrian and Bicycle Access*
- *Plan Development Report - Overview of Legal and Administrative Conditions*



² The Federal Highway Administration, consistent with the Bicycle and Pedestrian Provisions of the Federal-aid Program, expects every transportation agency to make accommodation for bicycling and walking a routine part of their planning, design, construction, operations and maintenance activities. The goals, strategies, and actions of this Master Plan, as later described here commits MDOT to make bicycling and walking accommodations a routine part of our activities.

Listening to Citizens and Stakeholders

Critical to the success of this planning effort is the widespread support of the many stakeholders involved in bicycling, pedestrian and land use issues. The three-phased planning process incorporated input and direction from the public, walking and bicycling advocacy groups, State, regional and local officials and interested citizens at district and regional meetings held throughout Maryland. Further input was obtained through ongoing dialogue made possible by project newsletters and an interactive web site. This Plan was developed using information received at more than 18 meetings held between October 2000 and May 2002 and from the many comments received through E-mail, letters or conversations.

Additionally, the Plan was developed in consideration of the advice of the Maryland Bicycle and Pedestrian Advisory Committee, a group appointed by the Governor consisting of representatives of bicycle and pedestrian advocacy groups, members of the public, State agencies with responsibility for overseeing bicycle and pedestrian travel or representing stakeholder groups with special interests in bicycle or pedestrian issues, such as Marylanders with disabilities. This Committee was formed for the purpose of providing advice to the Governor on pedestrian and bicycle issues.

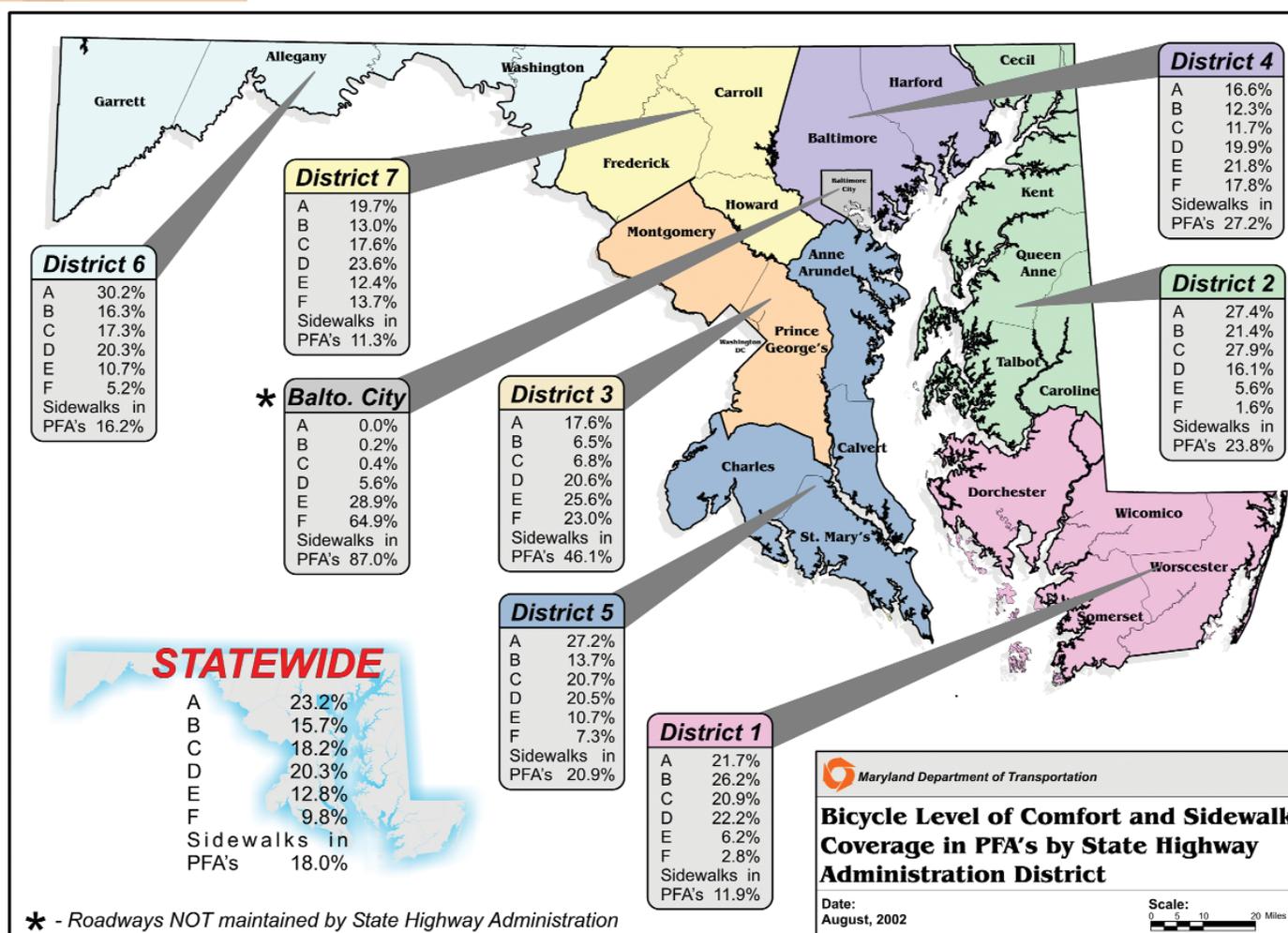


Existing Conditions

Existing Conditions

In 2002, MDOT contributed more than \$55 million dollars to improve the quality and safety of bicycling and walking in Maryland using a number of different State and federal funding programs. Despite the State's considerable investment in these networks, an extensive review of existing conditions conducted by MDOT (documented in the companion technical appendix) revealed that there is still work to be done towards improving the transportation system to be more amenable and inviting to biking and walking. The complete review included an exhaustive inventory and analysis of applicable Maryland policies and programs, legal and administrative codes, trails, State highways and roadways in the city of Baltimore in an attempt to identify the most persistent challenges to creating a safer, more comprehensive and reliable system for traveling by foot, wheelchair or bike.

Almost 5,000 miles of State-owned roadway was assessed for bicycle and pedestrian conditions. For bicycle conditions, MDOT used a nationally-recognized methodology, the *Bicycle Level of Comfort*, or *BLOC*, (also known as *Bicycle Level of Service*). Maryland is one of the first States to undertake this kind of comprehensive, system-wide analysis of bicycle accessibility. The BLOC assessment revealed



that 55 percent of the State's road network received a "grade" of C or better (using a typical "A" through "F" grading system) with the worst conditions occurring in urban areas. This performance is consistent with national trends, with relatively good quality conditions occurring in rural areas with lower traffic volumes and wider rights-of-way and less comfortable conditions in urbanized areas with older, heavily used roads.

As the map on the previous page indicates, conditions for bicyclists are not consistent throughout the State, and several areas of persistent need stand out. Another assessment examined the availability of sidewalks along State highways, particularly in Priority Funding Areas³ where pedestrian activity would be highest. This assessment, also indicated on the map, noted a wide range of sidewalk availability throughout the State.

There is no equal set of quality standards for analysis for pedestrians. Factors that contribute to the comfort and safety of all pedestrians – walkers and wheelchair users - include the width and condition of sidewalks, the availability of curb cuts, pedestrian crossings, signalization, and lighting.

The BLOC information is a useful tool for identifying bicycle and pedestrian transportation needs on the State highway system. Consistent with the approach taken to address highway needs, Maryland will use the BLOC grades as a way to screen and prioritize projects. This approach reflects the State's current fiscal environment, in which needs outstrip the availability of funds to address them.

Other issues revealed through the assessment include legal and safety challenges to bicycle and pedestrian travel on facilities operated by the Maryland Transportation Authority, such as the bridges crossing the Susquehanna River and Chesapeake Bay, and public attitudes which often do not embrace bicycling and walking on the State's primary and secondary road system. Such challenges cannot be met by simply building physical facilities. They require more comprehensive approaches involving information, education, enforcement, and even legislative action.



³ A Priority Funding Area, or PFA, is an area designated as a priority for growth and development. Consistent with the Smart Growth Act, the State typically only funds transportation projects falling within a PFA, with some minor exceptions.

Programs and Resources

MDOT makes use of a wide array of State programs to develop the bicycle and pedestrian network. The Neighborhood Conservation Program and the Sidewalk Retrofit and Bicycle Retrofit programs are used to integrate elements such as pedestrian and bicycle “friendly” street designs, sidewalks and bike paths, transit shelters and other facilities, shoulders, curbs, lighting and street amenities to create a safer and more welcome environment for all users of the State highways - pedestrians and bicyclists, as well as motorists and public transit users. Design, management and maintenance practices at the Maryland State Highway Administration have evolved to provide a greater degree of accommodations for all users of the State highway system, including walkers, persons of limited physical abilities, and bicyclists. Maryland SHA has been a national leader in a new initiative called “Thinking Beyond the Pavement” in which context sensitive design programs seek to build and improve facilities to meet the needs of the entire traveling community. Projects on the primary and secondary road network are increasingly incorporating bicycle and pedestrian enhancements such as curb cuts, wide sidewalks, pedestrian crossings and signalization, wider shoulders, wide curb lanes and marked bike-ways.



MDOT also is conducting studies and programs that target specific pedestrian and bicycle transportation needs. For example, the Maryland “Safe Routes to Schools” program identifies strategies for improving the safety of bicycling and walking to school. In addition, the Maryland Transit Administration (MTA) and State Highway Administration (SHA) have completed Access 2000, a comprehensive study of pedestrian and bicycle access to rail transit stations in Maryland. Providing adequate bicycle and pedestrian access to public transit is important to meeting another critical transportation goal – doubling transit ridership in Maryland by 2020.

Creating a safe and inviting bicycle and pedestrian transportation system requires attention to more than physical infrastructure. It also requires users and motorists to have a basic knowledge of travel safety and etiquette. MDOT, through the SHA’s Highway Safety Office and Office of Communications, has sought to improve public understanding of the rules of the road for all users – bicyclists, pedestrians and motorists - through training, education, enforcement, and promotional programs.

PARTNERSHIPS

Partnerships are central to implementing this Master Plan. Creating a safer and easier environment for bicycling and walking in Maryland cannot be accomplished by MDOT alone. A comprehensive effort on the part of all levels of government, private sector organizations and individuals will be necessary to realize fully the benefits of walking and bicycling.

There are a number of partnerships that should be strengthened in the future:

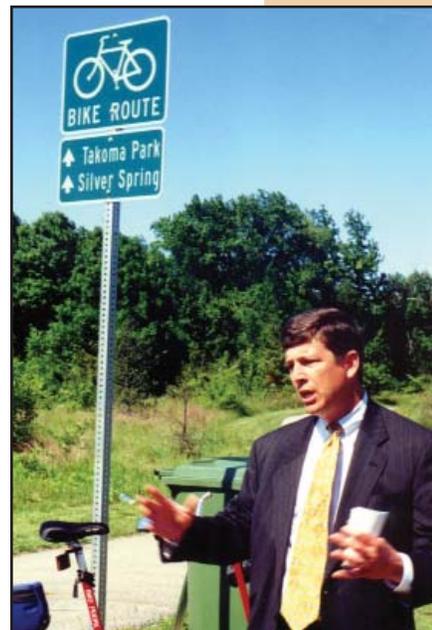
- coordination between MDOT and other state and federal agencies to encourage activities and programs that support bicycle and pedestrian access (see the matrix of Master Plan strategies in the next chapter).
- coordination with local and regional governments on pedestrian and bicycle issues, programs and projects. These partnerships are also an important part of the State's efforts to encourage smart growth.
- coordination and partnership with the public health community. Public health advocates and organizations in Maryland are important allies in the effort to provide safe, walkable and bikable communities.
- coordination and partnership with the private sector.

Examples include:

- employer-initiated "clean commute" programs, working with developers to establish pedestrian-friendly transit-oriented developments, and other similar types of efforts.
- partnerships with local pedestrian and bicycle advocates.

These are only a few of the many partnerships that will be needed in the future. A shared approach to bicycle and pedestrian travel is what, in fact, exists today. For example, local government agencies share the cost of building sidewalks along State highways with MDOT. The local share of sidewalk construction depends on whether the projects involve building new or retrofitting existing highways, and whether they are located in a county's Priority Funding Area. Sidewalk maintenance along State highways is entirely a local responsibility. Local agencies also provide the sidewalks and bicycle facilities located on their land and roads - about 80 percent of total highway miles in Maryland are locally owned and operated - and develop land use and other policies to promote walking and cycling in their communities.

MDOT similarly shares responsibility for building and enhancing many of the State's long-distance trails and greenways. Many of these trails are managed by the Maryland Department of Natural Resources, as in the case of the Northern Central Railroad Trail, or by the National Park Service, as in the case of the C & O Canal Towpath. Other facilities are owned and managed by municipal governments. MDOT distributes Federal Transportation Enhancements funding towards a number of trail projects, including building Baltimore City's Gwynns Falls Trail and developing Maryland's portion of the Allegheny Highlands Trail. When fully completed, this trail, combined with the existing C & O Canal Towpath, will form a 415-mile trail corridor extending from Pittsburgh to Washington, D.C.





Inside the Bicycle and Pedestrian Access Master Plan

The MDOT Bicycle and Pedestrian Access Master 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.

The Plan's vision statement serves as the fundamental principle guiding the identification of Master Plan goals. This vision statement was developed in consultation with a wide range of stakeholders. In addition to this vision statement, five goals were developed for the Bicycle and Pedestrian Master Plan to articulate the State's direction for accommodating the needs of pedestrians and bicyclists over the next twenty years in a manner that supports related goals in the *Maryland Transportation Plan* (MTP). To guide implementation, the goals are supported by policy strategies and specific actions – programs, projects, and activities – that, when implemented, will achieve the Plan goals. This common vision and goals will help to ensure that

MARYLAND BICYCLE AND PEDESTRIAN ACCESS PLAN VISION

Maryland is striving to be the best State in the nation for bicycling and walking. The Maryland Department of Transportation, in consultation with a wide range of representatives from all levels of government, special interest groups, design professionals and citizens came up with the following Vision Statement to describe what it means to be the "best":

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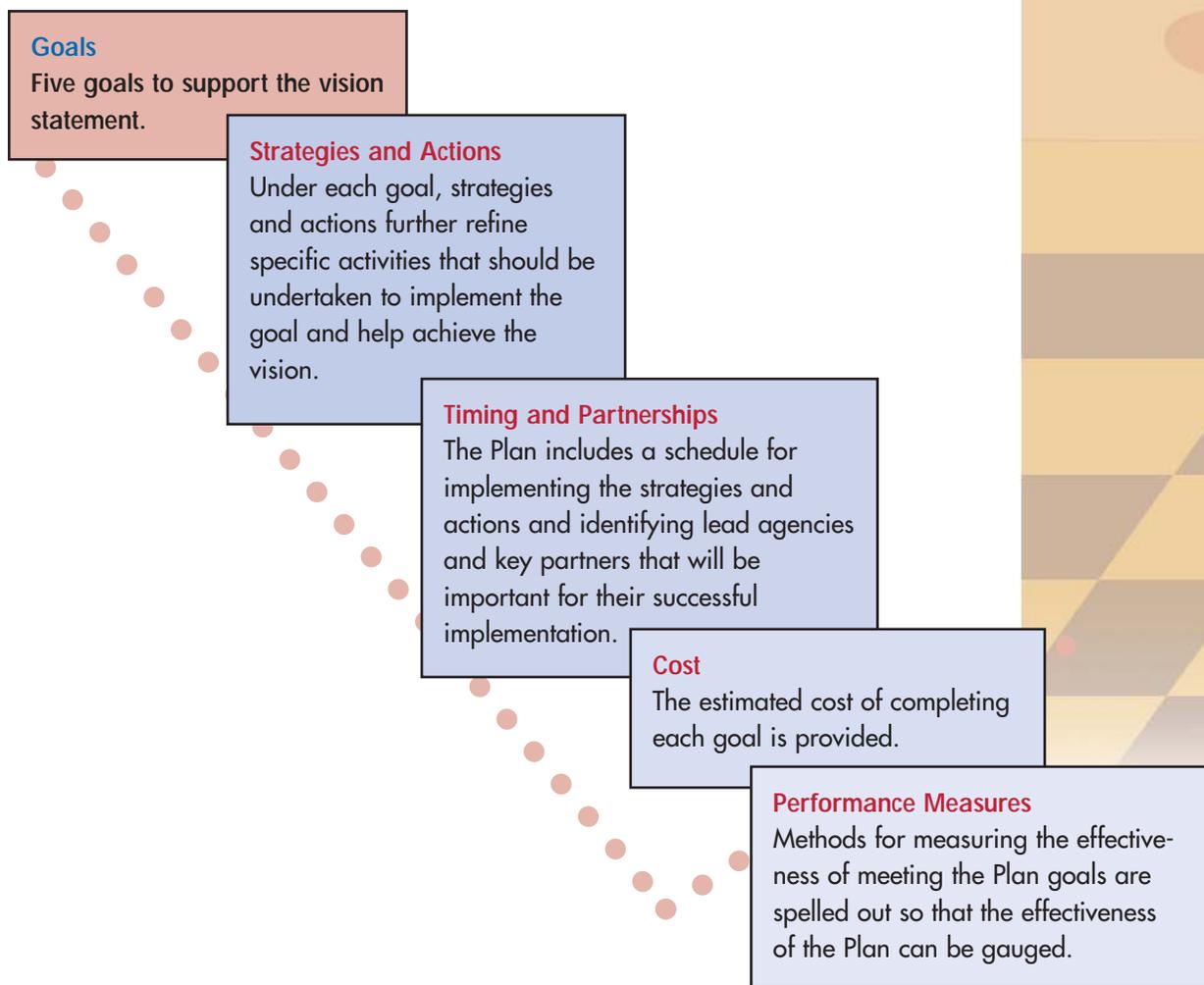
MDOT and its partners in other State agencies, local government and the business community share a desire for the same outcome in the development of Maryland's future bicycle and pedestrian transportation system.

A table is provided at the end of this document that presents the five Bicycle and Pedestrian Master Plan goals with their corresponding strategies and actions. Each action has been assigned a relative timeframe - short-term (FY 2003-2008) or long-term (FY 2009 and beyond) - for start of implementation after the Plan is adopted. A rough cost estimate for implementation of each goal is provided. The cost estimates are based on standardized assumptions for the costs of implementing certain

types of improvements, such as adding a shoulder to a primary road. Costs of individual projects vary considerably depending on numerous factors, such as the need for and cost of land, design and environmental considerations.

Consistent with the MTP, this document includes a set of performance measures that will be used by MDOT on an annual basis to determine the extent to which the Department is meeting the goals set forth in this Plan.

It is expected that the goals, strategies and performance criteria will evolve as actions are implemented and conditions in Maryland change. A report on the Plan progress will be issued annually as part of the *State's Annual Attainment Report* and, every three years, will be integrated with the updated *Maryland Transportation Plan (MTP)*.



Technical Appendices

There are two technical appendices that support the Master Plan. The first technical appendix details the approach and outcomes of the physical inventory conducted earlier in the planning process. It also includes a bicycle and pedestrian needs inventory, developed in consultation with local officials. Not all local jurisdictions are represented in the lists. MDOT will consider additions and deletions from local officials as needs are identified.

MDOT reviewed the inventories provided by the local agencies and developed two tiers of needs for further review and consideration by MDOT. Roadways in Tier 1 demonstrate the greatest need for bicycle and pedestrian accommodations, whereas roadways in Tier 2 show less need.

Tier 1 routes meet all of the following criteria:

- 1) The road segment is recommended for improvement in a local/regional bicycle or pedestrian plan
- 2) The road segment is within a Priority Funding Area
- 3) The road segment has an Bicycle Level of Comfort of "E" or "F".

Tier 2 routes meet either one of the following two criteria:

- 1) The road segment is recommended for improvement in a local bicycle or pedestrian plan
- 2) The road segment is a Bicycle Level of Comfort of "E" or "F".

MDOT will continue to work with local officials to update and prioritize areas of greatest need. Projects will be selected from these lists during programming for implementation based on assessments of engineering feasibility, environmental

impacts, costs, and local support. To proceed with planning, design and construction of any given project, the appropriate funding must be identified in the capital program. The availability of funds to address bicycle and pedestrian needs will depend upon the total funds contained in the State's capital program. Funding levels vary according to the performance of the Transportation Trust Fund and other variables.

The second appendix to the Bicycle and Pedestrian Master Plan is a model land use guidance document for supporting bicycle and pedestrian

travel at the local level. MDOT hopes that this document will provide guidance to local officials in planning and providing adequate conditions for walking and biking in their jurisdictions.



Goals, Strategies, and Actions

Master Plan Goals, Strategies and Actions

Goal 1 Facility Integration and Expansion

Goal 1: Facility Integration and Expansion

Integrate and expand the State's bicycle and pedestrian facilities, creating a connected network of on-road, off-road and transit-related accommodations that will encourage and facilitate increased levels of bicycling and walking and improve access for individuals with disabilities.

Strategy 1A:

Integrate Bicycle and Pedestrian Facilities into Routine Roadway Development Policy

With passage of federal and State legislation, and in response to public interest, SHA revised highway design and construction policies to better meet the needs of bicyclists and pedestrians using the State highway system. Future roadway planning, engineering, design and construction will continue to strive for a more balanced transportation system that includes a seamless, safe and accessible bicycle and pedestrian network and encourages bicycle and pedestrian travel wherever possible.

Meeting this strategy requires that bicycle and pedestrian needs are identified and addressed in the development of all road and bridge projects, with the exception of interstates and freeways, including those managed by the Maryland Transportation Authority. To achieve this, the State will evaluate current practices and guidelines that address pedestrian and bicyclist needs.



Strategy 1B:

Focus and Expand Trail Development Initiatives

Maryland has a number of extraordinary trails that provide recreational as well as utilitarian walking and bicycling. Because of the State's relatively small size, Maryland has a unique opportunity to create a truly Statewide, off-road trail system that offers direct access to major activities. Greenways and long distance trails in Maryland are documented in the plan development report, *Overview of Greenways and Long Distance Routes*. Many community based trail projects have been completed, and MDOT has encouraged the continued development of plans for multi-use trails that focus on completing crucial missing links to creating regional long-distance trails. Creating and implementing the plan will require improved coordination with other agencies and local governments to develop trail master plans as well as incorporate new design guidelines and access issues on the road network.



Goal 1

Facility Integration and Expansion

Strategy 1C:

Enhance and Expand Bicycle/Pedestrian Access to Transit

Maryland has an extensive bus and rail transit system with thousands of daily riders. In an effort to improve access to these facilities for all users, bike racks are being installed on buses, access for bikes is permitted on the Baltimore Light Rail and Metro systems as well as Metrorail trains in Washington, D.C. The MTA's Smart Growth Transit Program will continue to improve access to rail transit by walkers

and bicyclists. Sidewalks and pads are being installed at bus stops for pedestrians and persons with disabilities. These programs advance MTA's goal to make all rail stations and bus stops conveniently accessible by foot, wheelchair, and bicycle as an affordable means to increase access to and to expand the market for public transit. Additionally, this strategy encompasses promoting land uses and development surrounding transit facilities to enhance the environment for walking and biking, as well as improving public transit ridership.



Goal 2 Facility Preservation and Maintenance

Goal 2: Facility Preservation and Maintenance

Preserve, protect and maintain the State's existing bicycle and pedestrian facilities and rights-of-way including bike lanes, roadway shoulders, sidewalks, crosswalks, trails and side paths.

Strategy 2A:

Integrate Bicycling and Walking into Planning and Roadway Maintenance Routines

Integrating bicycling and walking into the planning, inventory and maintenance routines of transportation agencies is as important as addressing roadway design policy. System inventory activities that address bicycling and walking will help ensure sufficient accommodations in future years. For example, SHA will attempt to not sever major bicycle routes without insuring the availability of an adequate alternate route. Sensitive maintenance routines will address aspects of the transportation system that matter greatly to cyclists, pedestrians, and individuals who are mobility impaired. Maintenance remains a local responsibility. Implementation of this strategy will require outreach and coordination with local agencies.

To meet this strategy, the State will evaluate existing programs and develop a program for Americans with Disabilities Act (ADA) compliance and improved programs for facility maintenance, in partnership with local agencies.



Goal 3 Safety

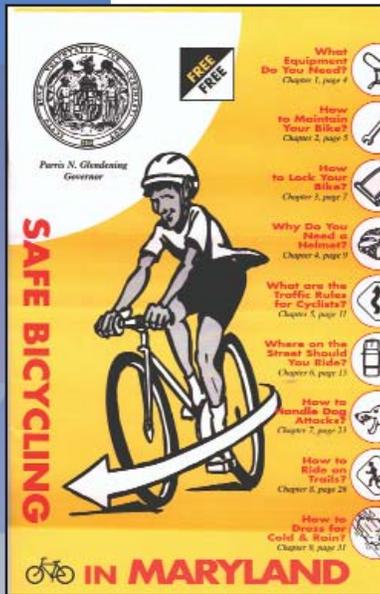
Goal 3: Safety

Provide safe and convenient bicycle and pedestrian accommodations for every type of trip, and for all levels of ability.

Strategy 3A:

Coordinate Education, Engineering, and Enforcement Safety Activities

Studies have shown that the most effective traffic safety initiatives are those that integrate engineering, education and enforcement at both the programmatic and project level. For example, successful Safe Routes to School programs include making modifications to the streets around schools, educating and training the students how to walk and bike safely to school, and enforcing the traffic laws for all street users in and around school zones. Full implementation of this strategy will require the active participation of Maryland schools, State agencies other than the Maryland Department of Transportation, the General Assembly, and local governments to develop and implement new safety programs and campaigns



Goal 4: Education and Encouragement

Develop education and promotional programs that will increase bicycling and walking and foster a pro-bicycle and pro-pedestrian awareness in individuals, private sector organizations, and all levels of government.

Strategy 4A:

Establish and Support Encouragement Program

Achieving this vision will require more than infrastructure improvements. The adage is true, "If you build it, they will come!" but only if they know it is there and how it can be used. Maryland has a number of unique opportunities to use education and marketing strategies to increase the use of bicycling and walking as a mode of transportation to access jobs, shopping, recreation, and transit for longer trips.

Partnerships with the Department of Natural Resources, the Department of Business and Economic Development, MDOT modal administrations, and private employers will be instrumental in developing a variety of activities to encourage walking and bicycling in Maryland through special events, marketing and other means.



Strategy 4B:

Increase Communication with Stakeholders

Many people are unaware of their rights and responsibilities as bicyclists, pedestrians, persons with disabilities, and motorists sharing the same roadways. Public

and stakeholder communication is needed to increase public awareness and understanding of these issues. Stakeholder communication should be provided in many forms and should use many mediums—annual funding reports, program guides, websites, maps, and person-to-person meetings, especially in the field.

A variety of activities are identified to provide more information regarding transportation planning, programming, funding processes and relevant State laws and policies. Strong State coordination with local programs is also encouraged.



Goal 4

Education and Encouragement

Strategy 4C: Provide Professional Development and Training

Agencies are continuously challenged by the need to integrate the needs of multiple users and user groups into the planning, design and operation of transportation facilities and services. This strategy focuses on developing professionals with specialized knowledge and skills in the travel needs of bicyclists, pedestrians and disabled citizens through professional development and training.

A number of methods are identified to enhance the quality of bicycle and pedestrian facility design through training programs and sharing of information by State agencies.



Strategy 4D: Create New Forums for Learning, Dialogue and Research

The field of bicycle/pedestrian planning and design is growing and changing rapidly. New ideas and technologies are being introduced regularly, and professionals rely heavily on the ideas and experiences of other communities throughout the U.S. and Europe. Maryland has tremendous resources to draw upon, including its University System and its proximity to Washington, DC and national leaders. Harnessing and utilizing these resources effectively would enable Maryland to develop and be recognized for its excellence and leadership in bicycle and pedestrian education, technology transfer and research.

Several methods are identified to foster improved education for students and professionals regarding facility design and traffic safety.



Goal 5: Smart Growth

Work with local communities to increase their understanding of how land use, transportation and other policies and planning processes need to be modified to achieve increased levels of bicycling and walking, especially in Priority Funding Areas.

Strategy 5A:

Institute New Non-Motorized Travel and Health Impact Surveys

Current data about the extent of bicycling and walking are insufficient for effective planning and use as performance measures. Information about how bicycling and walking potentially affect public health is also insufficient to fully understand the impact of these activities. Development of Maryland-specific data will establish fresh baselines, enable new performance measures to be created and assist policy-makers with program development and project funding decisions.

Survey activities are noted to provide an information base to begin to evaluate the health effects of bicycling and walking on the State population.

Strategy 5B:

Initiate a Bicycle and Pedestrian Partnership Program (BPPP)

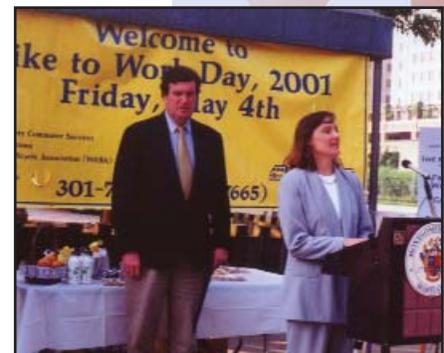
The Retrofit Bicycle, Retrofit Sidewalk, Smart Growth Transit Program, Neighborhood Conservation, Transportation Enhancements and National Recreational Trails programs are highly popular programs for developing and funding bicycle and pedestrian improvements in Maryland's older communities. The State faces the critical task of determining how to both increase the total amount of resources available for these activities and concentrate them in the areas of greatest need. Implementation of a Bicycle and Pedestrian Partnership (BPPP) program is a logical way to do both by bringing the appropriate stakeholders to the table to discuss ways to address bicycle and pedestrian travel in Maryland.

The BPPP will provide a much-needed framework for State/local partnerships focused on bicycling and walking. Bicycle and pedestrian travel is inherently a local activity, so it is essential that improvements on State facilities compliment local networks. The BPPP can ensure that in Maryland's most populated communities, land use and transportation actions, on-road and off-road networks, transportation and recreation agencies, safety education, enforcement and promotion programs, planning and funding initiatives are all being effectively coordinated.

Strategy 5C:

Continue Strong Transportation Policy Guidance

MDOT has established a long-range transportation plan (MTP) for the state that strongly supports mode choice, smart growth, environmental preservation and development of a safe and modally diverse transportation system. It establishes a highly supportive policy context for bicycling and walking. As a result, this Plan recommends a series of actions designed to ensure that MDOT's internal business and strategic planning processes support and are consistent with Maryland bicycle and pedestrian policies.



Start of Implementation

Goal 1 Actions, Timing, and Cost Estimates

<i>Goal 1 - Facility Integration Expansion</i>		
Total Cost	\$1.48-1.68 billion*	
	FY 2003-2008	FY 2009-2023
STRATEGY 1A: Integrate bicycle and pedestrian facilities into routine roadway development policy		
ACTIONS: (MDOT is the lead implementing agency unless noted below)		
1. Continue current programs, such as Bike Retrofit, Smart Growth Transit Program, Sidewalk Retrofit, etc.) to construct bicycle and pedestrian facilities and work to obtain additional funding, as needed.		ongoing
2. Incorporate a bicycle/pedestrian/ADA assessment (including field visits) into scoping and engineering activities for all (new/rehab.) roadway and bridge projects.	✓	
3. Incorporate BLOC measures into the scope and design of all roadway and bridge projects with the goal of achieving desired standards for bicyclists at the most reasonable cost.	✓	
4. Implement the Bicycle and Pedestrian Accommodations Checklist developed by SHA staff for internal review of roadway development projects with regard to improving bicycling and walking conditions.	✓	
5. Consider state-of-practice approaches for all roadway and bridge projects, including national standards such as AASHTO and ADAAG (with the exception of interstates and freeways).	✓	
6. Continue to assess internal SHA documents and update with appropriate bicycle and pedestrian design standards and guidelines.		ongoing
7. Increase public awareness of available services.	✓	
8. Develop a best practice document for Maryland bicycle and pedestrian facilities using AASHTO and other national standards to address intergrate factors such as traffic calming, spot hazards and safe crossings.	✓	
STRATEGY 1B: Focus and expand trail development initiatives		
ACTIONS:		
1. In coordination with the Department of Natural Resources, continue to update and implement plans of multi-use trails in the State.	✓	
2. Work with trail operators to develop uniform practices for trail user counting procedures and utilize trail counts to track trail use.	✓	
3. Working together, MDOT and local jurisdictions will examine corridors to identify high-quality commuter routes that provide direct links to major employment/activity centers.	✓	

*denotes a projection of the estimated costs, not for programming purposes.

<i>Goal 1 - Facility Integration Expansion</i>		
Total Cost	FY 2003-2008	FY 2009-2023
. \$1.48-1.68 billion*		
4. Provide support for designation, development, funding, management, and mapping of multi-use trails and greenways that serve both transportation and recreation needs.	✓	
5. Evaluate and address trail/roadway intersection and grade separation needs from the proposed Statewide multi-use trail plans.	✓	
STRATEGY 1C:		
Enhance and expand bicycle/pedestrian access to transit		
ACTIONS:		
1. Evaluate transit stations in terms of existing and potential demand for bike/pedestrian access as well as reasonable improvements to accommodate this demand.	✓	
2. Continue providing funding for capital improvement projects that improve bicycle and pedestrian access to transit stations and bicycle and pedestrian accommodations at the stations.	ongoing	
3. Increase the number of bicycle parking racks and lockers located at rail transit stations.	✓	
4. Continue to increase the number of transit buses that are equipped to transport bicycles.	ongoing	
5. Continue to plan for implementing MARC Bike-on-Rail services on rail cars, as appropriate.	ongoing	
6. Evaluate the potential for locating Bike Stations at major rail transit centers.		✓
7. Continue to examine and provide access and safety improvements to existing and planned new bus stops.	ongoing	



*denotes a projection of the estimated costs, not for programming purposes.

Goal 2

Actions, Timing, and Cost Estimates

Goal 2 - Facility Preservation and Maintenance

Total Cost	\$20.6 million*	
	FY 2003-2008	FY 2009-2023
STRATEGY 2A: Integrate bicycling and walking into planning and roadway maintenance routines		
ACTIONS: (MDOT is the lead implementing agency unless noted below)		
<u>Planning</u>		✓
1. Update the sidewalk and bicycle facility inventory over a three-year cycle.		
2. Continue to ensure that sidewalk, intersection and transit facilities comply with ADA.	<i>ongoing</i>	
<u>Maintenance</u> (Local agencies provide most maintenance of bicycle and pedestrian facilities. These actions will be implemented in coordination with local agencies.)		
3. Include an element in existing highway spot maintenance response program (brochure, web page, etc.) to address the safety of bicycle and pedestrian facilities and networks.	✓	
4. Evaluate maintenance routines implemented by the State and at the local levels to determine if practices need to be changed to better address the needs of bicyclists and pedestrians.	✓	



*denotes a projection of the estimated costs, not for programming purposes.

<i>Goal 3 - Safety</i>		
Total Cost \$33 million*	FY 2003-2008	FY 2009-2023
STRATEGY 3 A:		
Coordinate and enhance safety activities		
ACTIONS: <i>(MDOT will implement in coordination with the following agencies, as noted)</i>		
1. In coordination with the Maryland Department of Education and local schools, promote pedestrian and bicycle safety, knowledge and skills into the Health Education Learner Outcomes and Performance Indicators for grades K – 12.	✓	
2. In coordination with the Maryland Bicycle and Pedestrian Advisory Committee, Maryland Department of Education and local schools, assess the potential of a Safe Routes to School program.	✓	
3. Include MDOT materials related to bicycling and walking in brochures provided with vehicle registration renewals.	✓	
4. Study the possibility for inclusion of additional bicycle and pedestrian related questions on the Motor Vehicle Administration driver's license exam.	✓	
5. Display and distribute bicycle and pedestrian safety information at all Motor Vehicle Administration locations.	✓	
6. Work with the appropriate State and local agencies to obtain bicycle and pedestrian crash location data for use in developing targeted, local education and enforcement programs.	✓	
7. In coordination with local and State law enforcement agencies, analyze and document the effectiveness of all traffic enforcement activities and programs.		✓
8. In partnership with other State agencies, continue to provide support to local governments for education and enforcement campaigns and programs.	✓	
9. Encourage the Maryland General Assembly to review the enforcement of existing traffic law violation penalties to determine the sufficiency of their deterrent and punishment value.	✓	
10. In partnership with local communities and other appropriate agencies, use crash location data and public surveys to identify high crash locations to target engineering, enforcement and education actions.	✓	
11. Encourage local communities to maintain and step-up visible pedestrian, bicycle and traffic enforcement and education efforts.	✓	
12. Encourage appropriate local and State agencies to provide pedestrian and bicycle safety education materials in Spanish or other languages used by local residents.	✓	
13. Encourage the Department of Education and local schools to integrate pedestrian and bicycle safety into English as second language classes.	✓	
14. In partnership with local communities, provide dual-language signs on pedestrian-activated signals in neighborhoods with high levels of non-English speaking populations.	✓	

*denotes a projection of the estimated costs, not for programming purposes.

Goal 4

Actions, Timing, and Cost Estimates

<i>Goal 4 - Education, Encouragement and Awareness</i>		
Total Cost\$12 million*	
	FY 2003-2008	FY 2009-2023
STRATEGY 4 A: Establish and support encouragement programs		
ACTIONS: <i>(MDOT is the lead implementing agency unless noted below)</i>		
1. Continue to enhance bicycle/pedestrian information on the MDOT website.		<i>ongoing</i>
2. Work with State agencies and employers to support and participate in national, State and local programs and events that promote increased participation in bicycling and walking.	✓	
3. Step-up overall marketing activities designed to promote increased use of bicycle and pedestrian modes as a means to access rail and bus transit services.	✓	
4. Working together with local agencies, MDOT and DNR will create a one-stop shopping outlet on the MDOT and DNR websites for trail maps and other similar information.	✓	
5. In partnership with the Department of Business and Economic Development, initiate a special marketing program for BWI Airport as the preeminent gateway for foreign and national tourists seeking a biking or hiking-based travel experience in Maryland.	✓	
6. Reach out to new markets by developing bicycle and pedestrian travel promotion strategies with new partners, such as the Maryland Department of Health and Mental Hygiene, Department of Business and Economic Development, Department of Housing and Community Development, the business community, and transportation management associations (TMAs).	✓	
7. Explore expansion of the Commuter Choice Maryland program to encourage employers to establish bicycling and walking commute incentive programs and employees.	✓	
STRATEGY 4 B: Increase communication with stakeholders.		
ACTIONS:		
1. Continue to include bicycle facilities, pedestrian improvements, ADA accessibility improvements as part of the Comprehensive Transportation Plan (CTP).		<i>ongoing</i>
2. Publish and distribute (or create on the MDOT website) a brief compilation and reference guide to State and federal laws and policies related to bicycling and walking.	✓	
3. Publish new Statewide bicycle map which designates bicycle routes and trails.	✓	

*denotes a projection of the estimated costs, not for programming purposes.

<i>Goal 4 - Education, Encouragement and Awareness</i>		
Total Cost \$12 million*	FY 2003-2008	FY 2009-2023
STRATEGY 4C:		
Provide professional development and training		
ACTIONS:		
1. Continue to provide bicycle and pedestrian transportation training for MDOT engineers and planners which incorporates ADA, AASHTO, and other federal design guidelines, in the training curriculum.	<i>ongoing</i>	
2. Expand internal communication strategies which include consideration of the access needs of persons with disabilities, pedestrians, and bicyclists when planning, designing and implementing transportation facilities.	<i>ongoing</i>	
STRATEGY 4D:		
Create new forums for learning, dialogue and research		
ACTIONS:		
1. Select demonstration corridors to provide innovative examples of pedestrian and bicycle facilities.	✓	
2. In partnership with the Maryland Transportation Technology Transfer Center (MTTC), establish a pedestrian and bicycle transportation seminar series for college students and professionals at MDOT and other professionals working in the field of bicycling, walking and traffic safety.		✓
3. In partnership with one or more universities, establish a Statewide institute for bicycle and pedestrian research and technology transfer program to conduct policy research and identify cutting-edge bicycle and pedestrian technology and treatments and procedures that can be evaluated, tested and applied in Maryland.		✓
4. Establish a component of the Smart Growth Leadership Training Course that focuses on pedestrian and bicycle transportation project and policy issues.	✓	

*denotes a projection of the estimated costs, not for programming purposes.

Goal 5

Actions, Timing, and Cost Estimates

<i>Goal 5 - Smart Growth</i>		
Total Cost	FY 2003-2008	FY 2009-2023
STRATEGY 5A:		
Institute new bicycle and pedestrian travel and health impact surveys.		
ACTIONS: <i>(MDOT is the lead implementing agency unless noted below)</i>		
1. Assess the relationship between proximity to pedestrian and bicycle facilities and the amount of exercise undertaken by Maryland residents and their fitness level.	✓	
2. Assess the relationship between proximity to pedestrian and bicycle facilities and the amount of exercise undertaken by and fitness levels of Maryland residents.	✓	
STRATEGY 5B:		
Initiate a Bicycle and Pedestrian Partnership Program (BPPP)		
ACTIONS:		
1. Explore implementation of a Bicycle and Pedestrian Partnership Program as a framework for MDOT/County & Municipality partnerships focusing on development of effective bicycle and pedestrian facility networks and support for programs that create results at the local level.	✓	
STRATEGY 5C:		
Continue strong transportation policy guidance.		
ACTIONS:		
1. Continue assessment of progress in implementing this plan on a regular schedule to coincide with the updating of the Maryland Transportation Plan (MTP), including goals and performance measures from this Plan into the Annual Attainment Report.	<i>ongoing</i>	
2. When developing strategic or business plans, include bicycle and pedestrian related goals and objectives.	✓	
3. Encourage the Department of General Services to adopt a policy of providing secure bicycle parking facilities and related amenities such as showers, clothing lockers and changing rooms in all State government buildings.	✓	
4. Encourage counties and municipalities to adopt policies, procedures and guidelines describing how local roadway projects can be designed to safely accommodate non-motorized modes of travel and how all local planning and land use regulation can address bicycling and walking needs.	✓	
5. Initiate a study of State and local laws, policies and practices that affect sidewalk maintenance and construction.	✓	
6. Encourage all counties to identify bicycle and pedestrian projects in their priority project designations.	✓	

*denotes a projection of the estimated costs, not for programming purposes.

Goal 5

Actions, Timing, and Cost Estimates

<i>Goal 5 - Smart Growth</i>		
<i>Total Cost</i>	<i>FY</i> 2003-2008	<i>FY</i> 2009-2023
7. Continue to fund bicycle and pedestrian facility improvements through the Sidewalk and Bicycle Retrofit, Neighborhood Conservation and other funding programs.	<i>ongoing</i>	
8. In the next reauthorization of Federal transportation law, support continuation of funding programs that address bicycling and walking, such as the Transportation Enhancements and safety set-asides of the Surface Transportation Program and the National Recreational Trails Program.	✓	
9. After the next reauthorization of Federal transportation programs, consider creating a partnership program and consolidating the funding application process for bicycle and pedestrian projects and programs.	✓	



*denotes a projection of the estimated costs, not for programming purposes.

Performance Measures

Performance



Performance Measures

In 2002, the Maryland Department of Transportation initiated a system of annually monitoring the Department's success in meeting the goals and objectives of the Maryland Transportation Plan, using a set of performance measures. These results are reported in the Annual Attainment Report that is presented as part of the State's Annual Report on Transportation to the Maryland General Assembly.

Following in this newly instated tradition, the Department has selected a set of performance measures for gauging the success of meeting the goals and implementing the recommendations contained in this Bicycle and Pedestrian Master Plan. The measures selected are presented below. Depending on the availability of data, it is expected that this year's performance will be measured to provide a baseline of performance from which future years' success will be gauged. An annual assessment will be included in the Annual Attainment Report submitted to the General Assembly as part of the State Report on Transportation. (Items with an asterisk are monitored in the Annual Attainment Report issued by MDOT.)

Performance measures are important as they represent degrees of success towards achieving an intermodal system that fully accommodates bicyclists and pedestrians of all levels of ability. Progress towards achieving these goals will depend not only on the continuing commitment within MDOT and its modal agencies, but also on critical partnerships with a wide variety of cooperating agencies at the State and local level as well the health of the Transportation Trust Fund and other revenue sources.

PEDESTRIAN TRAVEL PERFORMANCE MEASURES

- Percentage of trips to work that were made by walking (MDOT*)
- Percentage of State-owned roadway centerline miles within Priority Funding Areas that have sidewalks. (SHA)*
- Number and rate per 1 million population of pedestrian fatalities and injuries on State highways. (SHA)*

BICYCLE TRAVEL PERFORMANCE MEASURES

- Number and rate per 1 million population of bicyclist fatalities and injuries on State highways. (SHA)*
- Percentage of State-owned roadway centerline miles with a bicycle level of comfort (BLOC) grade of "D" or better. (SHA)*
- Percent of appropriate transit vehicles that can accommodate bicycles. (MTA)
- Center-line mileage of State-owned highways with marked bike lanes. (SHA)
- Percentage of trips to work that were made by bicycling.

BICYCLE AND PEDESTRIAN TRAVEL PERFORMANCE MEASURES

- Number of local jurisdictions implementing local ordinances which support bicycling and walking (MDOT)
- Dollars committed to bicycle and pedestrian projects in the Consolidated Transportation Program (MDOT).

GOALS OF THE MARYLAND BICYCLE PEDESTRIAN ACCESS MASTER PLAN AND THEIR RELATIONSHIP TO THE GOALS OF THE MTP	
PLAN GOALS	CORRESPONDING MTP GOAL
<p>Goal 1: Facility Integration and Expansion Integrate and expand the State’s bicycle and pedestrian facilities, creating a connected network of on-road, off-road and transit-related accommodations that will encourage and facilitate increased levels of bicycling and walking and improve access for individuals with disabilities.</p>	<p><i>MTP Goal 6: Provide Mobility and Accessibility with Transportation Choice.</i></p>
<p>Goal 2: Facility Preservation and Maintenance Preserve, protect and maintain the State’s existing bicycle and pedestrian facilities and rights-of-way.</p>	<p><i>MTP Goal 2: System Preservation</i></p>
<p>Goal 3: Safety Provide safe and convenient bicycle and pedestrian accommodations for every type of trip, and for all levels of ability.</p>	<p><i>MTP Goal 4: Safety and Security</i></p>
<p>Goal 4: Education and Encouragement Develop education and encouragement programs that will increase levels of bicycling and walking and foster a pro-bicycle and pro-pedestrian ethic in individuals, private sector organizations, and all levels of government.</p>	<p><i>MTP Goal 10: Serving Our Customers</i></p>
<p>Goal 5: Smart Growth Work with local communities to modify land use, transportation and other policies and planning processes to achieve increased levels of bicycling and walking.</p>	<p><i>MTP Goal 1: Smart Growth, Smart Transportation</i></p>



Looking Forward

Looking Forward

The preceding pages of the *Maryland Bicycle and Pedestrian Master Plan* outline the twenty-year blueprint Maryland will follow in its endeavor to *make Maryland the best State for bicyclists and pedestrians*. However, MDOT is already hard at work implementing numerous activities from the Master Plan and is working to bring many more on line in the near future. Below is a sample of the many exciting bicycle and pedestrian projects and activities currently underway or planned for the near future.

GOING ON NOW

<ul style="list-style-type: none"> • Bicycle and Pedestrian Safety Curriculum for Maryland Schools. 	<ul style="list-style-type: none"> • Ongoing pilot pedestrian countdown signals in Montgomery County.
<ul style="list-style-type: none"> • Assessing a Safe Routes To Schools program, in coordination with the Maryland Bicycle and Pedestrian Advisory Committee. 	<ul style="list-style-type: none"> • Safe Bicycling in Maryland Guide.
<ul style="list-style-type: none"> • Neighborhood Conservation Program project on MD 193. 	<ul style="list-style-type: none"> • Guidelines for locating bus stops for safer pedestrian access.
<ul style="list-style-type: none"> • Maryland Bicycle Retrofit Program. 	<ul style="list-style-type: none"> • Study providing access for bicycles on controlled access highways.
<ul style="list-style-type: none"> • Planet Walk - a public art project along the Baltimore and Annapolis Trail. 	<ul style="list-style-type: none"> • Bicycles on buses - throughout the State.
<ul style="list-style-type: none"> • Washington regional media campaign to encourage bicycle and pedestrian travel. 	<ul style="list-style-type: none"> • Multi-county pedestrian enforcement initiative.
<ul style="list-style-type: none"> • Completing the Anacostia and Allegheny Highland trails. 	<ul style="list-style-type: none"> • BWI Trail Improvements Demonstration Project.

COMING SOON!

<ul style="list-style-type: none"> • New statewide bicycle map. 	<ul style="list-style-type: none"> • Lexington Park - pathways to schools project.
<ul style="list-style-type: none"> • Best practices guide for bicycle and pedestrian facility design and operation. 	<ul style="list-style-type: none"> • Transportation survey to identify bicycle and pedestrian usage and travel patterns and needs.
<ul style="list-style-type: none"> • Connect BWI trail to the airport terminal and other area trails, such as Patapso Trail. 	<ul style="list-style-type: none"> • Woodrow Wilson bridge bicycle and pedestrian path.
<ul style="list-style-type: none"> • Develop clearer simpler laws governing bicycle and pedestrian safety. 	<ul style="list-style-type: none"> • Pedestrian bridge over I-270 at MD 28.
<ul style="list-style-type: none"> • Develop pedestrian-friendly transit-oriented developments in Owings Mills, West Hyattsville and other key rail stations. 	<ul style="list-style-type: none"> • Adapt existing MARC rail cars with bike racks to permit passengers to carry on bicycles.
<ul style="list-style-type: none"> • Study opportunities to create pedestrian-friendly transit-oriented developments on new rail transit lines in Baltimore and Washington regions. 	<ul style="list-style-type: none"> • Study new methods of increasing the visibility of bicycles and pedestrians on roadways.

List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act of 1990
ADAAG	Americans with Disabilities Act Accessibility Guidelines
BLOC	Bicycle Level of Comfort
BPPP	Bicycle Pedestrian Partnership Program
BWI Airport	Baltimore-Washington International Airport
CTP	Consolidated Transportation Program
DNR	Department of Natural Resources
MBPAC	Maryland Bicycle and Pedestrian Advisory Committee
MDOT	Maryland Department of Transportation
MdTA	Maryland Transportation Authority
MTA	Maryland Transit Administration
MTP	Maryland Transportation Plan
MVA	Maryland Motor Vehicle Administration
PFA	Priority Funding Area
SHA	State Highway Administration

Maryland Bicycle and Pedestrian Access Act

PUBLIC POLICY

The General Assembly finds that it is in the public interest for the State to include enhanced transportation facilities for pedestrian and bicycle riders as an essential component of the State's transportation system, and declares that it is the policy of the State that:

- 1) Access to and use of transportation facilities by pedestrians and bicycle riders shall be considered and best engineering practices regarding the needs of bicycle riders and pedestrians shall be employed in all phases of transportation planning, including highway design, construction, reconstruction, and repair as well as expansion and improvement of other transportation facilities;
- 2) The modal administrations in the Department shall ensure that the State remove barriers, including restrictions on the bicycle access to mass transit, that impede the free movements of individuals from one mode of transportation to another; and
- 3) As to any new transportation project or improvement to an existing transportation facility, the Department shall work to ensure that transportation options for pedestrians and bicycle riders will be enhanced and that pedestrian and bicycle access to transportation facilities will not be negatively impacted by the project or improvements.

DIRECTOR OF BICYCLE AND PEDESTRIAN ACCESS

- a) **Established** - There is a Director of Bicycle and Pedestrian Access in the Office of the Secretary.
- b) **Appointment** -
 - (1) The Director shall be appointed by the Secretary with the approval of the Governor.
 - (2) The Director shall be a person with experience and knowledge in matters related to bicycle and pedestrian access to transportation facilities.
- c) **Service, reporting and duties** -
 - (1) The Director serves at the pleasure of the Secretary and shall report directly to the Secretary.
 - (2) Subject to the authority of the Secretary, the Director is responsible for carrying out:
 - (i) The powers and duties vested by law in the Director; and
 - (ii) The powers and duties vested in the Secretary and delegated to the Director by the Secretary.
- d) **Salary** - The Director is entitled to the salary provided in the State budget.

BICYCLE-PEDESTRIAN MASTER PLAN

- a) **Requirements; Goals of the Plan** - The Director shall develop and coordinate policies and plans for the provision, preservation, improvement, and expansion of access to transportation facilities in the State for pedestrians and bicycle riders, including development, before October 1, 2002, of a Statewide 20-year Bicycle-Pedestrian Master Plan that:
 - 1) (i) Identifies short-term and long-range goals that are consistent with the purposes of this subtitle; and
 - (ii) For each identified goals includes:
 1. Reasonable cost estimates for achieving the goals; and

2. For purposes of the annual report required under Section 3-216 of this article, objective performance criteria against which progress in achieving the goal can be measured.
 - 2) Complies with applicable federal funding requirements;
 - 3) Provides a model to guide political subdivisions of the State in enhancing bicycle and pedestrian access to transportation facilities;
 - 4) Proposes long-term strategies for improving the State's highways to ensure compliance with the most advanced safety standards for pedestrians and bicycle riders;
 - 5) After consultation with political subdivisions in the State, identifies bicycle-pedestrian priority areas to facilitate the targeting of available funds to those areas of the State most in need.
- b) **Duties of the Director** - To carry out the purposes of this subtitle, the Director shall:
- 1) Participate in the planning of new transportation facilities and improvements to existing transportation facilities;
 - 2) Advise the Secretary on matters concerning bicycle and pedestrian access and any other matter as requested by the Secretary;
 - 3) Initiate a program of systematic identification of and planning for projects related to bicycle and pedestrian transportation that qualify for funds under Federal Highway Administration guidelines;
 - 4) Monitor State transportation plans, proposals, facilities, and services to ensure maximum benefits for pedestrians and bicycle riders in the State; and
 - 5) Consult regularly with the Bicycle and Pedestrian Advisory Committee.
- c) **Secretary's authority** - The exercise of the powers and duties of the Director is subject to the authority of the Secretary.

Twenty Year

Bicycle & Pedestrian Access Master Plan

Model Ordinances for the
Enhancement of Bicycle
and Pedestrian Access
to Transportation
Facilities.



**Making Maryland
the Best State for
Bicyclists and Pedestrians**

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Introduction

The Maryland Department of Transportation (MDOT) has developed a 20-Year Bicycle and Pedestrian Master Access Plan that includes strategies that can be effective in improving bicycle and pedestrian access throughout the State. One of the strategies being explored is the application of land use regulations to encourage the development of bicycle and pedestrian facilities at the county or municipal level. MDOT is researching this issue to provide local planning representatives with tools that they can use in support of bicycle and pedestrian activity. This technical memorandum presents a model for developing land use regulations related to pedestrian and bicycle facilities.

The purpose of this model is to offer a broad range of useful tools as options for local governments to draw upon in their efforts to promote the development of bicycle and pedestrian access in their community, county, or region.

This model draws upon research into the application of regulatory tools for promoting such pedestrian and bicycle access throughout the United States. A summary of the information resources utilized is provided in Appendix A.

The research into how other states, counties, and/or communities promote bicycle and pedestrian access and safety indicated that there are three focuses for bicycle and pedestrian infrastructure management. First, there are local ordinances that control behavior by bicyclists and pedestrians. These laws state where they can walk or ride, where bicycles can be parked, if bicycles must be registered, etcetera. Second, there are land use regulations that control the manner in which bicycle and pedestrian facilities are developed. These laws establish where bicycle lanes, sidewalks, and bicycle and/or pedestrian paths must be constructed as well as set standards for the physical design of these facilities. Third, there are regulations that provide for and encourage development of mixed land uses at a scale (buildings, streets, community spaces) that is compatible with walking and bicycling.

The following model approach focuses primarily on regulations that can encourage/require provision of bicycle and pedestrian access as part of the land development process.

This model does not include an exhaustive listing of specific design features that a typical bicycle or pedestrian facility should include. Rather, it focuses on the process by which provisions can be incorporated in local land use regulations to require or encourage development applicants to provide bicycle and pedestrian access as part of site design. A variety of resources for learning more about bicycle and pedestrian facility design are included in Appendix A

Maryland Framework for Land use Management

The legislative framework for planning and zoning by local governments in Maryland provides the foundation for land use regulations including those that may be adopted to promote the development of bicycle and/or pedestrian facilities. Therefore, this summary of local regulatory authority is provided as a backdrop for understanding the range of planning and regulatory options discussed in this technical memorandum. In addition, the following overview demonstrates state-level commitment to supporting local efforts to develop bicycle and pedestrian access.

ANNOTATED CODE OF MARYLAND

The land use management powers of Maryland counties and municipalities are derived from the State's Constitution, and detailed through the *Annotated Code of Maryland*. This legal framework prescribes the limits of county and municipal governments' authority for land use control, primarily zoning, to stipulate the location, character, and design of private land development.

Article 66B, sections 1.0 through 14.09, of the *Annotated Code of Maryland (Article-Land Use)* provides a mandate for counties and municipalities to make and adopt a comprehensive plan. An important required feature of the comprehensive plan is a transportation plan element that provides for bicycle and pedestrian access.

In addition, each comprehensive plan must have a recommendation for land development regulations to implement the plan and which encourages, among other things, the provision of bikeways and sidewalks.



This article of the Maryland Annotated Code also establishes the authority of most local governments to implement zoning and subdivision controls. The subsection on zoning (*Article – Land Use, 4.01*) specifies that if a local legislative body regulates off-street parking, they must also require space for bicycle parking in a manner they deem appropriate. The local legislative body may also allow a reduction in the number of required automobile parking spaces based on the availability of bicycle parking spaces.

1992 SMART GROWTH ACT

The 1992 *Smart Growth Act* was passed by the Maryland General Assembly to guide the location of growth in the State. The Act laid out seven vision statements that, in summary, would concentrate growth in suitable areas, protect sensitive resources, and protect rural character. This Act also required local governments to revise their comprehensive plans to reflect the seven vision statements. Subsequently, the *1997 Neighborhood Conservation and Smart Growth Act* established programs to promote the State's smart growth goals, including establishing priority funding areas, a rural legacy program, and a brownfields redevelopment initiative. This Act directed Maryland's resources primarily to revitalizing established communities. As a part of that effort, the Maryland Department of Planning (MDP) has been developing guidance



documents to assist local governments in their efforts to regulate land use to promote smart growth objectives.

A primary goal of Maryland's smart growth program in terms of guiding future development patterns has been to promote compact, mixed-use communities or "smart neighborhoods." The concept of smart neighborhoods can be summarized as an approach to land development that:

- Seeks to establish communities and/or neighborhoods with a sense of place
- Fosters socialization among residents
- Is walkable
- Provides alternative modes of transportation that minimize auto dependency
- Provides diversity among land uses and housing types.

A smart neighborhood has been envisioned as one that is essentially a self-contained community unit that embraces these planning and design goals.

One significant aspect of planning for smart neighborhoods is enhancing access and circulation patterns. The emphasis is on balancing the mobility, safety, and access needs of pedestrians and bicyclists, as well as vehicular traffic. This is anticipated to strengthen community cohesion, reduce auto dependency, and support the economic viability of these communities or neighborhoods.

Consequently, language to require development of bicycle and pedestrian access can and should be an integral part of any other local regulatory provisions intended to result in the creation of smart neighborhoods. One option for local governments to consider when wishing to require private development projects to include bicycle and pedestrian facilities is to include design requirements for these facilities in zoning language for mixed-use, smart neighborhood zones.

In keeping with this approach, one element of planning for greater bicycle and pedestrian access in a community can be to amend the local zoning such that it encourages projects that provide mixed-use developments in a pedestrian scaled environment. Research into planning for walkable, bicycle friendly, and transit oriented communities revealed the following broad guidelines that may be useful in revising and updating zoning regulations to promote development compatible with those goals:

- Provide locations for neighborhood-scale commercial development within residential areas
- Provide for higher density residential development and mixed-use zones to create new village centers and foster neighborhoods
- Keep automobile-oriented development in specific zones along major arterial roadways
- Allow for a high level of lot coverage for properties with high pedestrian, bicycle, and/or transit access
- Allow accessory dwellings, a variety of home occupations, and a mix of office and residential uses on the same lot or



in the same building

- Encourage clustering of uses in development and set-aside of open space for parks
- Allow and/or encourage the development of alleys
- Discourage gated access and perimeter walls around subdivisions
- Provide for connector streets and/or street grids, limit cul-de-sacs
- Encourage affordable housing and senior housing projects within 500 feet of transit facilities and bus stops
- Allow park-and-ride lots and transit centers in residential zones
- Require that sidewalks and bicycle lanes or paths be incorporated into new residential and commercial subdivisions



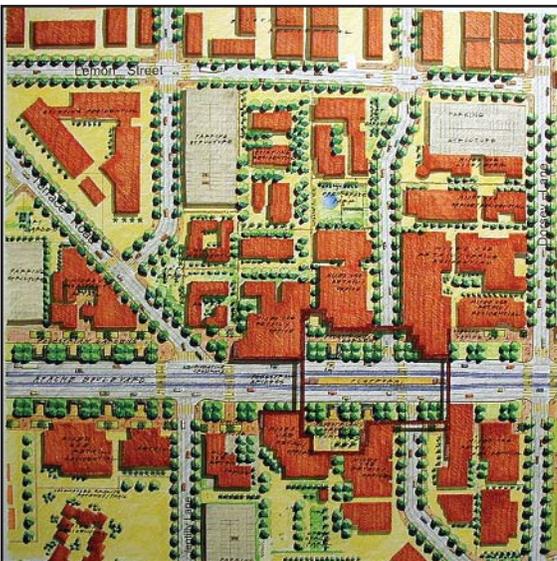
Organization of This Model

This model presents a menu of options that local governments can use to promote the development of bicycle and pedestrian facilities. It discusses both planning approaches

and regulatory approaches. The following section discusses the ways in which counties and/or municipalities can plan for a local bicycle and pedestrian circulation system, and defines steps for implementation. The main body of this model details how zoning regulations can be used to require development proposals to provide bicycle and pedestrian facilities as part of their design.

Most zoning regulations have a basic set of sections in common that describe the purposes for which the regulations are adopted, defines terms used in the regulations, establishes zones for different uses, sets development standards in each zone, and establishes guidelines for the application process. Bicycle and pedestrian access can be addressed in each of these components of the regulations. This model includes a

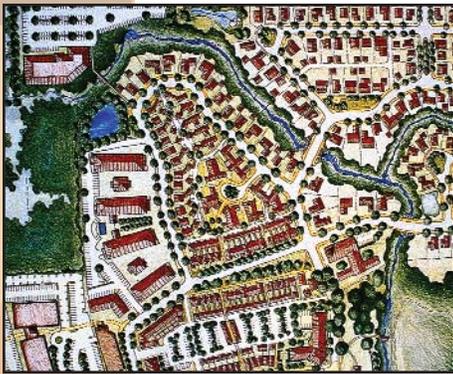
heading for each relevant component of a typical zoning regulation, defines the objective for including bicycle and/or pedestrian language in that section, and provides an example, where possible, of how this has been accomplished.



Planning and Policy for Bicycle/Pedestrian Facilities

Planning and Policy For Bicycle/Pedestrian Facilities

The nationwide research conducted into developing bicycle and/or pedestrian facilities indicated that regulating the development of bicycle and pedestrian access is most effective when it is tied to clear local policy statements regarding these facilities. In particular, many of the samples of existing regulatory language collected referred directly to a bicycle and sidewalk facility plan for a community or a map of existing and proposed locations for such facilities. The development and adoption of bicycle/pedestrian policy plans and proposed facility/route maps can establish a legal foundation for the enforcement of related regulations. The regulations previewed generally required that bicycle lanes, sidewalks, and paths be developed in conformance with established policy plans.



The availability of an adopted bicycle and pedestrian facilities plan and associated map has other benefits. It makes a clear statement to developers and financial lenders the individual community goals for these facilities. A comprehensive bicycle and pedestrian circulation map can show where the community would like to see a contiguous sidewalk system, on-street bicycle routes, and off-road trails. Any resources that can clarify and facilitate the land use application process, including infrastructure plan maps, are a benefit to both the community and the prospective developer in saving time, expense, and reducing potential conflict. It is recommended that any local effort to promote bicycle and pedestrian access utilize both a policy approach in the form of a bicycle/pedestrian plan and/or route map (either a free-standing document referred to in the comprehensive plan or a chapter in the comprehensive plan itself) in addition to any regulatory approach.

A bicycle and/or pedestrian circulation plan can be an integral part of the comprehensive plan, can be a free-standing document, and can also be an element of other community planning efforts. Communities adopt a wide range of planning documents to address particular issues of concern. Other community plans that could include a chapter on bicycle and pedestrian access are:

- Sub-area plans for individual neighborhoods
- An overall transportation system plan or congestion management plan
- A transit system plan
- Land preservation and recreation plans
- A smart neighborhoods plan (see page 4)

However, regardless of where bicycle and pedestrian access policy is addressed, there should be cross references between the plan that includes bicycle and pedestrian access, the comprehensive plan, and all other related community documents to assure that local policy for development of such facilities is implemented consistently across all community programs.

CONSIDERATIONS FOR DEVELOPING A BICYCLE AND PEDESTRIAN CIRCULATION PLAN

A typical planning process for developing a bicycle and/or pedestrian circulation plan would include the following steps:

1. Establishment of a program of collaborative, community-based public participation
2. Inventory of current conditions for pedestrians and bicyclists
 - Preparation of maps of all sidewalks, trails, bike lanes and bicycle parking facilities
3. Set goals and objectives for a bicycle and pedestrian circulation system
4. Correlate goals and objectives to other community goals, in particular for the street circulation system.
5. Establish performance criteria for the bicycle/pedestrian network
6. Develop a future bicycle and pedestrian facilities plan and/or circulation system map
 - Evaluate and select specific route locations
 - Select design treatments and amenities for each route
7. Review and adopt the plan and map through a community involvement process

System planning considerations that should be addressed as part of this process include:

- What type of bicyclist or pedestrian needs should be served? The FHWA guidance document, *Selecting Roadway Design Treatments to Accommodate Bicycles* (January 1994), groups bicyclists in three ways: advanced bicyclists (bicycle commuters), basic bicyclists (recreational use), and children (those with less developed riding skills who are generally monitored by an adult). Advanced bicyclists may be best served by making every street bicycle friendly whereas recreational riders and children may be best served by a system of bicycle paths and designated bicycle lanes on appropriate travel corridors. Some communities use planning subareas to characterize different rider/walker needs for different geographic areas.
- What type of facilities will meet the need in what locations? Options include: roadways for bicycle and motor vehicle shared use roadways with designated bike lanes, paved roadway shoulders, sidewalks, pedestrian trails, and shared-use trail facilities.
- What funding mechanisms should be used for construction? Options include: general revenues, special district funds, nonprofit organization support, developer contributions, Transportation Equity Act for the Twenty-First Century (TEA-21) funds, Federal Transit Administration (FTA) funds, parks and recreation funds, designated bond funds, and general transportation funds.



Planning and Policy for Bicycle/Pedestrian Facilities

- Once private developers construct facilities, what process should be used so the facilities become publicly owned and maintained in a fashion similar to new streets?



RELATIONSHIP OF BICYCLE/PEDESTRIAN POLICY PLANS TO OTHER PLANNING PROGRAMS

The adoption of a plan and program to provide bicycle and pedestrian facilities in a community will necessarily have implications for the future of the county or municipality beyond the need to amend land use regulations to implement the plan. The cost to local governments to construct and/or simply maintain facilities will need to be incorporated into the capital improvement plan and budget. Any plans for bicycle lanes or sidewalks that will utilize or abut state roads/right-of-way will need to be achieved in a collaborative process with MDOT to mesh local programs with state level programming of maintenance and improvements to state roads. Similarly, plans for bicycle lanes and sidewalks that utilize or abut county roads/right-of-way within a municipality will need to be coordinated among the affected local governments. Finally, the development of bicycle and pedestrian facilities should facilitate walking and bicycling across municipal and county boundaries. Therefore, planning for a local bicycle and pedestrian circulation system should be a local process achieved with a regional perspective and regional coordination. Local plans should be complementary to regional plans, in addition to meeting local bicycle and pedestrian access needs.



Zoning for Bicycle and Pedestrian Access

Zoning Overview

Zoning For Bicycle and Pedestrian Access

OVERVIEW

The overall intent of including bicycle and pedestrian facility provisions in zoning regulations to encourage the increased use of bicycle, pedestrian and transit modal alternatives by ensuring that all new development as well as redevelopment of land in a community includes bicycle and pedestrian facilities in the appropriate design and location. As with any zoning language, the requirements and direction provided to applicants should be as clear and succinct as possible to minimize any confusion or conflict about what is desired, and where. Most zoning regulations have a basic set of sections in common. References to the development of bicycle and pedestrian access can be included in each to define the types of facilities that are required, establish standards for facility design and location, and state how bicycle and pedestrian facility proposals will be evaluated as part of the application process. Language in the zoning regulations can do one or more of the following:

- **RECOMMEND** that bicycle and pedestrian access and facilities be included as part of all development proposals
- **REQUIRE** that bicycle and pedestrian access be provided in all new development proposed within specific geographic areas
- **REQUIRE** that bicycle and pedestrian access be provided as part of some specific types of new development
- **PROVIDE** general guiding principals for facility design
- **REQUIRE** that bicycle and pedestrian access be provided in accordance with specific design standards
- **REQUIRE** that all site plans show existing and proposed bicycle facilities and pedestrian amenities
- **OFFER** related regulatory bonuses or relief from related regulatory requirements as an incentive for developments that incorporate high quality bicycle and pedestrian facilities in concert with local goals and plans

NEW DEVELOPMENT VS. RETROFITTING

Zoning regulations do not generally distinguish separate requirements for new development as opposed to redevelopment. Rather, every development proposal must go through the zoning approval process based on the character, scale, and location of the proposed use involved. Zoning provisions for specific site features, such as parking or bicycle and pedestrian facilities, would, therefore, apply to both new development and to a substantial change to an existing land use. This allows for the retrofitting of an old development to meet new standards when redevelopment occurs. Current zoning requirements could apply to any existing use where a substantial change is proposed that would require rezoning, a special permit or special exception, site plan and/or subdivision approval, or modification of an existing approved site plan.



Zoning Statement of Intent



A substantial change can be defined in a variety of ways. It can be described as one which involves a change in use from residential to any commercial or industrial use, or one which calls for a 25% or greater increase in gross floor area of any non-residential use, or one for which there would be 1000 square foot or greater increase in gross building floor area. The change to building size that would be considered substantial would be tailored to the specific circumstances of a particular community. Regardless of how this is defined,

pre-existing sites may have unique challenges in terms of providing bicycle and pedestrian access because they were once developed without it. Therefore, it is helpful if the zoning regulations include provisions for those circumstances under which the zoning administrative officer and/or commission may waive some requirements of the bicycle and pedestrian access regulations that would pose an unreasonable burden for an applicant due to unique site characteristics.

The way in which each basic component of a zoning regulation can incorporate language relative to bicycle and/or pedestrian access is detailed below.

STATEMENT OF INTENT

OBJECTIVE:

The statement of purpose section of a zoning regulation generally includes a statement of intent to facilitate the adequate provision of transportation and to lessen congestion in the streets. This can also mean providing for alternate modes of transportation, including bicycles and on foot. The statement of purpose also commonly states the intent to promote the policies contained within the comprehensive plan. So, to the extent that the comprehensive plan includes a bicycle and pedestrian circulation plan or other direct policies for promoting bicycle and pedestrian access, the zoning regulations make a supporting statement that those policies will guide the zoning administrative officer and/or planning and/or zoning commission (the commission) in making decisions on development proposals.

HOW IT'S DONE

The zoning regulations typically include a formal statement of purpose that repeats the language from the state enabling legislation for zoning. That is, the zoning regulations are adopted to “promote the health, safety, morals, or general welfare of the community.” (Annotated Code of Maryland, 2001). Most local regulations then elaborate on this statement by listing which specific elements or qualities of community life will be regulated to achieve this broad goal. The regulations may, among other things, control the provision of streets, parking, and bicycle and pedestrian facilities to lessen congestion in the streets, maintain air quality, and assure mobility and access for residents. Alternately, if the regulations include a separate chapter on bicycle and pedestrian access, this section can also include a statement of intent and purposes.

EXAMPLE

Fort Collins, CO Zoning Code

1.2.2 Purpose

The purpose of this Land Use Code is to improve and protect the public health, safety and welfare by:

Zoning Statement of Intent



- Ensuring that all growth and development which occurs is consistent with this Land Use Code, City Plan and its adopted components, including but not limited to the Structure Plan, Principles and Policies and associated sub-area plans.
- Encouraging innovations in land development and renewal.
- Fostering the safe, efficient and economic use of the land, the city's transportation infrastructure, and other public facilities and services.
- Facilitating and ensuring the provision of adequate public facilities and services such as transportation (streets, bicycle routes, sidewalks and mass transit), water, wastewater, storm drainage, fire and emergency services, police, electricity, open space, recreation, and public parks.
- Avoiding the inappropriate development of lands and providing for adequate drainage and reduction of flood damage.
- Encouraging patterns of land use that decrease trip length of automobile travel and encourage trip consolidation.
- Increasing public access to mass transit, sidewalks, trails, bicycle routes and other alternative modes of transportation.
- Reducing energy consumption and demand.
- Minimizing the adverse environmental impacts of development.
- Improving the design, quality and character of new development.
- Fostering a more rational pattern of relationship among residential, business and industrial uses for the mutual benefit of all.
- Encouraging the development of vacant properties within established areas.
- Ensuring that development proposals are sensitive to the character of existing neighborhoods.
- Ensuring that development proposals are sensitive to natural areas and features.

City of Portland, OR Zoning Regulations Chapter 33.266, Parking and Loading

33.266.200 Purpose: Long-term bicycle parking provides employees, students, residents, commuters, and others who generally stay at a site for several hours, a secure weather-protected place to park bicycles.....the intent of these standards is to allow bicycle parking to be within a reasonable distance in order to encourage bicycle use.



Zoning Definitions

DEFINITIONS

OBJECTIVE

A definitions section to the zoning regulations is important because terms such as 'shared access', 'bicycle lane', or 'multiuse path' can be subject to a variety of interpretations. In addition, the regulations may require different types of bicycle lanes on different classifications of street. The use of terms in the context of each street may vary somewhat. Therefore, all terms used in reference to bicycle and pedestrian access design as well as the local functional roadway classification should be included in the definitions section.

HOW IT'S DONE

This section includes all definitions that may be open to interpretation within the regulations. This section offers an opportunity to define what is considered a bicycle or pedestrian facility, such as bicycle route, bicycle lane, sidewalk, and multi-use trail.

EXAMPLE

AASHTO 1999

Guide for the Development of Bicycle Facilities

- Bicycle Lane – A portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.
- Bikeway – a generic term for any road, street, path, or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designed for the exclusive use of bicycles or are to be shared with other transportation modes.
- Shared Use Path – A bikeway physically separated from motorized vehicular traffic by an open space or barrier either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.



DEVELOPMENT STANDARDS

OBJECTIVE

Development or design standards established for the character of bicycle and pedestrian access can ensure that the quality of facilities constructed is consistent throughout the community. In addition, the provision of clear standards reduces confusion on the part of site developers as to what's required, and helps avoid miscommunication between developers and local governments. Applicants understand the extent of what they will be expected to provide, the evaluation process and thus timeline for approval, and the costs they can expect to incur as part of the development process.

HOW IT'S DONE

Most zoning regulations contain a section with supplemental regulations. These regulations often address development issues applicable to all land uses in the community and provide for such things as parking requirements, sign regulations, development in floodplains, etcetera. Design standards for bicycle and pedestrian facilities can be detailed in a separate subsection of a supplemental regulations section. If a separate subsection on bicycle and pedestrian facility design standards is incorporated into the regulations, it should address:

- Which development applications must include provisions for bicycle and/or pedestrian access (i.e. all site plan approvals, or all applications in a given geographic area of the community, or all applications for smart neighborhoods).
- A reference to the bicycle and pedestrian circulation plan or policies contained in the comprehensive plan or other planning document.
- How the zoning administrative officer or commission will decide if the requirements of the bicycle and pedestrian access subsection of the regulations have been met.
- Conditions under which the commission may waive the standards in this section, such as the presence of existing public bicycle lanes or shared-use paths.
- Process by which the facilities will become public rights-of-way, owned by the community.

As noted earlier, provisions of a bicycle and pedestrian facilities subsection should apply to both new development and redevelopment of an existing land use. The regulations should include a concrete definition of a substantial change to an existing use to facilitate application of the bicycle and pedestrian access requirements. Notwithstanding this, the commission may give itself some flexibility in deciding when a substantial change to an existing use is being proposed, in relation to making practical and reasonable decisions as to when redevelopment should include bicycle and pedestrian amenities.



DESIGN ISSUES TO ADDRESS

Issues in a design standards section of the regulations that should be considered and that applicants should be required to address include:

- Access provided
- Linkage to other facilities/ connectivity
- Safety
- Lighting and signage
- Surfaces (it may be desirable for surfaces for walking paths to be different than surfaces for a bicycle path)
- Terrain and grade
- Bicycle lane or sidewalk width, geometry
- Landscaping
- Related amenities (benches, water fountains, shade trees, restrooms)
- Roadway interface/intersections
- Sight-distance
- Traffic controls
- Bicycle parking
- Relation of facilities to parking lots/ on-street parking
- Easements for right-of-way for a bicycle lane, sidewalk, or path
- Setback and natural buffer requirements for multi-use paths
- Transit connections
- Compliance with goals and requirements of the Americans with Disabilities Act.

EXAMPLE

Eugene, Oregon Land Use Code 9.6730 Pedestrian Circulation On-Site

1. **Purpose of Pedestrian Circulation On-Site.** These standards are intended to provide safe and efficient circulation for pedestrians within all developments
2. **Applicability of Standards.** As more specifically provided in this section, the standards in this section apply to any development that creates a new building entrance, but not to a building alteration or change in use.
 - a. In any zone, except I-2 and I-3, on-site pedestrian paths shall be constructed in the following cases for institutional, office, commercial and industrial development:
 1. Between all new building entrances and all streets adjacent to the development site. On-site pedestrian paths shall be designed and constructed to provide a direct connection to existing public right-of-ways and public accessways. Etcetera.....
3. **Design of On-Site Pedestrian Facilities.** All on-site pedestrian paths provided for the purposes of complying with this land use code shall conform with the following standards:
 - a. On-site pedestrian paths shall provide direct access from public ways to building entrances.
 - b. On-site pedestrian paths shall be constructed of concrete or a comparable

hard surface material.

- c. On-site pedestrian paths shall be raised to the standard curb height when adjacent to public and private streets and driveways.
- d. Where necessary for traffic circulation, on-site pedestrian paths may be intersected by driving aisles as long as the crossing is marked with striping or constructed with a contrasting paving material to indicate a pedestrian crossing area.

Etcetera.....

OVERLAY ZONE APPROACH

OBJECTIVE:

In addition to regulations that apply to the entire community, there are those that can be established as overlay zones for special purposes. If a community has established a primary area or areas where it wants bicycle and pedestrian facilities to be located, then the zoning regulations can create a bicycle/pedestrian access overlay zone that encompasses those areas.

HOW IT'S DONE

A bicycle and pedestrian access overlay zone would be established with a new zoning category. Then the regulations would define the designated area(s) where the new zone applies and show this on the zoning map. Finally, language would be drafted with design standards for the designated zone. Another approach would be to establish greenways overlay zones that highlight areas where the community wishes to conserve natural, scenic, recreational lands and incorporate trails in those areas. Then, language can be adopted requiring all new development and/or redevelopment to provide a conservation easement within

the greenways zone and include bicycle and pedestrian access within them. The regulations should, in this case, also include design standards.

EXAMPLE

City of Portland, OR Land Use Code
Chapter 33.440 Greenway Zones

33.440.030 *Greenway Overlay Zones*

The Purpose of the Greenway Overlay Zone is to implement the land use pattern identified in the Willamette Greenway Plan. There are four greenway overlay zones, each with its own focus and purpose.

33.440.200 *Application of Development Standards*

Any changes to land or development within the greenway zones, including right-of-way, are subject to the development standards of this chapter.

33.440.240 *Public Recreational Trails*

Public recreational trail requirements. All sites with a public recreational trail symbol shown on the Official Zoning Maps must comply with the requirements of Chapter 33.272, Public Recreational Trails, provide and install the official Greenways Trail signs as required by the Parks Bureau, and meet trail design guidelines contained in the Willamette Greenway Plan.

Zoning Design Manual & Performance Criteria Approach

Harford County, MD requires sidewalks throughout its Edgewood Neighborhood Overlay District:

1. Sidewalks at least 5 feet in width (except for main street districts) shall be provided and constructed of similar materials consistent with adjacent sites.
2. Pedestrian scale streetlights (12 feet high) shall be provided at no greater than 80 feet intervals along sidewalks and parking area.



DESIGN MANUAL APPROACH

OBJECTIVE:

To consolidate all design criteria related to transportation infrastructure in one place to facilitate their use in varied circumstances including zoning applications, subdivision applications, construction permit applications, and local government construction projects.

HOW IT'S DONE

Many communities develop a stand-alone manual of specifications for street and driveway construction (such as the County Road Ordinance) including facilities such as street signs, sidewalks, and drainage structures. This manual could be expanded to incorporate design standards for all bicycle and pedestrian facilities. These manuals can provide information on such things as required bicycle lane width and geometry, layouts for bicycle parking, sidewalk geometry and composition, and recommended locations and spacing of benches, landscaping, lighting, and other amenities.

PERFORMANCE CRITERIA APPROACH

OBJECTIVE:

To provide a flexible approach to design of bicycle and pedestrian facilities that allows creative approaches to accommodate the unique characteristics of each development site.

HOW IT'S DONE

Performance criteria are performance-based standards for design of site features required by local regulations. They may serve the dual purpose of describing the qualitative characteristics that a bicycle or pedestrian facility should encompass while also describing the qualities of design that the zoning administrative officer or commission will consider in deciding whether a proposal is acceptable. Performance criteria are often all consolidated together in one section of the regulations on site

design. Alternately, if the regulations include a separate subsection on bicycle and pedestrian access, the design requirements contained in that section can be phrased in the form of performance criteria. For example, rather than a static requirement that bicycle lanes be provided 4 feet wide of bituminous concrete on a non-arterial road with no curb and no gutter, the performance criteria would state that bicycle lanes should be provided to maximize bicycle access and minimize conflicts between bicyclist and motor vehicle operators, providing a safe travel surface, and providing an aesthetically appealing riding environment, with facilities that meet or enhance those indicated in AASHTO guidelines.

EXAMPLE

Anne Arundel County, MD zoning regulation draft

- a. Pedestrian ways shall be continuous, direct, and convenient with grade separation where necessary.
- b. Pedestrian ways shall be secure, well lighted, and have good visibility.

INCENTIVES

OBJECTIVE:

While the zoning regulations detail the requirements for design of development in a community, they are limited in their ability to influence where private individuals or companies will take an interest in creating new development or redevelopment. One factor that affects which properties are attractive for development are the associated costs such as need for new streets or other infrastructure and cost for professional services such as those of a civil engineer to design a site to meet regulatory requirements. The zoning regulations can be crafted to provide incentives that will encourage development in areas of the community targeted for growth. This can include incentives to help minimize or offset costs to construct bicycle and pedestrian facilities as part of the site development. The purpose is to encourage developers to offer the best possible design for site features such as bicycle and pedestrian amenities in exchange for a reduction in other regulatory burdens.

HOW IT'S DONE

There are several approaches that a commission can take to providing incentives to development. These can be summarized as:

- Releases from some related zoning requirements.
- Bonuses for site design that is particularly beneficial to the community or region at large.
- A system of allowing cash proffers or assessing impact fees.
- Other related incentives.

Releases: The zoning regulations may provide that the commission may release an applicant from one or more of the requirements of the regulations where certain conditions are met. For example, the commission may reduce the amount of required parking where a given number of bicycle parking spaces and connecting bicycle lanes or a bicycle path is provided.

Bonuses: An alternative approach to providing a release from some regulatory requirements is to allow an applicant to apply for a regulatory bonus if certain conditions are met. For example, a commission may allow an increase in density (i.e. extra square footage of a business on a lot) if there is particularly good bicycle and pedestrian access to the site.

Options for releases and/or bonuses include:

- Floor Area Ratio (FAR) increase or decrease.
- Decrease in the number of required motor vehicle parking spaces.
- Reduction in front/back yard setback requirements, as long as adjacent properties are not

adversely affected.

- Landscape swapping (smaller trees instead of larger trees).
- Bike locker locations and bicycle rack areas will not be counted as part of impervious surface area.
- Bicycle parking facilities may be located inside a structure, but not counted for FAR calculation.
- Sign area increases.
- Credit for trip generation allocation when evaluating traffic impacts.



Zoning Incentives

EXAMPLE

Language providing for releases in relationship to bicycle and pedestrian amenities might be phrased as follows**:

Releases: When deemed necessary or in the best interests of the county or municipality, the Commission may release an applicant from one or more of the requirements contained in Section ____, Parking and Loading, at his/her request and by a 3/4 (three quarters) vote of all Commission members. No release shall be granted unless two or more of the following conditions are met:

- The proposed bicycle and/or pedestrian amenities and access will enhance the overall development of the circulation system in the community such that the goals and/or policies of the Comprehensive Plan for the community are promoted or implemented;
- Proposed bicycle and/or pedestrian access will have a beneficial impact on the existing or future safety, capacity or convenience of a public roadway or other community resource;
- The bicycle and/or pedestrian access as proposed will not have an adverse affect on any adjacent property, public roadway, or other community resource;
- The proposed bicycle and/or pedestrian access and amenities will be consistent with all the requirements and purposes of Section____ of these regulations that establishes standards for inclusion of such facilities in site design.

*** This language is an amalgamation of several zoning provisions*

Cash Proffers and Impact Fees: A cash proffer is a voluntary offer of money on the part of an applicant to offset the impact of a particular development. In the case of bicycle and pedestrian facilities, the zoning regulations may provide that an applicant can offer cash in lieu of building bicycle or pedestrian facilities. This money would be made part of a specific fund dedicated to the construction of these facilities by the community at some future point in time. Alternately, if the zoning regulations have a schedule of impact fees assessed against developments, this may include the costs to the local government associated with providing bicycle and pedestrian access to the site. This releases the applicant from the responsibility and direct cost for constructing these facilities.

Other Related Incentives: Other incentives to development of bicycle and pedestrian facilities may include:

- Tax credits.
- Allowing flexible development timing or phasing of construction.
- Low interest loans.
- Rebates for facilities built in excess of requirements.
- Priority status for development application review.
- Fast track, accelerated or streamlined application review and approval processes.



NONCONFORMING USES

OBJECTIVE:

When a county or municipality defines its goals for a bicycle and pedestrian circulation system, it is likely that some areas of the community may be identified that are already built out, have no bicycle or pedestrian access, but are within an area where bicycle and pedestrian access is desirable. To address this issue the zoning regulations should define how the requirements for provision of bicycle and/or pedestrian access must be met when redevelopment occurs. One approach is to consider properties that are required to have such facilities but are already developed without them, as nonconforming sites. The purpose is to pinpoint those sites that should be retrofitted for bicycle and/pedestrian access when the opportunity arises during redevelopment.

HOW IT'S DONE

Nonconforming uses may include properties that do not, at the date of the adoption of regulations for bicycle and pedestrian access, meet the standards and requirements of those zoning provisions. Therefore, the section of the regulations dealing with nonconforming uses would be amended to address nonconforming properties in terms of bicycle and pedestrian access features.

EXAMPLE

Language to address such situations could be phrased as follows**:

Nonconforming Development: This section is aimed at upgrading nonconforming developments where the existing site design adversely affects bicycle and pedestrian access to a site or region of the community. Such nonconforming developments are considered incompatible with the intent and purposes of these regulations. It is the intent of these regulations to permit these nonconforming developments to continue until they are removed or until a substantial change to the existing use on the lot is approved where the nonconforming development exists. Such substantial change shall be as defined in Subsection ___ of these regulations. No non-conforming

development may be changed except to a conforming use, or, with the approval of the Zoning Board of Appeals, to another non-conforming development more consistent with the requirements of Section ___, Bicycle and Pedestrian Access

*** This language is an amalgamation of several zoning provisions*



Zoning Application Process

OBJECTIVE:

The application process for zoning approval may take the form of administrative review and approval by the zoning administrative officer or formal hearing of an application in front of the local commission. In either case, the application process should be one that provides the decision-making individuals with all the information necessary to determine if the intent and requirements of the zoning regulations have been met. This includes the provisions for bicycle and pedestrian access.

APPLICATION PROCESS

HOW IT'S DONE

The zoning regulations typically include a section, which outlines the requirements for an application, including the content of a site plan. This section can also require that a traffic impact report be prepared by a professional engineer for developments of a given size or anticipated impact. This report should discuss all aspects of site access including the relationship of proposed bicycle lanes, sidewalks, or pedestrian crossings to anticipated traffic flow patterns.

Site Plan Requirements/Checklist: The administrative section of the zoning regulations generally includes requirements for information that must be shown on a site plan. This can be in the form of a checklist that applicants and administrative zoning staff can use to determine if their application packages are complete. This section can require that all existing and proposed bicycle and pedestrian amenities be shown. Thus, site plans would show both existing and proposed facilities adjacent to and in the vicinity of proposed development as well as those planned for the development site itself.

Review Process: The administrative section of the regulations generally states how the zoning administrative officer and/or commission will review and decide upon a proposed development. This can include referrals of the site plan to other agencies or professional staff such as the county engineer or public works department. This is also an opportunity for a development proposal to be reviewed by adjacent affected municipalities and by county planning or regional planning agency staff for compatibility with their plans and programs.

This section can also include a requirement for pre-application review that provides a clear process for the administrative zoning staff and developers to discuss concept plans for a development before a formal application is submitted. This process gives the local jurisdiction a chance to see what a developer has conceived in terms of bicycle and pedestrian access for a site and to clarify what is needed to meet the requirements of the regulations.

This section should also state that the zoning administrative officer or commission will refer to the design standards contained elsewhere in the regulations for bicycle and pedestrian facilities and must find that those standards are met prior to approval of any site plan. This section may also state that the commission may, where necessary, attach specific conditions to its approval to ensure bicycle and pedestrian access is adequately provided for.



PUBLIC-PRIVATE PARTNERSHIPS

OBJECTIVE:

To develop bicycle and pedestrian access as part of a negotiated partnership between a local government and a private developer. Partnerships between a local jurisdiction and private developers can facilitate coordinated development of bicycle and pedestrian facilities in a process that is cost-effective for all the parties involved, is less time consuming, and shares the burden of construction in an equitable manner. The cooperation among developers, the community, and the local government that can occur during this process fosters an understanding of one another's needs and goals. It can lead to long-term collaborations for completing a bicycle and pedestrian circulation system.

EXAMPLES OF PROJECTS

Trail Projects:

- a. Gulf Islands National Seashore Trail, Naval Live Oaks Area, FLA. - Was constructed with over 25 public and private partners
- b. Rock Island Rail-Trail, Colorado Springs, CO. - Is being partly funded by the Rustic Hills Improvement Association, a group of local homeowners living adjacent to the trail.
- c. Ice Age Trail between the cities of Madison and Verona, WI. - A 40-acre section of trail was acquired with the help of the Madison Area Youth Soccer Association. The soccer association agreed to a fifty-year lease of 30 acres of the parcel for a soccer complex, providing a substantial part of the \$600,000 acquisition price.
- d. Boardwalk, Evansville, IN. - A boardwalk is being built with corporate donations from Indiana Power and Light Co. and the Wal-Mart Foundation.
- e. Arizona Trail, AZ. - The Salt River Project, a local utility, is providing trail directional and interpretive signs for the trail. Other corporate sponsors of the Arizona Trail are the Hughes Missile Systems, BHP Cooper and Pace American, Inc.
- f. Liberty Township Trails Initiative, Ohio - Creation of more than 4 miles of recreational trails as part of a township wide hike/bike trail system.

Traditional Neighborhood Development (TND) Projects with bicycle/pedestrian amenities:

- a. Historic Westside Village, Atlanta GA. - TND development with 340 housing units, 200,000 SF of retail, and 300,000SF of office space.
- b. Norman Commons, Louisville, Kentucky, TND development of two new villages.
- c. Wildwood Town Center, Wildwood, Missouri, plan for new town center in a sprawling suburb.



Subdivision Regulations

OBJECTIVE:

The purpose of addressing bicycle and pedestrian facilities within subdivision regulations is threefold. First, subdivision language relating to bicycle and pedestrian access can provide for access within those developments not addressed by zoning approval. For example, a simple residential subdivision may be planned in an area where the residential density proposed is allowed as-of-right by zoning. Consequently, the plan will not require review and approval by the commission. In these cases, the subdivision regulations should include provisions for bicycle and pedestrian amenities to ensure that all development meets the same standard for bicycle and pedestrian access. A second purpose for addressing bicycle and pedestrian facilities within subdivision regulations is to ensure that bicycle and pedestrian circulation is considered both within a site as well as between a site and the surrounding existing development. Third, language to require bicycle and pedestrian access in new subdivisions can promote consistency of access among multiple new developments. Thus, language to require safe and adequate bicycle and pedestrian access within the subdivision regulations can have the long term effect of facilitating the design of new walkable areas in a community.

HOW IT'S DONE

The following segments of a typical set of subdivision regulations may include language to require the provision of bicycle and pedestrian access.

General Provisions: The general provisions of the subdivision regulations are similar to the statement of purpose included in zoning regulations. They can include a statement that all subdivisions shall make adequate provision for bicycle and pedestrian access.

Requirements for Approval: This section of the subdivision regulations states the terms under which a subdivision will be approved. Approval of a proposed subdivision plan may be withheld where the proposed bicycle and pedestrian access from such subdivision will likely be incompatible with existing facilities or adversely affect bicycle and pedestrian circulation in the community as a whole.

Application Requirements: This section generally sets forth the standards for development of a subdivision plan and the information it is required to show. The subdivision site plan map can be required to include a Bicycle and Pedestrian Access Element that shows the following:

- Existing bicycle lanes, sidewalks, and off-road paths on and within 200 feet of the site.
- Traffic circulation, roadways, intersections, access or driveways onto adjacent properties, and traffic conditions within 200 feet of the site.
- Proposed internal circulation and infrastructure, including that for bicycles, pedestrians, and transit vehicles.
- Proposed off-site bicycle and/or pedestrian facility connections and improvement plans.

A traffic impact report is often required for all proposed subdivisions involving a given number of lots, based on a threshold size established by the community. The report can be required to include an analysis of the impact of the development on existing bicycle and pedestrian facilities in the vicinity of the proposed project in terms of related roadway safety issues.



Review Procedure: The administrative section of the subdivision regulations serves the same purposes and includes the same types of provisions as the administrative section of the zoning regulations. This section may require that an application with a bicycle and pedestrian access proposal be sent to the commission for comment on its zoning consistency, where the development will not also be required to apply for zoning approval.

Design Standards: Subdivision regulations generally include a section with design standards for all aspects of the subdivision site plan. Standards for design of bicycle and pedestrian facilities and amenities can be included in this section. They should be consistent with the design standards provided in the zoning regulations.



Other Considerations and Issues

There are a number of factors that may affect the ability of local governments to implement a program to promote the development of bicycle and pedestrian access. Certainly the need for bicycle and pedestrian facilities relative to other community needs will be a deciding factor in how they are prioritized for implementation. The stringency of regulatory language adopted to require bicycle and pedestrian access as part of development will also be guided by how communities perceive the need for bicycle and pedestrian facilities in the context of other development issues. These factors will need to be evaluated in the course of planning and regulatory efforts and are discussed in more detail below.

PLANNING CONSIDERATIONS

There are a number of considerations related to existing local development patterns that influences the direction of local planning for bicycle and pedestrian facilities. These include:

- Existing land uses are often physically separated, consistent with traditional zoning theory. Consequently the distance of residential areas from employment centers, commercial districts, and other community resources can be prohibitive for individuals considering traveling among them by bicycle or on foot. In this case, the local jurisdiction may need to develop plans (and amend zoning regulations) to promote mixed-use developments with traditional neighborhood design that incorporates convenient bicycle and pedestrian access (e.g. methods to connect pedestrian and commercial areas).
- The demand for bicycle and pedestrian facilities will be quite different in rural areas than in suburban or urban communities. Still, county and municipal governments can plan for bicycle and pedestrian trails in rural areas to promote tourism, for bikeways for bicycle lanes between village centers and key destinations, and for bicycle and pedestrian access within village centers.
- There are a mixture of state and county roads in Maryland. Any planning for local bicycle and pedestrian facilities that uses or interfaces with these roads will require early coordination and dialog among local jurisdictions and MDOT to ensure that issues such as responsibility for construction, inspection, maintenance, and liability are determined before facilities are constructed. This MDOT planning process for a statewide bicycle and pedestrian policy plan and establishment of Director of Bicycle and Pedestrian Access demonstrates the commitment to supporting successful planning and implementation on a local level, including that which utilizes state roads in the process.

REGULATORY CONSIDERATIONS

The adoption of local plans to implement a bicycle and pedestrian circulation system will require that county and/or municipal land use regulations be amended to bring private development in concert with those plans. This can raise several issues for local jurisdictions including:



- It will be necessary to carefully review the entire body of zoning and subdivision regulations to ensure that new provisions requiring bicycle and pedestrian access do not conflict with or contradict existing provisions. This will, in most cases, necessitate involvement of an attorney to verify the legal soundness of amendments being considered. Therefore, it would be most cost and time efficient to develop a comprehensive

package of amendments to modify local regulations all at the same time to promote bicycle and pedestrian access, rather than piecemeal changes addressing individual issues, one at a time. This also reinforces the value of a local bicycle and pedestrian circulation plan to successful modification of local regulations to promote bicycle and pedestrian access.

- Land use regulations that require a private developer to construct bicycle and pedestrian facilities should also be clear on who is responsible for maintaining those facilities once they are built. In the case of sidewalks, bicycle lanes and/or multiuse paths, the county or municipality should expect to take on this responsibility just as they do when new streets are constructed in a private development. The cost to the local jurisdiction should be considered when it could be expected that the regulatory language will result in new facilities that will fall ultimately under local control.
- Land development is, to some extent, a result of a negotiation process between the developer and the local jurisdiction. Communities and their governments have a wide range of features they would like to see incorporated into development proposals to help realize community goals. Communities may be faced with making trade-offs between acquiring new bicycle and pedestrian access and meeting other community objectives in order to encourage development of a particular site in a targeted growth area. If a local government has an established process for working with developers to achieve consensus on what features a new development will include (such as a pre-application consultation process), this may ease the burden of negotiations.
- Many Maryland counties and municipalities are in the process of addressing growth management objectives in their comprehensive plans. They are reconsidering local zoning regulations in light of the need to direct growth in line with statewide smart growth principles. It will be especially important to address bicycle and pedestrian access issues in concert with and as a part of that process, if smart growth ideals are to be realized in terms of reducing auto dependency, maximizing community cohesion, and making the most efficient use of community resources and infrastructure. Amendments to local land use regulations will need to be accomplished in a coordinated fashion to blend bicycle and pedestrian access provisions with other smart growth language.



Appendix A

INFORMATION RESOURCES FOR PROMOTING BICYCLE AND PEDESTRIAN ACCESS

The following individuals, agencies, and/or local governments were contacted and resources researched:

1. Guide for the Development of Bicycle Facilities, AASHTO, 1999
2. Smart Neighborhoods, Maryland Department of Planning, September, 2001
3. Zoning Regulations, City of Berkeley, California
4. Municipal Code Corporation: Sample bicycle path ordinance from the code of Milford, Michigan
5. Zoning Regulations, San Joaquin County, California
6. Orlando Urban Area MPO (Florida): Model Bicycle/Pedestrian Land Development Regulations
7. City of Albuquerque, N.M.: Ordinance regulating bicycle use, inspection, registration, and safe riding habits
8. Planning Commissioner's Journal: Article on planning for bicycle facilities, American Planning Association
9. Firm of Duany-Plater Zeiberk web site – projects relating to bicycle facility design
10. Washington State Department of Transportation: web-site on development of their statewide bicycle policy plan
11. City of Eugene, Oregon
12. City of Portland, Oregon
13. Oregon Department of Transportation
14. City of Denver, Colorado
15. City of Austin Texas
16. FHWA Final Report, The National Bicycling and Walking Study, 1993
17. FHWA Final Report, The National Bicycling and Walking Study, Case Study No. 4, Measures to Overcome Impediments to Bicycling and Walking, 1993
18. Technology Transfer Quarterly (Florida's Traffic Engineering Training Newsletter, FDOT)
19. Transportation Research Record, Journal of the Transportation Research Board, Bicycle and Pedestrian Research, 1999
20. Creating Walkable Communities, 1998, Bicycle Federation of America
21. Selecting Roadway Design Treatments to Accommodate Bicycles, FHWA, 1994
22. Walkable Communities, Inc., High Springs, Florida
23. America Walks, non-profit national coalition based in Portland, Oregon
24. Victoria Transport Policy Institute, Victoria, British Columbia

