CHAPTER 1: INTRODUCTION

The Maryland Department of Transportation's principle 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 reach this goal. In 2002, the Department issued the Twenty Year Bicycle and Pedestrian Access Master Plan that serves as a blueprint for achieving the vision of Maryland becoming the best state in the nation for bicycling and walking. In support of the Master Plan, the State Highway Administration (SHA) issued its Policy for Accommodating Bicycles and Pedestrians on State Highways. The policy is stated below:

> **"The State Highway Administration (SHA) shall make accommodations for bicycling and walking a routine and integral element of planning, design, construction, operations and maintenance activities as appropriate."**

1.1 Purpose

The purpose of this manual is to assist the transportation engineer by providing guidelines for preferred accommodations to benefit bicycling and walking in Maryland. It is SHA's goal to provide these accommodations as part of all roadway projects where it is appropriate and feasible to do so. Providing bicycle and pedestrian accommodations is especially important where the existing and proposed land use supports cycling and walking. This includes trip generators and destinations such as employment, education, residential, commercial, recreation and transit centers.

This manual provides a uniform set of design guidelines for bicycle and pedestrian facilities in order to achieve a consistent statewide approach to bicycle and pedestrian issues. It is the intent that these guidelines apply to all public facilities in Maryland regardless of jurisdiction. The guidelines take into account current SHA road design practices, accepted national guidelines and standards and best practices used by state and local governments.

The following definitions of "shall", "should", and "may" apply to recommendations in this manual (ITE Traffic Engineering Handbook, 413):

1. SHALL – A *mandatory* condition. Where certain requirements in the design or application of the device or treatment are described with the "shall" stipulation, it is mandatory when an installation is made that these requirements be met.
2. SHOULD – An *advisory* condition. Where the word "should" is used, it is considered to be advisable usage, recommended but not mandatory.
3. MAY – A *permissive* condition. No requirement for design or application is intended.

1.2 Project Development Process

The need to provide bicycle and pedestrian access, facilities and amenities should be identified at the initiation of the project and carried through the planning, preliminary design and final design phases as appropriate. Adopted local[1] master plans and guidelines should be reviewed to identify preferred pedestrian and bicycle facilities.

[1] Local is defined here as incorporated cities such as Rockville or Frederick as well as county agencies such as Maryland National Capitol Park and Planning Commission as well as county governments.

- Project Initiation: Reinforce the need to provide for bicycle and pedestrian access if appropriate and identify preferred accommodations including those that have been identified in local master plans. Coordinate with local agency staff.
- Preliminary Field Investigation: Identify preferred bicycle and pedestrian accommodations, gaps in accessibility, potential connections, potential mid-block crossings, etc. Identify logical termini for bicycle and pedestrian facilities.
- Final Review plans should include SHA's preferred bicycle and pedestrian facilities where appropriate and feasible to do so. Any project that does not comply with SHA's policy for accommodating bicycle and pedestrians is required to have a design waiver for each element of non-compliance. Maintenance of Traffic Plans should include provisions for bicycle and pedestrian access during construction where appropriate, reasonable and feasible to do so in accordance with SHA's "Bicycle and Pedestrian Access Through Work Zones" and the MUTCD (2003).

1.3 Fund 76 and Fund 77 Projects

Fund 76 and Fund 77 projects include various safety activities (such as signalization changes) as well as the pavement resurfacing program. Whenever feasible, Fund 76 and 77 projects should include bicycle and pedestrian accommodations. Examples of the types of improvements that can be implemented in Fund 76 and Fund 77 projects include 5 foot wide bike lanes or wide outside lanes[2] on closed sections, 4 foot wide shoulders (or bike lanes) on open sections, and pedestrian signalization improvements such as pedestrian countdown signals and accessible pedestrian signals.

For existing roadways where adequate widths do not exist, the typical sections shall be reviewed during SHA's regularly scheduled resurfacing program selection process to determine if the existing travel and turning lanes widths can be reduced to provide SHA's preferred widths for bicycle accommodations. Existing lane widths shall only be reduced with the approval of the Assistant District Engineer – Traffic (ADE-T) and typically not below 10 feet for turning lanes and 11 feet for travel lanes.

Fund 76 and 77 projects will not be required to follow the waiver process if the preferred bicycle accommodations can not be provided. It is understood that the scope of these projects typically does not include roadway improvements or reconstruction that would result in adding or improving bicycle accommodations if none exist. However it is imperative that the Assistant District Engineer –Traffic takes responsibility to make sure that any change to the existing striping does not result in a negative impact on existing bicycle access. Any changes to the existing striping that would result in a negative impact to bicycle access should be discussed with SHA's Bicycle and Pedestrian Coordinator.

Resurfacing projects are, however, required to address pedestrian accessibility at intersections and driveways. If sidewalks exist on one or both sides of the roadway, each connection to the street, e.g., all four corners of an intersection shall be made accessible per SHA's *Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways.*

1.4 Definition of Negative Impact

Negative impact to bicycling is described as the permanent reduction or elimination of existing bicycle accommodations. The following examples clarify the definition of "negative impact" to bicycling:

[2] Installation of bicycle lanes should be given priority consideration over wide outside lanes as studies have shown bicyclists prefer striped lanes over wide curb lanes (Hunter, Feaganes, and Scrinivasan; Hunter et al).

- Existing roadway conditions that exceed SHA's preferred widths should not be reduced to widths below the preferred widths. (Ex. An existing 10 foot wide shoulder may be reduced but not below the preferred 4 foot width.)
- Existing roadway conditions that are less than SHA's preferred widths should not be reduced. (Ex. A 3 foot wide shoulder is below the preferred 4 foot width and therefore should not be reduced.)
- No project shall eliminate a shoulder on any roadway where bicycles are permitted to operate and where the maximum posted speed limit is more than 50 miles per hour. By Maryland state law bicyclists are prohibited from operating on any roadway (travel lane) where the posted maximum speed limit is over 50 mph. Cycling is permitted however on shoulders. Eliminating the shoulder would eliminate bicycle access.
- No project shall permanently eliminate existing bicycle access unless a reasonable alternate route exists or reasonable alternate access will be included in the proposed project. Reasonable alternate routes will be determined by the Bicycle and Pedestrian Coordinator.

Negative impact to walking is described as the permanent reduction or elimination of existing pedestrian accommodations. The following examples clarify the definitions of "negative impact" to walking:

- Existing sidewalk that exceeds SHA's preferred widths should not be reduced to widths below the preferred widths. (Ex. An existing 10 foot wide sidewalk should not be reduced below the required minimum 5 foot width of travelway.)
- Existing sidewalk that is less than SHA's preferred widths should not be reduced. (Ex. A 4 foot wide sidewalk is below the required minimum 5 foot width of travelway and should not be reduced.)
- No sidewalk should be removed and thereby eliminate pedestrian access.
- No shoulder in an open section roadway (where sidewalk does not exist) should be removed or reduced below 4 foot in width and thereby eliminate pedestrian access.
- No project shall permanently eliminate existing pedestrian access unless a reasonable alternate route exists or a reasonable alternate route will be included in the proposed project. Reasonable alternate route will be determined by the Bicycle and Pedestrian Coordinator.

1.5 Design Waivers

While it is SHA's intent to provide the preferred accommodations on all projects, it is understood that projects will be reviewed on a case-by-case basis. If it is determined that the preferred bicycle and pedestrian accommodations as described in this document cannot be provided, a design waiver must be requested. Design waivers are not intended to waive the requirements in SHA's *Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways*. A project can only proceed to advertisement and/or construction if the project provides SHA's preferred accommodations or has been granted a design waiver.

A design waiver may be considered for such things as impacts to right of way, utilities, structures (such as bridges and drainage structures), cost and environmentally or historically sensitive areas. The need to provide safety or capacity improvements to the roadway may also be considered. A waiver should not be requested until all reasonable alternatives to provide the preferred bicycle and pedestrian accommodations have been exhausted. The documentation of these alternatives will be required to support the design waiver request.

Design waivers are not intended to exclude the implementation of bicycle and pedestrian facilities as part of a project. Even with a design waiver, a project should be designed as close as practical to the preferred design accommodations. There will be no "blanket" waivers of requirements. The process for requesting a design waiver is provided in Appendix C.

1.6 References

Several additional roadway design manuals include pertinent information on bicycle and pedestrian design, and should therefore be referenced in conjunction with this guide:

- *MDSHA Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways*
  Provides SHA's ADA policy and design requirements for accommodating people with disabilities along Maryland state highways.

- *Maryland MUTCD*
  Provides standards for all traffic control devices in Maryland, including those related to pedestrian traffic, including warrants and design of pedestrian signs and signals, pedestrian signs and markings in school zones, and other topics.

- *AASHTO Guide for the Development of Bicycle Facilities, 1999 (or most recent edition)*
  Provides guidance on bicycle facility planning and design.

- *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004 (Est.)*
  Provides guidance on all aspects of pedestrian facility planning and design.

- *Alternative Treatments for At-Grade Pedestrian Crossings, 2001*
  An informational report on over 70 at-grade pedestrian crossing treatments, published by the Institute of Transportation Engineers.

- *Pedestrian Facilities Users Guide: Providing Safety and Mobility (FHWA-RD-01-102), 2001*
  This is an FHWA research study that describes a range of pedestrian facility design treatments that have been used to improve pedestrian safety in the U.S.

- *Design and Safety of Pedestrian Facilities – A Recommended Practice of the Institute of Transportation Engineers, 1998*