

The *TPB Vision* and *Region Forward* plans call for a transportation system that allows convenient and safe bicycle and pedestrian access, with dynamic regional activity centers and an urban core that contain a mix of jobs, housing and services in a walkable environment. In order to achieve these goals, the Bicycle and Pedestrian Subcommittee has developed the following set of recommended best practices.

A. Incorporate bicycle and pedestrian elements in all jurisdictional planning and design policies. Adopt “Complete Streets” policies.

“VDOT will initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking”



Figure 1: Missing sidewalk near Ft. Totten Metro

1. Include bicycling and walking, including provisions for persons with disabilities, in all stages of the transportation and land use planning process, from initial concept through implementation.¹
2. In particular, consistent with federal policy, every jurisdiction and agency should adopt a “complete streets” or routine accommodation policy such as the Virginia Department of Transportation has adopted. Under “complete streets” policies pedestrians and bicyclists will be accommodated as part of all transportation projects, with a few limited and well-defined exceptions. Typical exceptions drawn from Oregon’s “Bicycle Bill”, which has been the model for such ordinances, are listed below:
 - a. Bicyclists and pedestrians are prohibited by law from using the roadway, as with a tunnel or limited-access highway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.
 - b. The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is

*Many Agencies
involve Walking
and Biking
Advocates in the
Planning Process*

¹ Ft. Totten, DC Photo: COG/TPB, Michael Farrell

defined as exceeding twenty percent of the cost of the larger transportation project.

- c. Where sparsity of population or other factors indicate an absence of need. This exception is meant for remote rural areas that are not likely to experience development within the life span of the investment. Since the life span of a bridge may be 50 years or more, the existing sparsity of population should be expected to continue for that long; otherwise pedestrian and bicycle facilities should be provided.

Agencies should carry out periodic **audits to monitor compliance** with a Complete Streets policy once it is adopted.

An effective complete streets policy is critical, since retrofitting pedestrian and bicycle accommodations is far more expensive than designing them in from the beginning. Policies which urge agencies to “consider” or “encourage” the provision of pedestrian and bicycle facilities often do not provide clear guidance as to when pedestrian or bicycle facilities should or should not be provided. Absent a clear mandate, pedestrian and bicycle facilities tend to be omitted.

In 2010, the region budgeted roughly \$23 million for bicycle and pedestrian projects, or about 1% of transportation capital expenditures

3. Take into account likely future demand for bicycling and walking facilities in planning transportation projects and do not adopt designs that would preclude future improvements.
4. Encourage public participation by bicyclists and pedestrians and other community groups in the planning process.
5. Ensure adequate funding for bicycle and pedestrian transportation staff and facilities, including land acquisition, design, construction, and proper maintenance.
6. Integrate bicycling and walking into new development.
 - a. Require land developers to finance and construct sidewalks, shared-use paths, and bicycle parking facilities within their developments.
 - b. Require land developers to design developments in a way that facilitates internal and external bicycle and pedestrian access. New development should feature a dense network of interconnected streets to minimize trip distance and offer many low-speed, low-traffic routes. Superblock and cul-de-sac development patterns should be discouraged, and transit-oriented development should be encouraged.

Use the Virginia Department of Transportation's [Secondary Street Acceptance Requirements](#) as a model.

7. Design, construct, operate, and maintain sidewalks, shared-use paths, street crossings (including over- and undercrossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways so that **all pedestrians, including people with disabilities**, can travel safely and independently.
8. Improve inter-jurisdictional coordination to identify, plan, construct and preserve **multi-jurisdictional routes**, and provide connecting links for existing routes to assure the establishment of a continuous bicycle and pedestrian transportation system throughout the Washington metropolitan area.
 - a. Identify networks of existing bicycle routes (both on-street and off-street) in the urban core, suburbs, developing fringe, as well as connecting **long distance inter-city routes**. Ensure that these routes are included in land use and transportation plans, and not eliminated as development occurs.
 - b. Identify shared-use path corridors before they are developed, and preserve opportunities for development as shared-use paths.
 - c. Identify existing physical barriers to bicycling (such as rivers and streams, bridges, railroad tracks, highway crossings, and limited access highways with no crossing route) and identify solutions to overcome them.
 - d. Implement uniform wayfinding and/or designation for inter-jurisdictional routes that will provide easily understood instructions and information.
 - e. To help further these goals, create a regional **working group** consisting of state and regional representatives. The working group could identify regional and long distance travel corridors for bicyclists, develop common guide signage guidelines, and develop of recommended bikeway alignments within travel corridors.

B. Develop and adhere to consistent bicycle and pedestrian facility design and construction standards in each jurisdiction:

1. Assure adequate planning, construction and maintenance standards for comfortable and safe bicycling on both on-street routes and off-street paths, as well comfortable and safe walking on paths and sidewalks. Assure that safety is the primary consideration in all design standards.
 - a. Adopt, as minimum standards for privately and publicly built facilities, the AASHTO *Guide for the Development of Bicycle Facilities*, AASHTO's *A Policy on Geometric Design of Highways and Streets*, and the AASHTO *Guide for the Planning, Design and Operation of Pedestrian Facilities*, the *ADA Accessibility Guidelines* from the U.S. Architectural and Transportation Barriers Compliance Board (Access Board), and the *Manual on Uniform Traffic Control Devices* from the Federal Highway Administration.
 - b. Establish and maintain **minimum design and maintenance standards** for each type of facility.
 - c. In accordance with [federal guidance](#), **go beyond the minimum requirements where necessary** to provide safe and comfortable accommodation for bicyclists and pedestrians. Agencies such as the District of Columbia Department of Transportation have developed their own design manuals to meet their specific needs, and which may incorporate experimental measures which are not found in the current AASHTO bicycle facility design guide.

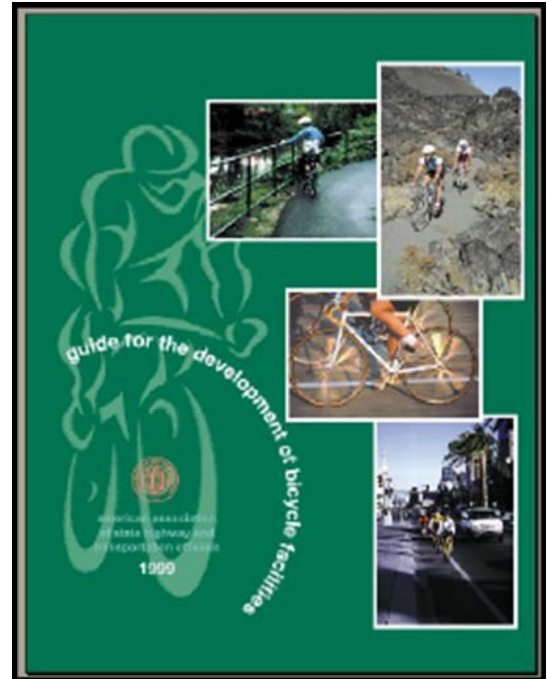


Figure 2: AASHTO Guide for the Development of Bicycle Facilities

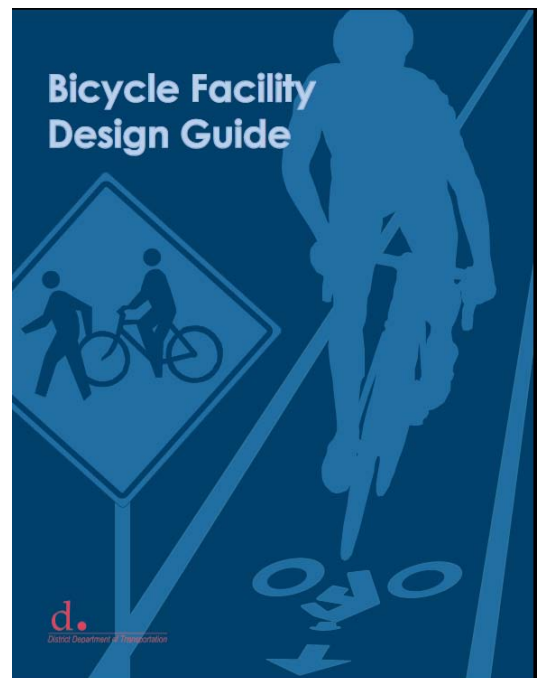


Figure 3: DDOT Bicycle Facility Design Guide

2. Improve Access for Persons with Disabilities to Pedestrian Facilities²

The Transportation Planning Board's Access for All Advisory Committee has identified the following

Poorly Placed Curb Ramps and Rough Pavement can be Difficult to Navigate in a Wheelchair

recommended best practices for improving access for persons with disabilities to pedestrian facilities. More detailed recommendations can be found in the *ADA Accessibility Guidelines* as noted above. With the exception of hand-rails on steep sidewalks, all of the following practices are legally required under the

ADA for all new facilities and all reconstructed facilities:

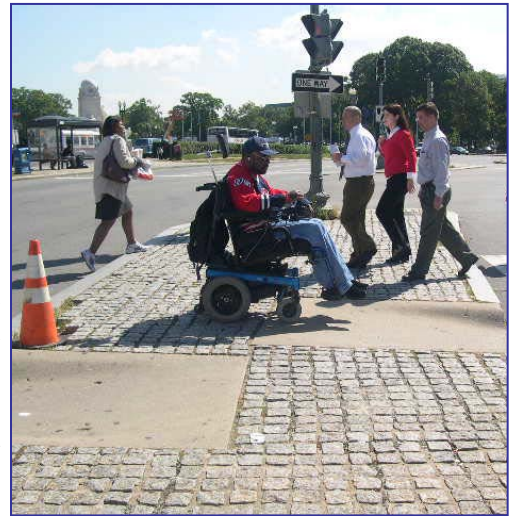


Figure 4: Pedestrian Island near Union Station

- a. Sidewalks should have curb ramps. Ramps should be well-maintained, well-placed, and not too steep in order to permit their use by persons in wheelchairs.³
- b. The height of wheelchair users should be considered when placing shrubs or other objects where they might block them from the view of motorists.
- c. Objects such as security barriers, fences, fire hydrants, telephone poles, parking meters, newspaper boxes, signal control boxes, and other street furniture should be placed in locations where they will not block curb ramps.
- d. The placement of crosswalk buttons must take into consideration the needs of people with disabilities.
- e. Audible pedestrian signals make communities safer for all pedestrians, including seniors and children as well as people with visual impairments.
- f. Sidewalks with steep slopes are difficult for people with disabilities to navigate, especially for people who use manual wheelchairs or people who have trouble walking. Hand rails could help mitigate these difficulties.

² "Lessons Learned" fact sheet for Disability Awareness Day. National Capital Region Transportation Planning Board Access for All Committee, October 20, 2004.

³ Wheelchair ramp photo: COG/TPB, Access for All Committee

C. Minimize roadway width, curb radii & crossing distance.⁴

To minimize pedestrian crossing distances and reduce impermeable, heat-absorbing asphalt coverage, the paved roadway of **all streets should be designed to be the minimum width — and have the minimum number of lanes** — that safely and cost-effectively allow for the desired operations of motor vehicles, buses, and bicyclists. Excess width should be reallocated to provide walking, transit, and bicycling facilities, public open space, green cover, and/or stormwater source control measures. If financial limitations preclude final implementation of street retrofits (e.g., curbing, streetscaping, etc.), the reallocation of space should still proceed with temporary or least costly approaches such as restriping.

To further reduce pedestrian crossing distances and slow turning vehicles, **all roadway corners should be designed with the smallest possible radius** that still accommodates the design vehicle and emergency vehicles.

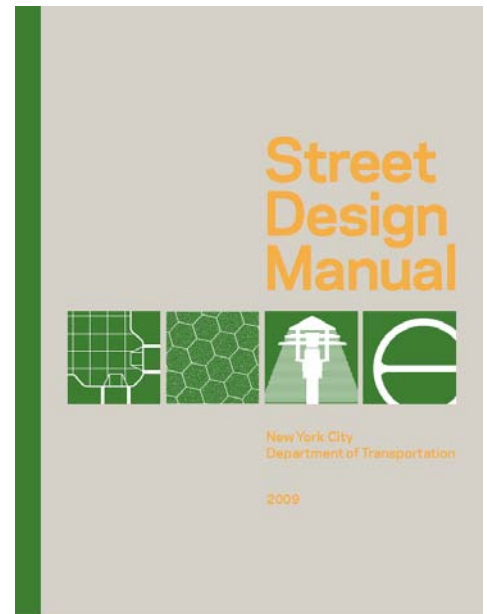


Figure 5: New York City Street Design Manual

D. Set target vehicle speeds appropriate to surrounding land use.⁵

Streets should be designed with target speeds and speed limits appropriate to their surrounding uses and desired role in the vehicular network. Slower target speeds and speed limits should be considered on local streets, residential streets, alleys; on streets adjacent to schools, senior or disabled pedestrian trip generators; waterfronts, parks, rail stations, and other significant pedestrian destinations.

Traffic calming features may be designed in from the beginning, or retrofitted where needed, to bring traffic speeds down to the desired level.⁶

E. Improve bicycle and pedestrian circulation within and between regional activity centers and the urban core.

1. Improve sidewalks, bikeways, intersections, signage and links to transit for bicyclists and pedestrians in activity centers

⁴ New York City Department of Transportation, *Street Design Manual*, 2009. Page 46.

⁵ New York City Department of Transportation, *Street Design Manual*, 2009. Page 46.

⁶ *Ibid.*, pp. 76-91.

2. Improve access to and between regional activity centers.
 - a. Provide access to activity centers from surrounding neighborhoods.
 - b. Provide facilities to connect nearby activity centers.



Figure 6: Bike Racks and Lockers at New York Avenue Metro Station

F. Integrate bicycling and walking into the public transportation system.⁷

1. Provide safe and convenient access for pedestrians and bicyclists to all Metro and commuter rail stations and park-and-ride lots.
2. Improve bicycle parking at Metro and commuter rail stations. Replace broken and obsolete bicycle racks with current models. Investigate increasing customer options for safe/secure /covered high performance, high capacity bike parking, that offer both long- and short term rental options.
3. Improve customers' ability to make the last mile of their trip by locating bike sharing or increasing bike parking options at rail stations, and eliminate the need to bring a bike on the train during peak periods. If/when capacity constraints permit, expand the hours when bicycles are permitted on Metrorail.
4. Provide bicycle racks on all buses.⁸

All Metrobuses have been equipped with racks to carry up to two bikes per bus



**Figure 7: Bike on Metrobus.
Photo Credit: WABA**

⁷ Photo of NY Avenue Metro Bike Lockers: COG/TPB, Michael Farrell

⁸ Photo of Bike on Bus by WABA/Eric Gilliland

5. Provide for more efficient accommodation of bicycles on future rail services in the Washington region. Vertical storage racks such as those on the [River light rail line](#) in New Jersey are a good model.

G. Provide adequate bicycle support facilities.

1. Enact zoning laws to require bicycle parking and related facilities as part of all new construction or major renovation, including office, retail, and housing developments.

The District of Columbia requires Bicycle Parking in any building with Automobile Parking, and Installs Bike Racks on Public Sidewalks on Request

a. Construct bicycle parking facilities in well-traveled and lighted areas. Facilities should be covered and secure.



Figure 8: On-Street Bike Parking, Seattle

- b. Require placement of bicycle parking facilities in convenient locations; short-term parking should be as close as possible to building entrances; long term parking facilities should be located in secure areas.

A keypad-controlled bike cage with racks is very secure

- c. Ensure the provision of showers and changing facilities in all new or renovated commercial developments.



Figure 9: Bike Cage, Stanford University

2. Provide bicycle parking on public property. Jurisdictions should install bicycle parking in public spaces where there is demand, such as public libraries, parks, and sidewalks near storefront retail.⁹

⁹ Photo of bike cage on Stanford Campus, COG/TPB, Michael Farrell

3. Provide bike parking at park and ride facilities.

The Washington, D.C. Department of Transportation has established the following bicycle parking requirements for property owners:

- Bicycle parking is required for office, retail and service uses that provide car parking
- The required number of bike parking spaces is five percent (5%) of the required number of automobile parking spaces
- Bicycle parking must be convenient, secure, and well-lit
- For older buildings, one percent (1%) of the amount of required parking spaces may be converted to bicycle parking spaces
- DDOT offers free technical advice and racks for existing garages and off-street parking lots

H. Develop a regional Bike Sharing Program

Bike sharing is self-service public bicycle rental. It is similar to a car-sharing system, such as ZipCar, where members pay a fee and have access to any available bike throughout the regional system. Unlike earlier “public bicycle” or “yellow bike” programs, which failed due to lack

of means of preventing theft, modern bicycle sharing links rentals to a user’s credit card, which can be charged if the bicycle is not returned. Bike sharing has become common and popular in Europe, with programs in dozens of cities.

See Chapter 4, pp. 10-11 for details on bike sharing in the Washington region.

Figure 10: Cyclist training
Photo Credit: WABA



I. Develop pedestrian and bicycle safety education and enforcement programs in all jurisdictions.

1. Promote pedestrian and bicycle safety education programs for children, beginning at the earliest possible age.
 - a. Establish pedestrian and bicycle safety programs at the elementary school level, including classroom and on-bicycle instruction.
 - b. Develop and distribute pedestrian and bicycle safety information materials designed to teach beginning cyclists and young pedestrians.
 - c. Emphasize the use of bicycle helmets as a means of injury reduction, lights after dark, reflectors, and reflective clothing for pedestrians.

2. Improve cycling skills and pedestrian safety habits of adults and young adults.
 - a. Produce and distribute information on bicycle usage and safety.
 - b. Emphasize the use of helmets for rider protection, lights after dark, reflectors, and reflective clothing for pedestrians.

3. Increase motorist awareness and accommodation of bicyclists and pedestrians, and bicyclist and pedestrian awareness and accommodation of motorists.

- a. Include bicycle and pedestrian information in automobile drivers' training classes, driver's manuals, and license exams, and through the media.
- b. Coordinate public media campaigns with law enforcement



Figure 11: Trail Patrol, C & O Canal Park

4. Encourage jurisdictional uniformity of traffic laws relating to bicycling and walking. Encourage conformity with such regulations as the Uniform Vehicle Code.
5. Encourage consistent bicycle law enforcement to assure safe bicycling and walking.

*Volunteer Patrols
can help with
Trail Security*

- a. Emphasize the enforcement of traffic laws dealing with offenses known to cause crashes between bicycles and motor vehicles, such as wrong way bicycling, and ignoring stop signs and stop lights.
- b. Emphasize enforcement of traffic laws dealing with offenses known to cause crashes between pedestrians and motor vehicles, such as motorists failing to yield to pedestrians, and pedestrians disobeying “Don’t walk” signals.

6. Improve bicycle and pedestrian accident reporting and analysis procedures at the state and regional levels, to provide jurisdictions with a better understanding of accident causes and countermeasures.
7. Provide increased law enforcement presence along regional off-road trail networks and encourage inter-jurisdictional cooperation and coordination to provide for the safety and security of all pedestrians and bicyclists.

The regional “[Street Smart](#)” Pedestrian and Bicycle Safety Campaign urges motorists and pedestrians to “Be Alert”

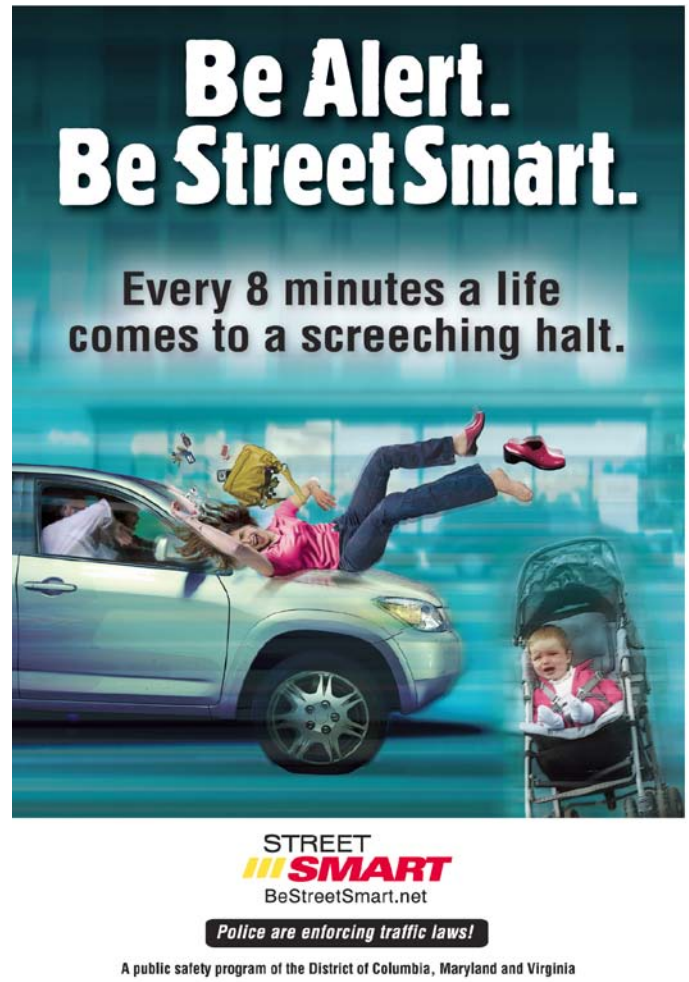


Figure 12: Street Smart Poster

J. Encourage Walking and Bicycling

Each jurisdiction and agency should encourage walking and bicycling, and promote the perception of both as legitimate forms of travel, in the way most appropriate to that organization. Examples include:

- a. Have walk and bike-friendly policies for your employees. Let employees know that walking and bicycling is both permitted and encouraged. Organize/support/participate in events such as [Bike to Work Day](#), [Car-Free Day](#), etc.
- b. Carry out pedestrian and cyclist education programs that also encourage walking and bicycling, such as [Safe Routes to School](#).

- c. Provide high-quality information to the public on the benefits of walking and bicycling, and where and how it can be done in your your community, through programs such as [WalkArlington](#) and [BikeArlington](#). Partner with employers, transportation demand managers, and advocacy groups.
- d. As part of a comprehensive transportation demand management program, provide financial incentives for employees to walk and bicycle.
- e. For States and Metro regions, consider investing in paid media campaigns.



Figure 13: Lawyers Road Before Road Diet
Photo credit: VDOT



Figure 14: Lawyers Road After Road Diet

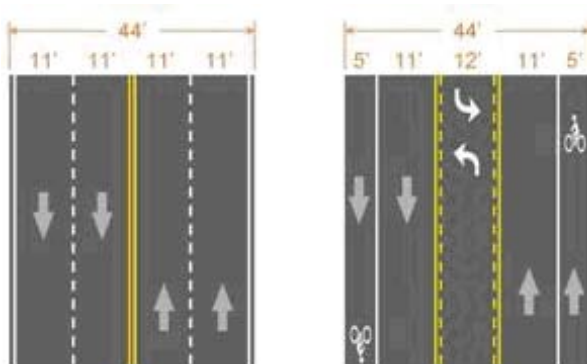


Figure 15: Before and After Illustration

VDOT recently completed a model Road Diet project, shrinking Lawyer's Road from four lanes to two plus a turn lane and bike lanes

- K. Each jurisdiction should develop a high visibility bicycle or pedestrian project to demonstrate the effectiveness of bicycling and walking as a short distance transportation mode.**
1. Projects should be easily implemented and supported by the community.
 2. Each project should enjoy the full and enthusiastic support of the government agencies responsible for implementation.
 3. Extensive publicity and promotion should be provided for each facility or service included in the project.
 4. An extensive analysis of the effectiveness of each project should be conducted following the demonstration period.
- L. Each agency should designate a bicycle coordinator and a pedestrian coordinator to oversee bicycle and pedestrian programs.**

Experience has shown that without a designated staff person or persons responsible over for overseeing their implementation, pedestrian and bicycle programs and policies are not implemented effectively. Staffing levels should be proportional to the size of the agency and volume of work.

All TPB member jurisdictions with active pedestrian and bicycle programs designate a lead staff person or coordinator.