

APPENDIX D

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



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Introduction

The Maryland Department of Transportation (MDOT) has developed a 20-Year Bicycle and Pedestrian Master 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 was developed in consultation with the Maryland Department of Planning, and presents models for addressing 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.

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 address 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 establish how bicycle and pedestrian facilities should be 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.

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, this overview highlights other land use policies, statutes and initiatives at the State level, that are intended to support local efforts to promote 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.

The Land Use Article, sections 3-101 through 3-304, of the Annotated Code of Maryland charges counties and municipalities with the responsibility to develop and adopt a comprehensive plan. An important required element of the

comprehensive plan is a transportation plan that provides for bicycle and pedestrian access and travelways. 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 bicycle and pedestrian access.

This Article also establishes the authority of most local governments to implement zoning and subdivision controls. The subsection on zoning (Title 4 of the Land Use Article) 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.

Key Smart Growth Laws in Maryland

The 1992 Economic Growth, Resource Protection, and Planning Act helped establish a basic policy framework to help shape growth in appropriate areas, while protecting key resources. This Act articulated the Maryland's growth policy through establishing seven Planning Visions and requiring local governments to revise their comprehensive plans accordingly. Subsequently, the 1997 Neighborhood Conservation and Smart Growth Act established programs to promote the State's smart growth goals, including establishing priority funding areas (PFAs), a rural legacy program, and a brownfields redevelopment initiative. This Act directed Maryland's resources primarily to communities within PFAs.

Beginning in 2008, the Maryland General Assembly with leadership from the O'Malley Brown Administration, began passing additional legislation to help strengthen policies and programs that help to achieve State's smart growth and sustainability goals.

In 2009, the Maryland's Planning Visions were updated and expanded to include 12 Visions which reflect the State's ongoing aspiration to develop and implement sound growth and development policy. The visions address: quality of life and sustainability; public participation; growth areas; community design; infrastructure; transportation; housing; economic development; environmental protection; resource conservation; stewardship; and implementation approaches. Local jurisdictions are required to include the visions in the local comprehensive plan and implement them through zoning ordinances and regulations.

Shortly thereafter, the Maryland General Assembly created a "Sustainable Growth Commission" to help encourage compliance with the 12 Visions, and to more broadly advance the causes of Smart and Sustainable Growth in the State.

Sustainable Communities Act of 2010

The Sustainable Communities designation was established by the Maryland General Assembly per the Sustainable Communities Act of 2010. The Act created a common platform for supporting state and local goals to promote revitalization and livability goals. To participate, municipal and county governments are asked to identify local areas in need of revitalization and create a comprehensive revitalization strategy or "Action Plan" guiding investment in accordance with the state's "Planning Visions" and broader principles of livability. These Plans should help increase economic, transportation and housing choices, while improving environmental quality and health outcomes, and advancing other locally identified goals.

Maryland's Sustainable Community designation encourages interagency and cross-governmental collaboration, aligning State and local resources to address the needs of Maryland communities.

Maryland's Sustainable Communities effort builds from new federal initiatives that began to crystallize in 2009, with the creation of an inter-agency Livability Initiative. In 2009, the U.S. Department of Housing and Urban Development, in conjunction with the Department of Transportation and the Environmental Protection Agency, committed to coordinate towards advancing six livability principles:

- ◆ Transportation Choice
- ◆ Equitable, Affordable Housing
- ◆ Economic competitiveness
- ◆ Support existing communities

- ◆ Coordinate and leverage federal policies and investment
- ◆ Value communities and neighborhoods

These principles also underpin state and local efforts to promote Sustainable Communities in the State of Maryland. State agencies, in their review of proposed designations, looks for local inclusion of strategies to advance transportation alternatives such as cycling and walking.

Governor O’Malley’s “Smart, Green and Growing” initiative also prioritizes concentrating growth in existing communities, as one means of promoting more sustainable development in Maryland. Smart Growth Policies, and the Sustainable Communities initiative is intended to support more economically viable, environmentally responsible, and equitable places to live.

The PlanMaryland initiative, published by the Maryland Department of Planning in 2011, also contributes important context to inform how land use regulations may help support bicycle and pedestrian travel. PlanMaryland is a statewide policy that helps guide growth towards areas that can accommodate it with existing resources and infrastructure, while protecting valuable resources such as waterways, farmland and forests. It aims to create sustainable growth by directing state agencies to target their resources to help achieve smart growth at the local level, and for Maryland’s counties and municipalities towards identifying growth and preservation areas to meet land use, planning and development goals. PlanMaryland suggests that such smart growth efforts present the most fiscally and environmentally responsible approach to accommodating growth, and that these outcomes become achievable in part, because they also help expand opportunities to promote transit, cycling and walking as transportation alternatives.

One significant aspect of planning for smart growth and sustainable communities is enhancing multimodal access and circulation patterns. The emphasis is on balancing the mobility, safety, and access needs of pedestrians and bicyclists, as well as vehicular traffic. Such efforts can strengthen community cohesion, reduce auto dependency, and support the economic viability of these communities.

Consequently, language addressing bicycle and pedestrian access can and should be considered in local regulatory provisions and should be integral to the development and site plan review processes. One option for local governments to consider is to include design requirements for such facilities as part of the zoning code, or to integrate a check list to include such concerns are addressed as a regular part of site plan review. Private development partners should be encouraged to think of including bicycle and pedestrian facilities as a desirable amenity for their projects, and could be required to help ensure connectivity with the broader bicycle and pedestrian network.

In keeping with this approach, one element of planning for greater bicycle and pedestrian access in a community can be to amend the local plan and zoning such that they encourage compact and mixed-use developments in a pedestrian scaled environment. Planning for walkable, bicycle friendly, and transit-oriented communities implies the following broad guidelines as useful in revising and updating local comprehensive plans and zoning regulations:

- ◆ Scale-sensitivity for buildings and infrastructure, with human scale frontages and pedestrian friendly lighting where appropriate.
- ◆ Promote land use mixes that maximize the potential for residents to achieve everyday activities by walking, biking, or taking transit. (e.g. consider allowing neighborhood-scale commercial development within easy access to residential areas).
- ◆ Encourage nodal development with areas of relatively higher density characterized by a mix of uses conducive to shorter trips.
- ◆ Encourage higher densities and pedestrian friendly infrastructure in areas 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.

- ◆ Discourage gated access, cul-de-sacs and stairs/walls around subdivisions that may limit connectivity and access.
- ◆ Promote a complete streets approach that considers all users, and balances automobiles with pedestrians, trucks and bicycles as appropriate.
- ◆ Encourage shorter blocks with a well-connected street grid to expand access and walkability.
- ◆ Provide for convenient access to adjacent communities and activity centers.

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. It is also recommended that local jurisdictions and other stakeholders incorporate bicycle and pedestrian access considerations into all appropriate aspects of their respective project development processes, and ensure that accessibility and accommodation is addressed as a regular part of the project development process. Circulation for bicycles and pedestrians, as well as transit vehicles and automobiles, can be integrated into a broad range of local planning initiatives, and can be integrated as a key concern in conducting site plan and design review.

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

The research conducted into national approaches to 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. Local jurisdictions, for example may want to consider adopting a general policy of promoting “complete streets” – which implies that roadway development and resurfacing projects will integrate consideration of transit, bicycles and pedestrians, as well as vehicle traffic. In addition, there are many examples of existing regulatory language that refer directly to a bicycle and sidewalk facility plan for a community, or a reference 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 include:

- ◆ Sector Plans or sub-area plans for individual neighborhoods
- ◆ An overall transportation system or corridor plan, or one more specifically focused on access or corridor congestion management
- ◆ A transit plan (including bus operations, new transit lines, stations and transit-oriented development)
- ◆ Land preservation and recreation plans
- ◆ A “Sustainable Communities” Action Plan”

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**

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

- ◆ What type of bicyclist or pedestrian needs should be served? The Federal Highway Administration (FHWA) has issued guidance (e.g. Selecting Roadway Design Treatments to Accommodate Bicycles-1994) that 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). The American Association of State Highway and Transportation Officials (AASHTO) has more recently also recommended that infrastructure needs may vary depending on the type of rider (experienced versus more casual or less confident cyclists) as well as the type of trip (recreational or utilitarian) to be accommodated. 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.

Additionally, FHWA provides important guidance to help design and construct sidewalks and trails that can accommodate a broad range of abilities and needs, whether the user is walking or traveling with a wheelchair, bicycle or other supportive device. These observations are intended to further complement requirements and recommendations established by the Americans with Disabilities Act (ADA).

- ◆ What type of facility will meet the need in what location? Options include: shared on-street lane for bicycles and motor vehicles, designated bike lane, cycletrack, paved roadway shoulder, off-road bicycle path, sidewalk, pedestrian trail, and multi-use facilities.
- ◆ What funding mechanisms should be used for construction? Options include: general revenues, special district funds, nonprofit organization support, developer contributions, federal transportation funds (including discretionary programs as well as formula funds coordinated by FHWA or FTA), parks and recreation funds, designated bond funds, / or state or local general funds for transportation projects.
- ◆ 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, manage and 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

Overview

As discussed in the overview, it is generally acknowledged that zoning to allow for an appropriate mix and density of uses, can increase accessibility for non-motorized forms of transport by helping shorten potential travel distances. In addition, zoning provisions can help encourage transportation alternatives by ensuring that both new development and re-development projects include bicycle and pedestrian facilities of an appropriate size, 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. Some jurisdictions structure their zoning code to emphasize a form based code approach, which can be used to define how differing requirements (set-backs, sidewalk widths, etc.) might apply to areas of differing densities and building type. Regardless of whether the code is structured around types of uses, or form-based performance requirements, zoning code provisions can include any of the following approaches to supporting bicycle and pedestrian infrastructure:

- ◆ 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 principles 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.

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

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 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.

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 of Stated Intent in Zoning Regulation: Fort Collins, Colorado

1.2.2 Purpose

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

- ◆ 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.
- ◆ Encouraging a wide variety of housing opportunities at various densities that are well-served by public transport for people of all ages and abilities.

Example of Zoning Provision for Bicycle Parking: Portland, Oregon

Parking and Loading Chapter 33.266.200

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.

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 amenity, bicycle path, bicycle lane, sidewalk, and multi-use trail.

Example of Definitions: AASHTO

Guide for the Development of Bicycle Facilities, 2012

- ◆ 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 in such 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 multi-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 of facility
- ◆ 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, trail, 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 of Pedestrian Provisions in Land Use Code: 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:
- i. 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.
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

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 of Greenway Overlay Zone: Portland, Oregon

In Chapter 33.440 Greenway Zones of their Land Use Code, The City of Portland outlines provisions pertaining to their Greenway Overlay 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 and water quality requirements. There are five 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

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.

Example of Overlay District Sidewalk Requirements: Harford County, Maryland

Harford County 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 shall be provided.

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.

Example Pedestrian Design Guide: Portland, Oregon

Portland defines their sidewalk corridor zone to include curb zone, furnishings zone, through pedestrian zone, and frontage zones, and includes the following standards for sidewalk zone width:

- ◆ 4.6 m (15'-0") - Recommended in Pedestrian Districts, especially for arterial streets or where ROW width is 24.5 m (80'-0").
- ◆ 3.7 m (12'-0") - Recommended for City Walkways, for local streets in Pedestrian Districts, and for streets where ROW width is 18.2 m (60'-0").

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 a specific width 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 of Zoning Code Language: Anne Arundel County, Maryland (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 is 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 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 a connecting bicycle lane 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

Example of Release Language for Bicycle and Pedestrian Amenities**

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 non-conforming 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 of Language to Address 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.

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.

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. In addition, jurisdictions can develop and publish development guidelines that help orient stakeholders to the project review process and heighten awareness of expectations regarding provision for bicycle and pedestrian amenities.

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 and can lead to long-term collaborations for completing a bicycle and pedestrian circulation system.

Examples of Public-Private 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.

Examples of Traditional Neighborhood Development (TND) Projects

- 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 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 focus 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.

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 amenities 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.
- ◆ 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 recreational bicycle and pedestrian trails in rural areas to promote tourism, for bicycle lanes between village centers and between village centers and key destinations, and for bicycle and pedestrian access within village centers, themselves.
- ◆ Pedestrian and bicycle planning and project development should be pursued in a manner that helps integrate other transportation modes, and helps knit together facilities that may be provided by the State, County and other jurisdictions. 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. The planning process should include the State Highway Administration (SHA), the Maryland Motor Vehicle Administration (MVA), and/or the Maryland Transit Administration (MTA) as well as other state agencies (e.g. the Department of Natural Resources for state parkland trails) as appropriate. Support and oversight, as well as other forms of assistance can often be made available at these agencies.

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 guide private development towards consistency with those plans. This can raise several issues for local jurisdictions. Following are areas of potential concern:

- ◆ 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 may 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 make piecemeal changes addressing individual issues, one at a time. This approach would also reinforce 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 specific as to the question of 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 usually reflects a process of negotiation 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. This can be achieved by creating development guidebook that outline key issues that a developer will be expected to address as they move forward with their project. Checklists that highlight expectations regarding bicycle and pedestrian accommodation (as well as transit access where appropriate), can facilitate these discussions by adding predictability, to the potential benefit of all stakeholders.
- ◆ Many Maryland counties and municipalities are in the process of addressing growth management objectives in their comprehensive plans as well as stormwater management and requirements to address Total Maximum Daily Load (TMDL) requirements for the Chesapeake Bay. They are reconsidering local zoning regulations and infrastructure design in light of the need to direct growth and develop infrastructure in a manner to meet a broad range of state and local planning objectives 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 these efforts, and to coordinate with state and regional entities to realize the desired outcomes in terms of reducing greenhouse gas emissions reducing auto dependency, promoting water and air quality, while improving quality of life and making the most efficient use of 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 policy goals and statutory requirements at the federal, state, regional and local levels.

Information Resources for Promoting Bicycle and Pedestrian Access

Guidelines for the provision of bicycle and pedestrian infrastructure are rapidly evolving. Engineering and design standards should be consistently monitored to ensure that proper flexibility and safety provisions are in place, and to ensure that proposed projects meet required standards. To ensure that the most current guidance can inform local decision-making, local jurisdictions are encouraged to consult the following web resources on street design and bicycle/pedestrian accommodation:

American Association of State Highway and Transportation Officials (AASHTO) Washington, D.C. <http://www.aashto.org>

Institute of Transportation Engineers (ITE) Washington, D.C. <http://www.ite.org>

Association of Pedestrian and Bicycle Professionals(APBP) Cedarburg, WI <http://www.apbp.org>

Federal Highway Administration (FHWA) Bicycle and Pedestrian Program Office of Natural and Human Environment Washington, DC <http://www.fhwa.dot.gov/environment/bikeped/index.htm>

MDOT, SHA, MTA and MVA and several state and local partners, as well as advocacy groups, help promote awareness of new resources and statutes affecting bicycle and pedestrian travel and infrastructure via their websites. The Maryland Motor

Vehicle Administration (MVA), in particular, coordinates the Maryland Highway Safety Office, which provides educational materials, legislation updates, and resources to help support bicycle and pedestrian safety in the state. See: http://mhso.mva.maryland.gov/SafetyPrograms/program_bicycle_safety.htm

In addition, the following sources were referenced above and/or are recommended for further information:

1. SHA Complete Streets Policy: http://www.roads.maryland.gov/OPPEN/SHA_Complete_Street_Policy.pdf
2. AASHTO Guide for the Development of Bicycle Facilities, 4th Edition AASHTO, 2012
3. Sustainable Communities Overview, Department of Housing and Community Development: <http://www.mdhousing.org/website/programs/dn/>
4. PlanMaryland, Maryland Department of Planning: <http://www.plan.maryland.gov/>
5. City of Berkeley, California: zoning regulations
6. Municipal Code Corporation: Code of Milford Michigan: Sample Bicycle Path Ordinance from the code of Milford, Michigan
7. San Joaquin County, California: Zoning Ordinance
8. Orlando Urban Area MPO (Florida): Model Bicycle/Pedestrian Land Development Regulations
9. City of Albuquerque, N.M.: Ordinance Regulating bicycle use, inspection, registration, and safe riding habits
10. Planning Commissioner's Journal: Planning for Bicycle Facilities, American Planning Association
11. Duany-Plater Zeiberk: www.dpz.com 10. Washington State Department of Transportation: <http://www.wsdot.wa.gov/bike/default.htm>
12. City of Eugene, Oregon, <http://www.eugene-or.gov> 13. Oregon Department of Transportation
13. City of Portland, Oregon, <http://www.portlandonline.com/>
14. Oregon Department of Transportation: <http://www.oregon.gov/ODOT>
15. City of Denver, Colorado, <http://www.denvergov.org>
16. City of Austin Texas, <http://www.austintexas.gov/>
17. FHWA Final Report, The National Bicycling and Walking Study, 1993
18. FHWA, The National Bicycling and Walking Study: Ten Year Status Report, 2004: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/resources/study/index_10yr.cfm
19. FHWA Final Report, National Survey of Pedestrian and Bicyclist Attitudes and Behaviors, 2002
20. NACTO. Urban Bikeways Design Guidelines. 2011
21. Baltimore City. Complete Streets Policy, <http://www.smartgrowthamerica.org/documents/cs/policy/cs-md-baltimore-resolution.pdf>
22. City of Rockville, Complete Streets Policy. <http://www.rockvillemd.gov/DocumentCenter/View/589>
23. Technology Transfer Quarterly (Florida's Traffic Engineering Training Newsletter, FDOT)
24. Transportation Research Board, <http://www.bicyclinginfo.org/trbbike/research.cfm>
25. Creating Walkable Communities, 1998, Bicycle Federation of America

26. America Walks, <http://americawalks.org/resources/>
27. Victoria Transport Policy Institute, <http://www.vtpi.org>
28. Baltimore City: Development Guidebook, Zoning Code and other guidance: <http://www.baltimorecity.gov/Government/AgenciesDepartments/Planning/MasterPlansMapsPublications/DevelopmentResources.aspx>