

The *TPB Vision*, *Region Forward*, and *Regional Transportation Priorities* 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.

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 and the National Capital Region Transportation Planning Board’s [Complete Streets](#) policy, every jurisdiction and agency should adopt a **Complete Streets** policy that includes elements that the TPB believes reflect current best practices.

Figure 1: Missing sidewalk near Ft. Totten Metro

Under Complete Streets policies pedestrians and bicyclists will be accommodated as part of all transportation projects, with a few limited and well-defined exceptions. A Complete Streets policy would typically not apply:

- To a new transportation facility construction or modification project for which, as of the effective date of the adoption of the policy, at least 30 percent of the design phase is completed.
- To a transportation facility which prohibits, by law, use of the facility by specified users, in which case a greater effort should be made to accommodate those specified users elsewhere in the travel corridor.

“A complete street safely and adequately accommodates motorized and non-motorized users, including pedestrians, bicyclists, motorists, freight vehicles, emergency vehicles, and transit riders of all ages and abilities, in a manner appropriate to the function and context of the facility.”

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

- When the cost to the exempted project in achieving compliance with the applicable complete streets policy would be excessively disproportionate (as per FHWA guidance), as compared to the need or probable use of a particular complete street.
- When the existing and planned population and employment densities or level of transit service around a particular roadway are so low that there is a documented absence of a need (as per FHWA guidance) to implement the applicable complete streets policy.
- To passenger and freight rail projects, which shall not be required to accommodate other motorized users in the railway right of way, although safe and adequate rail crossings for motorized and non-motorized users should be provided.
- To transportation projects which do not provide for direct use by the public, such as maintenance facilities, drainage and stormwater management facilities, education and training, transportation security projects, beautification, and equipment purchase or rehabilitation.

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

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.

3. **Take into account likely future demand** for bicycling and walking facilities in planning transportation projects; 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.
 - Require land developers to **finance and construct sidewalks**, shared-use paths, and bicycle parking facilities within their developments.
 - 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. Convene and participate in a regional **working group** consisting of state and regional representatives to identify regional and long distance travel corridors for bicyclists, develop common guide signage guidelines, and develop of recommended bikeway alignments within travel corridors.
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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.
 - 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 (MUTCD)* 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. The National Association of City Transportation Officials, an alliance of city transportation departments, including the District Department of Transportation, has developed guides for bikeways and for urban areas. The NACTO guides provide designs and treatments not currently found in the AASHTO guides.

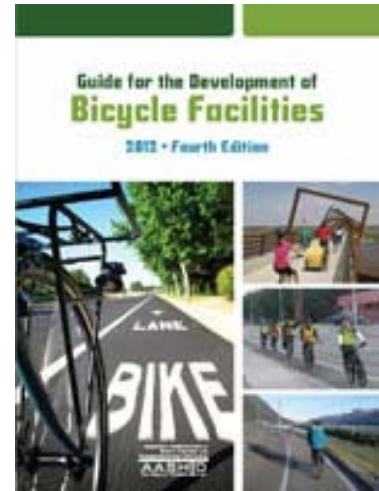


Figure 2: AASHTO Guide for the Development of Bicycle Facilities

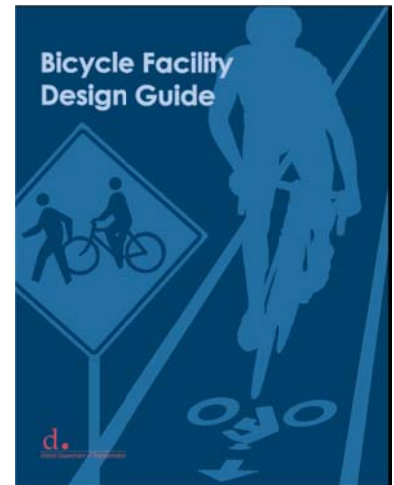
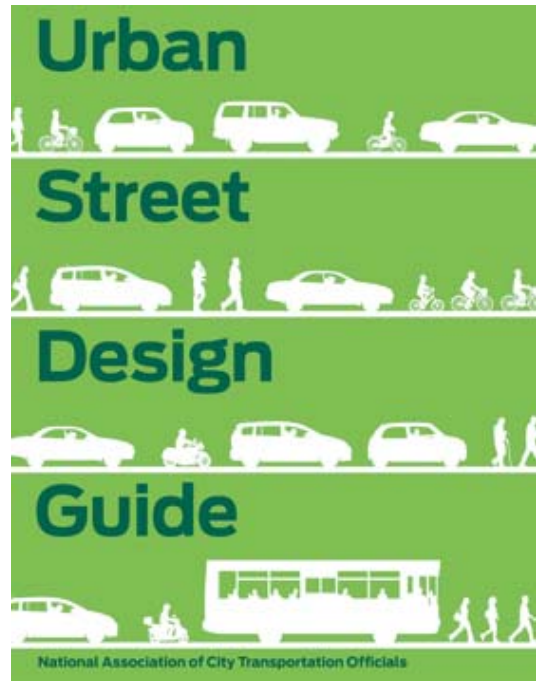


Figure 3: DDOT Bicycle Facility Design Guide

- d. Endorse and use the NACTO [Urban Street Design Guide](#) and [Urban Bikeway Design Guide](#). FHWA [has endorsed](#) the “appropriate” use of the *Urban Bikeway Design Guide* to help agencies fulfill the above-mentioned 2010 federal guidance. FHWA notes that most of the treatments in the NACTO guide are allowed or not precluded by the MUTCD. Non-compliant traffic control devices can still be used as pilots, under the MUTCD experimentation process.



2. Improve Access for Persons with Disabilities to Pedestrian Facilities²

The Transportation Planning Board’s Access for All Advisory Committee has identified the following recommended best practices for improving access for persons with disabilities to pedestrian facilities. More detailed recommendations can be found in the *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: Urban Street Design Guide

- 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 intended vehicle and emergency vehicles.

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

Urban streets should function as **public spaces for people** as well as arteries for traffic and transportation. The best street design adds to the value of businesses, offices, and schools located along the roadway.⁵ Lower speeds are often needed to enable a street to serve as a comfortable place to gather, shop, work, or live.

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

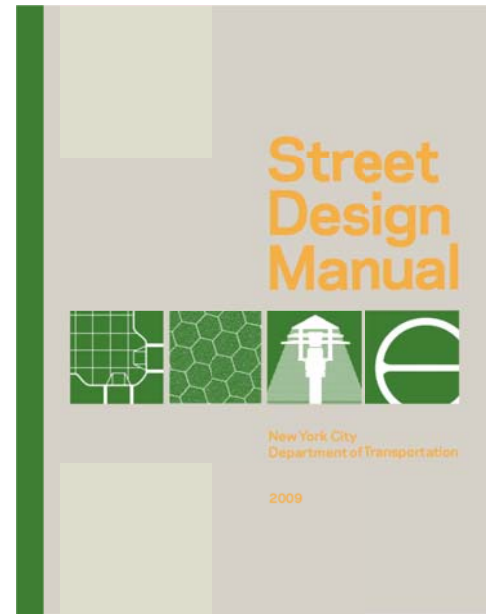


Figure 4: New York City Street Design Manual

⁴ New York City Department of Transportation, [Street Design Manual](#), 2009. Page 46.

⁵ NACTO, *Urban Street Design Guide*, 2013.

⁶ *Ibid.*, pp. 76-91.

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



Figure 5: Bike Racks and Lockers at New York Avenue Metro Station

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

1. Make it easier and safer to walk and bike to bus stop and rail stations.
 - Build sidewalks and pedestrian crosswalks and/or overpasses that connect transit stops to nearby neighborhoods, commercial areas, and existing pedestrian infrastructure.
 - Improve lighting, signage, and wayfinding around transit stations.
 - Improve bicycle parking at Metro, commuter rail stations, and park and ride lots. Replace broken and obsolete bicycle racks with current models. Add more [Bike & Ride](#) secure bicycle parking facilities at Metrorail stations.

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

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

- 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.



**Figure 6: Bike on Metrobus.
Photo Credit: WABA**

4. Provide bicycle racks on all transit buses.⁸
5. Provide for more efficient accommodation of bicycles on future rail services, including commuter rail, Metro, and light rail, 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.
 - Construct bicycle parking facilities in well-traveled and lighted areas. Facilities should be covered and secure.
 - 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.
 - Ensure the provision of showers and changing facilities in all new or renovated commercial developments.



Figure 7: On-Street Bike Parking, Seattle

The District of Columbia requires bicycle parking in any building with automobile parking, and installs bike racks on public sidewalks on request

⁸ Photo of Bike on Bus by WABA/Eric Gilliland

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

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. Expand the 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 took hold first in Europe, but has now [become common](#) in North America, with programs in dozens of cities.

See Chapter 4 for details on bike sharing in the Washington region. The bike sharing system for the Washington region is [Capital Bikeshare](#).

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.
 - Establish pedestrian and bicycle safety programs at the elementary school level, including classroom and on-bicycle instruction.

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

- Develop and distribute pedestrian and bicycle safety information materials designed to teach beginning cyclists and young pedestrians.
 - 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.
- Produce and distribute information on bicycle usage and safety.
 - Emphasize the use of helmets for rider protection, lights after dark, reflectors, and reflective clothing for pedestrians.



**Figure 8: Cyclist training
Photo Credit: WABA**

3. Increase motorist awareness and accommodation of bicyclists and pedestrians, and bicyclist and pedestrian awareness and accommodation of motorists.
- Include bicycle and pedestrian information in automobile drivers' training classes, driver's manuals, and license exams, and through the media.
 - Coordinate public media campaigns with law enforcement

*Volunteer Patrols
can help with
Trail Security*

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.



Figure 9: Trail Patrol, C & O Canal Park

- 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 or stop lights.

- 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 “Slow Down” and “Use Crosswalks”

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:

- Have walk and bike-friendly policies for 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.

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

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.

- Ensure that projects are feasibly implemented, and supported by the community and the government agencies responsible for implementation.
- Undertake extensive publicity and promotion for each facility or service included in the project.
- Conduct an extensive analysis of the effectiveness of each project following the demonstration period.



Figure 11: Lawyers Road Before Road Diet
Photo credit: VDOT



Figure 12: Lawyers Road After Road Diet

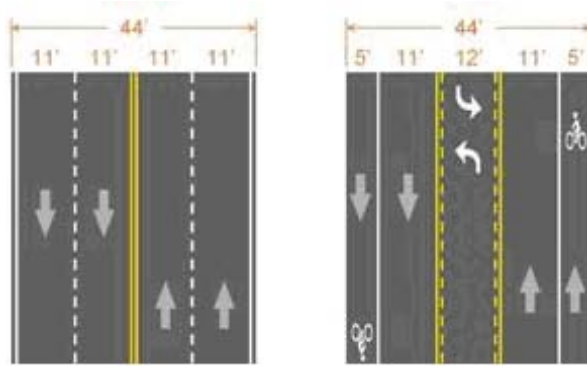


Figure 13: Before and After Illustration

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

- 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.