



Virginia Department of Transportation State Pedestrian Policy Plan

September 2014



Executive Summary

Walking is a popular activity for both transportation and recreation in Virginia. Residents and visitors to the Commonwealth walk to access transit, to shop, for pleasure, and for exercise. They walk on sidewalks along busy urban streets, along quiet rural roads and neighborhood streets. The Virginia Department of Transportation (VDOT) supports the provision of a multi-modal transportation system that addresses the needs of pedestrians. In 2004, the Commonwealth Transportation Board (CTB) adopted the Policy for Integrating Bicycle and Pedestrian Accommodations (also called the Policy). The Policy provides the framework through which VDOT accommodates bicyclists and pedestrians in the funding, planning, design, construction, operation, and maintenance of Virginia's transportation network.

This Plan is the second of three plans that seek to build on the advances made through the creation of the Policy. The first plan focused on state policy regarding bicycling and was released in September 2011. The final plan will address the implementation element of both the bicycle and pedestrian policy plans. The purpose of this Plan is to establish a vision for the future of walking in the Commonwealth and to advance the walking element of the Policy consistently, appropriately, and cost-effectively. The final plan will address the implementation element of both the bicycle and pedestrian policy plans. The recommendations in this Plan will advance the Policy more effectively and will involve a wide variety of partners within various divisions of VDOT, as well as stakeholders throughout the Commonwealth. This Plan focuses on policies, procedures, and programs within VDOT's authority.

The development process for the State Pedestrian Policy Plan involved coordination with key stakeholders and agency staff within VDOT as well as other agencies. The effort was led by an internal working group that consisted of VDOT staff and an external working group that was comprised of representatives of localities, Metropolitan Planning Organizations and the Federal Highway Administration. In addition, the Virginia Bicycle and Pedestrian Advisory Committee provided comments to refine this document.

The VDOT State Pedestrian Policy Plan was created to achieve several goals:

- Goal 1: Improve the safety and comfort of pedestrians throughout Virginia and reduce pedestrian related crashes.
- Goal 2: Enhance mobility and accessibility for pedestrians.
- Goal 3: Achieve a more connected pedestrian network in Virginia.
- Goal 4: Better promote and educate planners, designers, advocates, and stakeholders on the requirements of the CTB Policy for Integrating Bicycle and Pedestrian Accommodations.
- Goal 5: Improve available guidance on pedestrian accommodations.

EXISTING CONDITIONS

Virginia has a mix of opportunities and constraints to walking as well as a wide variety of conditions that impact pedestrian safety and comfort. There are many walkable downtown areas throughout the Commonwealth where walking is safe and convenient, while in other locations walking is difficult due to lack of sidewalks, crosswalks and long crossing distances. There are a variety of opportunities to improve walking conditions and local jurisdictions throughout the Commonwealth are eager to make walking a more viable option for their residents and visitors.

Virginia is home to an outstanding variety of walking opportunities from quaint downtowns to pedestrian malls and long-distance hiking trails. With support from VDOT, localities throughout Virginia are focusing more attention on the economic and quality of life benefits of walkable communities and are working to connect residential areas, shopping

areas, recreation facilities, places of work, and schools. While there are sidewalks on the ground today, there are many gaps in these networks that need attention. The Commonwealth Transportation Board's Policy will continue to serve a very important role in filling these gaps.

PLAN RECOMMENDATIONS

The recommendations of this Plan are organized under four core elements, as discussed below. More detail and specific recommendations are provided in Section 5.

ELEMENT 1: CLARIFY POLICIES WITH REGARD TO PEDESTRIAN ACCOMMODATIONS.

VDOT should provide additional guidance on the planning, design, operation, and maintenance of pedestrian facilities. In some cases, this will involve clarifying or revising existing departmental policies and procedures. In other cases, it will involve developing new resources to guide the implementation of the Policy across all disciplines of the department. For example, procedures are needed to clarify the appropriate type or level of pedestrian accommodations in different roadway environments.

ELEMENT 2: PROVIDE STAFF WITH RESOURCES TO INTEGRATE THE ACCOMMODATIONS OF PEDESTRIANS IN PROJECTS AND PROGRAMS.

VDOT has policies and design standards that address the needs of pedestrians. However, these policies are still fairly new and are being incorporated into the daily operating procedures of the department. The Bicycle and Pedestrian Program provides guidance for this process. VDOT staff should receive training and guidance on their job responsibilities in order to ensure they are able to design, construct, operate, and maintain roadways that safely and appropriately accommodate walking as a multimodal option.

ELEMENT 3: IMPROVE OUTREACH AND COORDINATION.

In addition to VDOT, there are many other agencies and organizations in the Commonwealth responsible for implementing pedestrian projects and programs. A high level of coordination among these entities will benefit stakeholders and the general public. VDOT should continue to coordinate, where appropriate, on pedestrian efforts with local government staff, Metropolitan Planning Organizations, parks and recreation departments, Planning District Commissions, other state agencies, and non-profit organizations including advocacy groups.

ELEMENT 4: MEASURE AND EVALUATE PROGRESS.

Regular monitoring and evaluation of pedestrian performance measures will help ensure that walking is included in the everyday operations of VDOT so Virginia can continue moving toward a truly multimodal transportation network. Established performance measures will help document improvements in pedestrian safety and convenience throughout Virginia. Establishing benchmarks will enable tracking of pedestrian projects and changes in walking rates over time. Data collection methods that are needed to support these benchmarks should also be established.

The final chapter of this Plan sets forward priorities for the recommendations of the Plan, classifying them into 0-1 year, 1-2 years, 2-5 years, and ongoing categories. The actions identified above will establish means to continue integrating the Policy in everyday business practices. Also, the recommendations establish means to enable the department to continue to serve in a coordination role with other agencies and organizations throughout Virginia that are involved in promoting pedestrian access.

Internal Working Group

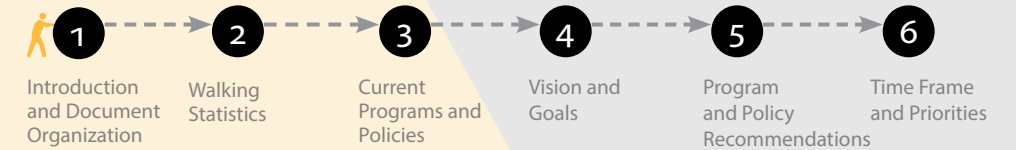
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External Working Group

- Sulabh Aryal, Associate Planner, Richmond Regional Planning District Commission
- Matha Kapitanov, Highway Safety/Emergency Coordinator, Federal Highway Administration (FHWA)
- David Patton, Bicycle & Pedestrian Planner, Arlington County
- Elijah Sharp, Regional Planner II, New River Valley Planning District Commission
- Michael Todd, Rail Corridor & Planning Program Manager, Virginia Department of Rail and Public Transportation (DRPT)
- Jennifer Wampler, Trails Coordinator, Virginia Department of Conservation and Recreation (DCR)
- Chris Wells, Pedestrian Program Manager, Fairfax County

* List reflects positions held by working group members at the time of the plan development.

Table of Contents



1 Introduction and Document Organization

This document represents the second phase of the three-phase process¹ that the Virginia Department of Transportation (hereafter referred to as VDOT or the Department) is conducting to implement a uniform bicycle and pedestrian policy across the State. This second phase of the process establishes a vision for the future of walking in the Commonwealth. The process builds upon the past initiatives of the 2004 CTB Policy for Integrating Bicycle and Pedestrian Accommodations, the VDOT State Bicycle Policy Plan, and many other related steps that VDOT has taken to ensure that bicycle and pedestrian facilities are considered and treated as integral components of the multi-modal transportation system.

Document Organization

This Plan is intended to be utilized in two ways:

1. As a reference guide (Sections 2 and 3) for officials, organizations, and individuals that are part of the project development process (contained in Appendix A); and
2. To recommend actions (Sections 4, 5, and 6) for VDOT and localities in regards to improving pedestrian policy and pedestrian accommodations in Virginia.

To support the two purposes noted above, this document is organized to first present a picture of pedestrian activity, infrastructure, and general statistics to frame the topic of discussion. In Section 3, the plan provides an overview of the guiding policies and documents available in Virginia. The overview of current programs and policies is presented as a reference guide for local officials, organizations, and individuals who are part of the project development process. Section 4, Vision and Goals, was developed based on the review of documents in Section 3, Current Programs and Policies, feedback from VDOT, and survey results of local officials, organizations, and individuals. Section 5, Program and Policy Recommendations is an action plan to achieve the Vision and Goals identified in Section 4.

Finally, VDOT has identified time frames and priorities for achieving the program and policy recommendations in Section 5. For a summary of the anticipated time frames see Section 6, Time Frame and Priorities.

¹ Phase 1 - State Bicycle Policy Plan
Phase 2 - State Pedestrian Policy Plan
Phase 3 - State Bicycle and Pedestrian Implementation Plan



VDOT Roadway and Pedestrian Facility Responsibilities

Understanding the division of road maintenance responsibilities in Virginia is essential to understanding the pedestrian facility maintenance and project development responsibilities of the State and local governments. The responsibility of road maintenance is determined by the following factors:

Local Roads

Local roads are known as the secondary system of highways and are maintained by the Virginia Department of Transportation. Local roads in Arlington and Henrico Counties are not part of the secondary system and are instead maintained by the two counties. There are currently 81 municipalities in the urban system who maintain their local roads. These municipalities are:

1. All cities (regardless of population).
2. All incorporated towns of more than 3,500 in population according to the latest U.S. Census or by evidence of population.
3. The towns of Altavista, Chase City, Elkton, Grottoes, Lebanon, Narrows, Pearisburg, Saltville, Vinton, and Wise.

Primary Roads

Primary roads in all counties are maintained by VDOT. Primary roads in municipalities that are part of the urban system are considered primary extensions and are not part of the Primary System. These roads are maintained by the municipality unless maintenance has been specifically retained by VDOT.

Interstate Highways

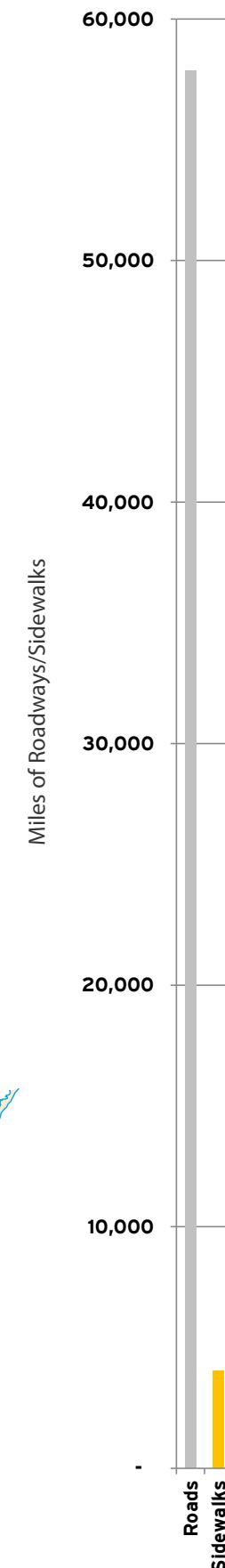
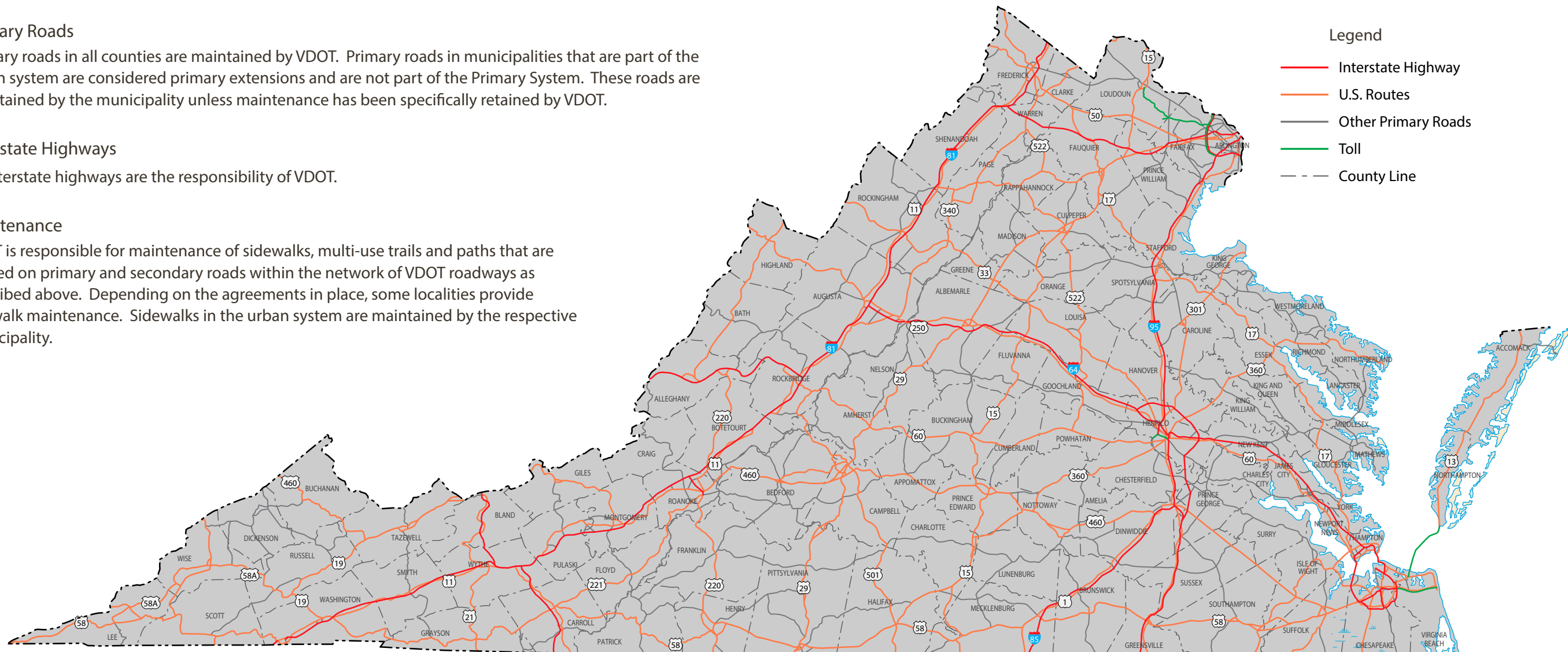
All Interstate highways are the responsibility of VDOT.

Maintenance

VDOT is responsible for maintenance of sidewalks, multi-use trails and paths that are located on primary and secondary roads within the network of VDOT roadways as described above. Depending on the agreements in place, some localities provide sidewalk maintenance. Sidewalks in the urban system are maintained by the respective municipality.

VDOT Facility Maintenance Summary (Source: www.virginiadot.org):
VDOT maintains a 57,867-mile roadway system that is divided into the following categories:

- Local Roads - 48,305 miles of roads serving as local connectors. These generally have a route number 600 or higher (system generally consists of facilities with two to four lanes).
- Primary Roads - 8,111 miles of roads that connect cities and towns with each other and with interstates (system generally consists of facilities with two to six lanes).
- Interstate - 1,118 miles of highways that connect states and major cities (system generally consists of facilities with four to ten lanes).
- Frontage Roads - 333 miles (local roads running parallel to a controlled access road).
- Sidewalks
 - 537 miles of sidewalk along primary roads with 6,572 curb ramps.
 - 3,500 miles of sidewalk along secondary roads with 49,155 curb ramps.



Source: Map Resources

Source: VDOT
Note: Based on documented centerline miles of roadway and total documented sidewalks. Totals for sub-divisions, cities and other non-VDOT maintained facilities are not included.



The maximum distance people are willing to walk to a transit station is roughly one-half mile, which equates to a five to ten minute walk (Source: Walking Revolution, Everybodywalk.org).

2 Walking Statistics

Data on Walking

Virginia's communities range from rural areas to densely populated urban areas, resulting in varying levels of pedestrian activity.

The following results are from a review of multiple data sources, including the National Household Transportation Survey, VDOT data, and DMV records:

Focus on Pedestrian Accommodations

10% goal of Highway Safety Improvement Program (HSIP) funds are allocated to bicycle and pedestrian accommodations.

1,000 miles of sidewalk were added between 2001 and 2011 through VDOT accepting subdivision streets into the statewide system.

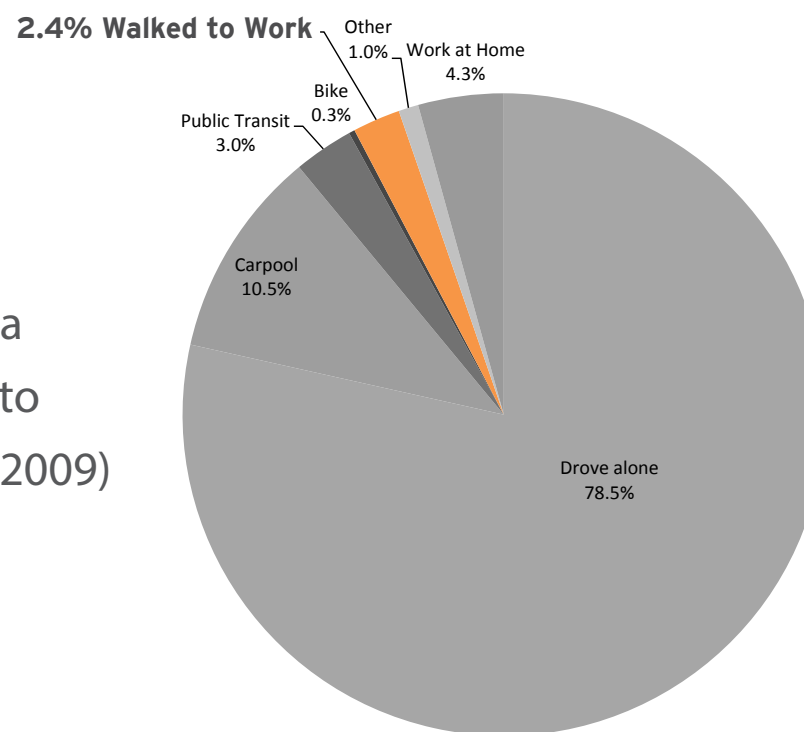
Travel to Work Data

2.4% of Virginia workers reported that they walk to work while the National average is reported at 2.8 percent (2009 National Household Transportation Survey).

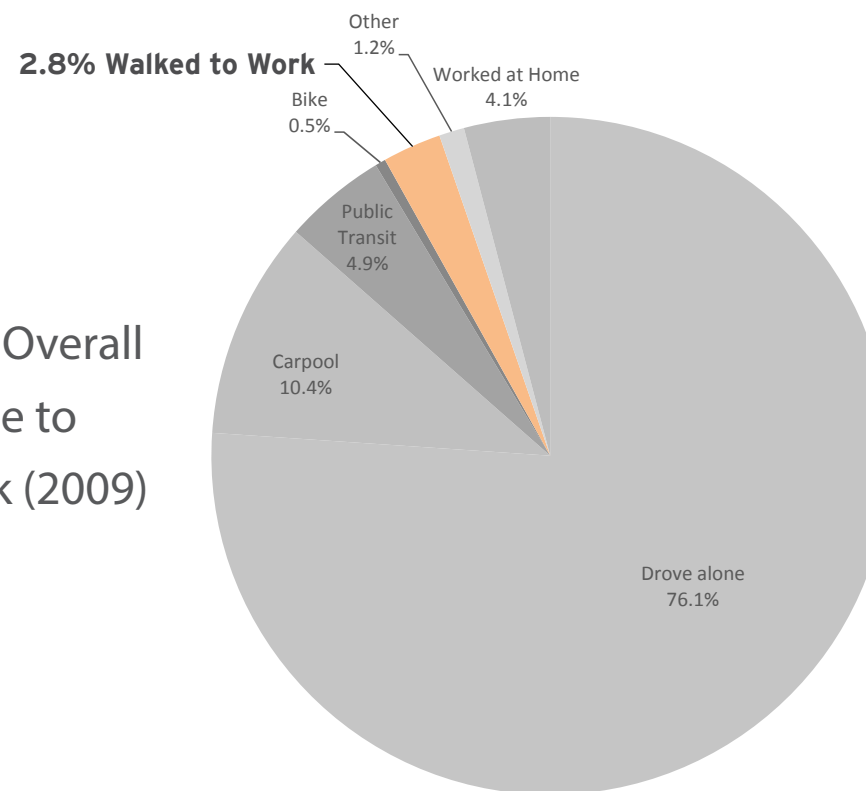
4.0% of Arlington workers reported that they walk to work (2009 National Household Transportation Survey).

2.0% of City of Richmond workers reported that they walk to work (2009 National Household Transportation Survey).

Virginia Mode to Work (2009)

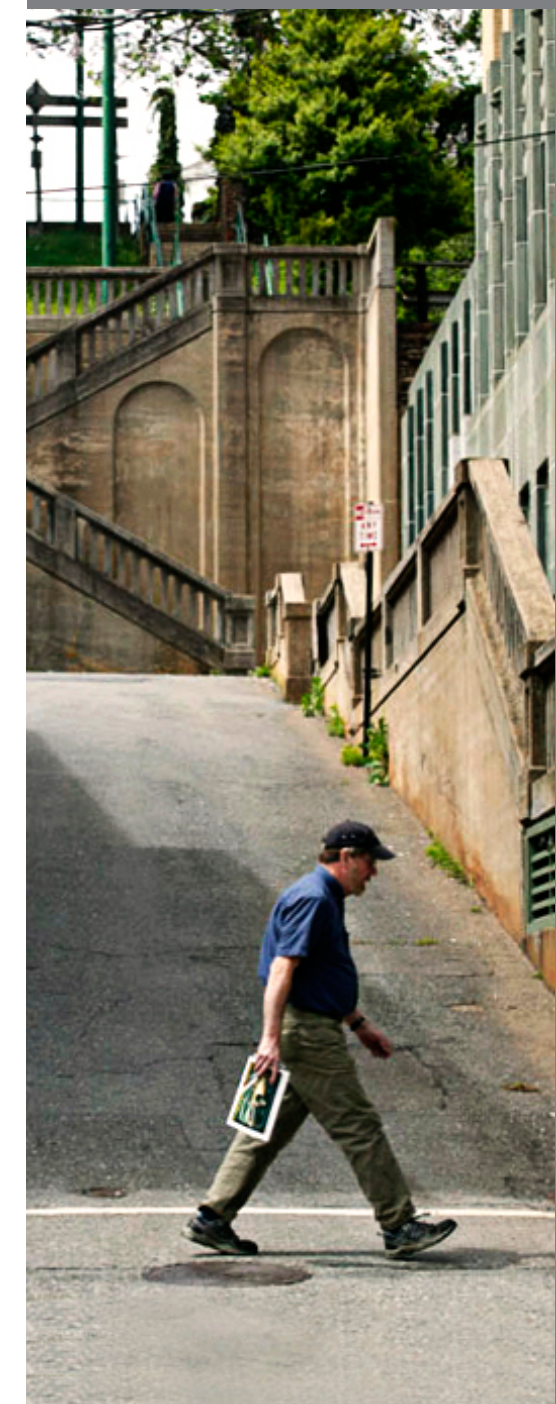


U.S. Overall Mode to Work (2009)



Source: 2009 National Household Transportation Survey

Every trip begins and ends as a pedestrian trip.

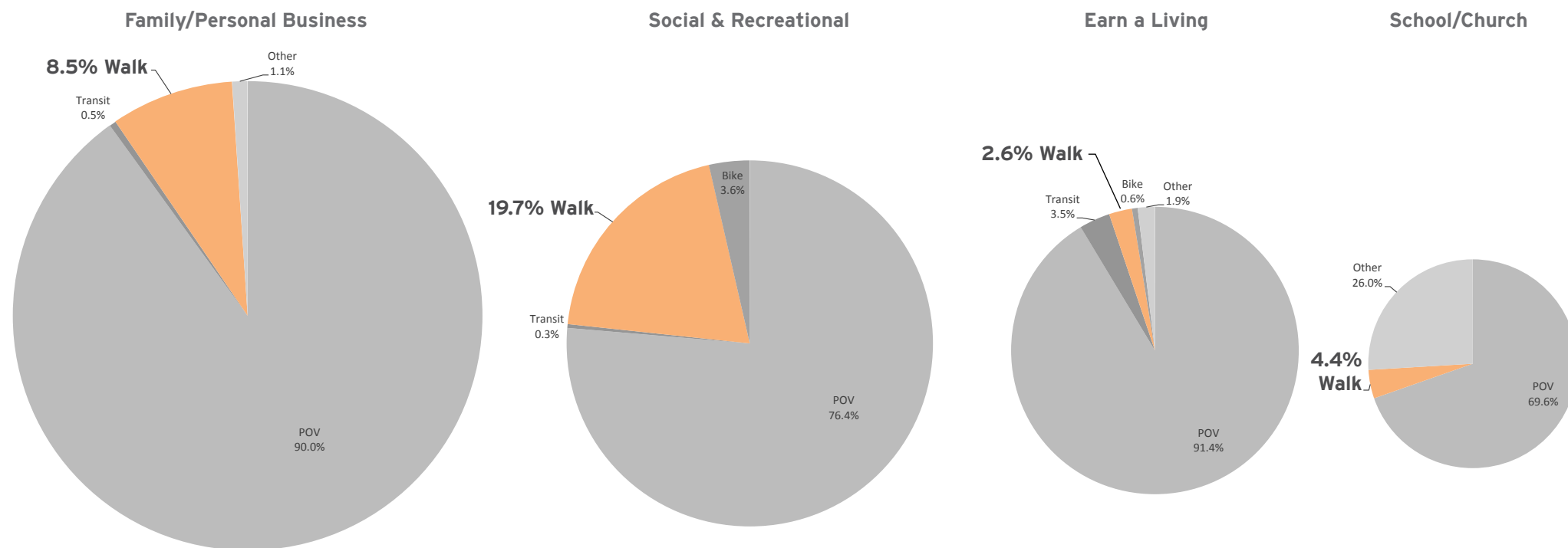




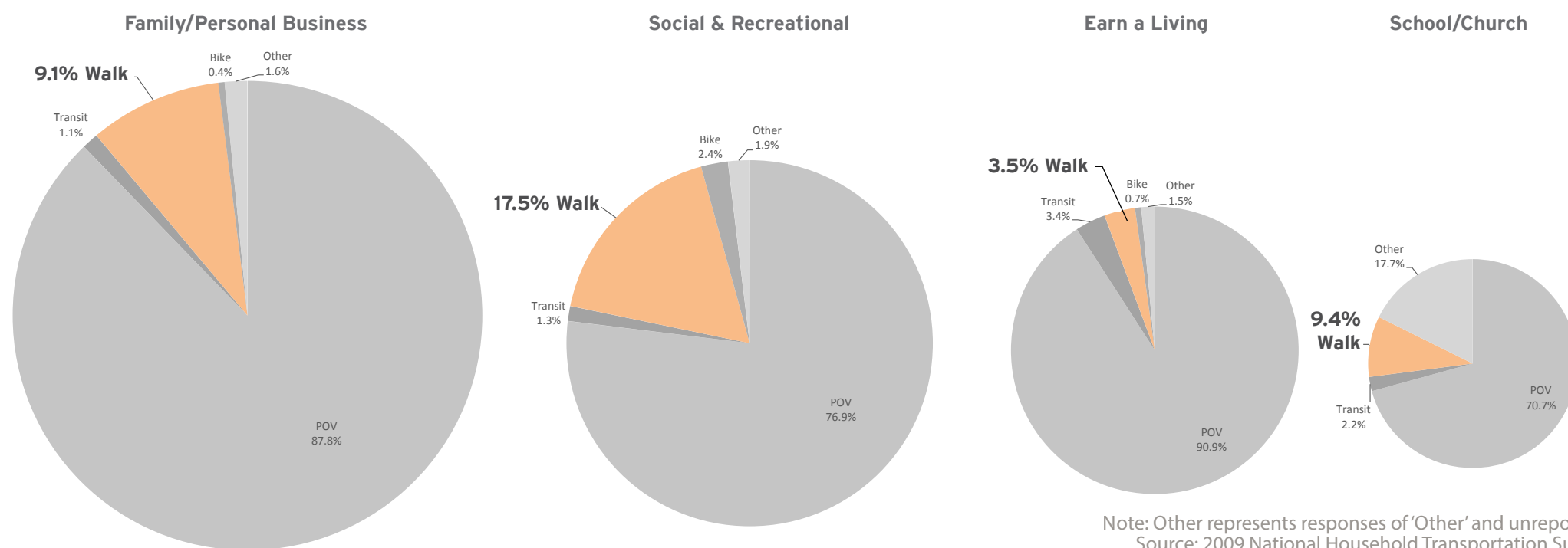
Person Trips by Trip Purpose by Mode of Travel

The following charts illustrate the breakdown of trips taken by trip purpose (family/personal business, social & recreational, to earn a living, school/church) and mode of travel (walk, bike, transit, Privately Owned Vehicle (POV), and other). The data illustrate the traveling tendencies of people on a National level and in the context of Virginia. For example, it is notable that trips taken by foot (Walk) to school/church in Virginia only represent 4.4 percent of the mode share. Nationally the mode share to school/church by foot is five percent higher at 9.4 percent.

Virginia Person Trips by Trip Purpose by Mode of Travel (2009)

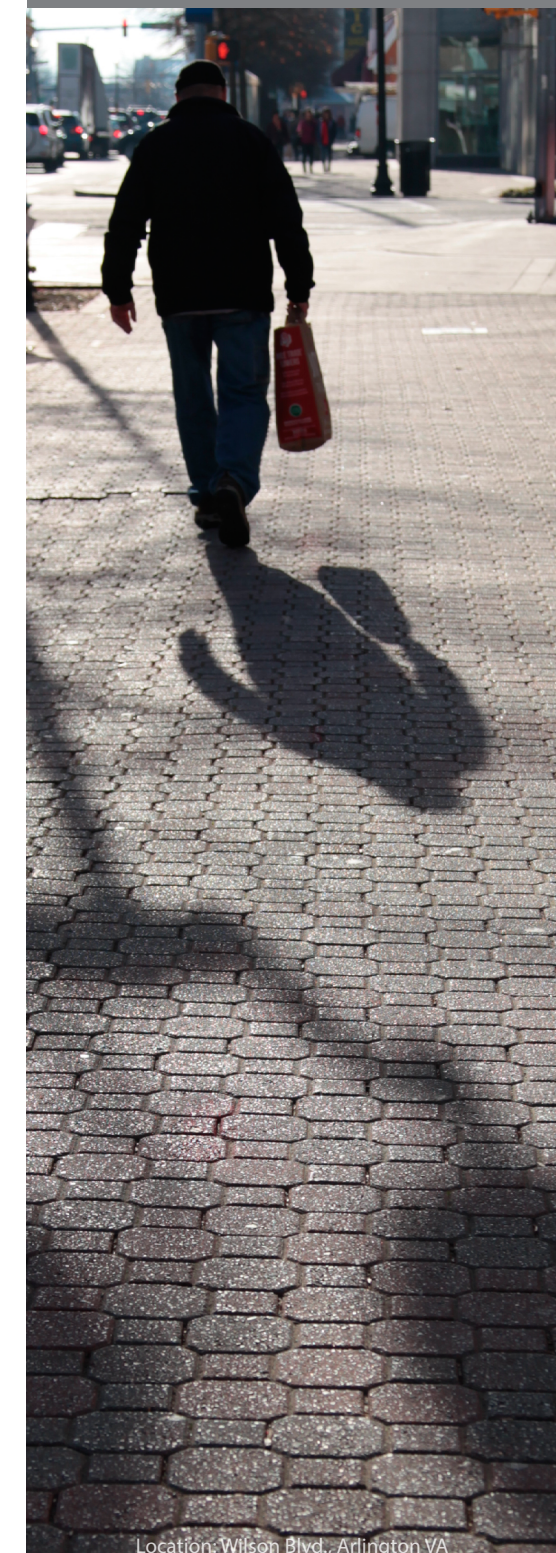


National Person Trips by Trip Purpose by Mode of Travel (2009)



Note: Other represents responses of 'Other' and unreported.
Source: 2009 National Household Transportation Survey

When the distance is a mile or less, 45 percent of people walk to work and 40 percent walk to shopping. (Source: Walking Revolution, Everybodywalk.org).



Location: Wilson Blvd., Arlington VA



Studies show that more bikeable and walkable communities can generate higher monthly spending than automobile oriented development (Source: Rails to Trails Conservancy).

Virginia Walk Score

The scores shown below and on the opposing page are based on the Street Smart Walk Score algorithm developed by Walkscore.com. Scores are given on a scale between 0 and 100 and are calculated by weighing the following factors:

- Walking routes and distances to amenities.
- Road connectivity metrics, such as intersection density and block length (Sidewalk data is not factored in the calculation of Walk Score).
- Scores for individual amenity categories (grocery stores, restaurants, shopping, coffee, banks, parks, schools, books, and entertainment).

It should be noted that the Walk Score rating is calculated for cities as a whole, Census Designated Places (CDP), and Towns. Thus, a high density or low density portion of an area can skew the average of the Walk Score. Assessing an individual address or area will yield a more specific and subsequently more accurate score. See the table to the right for the Walk Score of the top 20 most walkable cities/places in Virginia. Below the table is the Walk Score Rating Description, which defines the meaning of the rating.

Top 20 Most Walkable Cities/Places in Virginia

City/Census Designated Place/Town	Walk Score®	Population
Arlington County	67	206,779
Bailey's Crossroads (Unincorporated CDP)	67	22,881
Tysons Corner (Unincorporated CDP)	67	19,229
City of Alexandria	65	140,733
City of Charlottesville	64	43,010
City of Fairfax	60	23,236
Town of Herndon	60	23,344
City of Winchester	58	25,909
Fair Oaks (Unincorporated CDP)	55	29,684
Idylwood (Unincorporated CDP)	55	16,803
McNair (Unincorporated CDP)	55	17,292
City of Harrisonburg	54	48,507
West Falls Church (Unincorporated CDP)	53	29,471
City of Richmond	51	203,620
Lincolnia (Unincorporated CDP)	51	23,440
Reston (Unincorporated CDP)	51	58,512
Annandale (Unincorporated CDP)	51	40,879
Springfield (Unincorporated CDP)	50	30,387
City of Fredericksburg	49	24,104
City of Norfolk	49	242,897

Source: Walkscore.com, 2012

Walk Score® Rating Description

- 90–100 Walker's Paradise - Daily errands do not require a car.
- 70–89 Very Walkable - Most errands can be accomplished on foot.
- 50–69 Somewhat Walkable - Some amenities within walking distance.
- 25–49 Car-Dependent - A few amenities within walking distance.
- 0–24 Car-Dependent - Almost all errands require a car

VDOT maintains approximately 4,000 miles of sidewalks across the State, of which approximately 3,500 miles are along secondary roads and 500 miles are along primary roads.

There are a total of 55,727 sidewalk ramps. (Source: VDOT asset data)

- 42** is the average Walk Score of the 67 largest cities in Virginia. This is slightly below the average for the largest cities in the United States.
- 43** is the average Walk Score of the 2,500 largest cities in the United States.
- 5** highest Walk Scores for cities/places in Virginia are Arlington, Charlottesville, Alexandria, Bailey's Crossroads, and Tysons Corner. The average among these areas is 66.



Location: Clarendon, Arlington VA



Location: Belle Isle Footbridge, Richmond VA

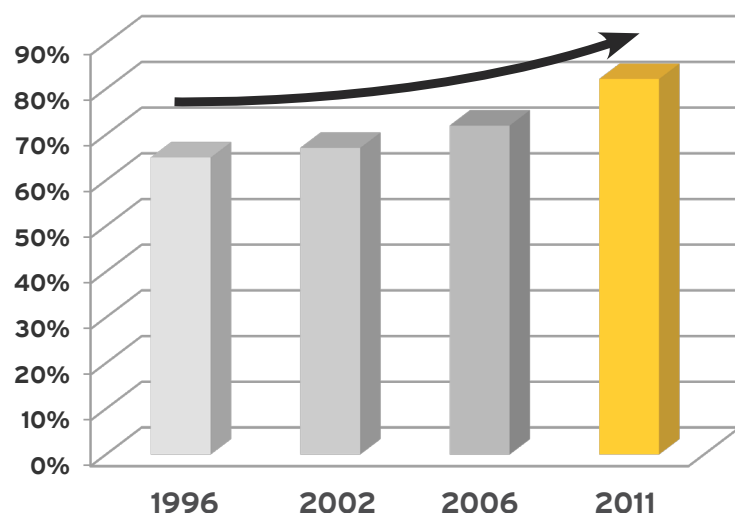


Safe streets promote walking, cycling, and transit for both recreational and utilitarian purposes.

Walking for Recreation

The Department of Conservation and Recreation (DCR) recently completed the 2011 Virginia Outdoors Demand Survey. This survey captures a wide range of data on the recreational tendencies of Virginians. Out of a list of 52 potential activities, respondents were asked to identify the activities in which they participated. "Walking for Pleasure" ranked number one, with 82.2 percent of households reporting that they participated in that category. It is worth noting that "Walking for Pleasure" has increased by 17 percent since 1996.

Percent of Households that Reported Walking for Pleasure



Source: 2011 Virginia Outdoors Demand Survey, Virginia Department of Conservation and Recreation

Walking and Transit

Public transit (including buses, street cars, trains, rapid transit, etc.) is an integral part of the national transportation network, accounting for 14.1 billion trips annually. Of these trips, 7.7 billion, or 54 percent, are unlinked transit trips, meaning that the entire trip is not contained within the transit system (Source: Walkinginfo.org). Other trip links may include private automobile, taxi or bicycle, but will always contain a portion where the traveler walks.

The walk may simply be from a parking spot to a bus stop, or it may be a longer distance; from a person's home to a train station, office or school. No matter the distance of the trip, transit riders use pedestrian accommodations at some point in their trip.

The average distance people are willing to walk to a transit stop or station is typically a quarter to one-half of a mile, which equates to a five to ten-minute walk. It is important to ensure that pedestrian needs are met beyond the areas immediately surrounding transit facilities.

Pedestrian Network and Factors that Discourage Walking

National research shows that there is a direct correlation between the quality of pedestrian accommodations to the numbers of people that choose walking as their primary mode of transportation. Below is a list of reasons why people may choose not to walk to destinations:

1. Connectivity:
 - Incomplete network: typical shortfalls in the pedestrian facility network are missing or disconnected sidewalks, paths or trails, dead-end streets, and limited roadway crossings. Additionally, if existing sidewalks, trails or other pedestrian accommodations do not connect to other accommodations or destinations such as schools, transit stations, parks, and shopping districts, people are less likely to choose to walk.
 - Barriers: temporary construction sites often disrupt continuity, with little warning and/or guidance for alternate routing. Temporary construction may promote taking an alternate route that is inadequate for pedestrians.
2. Safety:
 - Difficult Street Crossings: large intersections or street crossings may be difficult for pedestrians to navigate. Additionally, vehicles are able to turn at higher speeds in larger intersections, creating a safety concern. Intersections that do not have pedestrian signals, curb ramps, or median crossing islands can also be a deterrent for a person to choose walking over another mode of transportation.
 - Sub-standard facilities: narrow sidewalks for example, can discourage walking, as pedestrians may not feel they have enough space to pass each other or safely use strollers.
 - Lighting: insufficient lighting or a lack of lighting can create an environment where pedestrians may not be visible to each other, cyclists or drivers.
 - Poor walking surfaces: sidewalk surfaces that are uneven or broken create safety hazards.
3. Quality of Accommodations:
 - Sidewalk Obstructions: parking meters, traffic signals and poles, telephone/electric poles, guy wires, refuse receptacles, fire hydrants, fire alarm boxes, newspaper dispensaries, mail boxes, planters, sewer and ventilation gratings, and other similar fixtures all have the potential to obstruct the sidewalk area and thus, impede pedestrians.
 - No buffer: insufficient space between the sidewalk and the roadway, or a lack of trees or landscaping separating the pedestrian from the roadway, sometimes creates an unsafe perception for pedestrians.





- Signage: a lack of signage can make it difficult for pedestrians to find their destination, particularly if pedestrians are using multiple networks.

4. Seasonal Challenges:

- Weather: extremes in weather can affect the appeal and comfort level of walking. Hot summers can deter walking. During winter, rain and snow make walking uncomfortable, and ice can make walking dangerous.

Benefits of Walking

The following section focuses on the benefits of walking from a variety of perspectives including economic benefits, environmental benefits, and health benefits.

Economic Benefits of better Pedestrian (and Bicycle) Accommodations

The convenience and lifestyle of living in walkable neighborhoods has become increasingly desirable in the past 15 years. Home values in walkable areas are generally higher (Source: Rails to Trails Conservancy). The level of walking in a city is now considered an indicator of a community's livability, a factor that has a profound impact on attracting businesses and workers as well as increasing tourism. Another positive impact of pedestrian accommodations is economic vitality. Households may be able to spend less money on transportation and thus, potentially put that money back into the local economy (Source: Rails to Trails Conservancy, Active Transportation for America). The table below illustrates the relative costs per mile associated with each mode of travel. Notable among these costs is the high cost of car travel over the other modes.

Transportation Costs By Mode

Mode	Costs Per Mile (cents)
Car	59
Transit	24
Bicycle	~5
Walking	0

Source: FHWA, Rails-to-Trails Conservancy

Transportation is an important consideration for citizens as it is often a household's second highest cost, after housing. The Housing and Transportation Affordability Index documents the important role transportation plays in a household's budget. The likelihood that households will stay below the target of 45 percent of income spent on transportation and housing greatly increases in walkable neighborhoods.

Downtown areas with a mix of restaurants, shops, offices and residential units create an ideal walking environment. Studies have shown that people who walk and bike tend to spend less money per trip in their communities, but make more frequent purchases. People who walk have the ability to conveniently stop when passing a bakery, restaurant, coffee shop, or grocery store for an impulsive purchase, increasing the total number of purchases they make. The frequency of purchases can contribute to a larger number of total purchases in the community with the potential to enhance the community's economy.

While walkable neighborhoods promote the economic vitality of their local economy, their pedestrian infrastructure costs are considerably lower than roadway infrastructure costs. The price difference between sidewalks and roads allows jurisdictions to build 20 to 80 miles of bicycle and pedestrian facilities for the same amount of money as one mile of a four-lane urban roadway. These facilities provide a means of transportation that promotes both good health and decreases pollution. These sidewalks provide a means of transportation that promotes both good health and decreases pollution. More information on the economic benefits of cycling and walking can be found at:

<http://www.railstotrails.org/ourWork/advocacy/activeTransportation/makingTheCase/index.html>

Environmental Benefits of Walking

Walking as a mode of transportation has the potential to play a role in reducing oil consumption and pollution. According to the EPA, transportation is currently responsible for nearly 80 percent of all carbon monoxide, 31 percent of all carbon dioxide and 55 percent of all nitrogen oxide emissions in the US. Every trip transitioned to walking decreases the amount of pollution generated by the transportation system. In 2007 the Non-motorized Transportation Pilot Program chose four cities to study the effects of increased bicycle and pedestrian travel. By 2011, the cities had saved 86,000 pounds/year of hydrocarbons, 23.2 million pounds/year of CO₂ and 1.3 million gallons of gas by replacing motorized trips with walking and biking. More information on the study can be found at:

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/ntpp/

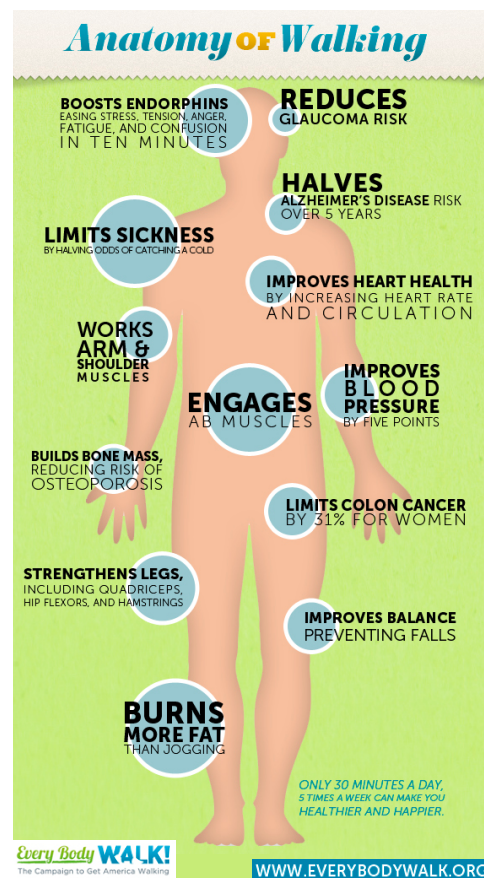




Location: W&OD Trail, Arlington

Health Benefits of Walking

Walking as a mode of transportation has a myriad of health benefits. It is a great form of exercise; it combines physical activity with a person's transportation needs. Walking as a mode of transportation can help people meet the 30 minutes of light to moderate daily activity recommended by the Center for Disease Control. Walking can help decrease a person's risk factors for heart disease, obesity, high blood pressure, type 2 diabetes, osteoporosis and helps ward off depression.



Arlington County Trails and Data Collection

Arlington County has an extensive network of dedicated shared-use trails that run throughout the county providing connectivity to regional trail networks, and existing infrastructure (sidewalks, transit). These trails are used extensively by pedestrians, runners, and cyclists for both recreation and transportation.

Arlington County is at the forefront of collecting data on pedestrians and cyclists that use trails and sidewalk infrastructure by implementing the Bike Pedestrian Automatic Count Technology Program. Since October 2009, Arlington County has installed 30 automatic counters to gain a better understanding of bicycle/pedestrian travel behavior and trail use. This was done to quantify bicycle and pedestrian mode share; guide investment, planning, construction, operations, and management decisions; and develop better methods for collecting data on the travel tendencies of bicyclists and pedestrians. Arlington also participates in the annual National Bicycle and Pedestrian Documentation Project, which takes a standardized approach to quantifying demand and usage of bicycle and pedestrian facilities. It should also be noted that other Virginia communities and organizations also participate, including the City of Alexandria, the National Park Service, Fairfax County, advocacy groups, and other across the State.

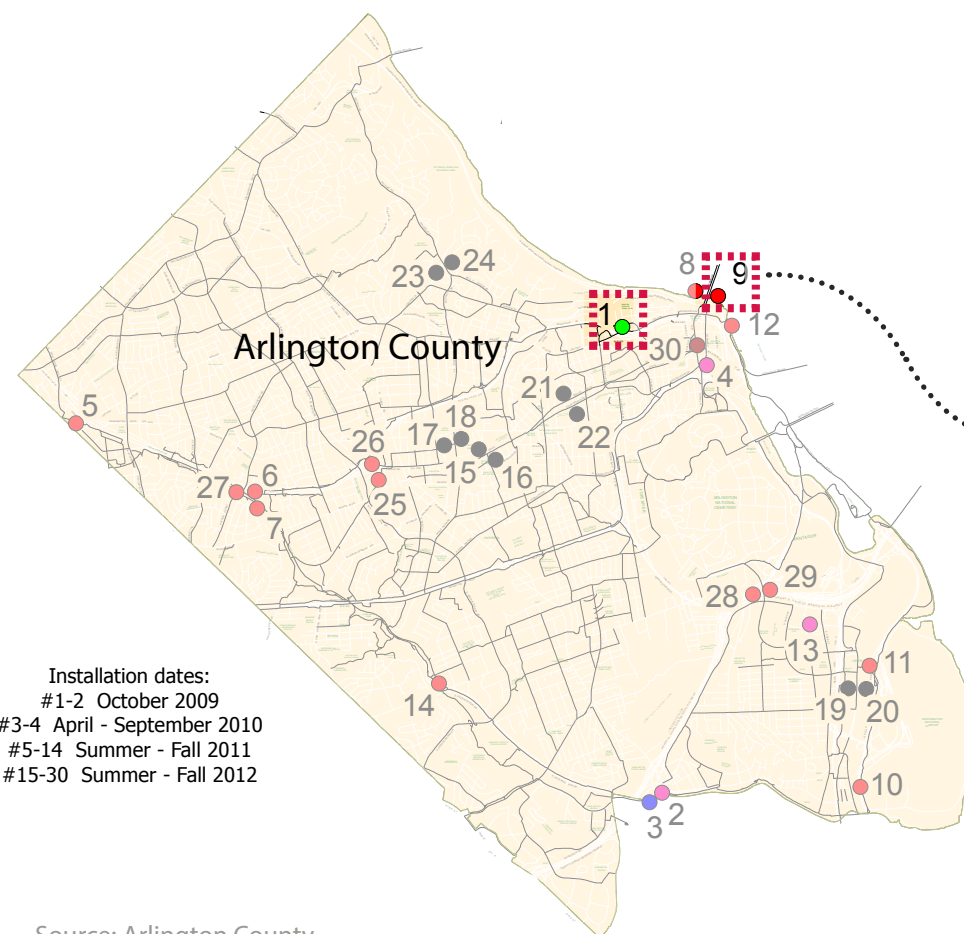
3,000

pedestrians per day have been documented crossing the Key Bridge (east side) Eco-Counter location (#9 as shown in the graphic below) during the peak activity month of April, 2012 (95,110 month total).

650

pedestrians per day have been documented at the Custis/Rosslyn Eco-Counter (Combo) location (#1 as shown in the graphic below) during November which represented the peak activity month in 2012 (19,621 month total). This is a heavily used corridor for pedestrians and cyclists. Many pedestrians can be seen commuting by foot to/from Rosslyn and Georgetown.

Arlington Automatic Bicycle and Pedestrian Counting Equipment Summary (June 2012)



Installation dates:
 #1-2 October 2009
 #3-4 April - September 2010
 #5-14 Summer - Fall 2011
 #15-30 Summer - Fall 2012

Source: Arlington County
<http://www.arlingtonva.us/departments/EnvironmentalServices/ProjectsAndPlanning/caprojects/page86832.aspx>



Location: Key Bridge sidewalk into Arlington (East side, Eco-Counter #9)



From 2001 to 2012, 2009 had the lowest number of reported fatalities and serious injuries in Virginia (Source: Virginia DMV).

Safety and Pedestrian Crash Data

12 Year Statistics on Pedestrian Fatalities and Serious Injuries in Virginia

According to Virginia Department of Transportation Division of Motor Vehicle (Virginia DMV) data, over the last 12 years, the State of Virginia has experienced between 69 and 102 pedestrian fatalities every year.

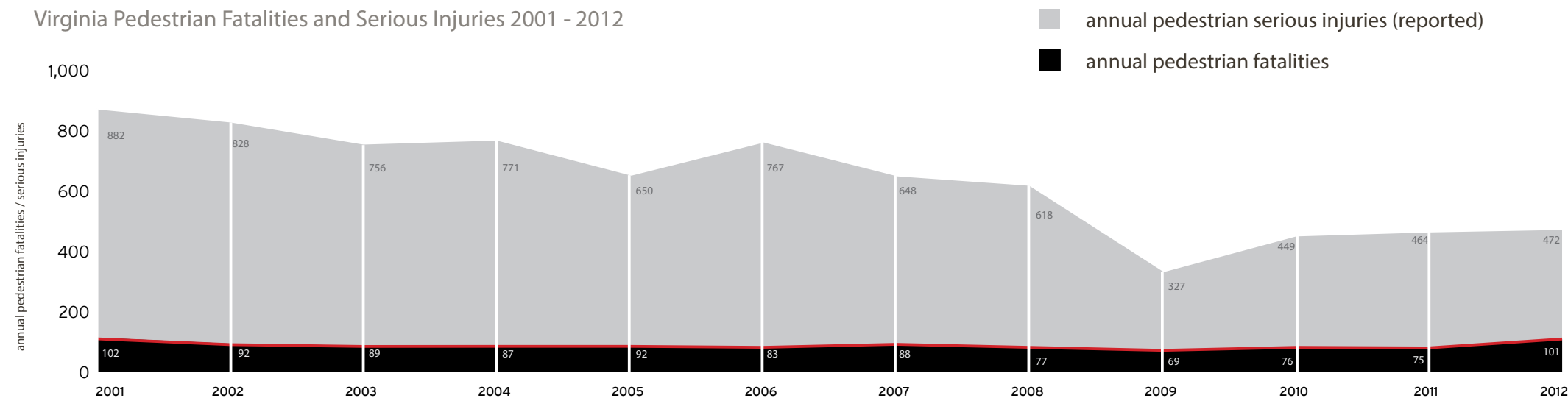
Over the twelve year period, fatalities have decreased from 102 to a low of 69 in 2009, but have risen again in 2012. Reducing fatalities (for all modes) by half by 2030 is identified as a key goal in the Virginia Strategic Highway System Plan (SHSP).

Serious pedestrian injuries have also decreased from approximately 882 in 2001 to 472 reported serious injuries in 2012, an approximate 50 percent decrease. Such improvements can be correlated to a number of factors:

- Improved pedestrian facilities in urban areas.
- Successful outreach and educational programs.
- Improved awareness among pedestrians.
- Safe Routes to Schools Program.
- Increased law enforcement.

The jurisdictions with the greatest numbers of pedestrian fatalities are: Arlington County, Fairfax County, Chesapeake County, Hampton, Newport News, Chesterfield County, Henrico County, and Richmond (Source: Virginia DMV).

Virginia Pedestrian Fatalities and Serious Injuries 2001 - 2012



Source: Virginia DMV



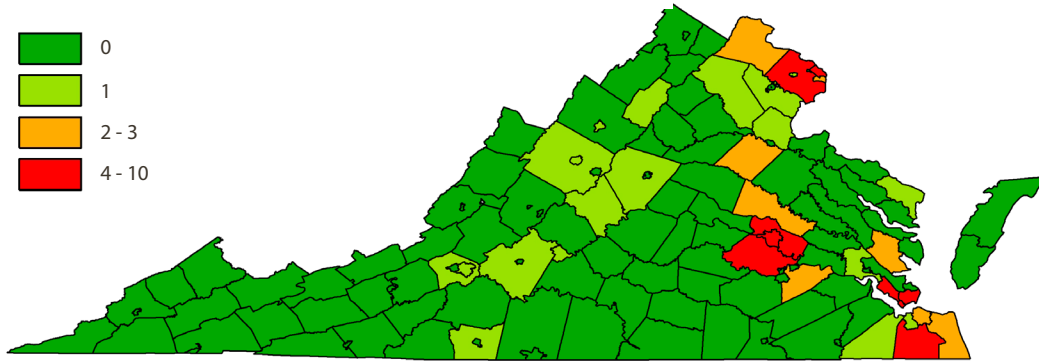


According to NHTSA statistics, January 1st and October 31st are the most deadly pedestrian days of the year.

Virginia Pedestrian Fatalities by Jurisdiction (2011)

The following graphic displays pedestrian fatalities by jurisdiction in 2011. The jurisdictions with the greatest numbers of pedestrian fatalities were: Arlington County, Fairfax County, Chesapeake County, Hampton, Newport News, Chesterfield County, Henrico County, and Richmond. It should be noted that the locations in red are also localities with greater population density, urban development, and subsequently higher levels of walking.

2011 Pedestrian Fatalities



Source: Virginia DMV 2011 Virginia Traffic Crash Facts

National Pedestrian Crash Report

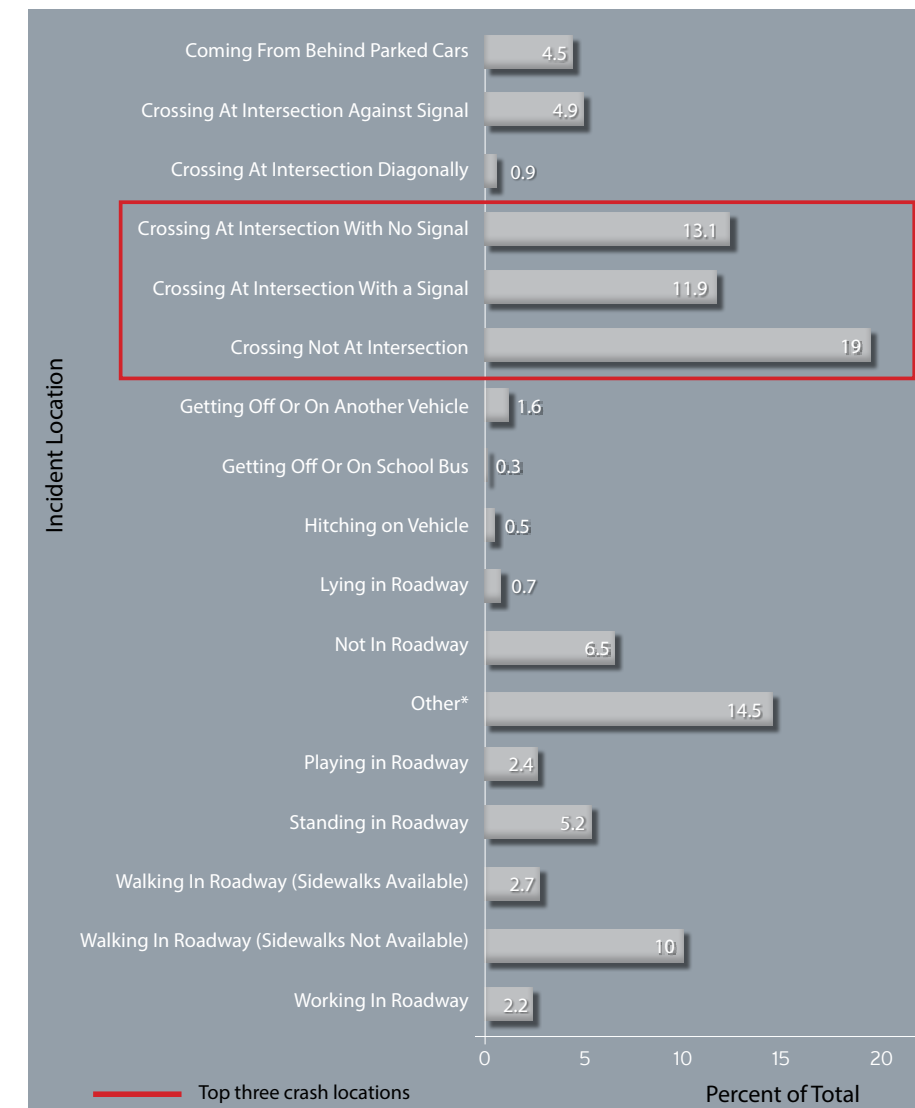
Pedestrian safety is a critical part of any successful multimodal transportation network. Identifying when and where a pedestrian is most vulnerable to a crash can begin the process of improving pedestrian conditions. The following list from the U.S. Department of Transportation (USDOT) National Highway Traffic Safety Administration (NHTSA), 2010 National Pedestrian Crash Report contains information on pedestrian crashes:

- 73 Percent of pedestrian fatalities happen in urban areas.
- Nationally a pedestrian death occurred for every 70 million miles walked.
- January 1st and October 31st are the most deadly pedestrian days of the year.
- Crashes are more likely to happen at night (68 percent).
- Crashes are more likely to happen on Friday, Saturday, or Sunday.
- Males are more likely to be involved in a crash (69 percent).
- The elderly are more likely to die as the result of a crash.
- The higher the posted speed limit, the higher the likelihood of a pedestrian fatality.

This information helps frame the discussion of pedestrian facility design. Pedestrians are vulnerable in crashes, more likely to die in higher speed collisions, and highly vulnerable at night. Designing facilities that minimize these factors, including better lit roads and lower speed limits in active pedestrian zones, can potentially improve pedestrian safety.

The following figure from the Virginia DMV breaks down the causes and locations for crashes involving pedestrians in 2011.

2011 Virginia Pedestrian Incident Location and Cause



*Note: this category represents multiple locations aggregated into a single classification. Source: Virginia Department of Motor Vehicles, 2011 Virginia Traffic Crash Facts

In 2011 the highest incident location and cause for pedestrian crashes was "crossing not at an intersection". (Source: 2011 Virginia DMV Crash Facts)





The Commonwealth Transportation Board approved the *Policy for Integrating Bicycle and Pedestrian Accommodations* in March 2004. It is the policy that defines how pedestrian accommodations are handled in Virginia.

3 Current Programs and Policies

This section clarifies the existing policies, guidelines, processes, and programs that are critical to a project in Virginia.

Policy and Design Guidelines

Pedestrian accommodations and pedestrian environments vary significantly throughout the State. To address the wide range of development, there is an over-arching policy, and framework of VDOT and National design guidelines. See Appendix A for the Project Development Process and the associated guidelines. Additionally, a Project Checklist is contained in Appendix B which aims to be a supplemental reference for anyone with a project in any phase of the Project Development Process.

The Commonwealth Transportation Board Policy for Integrating Bicycle and Pedestrian Accommodations dictates VDOT policy regarding pedestrian accommodations. It is an important document to reference when reviewing pedestrian policies in Virginia. It is summarized on the opposing page (and is included in its entirety in Appendix C) and is followed by a summary of documents relevant to Virginia. Those summarized in this document are listed below in three separate categories: VDOT policy, national design guidelines and policy, and VDOT division level design guidelines. To illustrate their general hierarchy and how they relate to any project in Virginia a diagram is provided in the right margin.

- VDOT Policy
 - CTB Policy for Integrating Bicycle and Pedestrian Accommodations (2004).
- National Design Standard, Guidelines and Policy
 - United States Department of Transportation (USDOT) Policy Statement.
 - Americans with Disabilities Act (ADA) and Accessibility Guidelines.
 - Manual on Uniform Traffic Control Devices (MUTCD).
 - American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Pedestrian Facilities.
 - Load and Resistance Factor Design (LRFD) Guide Specifications for Design of Pedestrian Bridges
 - Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAC).
- VDOT Division Level Design Guidelines
 - VDOT Road Design Manual Appendix A-5.
 - Bridge Design Standards. *
 - VDOT Designated Bicycle and Pedestrian Accommodations.
 - Guidelines for the Installation of Marked Crosswalks.
 - VDOT Asset Management Best Practices.
 - Location and Design Division (LD) Instructional and Informational

- Memorandum (IIM) IIM-LD-55.
- Virginia Work Area Protection Manual.
- Virginia Supplement to the MUTCD.
- Locally Administered Projects Manual.

VDOT follows a prescribed project development process (See Appendix A). It is important to understand the synergy of the project development process and policy during the implementation of any phase of a project. For clarification VDOT encourages the review of this document and associated guidance. For additional information, you can contact VDOT district planners assigned to each jurisdiction and/or the VDOT Central Office.

VDOT Policy

This section provides an overview of the CTB Policy for Integrating Bicycle and Pedestrian Accommodations.

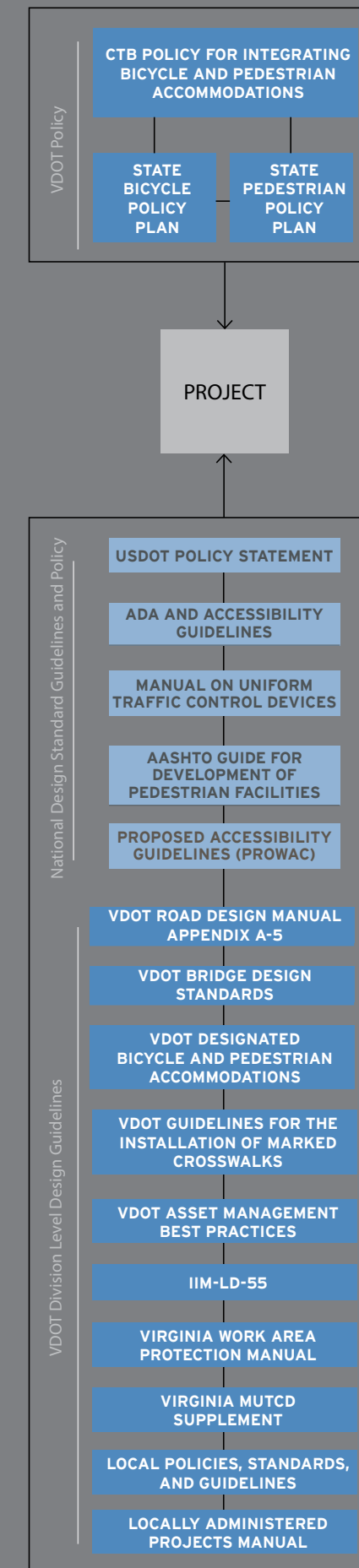
CTB Policy for Integrating Bicycle and Pedestrian Accommodations

The Policy for Integrating Bicycle and Pedestrian Accommodations in Virginia was adopted by the Commonwealth Transportation Board in 2004. The policy provides a framework for the Virginia Department of Transportation to accommodate bicyclists and pedestrians in the planning, funding, design, construction, operation, and maintenance of Virginia’s transportation network. These accommodations seek to provide the public with access to the transportation network, connections to alternate modes of transportation, and allow for personal transportation regardless of age, ability or income.

With the adoption of the policy, all highway construction projects (as appropriate) should accommodate both pedestrian and bicycle access in their designs. Factors supporting the provision of pedestrian and bicycle accommodations include:

- The facility’s inclusion in an adopted comprehensive or transportation plan.
- Existing and future need.
- Safety improvements.
- Existing and future land use.
- Connections to public transit and trip generators.
- Service of areas with limited transportation options.
- Links to other pedestrian/bicycle facilities and tourist destinations.

* VDOT Manual of the Structure and Bridge Division, Volume V – Part 2, Chapter 6 – Geometrics is abbreviated as Bridge Design Standards.



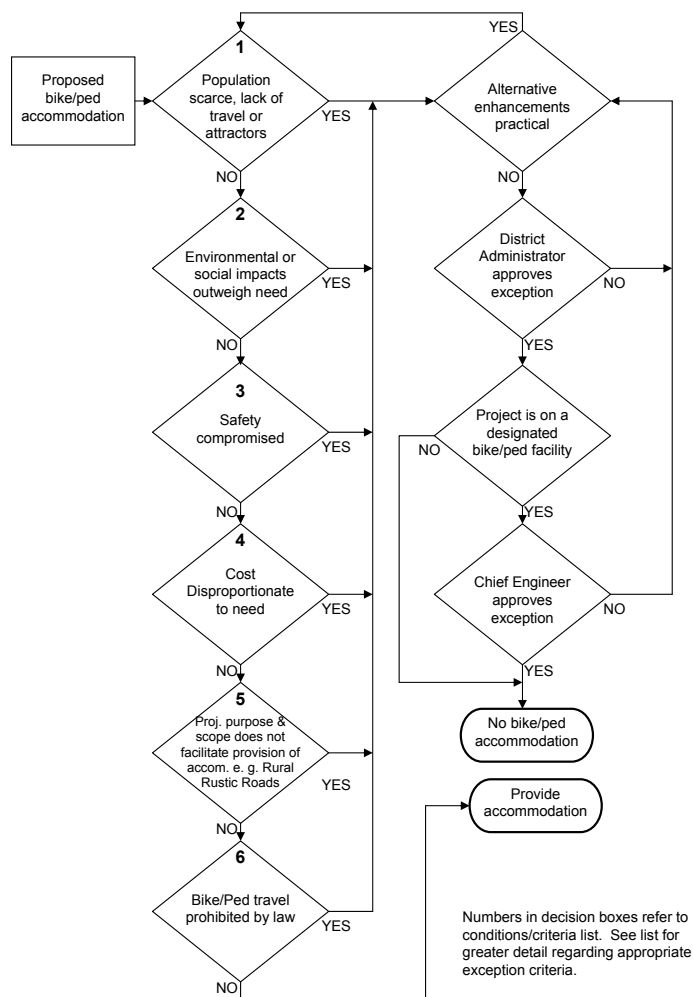


Bicycle and pedestrian accommodations should be provided except where one or more of the following conditions exist:

1. Scarcity of population, travel, and attractors, both existing and future, indicate an absence of need for such accommodations.
2. Environmental or social impacts outweigh the need for these accommodations.
3. Safety would be compromised.
4. Total cost of bicycle and pedestrian accommodations to the appropriate system (i.e., interstate, primary, secondary, or urban system) would be excessively disproportionate to the need for the facility.
5. Purpose and scope of the specific project do not facilitate the provision of such accommodations (e.g., projects for the Rural Rustic Road Program).
6. Bicycle and pedestrian travel is prohibited by state or federal laws.

The Policy provides direction on the decision process for the inclusion of pedestrian and bicycle facilities in projects, including the procedure for a difference of opinion between the VDOT and the locality on how to accommodate pedestrian facilities.

Bicycle and Pedestrian Accommodation Decision Process



Bicycle and Pedestrian Accommodation Decision Process

VDOT ensures that pedestrian and bicycle facilities are included in project development process. This involvement occurs in the following stages:

- Planning: promoting the inclusion of pedestrian and bicycle facilities in corridor studies, small urban studies, regional plans and the statewide multimodal long-range transportation plan.
- Funding: Highway construction funds can be used to build bicycle and pedestrian facilities, as well as funding from programs for highway safety, enhancement, air quality, congestion relief, and special access.
- Design and Construction: VDOT requires that the facilities are ADA compliant, connect to future transit modes, do not negatively impact the environment, and are compliant with State and Federal standards.
- Operations: VDOT will work to integrate methods of enhancing the pedestrian network including; traffic calming, crosswalk-markings, and pedestrian signals where feasible.
- Operation and Maintenance: VDOT will maintain the sidewalks and shared use paths.

The 2004 CTB Policy can be found at:

http://www.virginiadot.org/programs/resources/bike_ped_policy.pdf

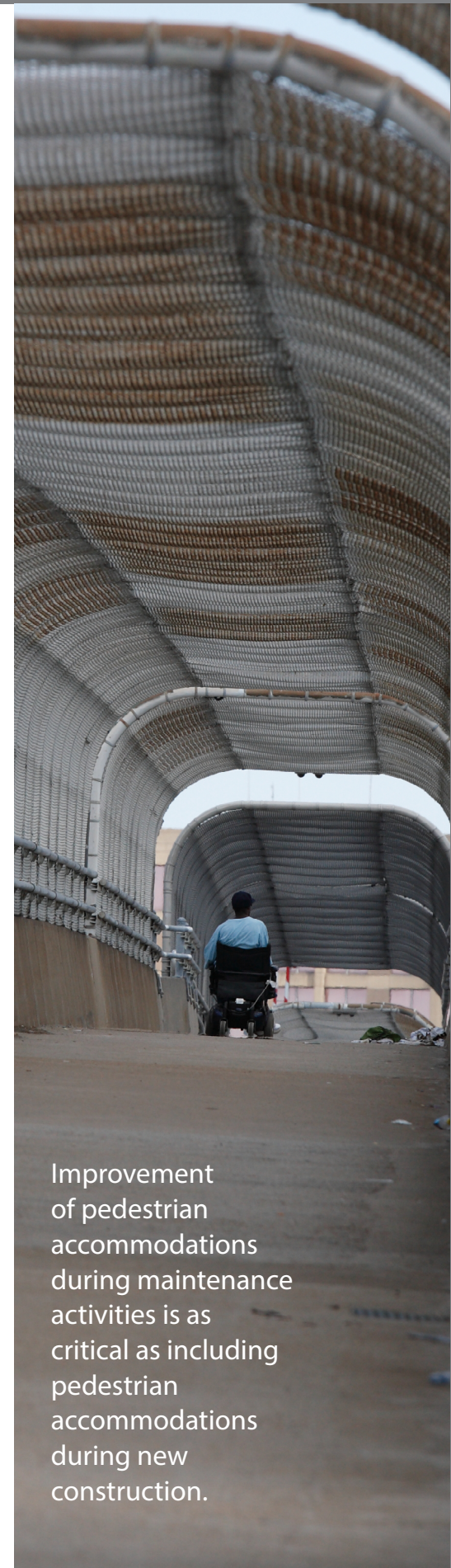
National Design Guidelines and Policy

This section provides an overview of national design guidelines and policies.

United States Department of Transportation (USDOT) Policy Statement

On March 11, 2010 the USDOT defined its policy on Bicycle and Pedestrian accommodations and recommendations. The USDOT's policy was established to ensure that safe and convenient walking and bicycling facilities are incorporated into all transportation projects. This integration is important due to the multiple benefits that walking and bicycling provides for health, safety, environmental, transportation, and quality of life. The USDOT encourages other organizations to adopt similar policy statements on bicycle and pedestrian accommodations, to create safe, attractive, sustainable, accessible and convenient bicycling and walking networks. Means of achieving these goals include:

- Considering walking and bicycling the equals of other transportation modes.
- Ensuring transportation choices are available to people of all ages and abilities, especially children.



Improvement of pedestrian accommodations during maintenance activities is as critical as including pedestrian accommodations during new construction.



Typical ADA curb ramp, high-visibility crosswalk, and vehicle stop bar.
Location: S Quincy St., Arlington, VA



Typical pedestrian bridge and curb ramp.
Location: S Shirlington Rd., Arlington, VA



Pedestrian accommodations adjacent to the Shirlington transit station.
Location: S Randolph St. and S Quincy St., Arlington, VA



High-visibility crosswalk.
Location: Rosslyn, Arlington, VA

- Exceeding minimum design standards.
- Improving non-motorized facilities during maintenance projects.
- Integrating bicycle and pedestrian facilities on new, rehabilitated and limited-access bridges.
- Collecting data on pedestrian and biking trips.
- Setting and tracking mode share targets for walking and biking.
- Removing snow from sidewalks and multi-use paths.

The entire policy statement can be found at:

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/overview/policy_accom.cfm

ADA and Accessibility Guidelines

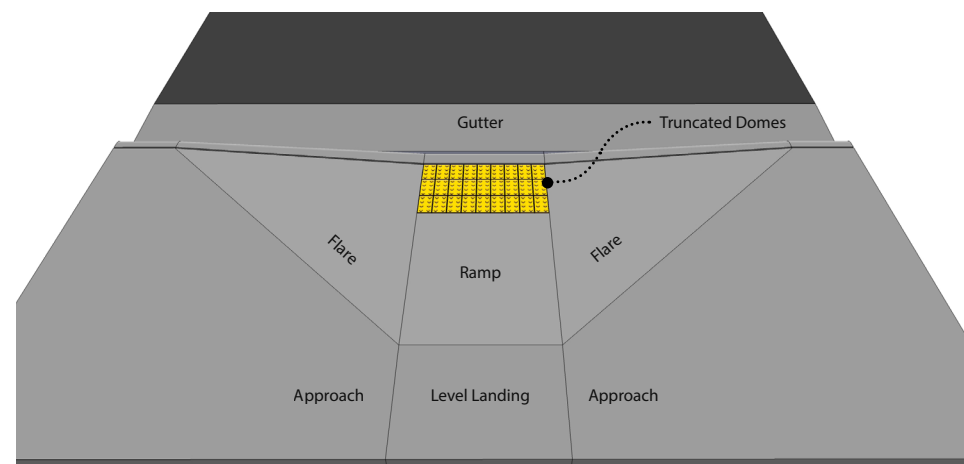
The Federal Highway Administration (FHWA) recognizes the need for the transportation system to be accessible to all users, and has policies to ensure that pedestrian facilities are compliant with the Americans with Disabilities Act of 1990. The FHWA states that, "Where sidewalks are provided, public agencies shall provide pedestrian access features such as continuous, unobstructed sidewalks, and curb cuts with detectable warnings at street crossings."

ADA Standards for Transportation Facilities

Guidance for ADA compliant accessible routes ensures that transportation facilities are accessible to all individuals. Guidance on surface width, slope, handrails, curb ramps, and access to transit options are provided in the document. Detailed information can be found at:

<http://www.access-board.gov/ada-aba/ada-standards-dot.cfm>

Typical ADA Compliant Curb Ramp Components



Source: ADA Designing Sidewalks and Trails for Access

Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

This document provides accessibility guidelines for the design, construction and modification of pedestrian facilities from the Architectural and Transportation Barriers Compliance Board. It is broken down into four chapters that address:

- Application and Administration: provides an overview of guidelines and standards for pedestrian facilities.
- Scoping Requirements: covers what scoping requirements are triggered when pedestrian facilities are provided including pedestrian signals, street furniture, transit stops, on-street parking and passenger loading zones.
- Technical Requirements: specifies what design elements, spaces, and facilities must be present to be considered accessible.
- Supplemental Technical Requirements: clarifies the design standards for accessible pedestrian facilities including vertical clearance, ramp grades, toe clearance, landing widths, and handrail placement.

Each chapter addresses questions asked of the Board, addressing issues, including but not limited to new construction, intersection control, and curb ramp alteration. More information can be found at:

<http://www.access-board.gov/prowac/nprm.pdf>

Manual on Uniform Traffic Control Devices

The MUTCD is published by the Federal Highway Administration (FHWA) under 23 Code of Federal Regulations (CFR), Part 655, Subpart F. The MUTCD specifies the standards by which traffic signs, road surface markings, signals, and other traffic control devices are designed, installed and used. Included are provisions and considerations for pedestrian accommodations, pedestrian signage, accessible pedestrian signals, crosswalk specifications, pedestrian island and median guidance, temporary traffic control considerations for pedestrians, and other considerations relevant to accommodating pedestrians. The manual has a chapter devoted to Pedestrian Control Features in which guidance for pedestrian signal heads can be found. The manual provides guidance on the location, height, interval, and timing of pedestrian signals. There are details related to the length of the crosswalk, number of pedestrians, and speed of the road and their relation to pedestrian crossing times. There is also information about pedestrian beacons located at un-signalized crossings. The manual can be found at:

<http://mutcd.fhwa.dot.gov/>



Walk to School Day.
Location: Richmond, VA



Pedestrian Hybrid Beacon (PHB).
Location: Alexandria, VA



Daily trail walkers and cyclist.
Location: High Bridge Trail State Park trail



Stamped asphalt crosswalk.
Location: N Brookside Drive and Washington Blvd., Arlington, VA



Design guidelines and policies are continually updated. To ensure optimum planning and development of facilities it is important to seek out the latest published guidance.

AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities

The AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities recognizes that walking is an integral part of the transportation system. The guide focuses on identifying effective ways to accommodate pedestrians in the public right-of-way, while emphasizing the critical effect that land use planning has on pedestrian mobility. Characteristics that create a pedestrian friendly atmosphere include:

- Inclusion of pedestrians in planning activities.
- Continuous systems/connectivity.
- Pedestrian oriented land uses.
- Pedestrian-supportive land use patterns.
- Accessible and appropriately located transit.
- Street trees.
- Pedestrian furnishings.
- Security and visibility.
- Proper maintenance.

The AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities states that pedestrian elements should be included in all transportation studies, to ensure that safety and mobility are enhanced in future projects. While pedestrian facilities should be included on all roadways where possible, it is financially necessary to prioritize pedestrian facilities, including those that serve:

- High pedestrian volumes.
- As a safety improvement.
- Pedestrian generators.
- School walking zones.
- Transit routes.
- Disadvantaged neighborhoods.
- Missing links in the network.

The design of pedestrian facilities should focus on ensuring a usable and friendly atmosphere. Designs should consider their impact to:

- Circulation.
- Balance.
- Connectivity.
- Safety.

- Accessibility.
- Traffic engineering elements.
- Landscaping.

Maintenance and operations are critical to the success of pedestrian facilities. Traffic signals at high-volume intersections are important for the safety and mobility of pedestrians. Well-signed and marked crosswalks make drivers aware of the presence of pedestrians and increase pedestrian safety at intersections. The Guide can be found at:

<https://bookstore.transportation.org/imageview.aspx?id=549&DB=3>

NACTO Urban Street Design Guide

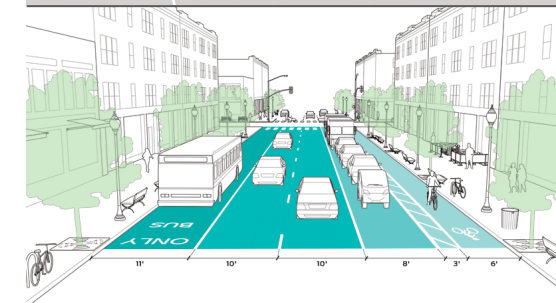
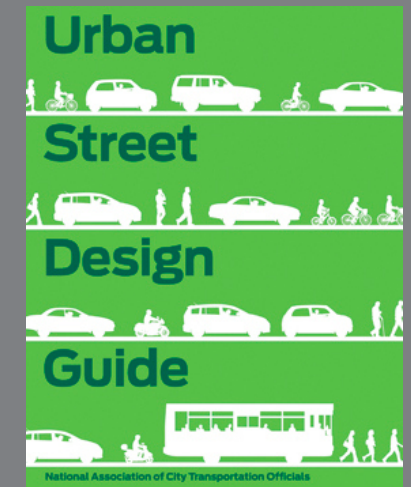
The National Association of City Transportation Officials (NACTO) has prepared a design guide that draws from the experience and expertise of leading engineers, planners, and designers from across the country. The Guide outlines a modern approach to complete streets and a plan to help implement better integrated street designs. Notable in the document is the hierarchy of guidance which is categorized in terms of importance; critical, recommended, and optional. The Guide emphasizes city street design as a unique practice with its own set of design goals, parameters, and tools. The Guide can be found at:

<http://nacto.org/usdg/>

Complete Streets: Best Policy and Implementation Practices (American Planning Association)

This document focuses on case studies across the Nation, where Complete Streets programs, projects and policies have been implemented. Complete Streets are 'streets for everyone', including pedestrians, bicyclists, motorists and public transportation users. The goal of Complete Street designs is to ensure a safe and enjoyable experience for all users. Complete Streets do not have one prescriptive design, but are tailored to the location they serve. Complete Streets may include:

- Sidewalks.
- Bike lanes.
- Bus lanes.
- Accessible transportation stops.
- Multiple safe crossing locations.
- Medians.
- Pedestrian signals.
- Narrow travel lanes.



Source: NACTO Urban Street Design Guide





- Roundabouts.
- Bulb outs.

The ultimate goal of Complete Streets is to create a diverse transportation system that provides viable choices to walk, bike and use public transportation, in addition to driving. Successful Complete Street projects and programs are sensitive to the context of the community they serve.

VDOT Design Guidelines

The following section focuses on key VDOT design guidelines and other resources adopted by VDOT.

Implementation Guidance Documents for Localities

This web-page contains links to documents with information on planning pedestrian and bicycle facilities in Virginia. There is specific guidance on:

- Guidelines for coordinating with localities.
- Planning level cost estimates.
- Updated construction and maintenance scoping forms.

The page and documents can be found at:

<http://www.virginiadot.org/programs/bk-documents.asp>

VDOT Road Design Manual Appendix A-5

The VDOT Road Design Manual provides design guidelines for VDOT roads. Included in the Road Design Manual is Appendix A-5, Bicycle and Pedestrian Facility Guidelines. The manual contains design guidelines on basic bicycle and pedestrian facilities. For example, Appendix A-5 defines a pedestrian accessible route as “a continuous unobstructed path connecting all accessible elements and spaces of a facility”. The manual requires that all new sidewalks:

- Be a minimum of 60 inches in width; where the right-of-way does not accommodate this width, a width of 48 inches can be used with the provision of pedestrian passing areas. Traffic sign, lighting and signal supports should not encroach into the 60-inch minimum width.
- Have a cross slope that does not exceed 48:1 (two percent).
- Have firm, stable, and slip-resistant surfaces (bark, gravel, and sand are not appropriate materials).
- Along streets with curb and gutter, sidewalks must be constructed with cement concrete or solid paving units.
- The manual encourages buffer strips between sidewalks and roadways, utility poles, and lighting fixtures. This should be a minimum of 48 inches.

The manual also has regulations for the accessibility of sidewalks, ensuring that curb ramp locations are present for wheelchair users and those with physical handicaps. The manual states that, “Curb ramps should be provided for each direction of crossing at intersections that incorporate pedestrian access routes, or on both sides of a mid-block location.” More information can be found at:

<http://www.virginiadot.org/business/locdes/rdmanual-index.asp>

VDOT Manual of the Structure and Bridge Division, Volume V – Part 2, Chapter 6 - Geometrics

The VDOT Manual of the Structure and Bridge Division, Volume V – Part 2, Chapter 6 includes VDOT bridge design requirements for pedestrian and/or bicycle facilities (both stand-alone and adjacent to vehicular traffic) and are based on the following references:

- Current VDOT-adopted AASHTO LRFD Bridge Design Specifications.
- Current VDOT-adopted AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges;
- Current VDOT Structure and Bridge Division Instructional and Informational Memoranda including IIM-S&B-80 for VDOT modifications to the AASHTO documents referenced in the two bullets above;
- Additional references denoted in Chapter 6.

Chapter 6 includes facility definition, bridge specific accessibility requirements and other background information gathered from the sources referenced above that assist the designer in determining the required bridge geometrics and design requirements. Parapets/railings are required along the edge of all structures. Where pedestrian facilities are adjacent to vehicular traffic, pedestrian elements may require separation from the roadway by crash-tested combination railing. Bridges with pedestrian facilities must be designed for the appropriate AASHTO pedestrian load and/or design vehicular live load as applicable. VDOT bridge references can be found at:

<http://www.virginiadot.org/business/bridge-manuals-default.asp>

VDOT Designated Bicycle and Pedestrian Accommodations

The VDOT Designated Bicycle and Pedestrian Accommodations document provides information on the design of pedestrian facilities. Information in the document includes:

- Sidewalks must be at least 5-feet wide (depending on context, i.e. five-5-feet 6-inches wide on bridges, not including curb).
- Shared use paths must be at least 10-feet wide unless certain criteria apply.
- Ramps must meet ADA standards.
- Appropriately striped crosswalks must be provided.





A pedestrian “accommodation” is defined as any facility, design feature, operational change, or maintenance activity that improves the environment in which pedestrians (and bicyclists) travel.



Location: Frost Ave and Broadview Ave
Warrenton, VA

The document also provides guidance on design features including:

- Providing signage warning drivers of pedestrian presence.
- Providing railings of 54 inches on structures.
- Providing lighting along pedestrian facilities.

The complete list of guidelines can be found at:

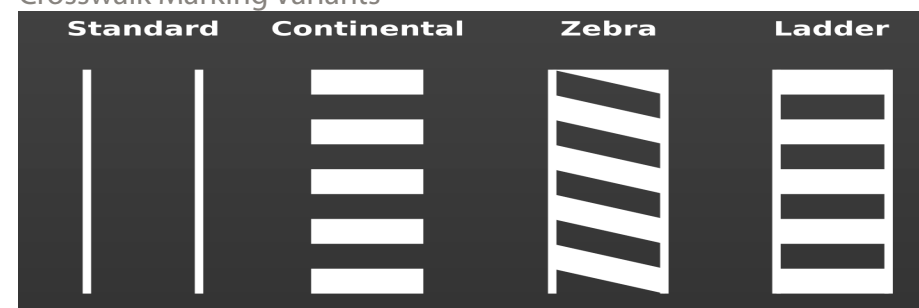
<http://www.virginiadot.org/programs/resources/bpaccommodationsdefined.pdf>

VDOT Guidelines for the Installation of Marked Crosswalks

Marked Crosswalks are an integral part of pedestrian infrastructure. They enhance safety at intersections as well as mid-block by increasing the visibility of crossing locations. The document provides guidance on where and with what frequency crosswalks should be used, noting that they should be used where pedestrian activity is frequent enough to warrant their use. Land use and population density surrounding the intersection can also be used as justification for the installation of a marked crosswalk. The guide provides a decision chart for the justification of the installation of marked crosswalks at uncontrolled intersections. Information on the implementation of crosswalks at multiple types of intersections is also provided in the Guide. More information on the installation of crosswalks can be found at:

http://www.virginiadot.org/business/resources/Marked_20Crosswalks_20Final_20Guidelines_2012-14-05.pdf

Crosswalk Marking Variants



Asset Management’s Best Practices Manual

Guidelines for the maintenance of pedestrian facilities, including sidewalks, crosswalks, and shared-use paths are outlined in the Asset Management Best Practices Manual. The guide states that all sidewalk accommodations should be kept firm, smooth and free of holes, defects, and debris. More information on the manual can be found at:

http://www.virginiadot.org/programs/resources/Asset_Mgmt_Best_Practices_Manual_BP_12.5.pdf

Location and Design Instructional and Informational Memorandum 55

The Location and Design Instructional and Informational Memorandum IIM-LD-55 addresses the design standards necessary to ensure VDOT facilities (sidewalks) meet and exceed the 2010 ADA Standards for Accessible Design (dated September 15, 2010). Additionally the memorandum references the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAC, dated July 26, 2011). The Memorandum provides details on sidewalk widths, surfaces and grades, and addresses the required elements of curb ramps to ensure accessibility for all users. The memorandum includes graphics depicting example curb ramps and their appropriate implementation on sidewalks. The complete memoranda can be found at:

<http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/iim/IIM55.pdf>

Virginia Work Area Protection Manual: Standards and Guidelines for Temporary Traffic Control

This manual focuses on mitigating the negative effects of work areas on pedestrians. Work areas often disrupt the pedestrian network. The manual provides guidance on whether pedestrian routes can be maintained during construction and makes recommendations for the provision of alternative routes if the walkway cannot safely be maintained. The manual has information on the required signage for closed and alternative pedestrian facilities, and details how to protect pedestrians from vehicular traffic and work zone construction.

The manual also covers different challenges encountered in work areas and ways to maintain worker and pedestrian safety. Safety measures recommended include:

- Canopied walkways.
- Fencing.
- Wooden railings.
- Signage.
- Banners.
- Channeling.
- Jersey barriers.

When these recommendations are implemented, accessibility can be maintained during construction. More information can be found at:

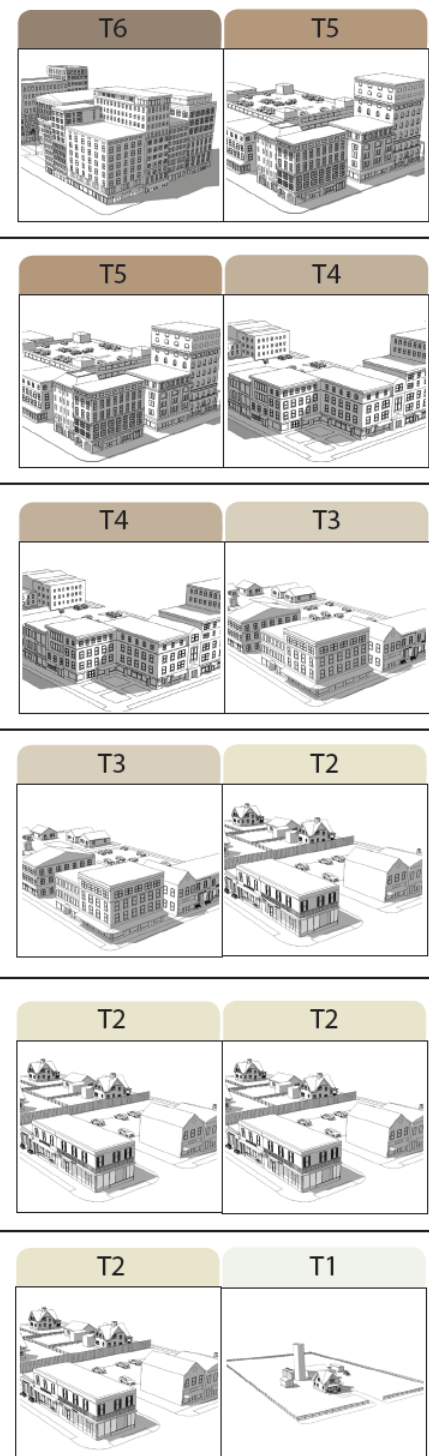
<http://www.virginiadot.org/business/trafficeng-wzs.asp>



Detectable Warning Surface



Transect Zones



Virginia Work Zone Pedestrian and Bicycle Guidance (DRAFT)
 VDOT is in the process of developing the Virginia Work Zone Pedestrian and Bicycle Guidance document. When complete it will provide guidance to identify pedestrian and bicycle issues in work zones. It will offer designers and engineers direction to ensure the safe movement of pedestrians and cyclists through work zones. The guide takes best practices from ADA Standards, PROWAC, MUTCD and the Virginia Work Area Protection Manual. The manual is broken down into sections on work zone recommendations. The Virginia Work Zone Pedestrian and Bicycle Guidance document has information on how to maintain pedestrian facilities in work areas including:

- Curb ramps.
- Channelizers.
- Railings.
- Barricades.
- Surface warnings.

The guide has examples of how these facilities can be preserved during construction work. It also has diagrams showing how the pedestrian walkways can be maintained at mid-block construction zones, intersection construction zones, and when crosswalks are blocked.

A checklist is provided to ensure that pedestrian facilities are not overlooked during the construction process. It has a series of questions, including:

- Will a reasonably safe, convenient, and accessible path be provided that replicates as much as practical the characteristics of the existing pedestrian facility?
- Will all pedestrian facilities near the work zones be separated from the work area by appropriate barriers that maintain the accessibility and detectability for pedestrians with disabilities?
- Will a smooth, continuous hard surface that will not cause tripping or restrict wheelchair use be provided throughout the entire length of the temporary pedestrian facility?

Virginia Supplement to the MUTCD, 2011 Edition with Revisions
 The Supplement contains Virginia specific requirements of traffic control devices. The supplement covers information on the required warrants, placement, design, and countdown phases of pedestrian signal heads. There is also information on measures to ensure signals and detectors are accessible to all pedestrians, including people with visual and hearing disabilities.

Source: DRPT, Multimodal System Design Guidelines. Figure 30 Multimodal Center Types Summary

The supplement includes details on pedestrian warning and yield signs including placement, mounting height and color. Virginia requires the use of fluorescent yellow-green in place of yellow for all pedestrian related signage. The Virginia Supplement also states that "Yield to Pedestrian" signs shall be used, instead of "Stop for Pedestrians." The manual also contains Virginia-specific information on crosswalks, including the length, marking, and yield laws. This document applies to all state-maintained roads. Localities that maintain their own roads may also choose to adopt the Supplement. Localities that do not adopt the Supplement must still follow the federal MUTCD. The complete supplement can be found at:

http://www.virginiadot.org/business/virginia_mutcd_supplement.asp

Locally Administered Projects Manual

This manual provides guidance to localities as they implement their own transportation projects. The manual emphasizes the need to consider pedestrian access in all new projects and provides guidance on sidewalks, crosswalks, and ADA compliance. The manual provides direction for the process, procedure, and documentation needed to ensure compliance with State standards on projects. The complete manual can be found at:

http://www.virginiadot.org/business/locally_administered_projects_manual.asp

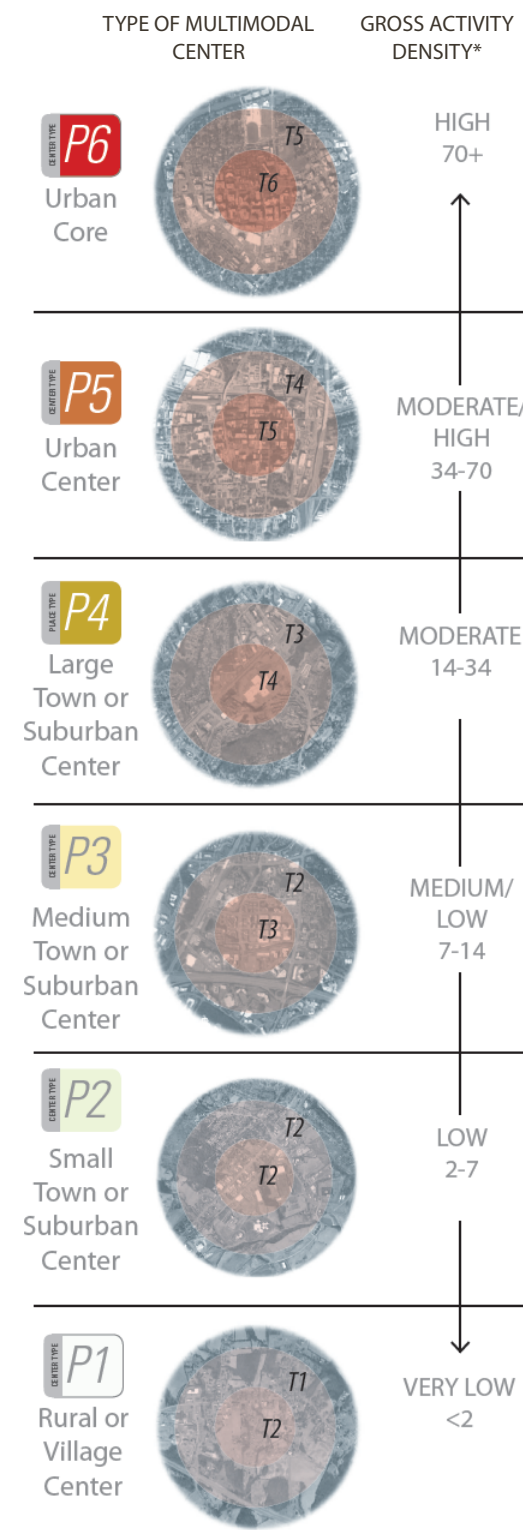
MultiModal System Design Guidelines

The Virginia Department of Rail and Public Transportation (DRPT) has established design guidelines for multimodal facilities, including pedestrian (and bicycle) infrastructure. The Guidelines establish common statewide best practices for multimodal planning that are intended to be used as a resource and model by planners and engineers. The Guideline serves as a step-by-step process to develop a multimodal transportation plan.

Corridors connect one of seven types of Multimodal Centers identified by the Guidebook, ranging from dense urban areas to low-density rural centers, they include the following:

- P-6: Urban Core.
- P-5: Urban Center.
- P-4: Large Town or Suburban Center.
- P-3: Medium Town or Suburban Center.
- P-2: Small Town or Suburban Center.
- P-1: Rural village Center.
- SP: Special Center.

Multimodal Centers

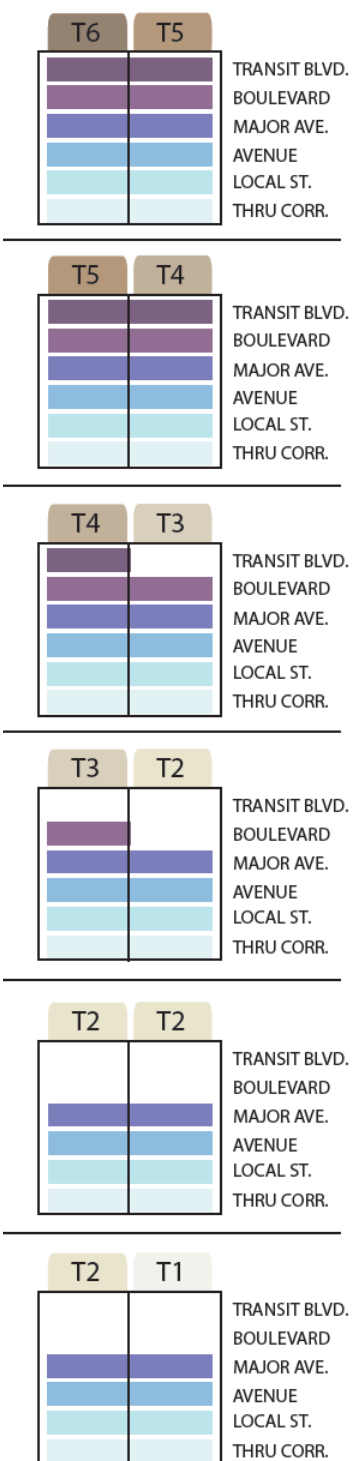


*Sum of jobs + population

Source: DRPT, Multimodal System Design Guidelines. Figure 30 Multimodal Center Types Summary



Multimodal Corridor Types by Transect



These Multimodal Centers differ from transit oriented development (TOD) as they include areas that have the characteristics of good multimodal infrastructure but are not centered on a transit system. The primary characteristic of a Multimodal Center is a mixture of land use. The five different multimodal corridors identified by the guidelines are:

- Transit Boulevard.
- Boulevard.
- Major Avenue.
- Avenue.
- Local.

The guidelines provide dimensions for optimal and minimal pedestrian accommodations based on road type and context. More information on the Guidelines can be found at:

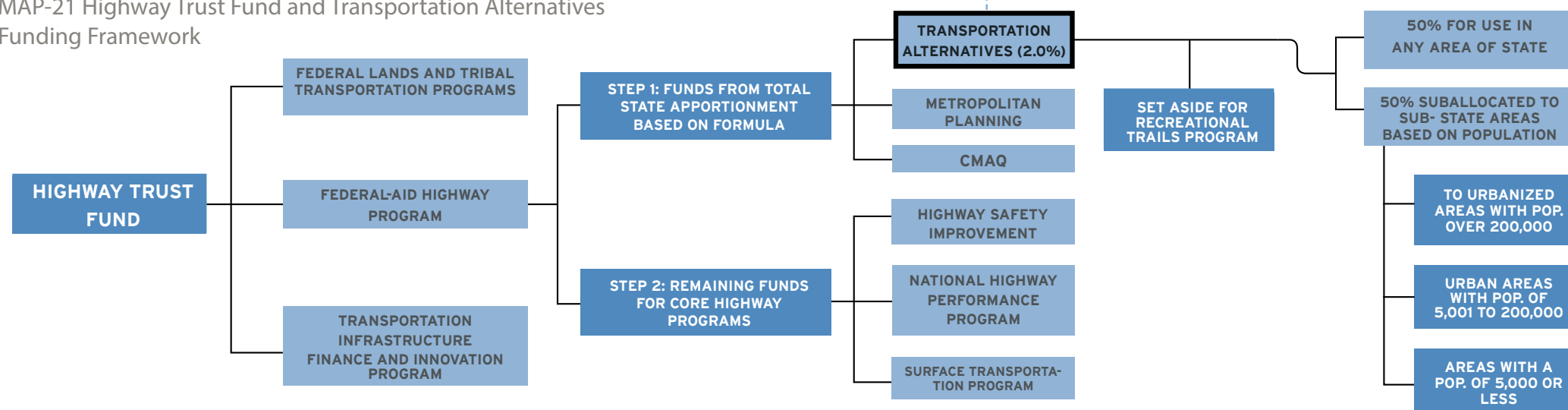
<http://www.drpt.virginia.gov/activities/MultimodalSystemDesignGuidelines.aspx>

VDOT Maintenance Best Practice Manual

VDOT has recently updated its Maintenance Best Practice Manual and it is available on VDOT's SharePoint site. The Manual will be made available on VDOT's website. It outlines guidelines for the maintenance and repair of roadway components including pavement, pavement markings, bridges, drainage, signage, and traffic control devices. When published it will include information on maintenance projects that affect sidewalks including:

- Street sweeping.
- Tree removal.

MAP-21 Highway Trust Fund and Transportation Alternatives Funding Framework



- Bridge deck washing.
- Signage (including pedestrian).
- Signal maintenance.

The manual helps VDOT ensure that transportation facilities, including sidewalks, crosswalks, ramps, and pedestrian signage remain in a state of good repair.

Funding Program Documents

The following section focuses on the various funding sources available to projects, particularly those related to pedestrian accommodations.

MAP-21 Overview

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was passed by Congress on June 29, 2012 and signed into law by President Obama on July 6, 2012. This two-year transportation bill became effective Oct. 1, 2012, and included significant changes to the Transportation Enhancement (TE) and Safe Routes to School Programs as set forth in SAFETEA-LU. MAP-21 established a new program, Transportation Alternatives (TA), for funding pedestrian accommodations, bicycling accommodations, and Safe Routes to School. This new program combines projects that were previously funded under multiple programs including Transportation Enhancements, Recreational Trails, Safe Routes to School, and several other discretionary programs. This new program sets aside two percent of a state's MAP-21 funding for projects, including:

- Transportation Alternatives, including pedestrian and bicycle accommodations.
- Recreational Trails Program.
- Safe Routes to Schools Program.

For 2013, the Apportionment for Transportation Alternatives in Virginia is \$21,603,840, of this \$1,527,161 is set aside for Recreational Trails (Source: FHWA)

Source: DRPT, Multimodal System Design Guidelines. Figure 30 Multimodal Center Types Summary



Under this new program each state must spend a portion of its TA funds on recreational trail projects unless the state opts out of the program and funding. For 2013, the apportionment for Transportation Alternatives in Virginia is \$21.6 million, of which \$1.5 million is set aside for Recreational Trails. The TA program is administered by the Local Assistance Division.

In MAP-21, several programs were combined including many of the prior Transportation Enhancement activities, the Recreational Trails program and the Safe Routes to School (SRTS) program.

In SAFETEA-LU, there were 12 eligible transportation enhancement activities. Under MAP-21, there are four defined eligible activities for the Transportation Alternatives Program (TAP), including one called "transportation alternatives," which replaces the 12 prior transportation enhancement activities with nine qualifying eligibilities.

In addition to eliminating some previously eligible transportation enhancement activities, modifications were made that more narrowly define the types of projects that qualify for funding. The overall theme of the revisions appears to expand the eligibilities from strictly enhancing the transportation system to include planning, construction, and design to comply with existing Federal regulations.

Not only did MAP-21 change the eligible activities, it also made changes in how Federal funds will be distributed. MAP-21 states that once funds are allocated to fund the Recreational Trails Program, the remaining TAP funds will be split, with 50 percent of these remaining funds being distributed based on population and 50 percent being distributed anywhere statewide.

MAP-21 also provides MPOs in the four identified Transportation Management Areas (TMAs) with the ability to make project selections in their respective areas. More information on MAP-21 can be found at:

<http://www.fhwa.dot.gov/map21/tap.cfm>

Congestion Mitigation and Air Quality (CMAQ) Improvement Program

This program continues under MAP-21 and funds projects that support surface transportation projects and other related efforts that contribute to air quality improvements and provide congestion relief that will help attain the National Ambient Air Quality Standards stated in the 1990 Clean Air Act amendments. Each year the funding is available to local areas that do not meet the National Ambient Air Quality Standards. CMAQ-funded projects may include bicycle and pedestrian facility improvements and outreach campaigns that promote bicycling and walking. As of May 2009 the regions of Northern Virginia, Richmond, Hampton Roads, Fredericksburg, and Shenandoah National Park

were eligible to apply for funds. Information on the program can be found at:

http://www.fhwa.dot.gov/environment/air_quality/cmaq/

Highway Safety Improvements Program

The Highway Safety Improvement Program (HSIP) continues under MAP-21. This FHWA program was established to make significant progress in reducing highway fatalities and serious injuries. It involves identification of high crash locations and provides funding for safety improvement projects. This program includes the Bicycle and Pedestrian Safety (BPS) Program which incorporates the previous Hazard Elimination Safety Program (HES).

The VDOT Traffic Engineering Division (TED) administers these federal funds within the Commonwealth of Virginia. Local governments and VDOT Districts need to submit their safety proposals for locations where improvements are recommended. The candidate projects are selected based upon the requirements and criteria set by the TED-HSIP application procedures and guidelines:

- Should be designed and constructed within three years.
- Should not require acquisition of significant rights of way.
- Should not require extensive environmental review and mitigation.

Information on the HSIP can be found at:

http://www.virginiadot.org/business/ted_app_pro.asp

Traffic Calming Guide

The Traffic Calming Guide for Local Residential Streets, which was adopted in June 2001, provides communities with a traffic management tool dealing specifically with speeding, with the goal being to slow speeders in residential neighborhoods on streets classified as local. Approval authority is by the District Administrator on both Primary and Secondary routes. More information can be found at:

<http://www.virginiadot.org/business/resources/TrafficCalmingGuideOct2002.pdf>





Review of State and Local Pedestrian Policies and Best Practices

States throughout the country are implementing their own pedestrian and bicycle policy plans.

A review of several well regarded plans revealed that a number of best practices emerged. Plans typically completed the following:

- Created a detailed list of projects and associated costs (related to pedestrian and bicycle accommodation improvements).
- Focused on improving pedestrian safety.
- Formed a Pedestrian Task Force, a steering committee, or some organization that represents the best interests of pedestrians (and other alternate modes of transportation).
- Developed a set of Goals and Objectives.

The inclusion of pedestrian accommodations in locality plans is critical to the planning and future implementation of pedestrian related projects. Their inclusion is essential to ensure that pedestrian accommodations are adequately budgeted for and addressed in on-going development.

Goals and Objectives

The creation of well thought-out sets of goals was at the center of these plans and often included the following:

- Safety.
- Equity.
- Health.
- Economic vitality.
- Mobility.
- Environmental stewardship.

Objectives, targeted at meeting the goals of the plans, provided direction and measurable achievements in the implementation of the improvement of pedestrian facilities. Objectives included:

- Complete and maintain the pedestrian system.
- Create vibrant public spaces that encourage walking.
- Increase the number of people walking for transportation, recreation, and health reasons.
- Provide pedestrian oriented planning, technical, educational, and financial assistance to local governments, and regional planning organizations.
- Educate motorists, pedestrians, and bicyclists regarding their shared responsibility to ensure safety.
- Data collection efforts focused on pedestrians and bicyclists.

- Training to encourage planners and engineers to appropriately include pedestrian and bicycle friendly projects in the planning and design of their projects.

Washington State Bicycle Facilities and Pedestrian Walkways Plan

The Plan focuses on the future of walking as a mode of transportation in Washington State. The purpose of the plan is to improve connections, increase coordination, reduce traffic congestion and assess pedestrian transportation needs. The plan establishes five objectives for Washington State:

- Preservation: ensure no net loss in pedestrian safety and mobility.
- Safety: target safety investments to known risk factors for pedestrians.
- Mobility: increase pedestrian transportation choices.
- Environment: walking will be integral in the State's strategy to improve public health and address climate change.
- Stewardship: improve the quality of the transportation system by improving transportation for all types of pedestrians.

To see that their objectives were met they created an implementation plan for each objective with steps and performance measures for different goal years. The complete plan can be found at:

http://www.wsdot.wa.gov/bike/bike_plan.htm

Virginia Best Practices

Jurisdictions throughout Virginia are implementing progressive pedestrian policies and plans. The following section has examples of best practices in pedestrian policy and implementation from urban, suburban, and rural areas of the Commonwealth, as well best practices implemented by other states.

Arlington Master Transportation Plan: Pedestrian Element

Arlington County creates policies, implementation plans and performance measures which are detailed in this document. Arlington wants to expand the pedestrian presence on its streets with "more people walking to more places more often". The Master Plan lays out 12 policies to ensure that a contiguous and usable walkway network is available to pedestrians. These policies are broken down into five groups:

- Complete the walkway network.
- Make the pedestrian network fully accessible and convenient for all users.
- Improve pedestrian safety.
- Increase walking.
- Operate and maintain pedestrian facilities to a high-quality standard.

Washington State Bicycle Facilities and Pedestrian Walkways Plan



Washington State Department of Transportation



Master Transportation Plan

Goals and Policies Summary



AN ELEMENT OF ARLINGTON COUNTY'S
COMPREHENSIVE PLAN
NOVEMBER 2007

The Plan then focuses on pedestrian accommodations and design principles, which are focused on creating a safe and continuous sidewalk network. The final chapter focuses on the implementation priorities for the County, creating Priority Pedestrian Zones (PPZ) which are:

- Within 0.25 mile of a transit stop.
- Within 0.5 mile of a Metrorail station entrance.
- Within 0.5 mile of a County facility, or a neighborhood retail center.
- Within 1.0 mile of a public school.

The Arlington Pedestrian Master Plan can be found at:

<http://www.arlingtonva.us/departments/EnvironmentalServices/ProjectsAndPlanning/file65402.pdf>

Fairfax County Pedestrian Program

In 2002, a comprehensive pedestrian program for Fairfax County was initiated by the Fairfax County Board of Supervisors. Under the Pedestrian Program a number of accomplishments have been made:

- Pedestrian Projects - The Board has designated \$48 million in Federal, State, and County funding under direction of FCDOT to construct pedestrian improvements in high-priority areas of Fairfax County.
- Yield to Pedestrians Program - Fairfax County is one of a few jurisdictions in Virginia allowed to enforce increased fines for failing to yield to pedestrians at designated intersections. Currently the signs are installed at over 400 intersections in the County.
- Countdown Pedestrians Signals - Fairfax County has upgraded nearly all 500 signalized crosswalk locations in Fairfax County with modern LED countdown signals. These improved devices aid pedestrians in understanding the time remaining to cross.
- Bus Stop Inventory - A Bus Stop Inventory and Safety Study of the over 4,000 Metrobus and Fairfax Connector public transit bus stops throughout Fairfax County was conducted to determine if these stops are safe for pedestrians and to make recommendations on improving

the stops. The Bus Stop Inventory and Safety Study was completed in 2004. Bus stop improvements are underway at priority stops identified in the study, and currently over 100 bus stop improvements are being designed for construction over the next few years.

- Pedestrian Task Force - The Board established a Pedestrian Task Force, consisting of citizens, appointed commission members, and multi-disciplined staff. This group reviews existing Fairfax County pedestrian programs and activities, makes recommendations on improving these programs, develops coordinated education and outreach efforts, and prioritizes funding for pedestrian projects. The Task Force completed and delivered its final report to the Board in 2006. Currently, The Trails and Sidewalks Committee serves the Board in a citizen advisory role.

More information can be found at:

<http://www.fairfaxcounty.gov/fcdot/pedestrian/pedprojects.htm>

City of Alexandria Pedestrian Mobility Plan

The City of Alexandria completed its Pedestrian and Bicycle Mobility Plan in 2008. The plan created a blueprint for the City's pedestrian and bicycle facilities by suggesting specific recommendations, which included:

- 17.5 miles of new sidewalks and 11.8 miles of reconstructed sidewalk.
- Removal of 274 sidewalk obstructions.
- 645 new marked crosswalks and 672 re-striped crosswalks.
- 251 new pedestrian countdown signals and 243 new pedestrian push button signals.
- 418 new accessible curb ramps and 464 reconstructed accessible curb ramps.
- 148 bus stop improvements.
- 10.1 miles of new shared-use paths and 3.54 miles of reconstructed shared-use paths.
- 12.31 miles of new shared use pathways alongside roads.

These recommendations were placed into five categories to help the City identify the appropriate funding source for each recommendation:



Location: Fairfax, VA
Source: FairfaxCounty.gov



City of Alexandria
Pedestrian and Bicycle Mobility Plan
 June 2008
FINAL

- Safe Routes to School.
- Access to Transit.
- Community Pathways.
- On-Road Bicycle Facilities.
- Off-Road Facilities.

This plan shows how concrete recommendations and potential funding sources can be used to improve the likelihood of pedestrian facilities being built or improved.

More information can be found at:

<http://alexandriava.gov/localmotion/info/default.aspx?id=11418>

Montgomery County Village Transportation Links Plan

The Montgomery County (Virginia) Village Transportation Links Plan focuses on recommending improvements in each of the county's six villages. The focus is on improving non-motorized transportation access and mobility within and between each of Montgomery County's designated villages.

The plan aims to align with the CTB Policy for Integrating Bicycle and Pedestrian Accommodations. It establishes preferred design guidelines and crossing standards for the Plan. These guidelines are then applied to each of the villages included in the Plan. Improvements are depicted in a schematic layout diagram which illustrates the proposed improvements and identifies the types of cross-sections and crossing type recommended. These improvements are summarized in a tabular cost estimate.

This detailed plan creates a path forward for the construction and implementation of pedestrian facilities in Montgomery County.

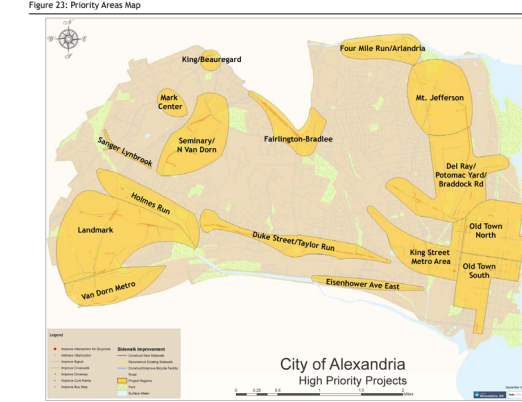
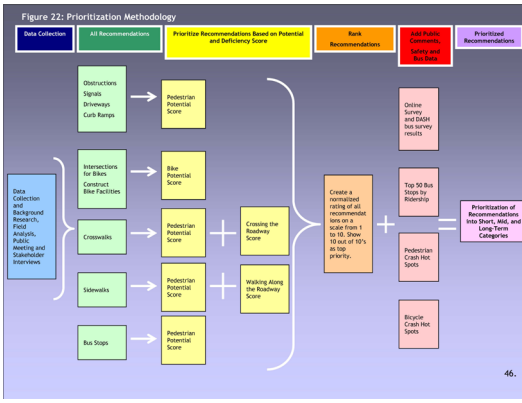
http://www.montva.com/filestorage/1146/98/167/684/1952/final_vitl_plan.pdf

VILLAGE TRANSPORTATION LINKS PLAN: Final Report
 Montgomery County, VA
 June 25, 2007

June 13, 2007
 Approved by the Planning Commission subject to additional study being made of the Belview and River demonstration projects prior to seeking grant funding for these projects.

June 25, 2007
 Approved by the Board of Supervisors

Prepared By: RENAISSANCE PLANNING GROUP



Project Recommendation Costs by Programmatic Category

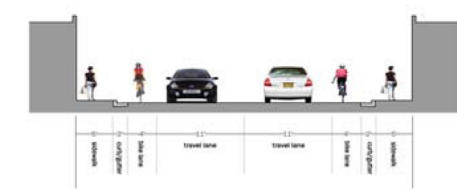
Recommendation Type	Top Priority (10 out of 10)		Medium Priority (8 and 9)		Low Priority (1 through 7)		Total Program Cost
	Number of Total	Total Cost	Number of Total	Total Cost	Number of Total	Total Cost	
Safe Routes To School							
Bus Stop Improvement	46	\$ 175,100.00	162	\$ 210,378.00	162	\$ 694,962.00	
Median Improvement	0	\$ 0.00	0	\$ 0.00	0	\$ 0.00	
Strip Crosswalk	148	\$ 27,364.80	117	\$ 14,148.21	117	\$ 138,619.56	
Restripe Crosswalk	78	\$ 121,109.02	36	\$ 49,235.52	116	\$ 172,109.30	
Curb Ramp Improvement	41	\$ 73,300.00	32	\$ 38,400.00	98	\$ 117,600.00	
Driveway Improvement	49	\$ 72,764.00	32	\$ 50,784.00	111	\$ 176,132.00	
Address Obstruction	144	\$ 115,309.00	56	\$ 74,012.00	253	\$ 358,162.00	
Construct Sidewalk	1	\$ 461,907.19	3	\$ 42,261.88	178	\$ 422,671.86	
Reconstruct Sidewalk	1,29	\$ 341,861.53	0,26	\$ 72,019.35	1,93	\$ 537,889.21	
Improve Landscaping	0	\$ 0.00	0	\$ 0.00	209	\$ 1,742.40	
Signal Improvement	40	\$ 461,560.00	4	\$ 14,642.00	75	\$ 346,648.00	
Total Cost	NA	\$ 1,680,074.12	NA	\$ 379,822.97	NA	\$ 2,268,933.32	\$ 4,324,830.41

Recommendation Type	Top Priority (10 out of 10)		Medium Priority (8 and 9)		Low Priority (1 through 7)		Total Program Cost
	Number of Total	Total Cost	Number of Total	Total Cost	Number of Total	Total Cost	
Bus Stop Improvement	46	\$ 175,100.00	162	\$ 210,378.00	162	\$ 694,962.00	
Median Improvement	0	\$ 0.00	0	\$ 0.00	0	\$ 0.00	
Strip Crosswalk	148	\$ 27,364.80	117	\$ 14,148.21	117	\$ 138,619.56	
Restripe Crosswalk	145	\$ 237,723.89	40	\$ 67,213.51	216	\$ 342,953.58	
Curb Ramp Improvement	118	\$ 237,600.00	49	\$ 58,400.00	218	\$ 387,600.00	
Driveway Improvement	42	\$ 66,794.00	21	\$ 33,327.00	209	\$ 331,483.00	
Address Obstruction	203	\$ 269,124.00	184	\$ 278,013.00	825	\$ 619,683.00	
Construct Sidewalk	1,03	\$ 1,256,933.88	3,43	\$ 679,633.66	4,16	\$ 996,748.80	
Reconstruct Sidewalk	1,9	\$ 530,301.45	1,26	\$ 352,333.52	4,74	\$ 1,322,398.05	
Improve Landscaping	0,15	\$ 1,900.00	0	\$ 0.00	207	\$ 1,549.40	
New Signal HWK or Full	0	\$ 0.00	0	\$ 0.00	2	\$ 114,600.00	
Signal Improvement	209	\$ 1,117,238.00	214	\$ 239,387.00	274	\$ 1,209,364.00	
Total Cost	NA	\$ 4,080,367.17	NA	\$ 1,444,453.54	NA	\$ 6,368,379.81	\$ 12,333,352.12

SAMPLE TRAILS

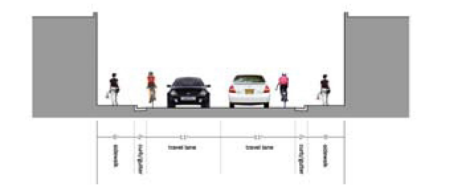
Constrained Right of Way w/ Bike Lane + Sidewalk

INTENT: Intended for streets in mixed-use core areas to add sidewalks and dedicated bike lanes (in the event that they are to be rebuilt or widened)
 TYPICAL APPLICATION: Not proposed for use in any of the VITL Plans



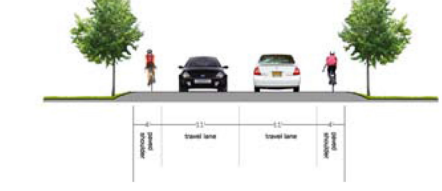
Constrained Village Right of Way w/ Shared Lane + Sidewalk

INTENT: Intended for streets in mixed-use core areas to add sidewalks with signed, shared bike use in the travelway (in the event that they are to be rebuilt or widened)
 TYPICAL APPLICATION: Typically used in the VITL Plans within the central, walkable core of the Village on older streets with mixed commercial and residential frontages



Constrained Rural Right of Way w/ Paved Shoulder (No Pedestrian)

INTENT: Intended for rural section highways that will not accommodate pedestrians to add a paved shoulder for bicyclists (in the event that they are to be rebuilt or widened)
 TYPICAL APPLICATION: Typically used between Villages on rural highways for regional bicycle traffic



Constrained Village Right of Way w/ Shared Lane + Buffered Sidewalk

INTENT: Intended for rural section highways that accommodate local pedestrian and regional bicycle traffic with a buffered sidewalk and shared, signed lane for bicyclists (in the event that they are to be rebuilt or widened)
 TYPICAL APPLICATION: Not used in the VITL plans, except for a short segment of Rt. 460 in Lafayette





4 Vision & Goals

The following section provides the vision and goals for the future of pedestrian accommodations in the Commonwealth of Virginia:

Vision

The Commonwealth strives to be a place where people can safely walk for transportation and recreation along roadways and off-road facilities in all parts of the Commonwealth. Virginia's transportation system accommodates and encourages walking by providing facilities for pedestrians of all ages and abilities, as well as policies, procedures, and programs that support walking as one of Virginia's multimodal options.

Goals

A set of goals were developed with the input of the Internal Working Group, the External Stakeholder Group, and survey respondents, as follows:

- Goal 1: improve the safety and comfort of pedestrians throughout Virginia and reduce pedestrian related crashes.
- Goal 2: enhance mobility and accessibility for pedestrians.
- Goal 3: achieve more consistent high-quality pedestrian accommodations in Virginia.
- Goal 4: better promote and educate planners, designers, advocates, and stakeholders on the requirements of the CTB Policy for Integrating Bicycle and Pedestrian Accommodations.
- Goal 5: improve available guidance on pedestrian accommodations.

Outcomes and Benefits

The goals above are important in order to achieve the following outcomes:

- **Transportation Options:** Virginia's multimodal transportation system should work toward enabling people of all ages and abilities to walk to reach destinations (i.e. "more people walking more places more often" as stated in Arlington County's Plan).
- **Improve Public Health, Safety, and Reduce Emissions:** by increasing the number of trips made by foot, public health and safety can be improved while reducing traffic congestion and emissions.

- **Economic Development:** supporting pedestrian friendly neighborhood design, mixed-use developments, and shopping districts provides expanded opportunities for walking. This can support livable and sustainable communities and will reduce adverse traffic impacts resulting from development.

How this plan was developed

The development of the State Pedestrian Policy Plan involved a great deal of input from VDOT staff and external stakeholders. The key stakeholders and steps were:

- **Internal Working Group:** this team was composed of staff representing various divisions and district offices within VDOT. These individuals provided guidance during the planning process and will be critical in the implementation of recommendations.
- **External Working Group:** the External Working Group provided guidance during the development of this Plan. This committee was composed of representatives from local government agencies, advocacy groups, and other state agencies.
- **Stakeholder Survey:** a survey was conducted to better understand the effectiveness of existing policy and to identify potential improvements to the policies. The survey was administered via a web-based survey to VDOT staff, Virginia localities, MPOs, and advocacy groups. The survey was designed primarily to collect qualitative data on the effectiveness and comprehensiveness of VDOT policy. The survey provided insight to the challenges jurisdictions face. An overview of the results can be found below in the Survey Overview and Results sub-section.
- **Review Best Practices:** a literature review was conducted to assess best practices and policy plans from local and national sources. See page 38 for the results of the literature review.

Survey Overview and Results

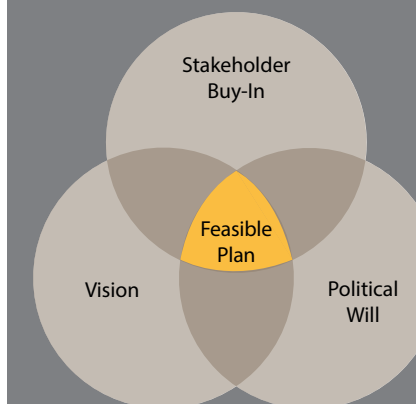
The survey was designed to collect qualitative data from VDOT staff, Virginia localities, MPOs, and advocacy groups across the State. This was done to gain insight on the effectiveness of existing policies, to assess where policy issues exist, and ultimately to assist in developing recommendations that will improve how pedestrian accommodations are implemented in Virginia.

Survey Overview

- Two-week survey period.
- Web-based survey instrument.
- 14 questions, with focus on qualitative open-ended responses. Skip logic was employed for each respondent type to tailor questions to the type of respondent.

Lessons learned from the implementation of any plan is that four fundamental success factors must be present:

- Vision
- Stakeholder Buy-in
- Political Will
- Feasible Plan





Approximately 76 percent of respondents indicated that guidance or tools on pedestrian accommodations could be improved (Source: VDOT Survey).

- 130 responses collected from VDOT representatives, MPOs, urban and rural localities, consultants, and advocacy groups.
- 90 different agencies participated from across the State (not all agencies and organizations responded).
- The majority of organizations represented reported that they incorporate a pedestrian element into their plans or policies.
- 80 percent of respondents reported being familiar with the 2004 CTB Policy for Integrating Bicycle and Pedestrian Accommodations.
- Approximately 76 percent of respondents indicated that guidance or tools on pedestrian accommodations could be improved.

Survey Focus

There were four open-ended questions, which are listed below:

- Could guidance or tools be improved?
- Are there gaps in any existing VDOT documents concerning pedestrian accommodations?
- Is there a particular VDOT policy in regards to pedestrian accommodations that is not working well?
- What particular issues have you experienced in incorporating pedestrian accommodations into infrastructure projects?

At the end of the survey, an additional opportunity to provide general comments was provided.

Focus of Comments Received

A wide range of comments were received in response to the open-ended questions. A sampling of these responses has been summarized below:

- Improved outreach is needed.
- Improved education on pedestrian policy is needed.
- Policies need better enforcement.
- Pedestrian activity (and accommodations) is not analyzed in all transportation studies.
- Pedestrian accommodations are not consistently included on similar projects throughout the State.
- Exclusion of pedestrian accommodations results in localities needing to add them post-construction.
- Clarification is needed in regards to when bicycle and pedestrian accommodations are required.
- A lot of policy is left to interpretation.

- Users cannot easily find guidance.
- More uniform implementation of pedestrian accommodations are needed across VDOT/Virginia.
- Funding opportunities need explanation.
- Ways to add pedestrian accommodations to existing road networks are needed.
- Pedestrian facilities are often excluded due to cost.
- Support for pedestrian facilities is needed from VDOT.
- The pedestrian network has to start 'somewhere'.

Respondents representing localities and MPOs indicated that approximately 53 percent of their organizations have dedicated staff or staff assigned to review pedestrian accommodations in plans and designs (Source: VDOT Survey).



Establishing an outreach and education program is essential to fully implement the VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations*.

5 Program and Policy Recommendations

This section provides a series of recommendations that will supplement and support policies established in the CTB Policy for Integrating Bicycle and Pedestrian Accommodations. These recommendations have been developed as a road map for VDOT to achieve the Vision and Goals identified in Section 4. Goals were based on input from the Internal and External Working groups and input from survey respondents, which include VDOT staff, Virginia localities, Metropolitan Planning Organizations (MPO), advocacy groups and interested individuals.

Recommendations have been organized in several distinct categories, as follows:

- Clarify policies with regard to pedestrian accommodations.
- Provide staff with resources to integrate accommodations into projects and programs.
- Improve pedestrian outreach and coordination.
- Measure and evaluate progress.

The recommendations are organized in these four categories (Elements). The chart on the opposing page represents the framework in which those categories fit.

Note: Recommendations with an *(asterisk) are shared with the Bicycle Policy Plan.

Element 1: Clarify Policies With Regard to Pedestrian Accommodation

Existing: The CTB Policy for Integrating Bicycle and Pedestrian Accommodations (2004) establishes the framework for accommodating bicyclists and pedestrians in the funding, planning, design, construction, operation, and maintenance of Virginia's transportation network.

Recommendation: In order to meet the Policy's vision of a multimodal transportation system, VDOT should provide additional guidance on the planning and design of pedestrian facilities. In some cases, this will involve clarifying or revising existing policies and procedures. In other cases, it will involve developing new resources to guide the implementation of the Policy across all disciplines of the Department.

Supplement Pedestrian Design Policies and Procedures

Existing: VDOT's Road Design Manual (RDM) and related geometric standards and specifications determine the design of all transportation

projects and are used by all levels within VDOT. This manual provides guidance on how to design pedestrian facilities and is consistent with national standards and guidance. However, further guidance is needed to determine the appropriate type or level of pedestrian and bicycle accommodation that may be needed in different roadway environments. This is a particular issue for large suburban roadways as land use changes create an even greater need for non-motorized transportation accommodations and safety countermeasures.

The following specific actions should be undertaken:

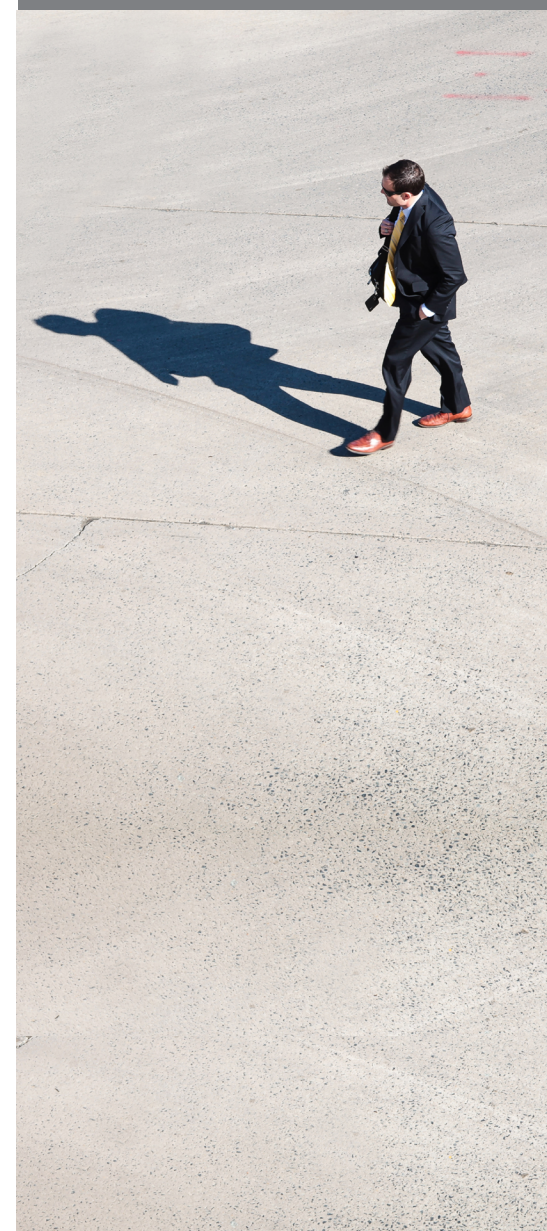
1. ***Action 1.1a: VDOT should monitor national design standards (AASHTO, ADA/Access Board, MUTCD, NACTO etc.) and adopt applicable standards as they are released.**
2. Revise the VDOT resource "Example Planning Level Cost Estimates for Bicycle Facilities" to include Pedestrian Facilities or provide a tool like the Statewide Planning Level Cost Estimates worksheet.
3. Develop design standards that address retrofitting pedestrian accommodations or adding accommodations to existing infrastructure. Design standards typically address new construction.
4. Integrate policies related to pedestrian accommodations with design documents.
5. VDOT should encourage localities to use multimodal level of service (LOS) in accordance with the Highway Capacity Manual (HCM) 2010.
6. Assure minimum safe crossing times and protected pedestrian phases are incorporated in intersection signal timing plans.
7. VDOT should adopt the DRPT Multimodal System Design Guidelines as standards and incorporate them into the VDOT Road Design Manual.
8. Pedestrian accommodations need to be addressed early in the planning and pre-scoping phases in the VDOT Project Development Process (see Appendix A), including the transportation element of the county comprehensive plan so that pedestrian needs may receive full consideration during the scoping process.

Policy Clarification and Application

Existing: After the Policy for Integrating Bicycle and Pedestrian Accommodations was adopted by the CTB, VDOT developed the Decision Process guide, which indicates the specific course of action to be taken when an exception to the Policy may be warranted. This chart, a decision tree, was carefully considered by numerous disciplines within VDOT, as well as local partners. The decision tree is an effective resource when used correctly. However, there are times when the decision tree is applied inconsistently, which can result in misapplication of the Policy.

9. **Action 1.2a: The decision tree should be revisited to ensure it clearly describes the process that should be undertaken to determine if an**

Maintenance of existing and new infrastructure is a challenge for agencies across the State. A best practice would combine routine maintenance tasks to maximize efficiency. A good example would be to clear debris and leaves concurrently during mowing of turf areas.





exemption to the Policy is warranted. At a minimum, a clarifying statement should be added on the decision tree that explains its proper use and how it directly relates to the Policy.

10. Internal Audit should conduct an audit to independently assess compliance with the CTB Policy for Integrating Bicycle and Pedestrian Accommodations.
11. Conduct on-going gap analysis in the sidewalk network and prioritize needs based on pedestrian demand and land use, population density etc. Provide analysis to localities and MPOs and encourage the gaps to be filled in through a variety of funding sources, including proffers, State, Local, and Federal construction funds.

Road Diet/Lane Diet Strategies

Existing: Right-of-Way (ROW) is often limited, creating challenges when trying to accommodate all users. Due to constrained ROW, providing for the safety of pedestrians may require re-allocating existing or proposed pavement width. Creating narrower travel lanes, otherwise known as lane diets, can provide space for paved shoulders or new sidewalks. Additional space for pedestrian accommodations can also be provided by reducing the number of lanes dedicated for automobiles and trucks. These projects are known as road diets.

12. *Action 1.3a: Consider narrower lane widths in accordance with Appendix A of the VDOT Road Design Manual, Geometric Standards.

Value Engineering

Existing: Value engineering is the systematic review of a project to improve performance, quality and/or life-cycle cost. The proposed lane width policy (see Action 1.3a above) will complement VDOT's value engineering goals by reducing the cost of incorporating sidewalks for pedestrians.

13. *Action 1.4a: The value engineering process should consistently apply the CTB Policy for Integrating Bicycle and Pedestrian Accommodations. On projects where provision of accommodations will result in significant cost increases, attempts should be made to reconfigure geometry throughout the project to allow for inclusion of pedestrian accommodations without the need to acquire additional right-of-way.

14. Identify potential right-of-way costs related to pedestrian accommodations early in the process. These costs are often underestimated and can inhibit what is included in a project.

Regional Trail Networks

Existing: Virginia has an extensive network of regional trails. These trails allow people to walk on routes dedicated to pedestrians and cyclists. By increasing the amount of trails in the Commonwealth, walking becomes a more viable option as a means of transportation.

15. VDOT should encourage localities with projects in the areas of the U.S. Bike Routes 1 and 76, the Beaches to Bluegrass Trail, the East Coast Greenway, the James River Heritage Trail, etc. to look for opportunities to provide additional pedestrian accommodations along the corridors to strengthen the network.
16. VDOT, DCR, and DRPT should conduct ongoing meetings to discuss potential rails to trails and rails with trails programs for both transportation and recreation to determine a common agenda, areas of responsibility and the best structure for collaboration on future projects.

Policy Regarding Pedestrian Prohibitions

Existing: Pedestrian access is restricted on interstate highways in Virginia (unless barrier separated); however, there is currently no policy regarding when pedestrian access should be restricted on other highways. In addition there is not a complete inventory of Virginia roadways where pedestrian access is restricted. This lack of information has led to non-cohesive decision-making regarding the restriction of pedestrians.

17. *Action 1.6a: Develop a list of current roadways where pedestrian (and bicycle) access are restricted.
18. *Action 1.6b: Develop a clear protocol to determine when prohibitions are warranted based upon objective criteria related to safety. This should apply to new roads and also should be used to review existing roads to determine if existing prohibitions still meet the criteria.
19. *Action 1.6c: Encourage the construction of separated shared-use pathways in the right-of-way of controlled-access freeways and identify where this can be applied safely. This can offer the opportunity to provide continuous, long-distance bikeways. For example, Virginia has several highly successful pathways that were built along freeways, including the Custis Trail in the I-66 corridor.

System Preservation and General Maintenance

Existing: At times, existing pedestrian accommodations are eliminated or obstructed in the course of maintenance or construction activities. For example, existing crosswalks are sometimes not restriped after an overlay.

20. *Action 1.7a: Develop a directive to preserve and/or replace pedestrian (and bicycle) accommodations as part of maintenance or construction activities to ensure that pedestrian and bicycle facilities and/or accommodations are not inappropriately eliminated or obstructed.
21. *Action 1.7b: Expand the information in the Maintenance Division Best Practices Manual on sidewalks and pedestrian facilities.
22. Upgrade pedestrian infrastructure during maintenance activities as required by ADA.



23. When maintenance activities occur, opportunities to stripe crosswalks should be considered.
24. When pavement safety assessments occur outdated crosswalks and handicap ramps should be documented and programmed for improvement.

Sidewalk Funding and Network Extension

Existing: VDOT includes sidewalks, where feasible, on highway construction projects in urban areas.

25. Connectivity of the pedestrian network should be improved wherever and whenever possible.
 - Provide funds in the VDOT program for completing gaps between parts of existing pedestrian networks, or connecting larger adjacent networks.
 - Encourage independent construction projects that fill in sidewalk gaps in heavily populated areas or where the existing and future land use expectations support the need for a sidewalk.
 - Coordinate with local jurisdictions on sidewalk and path construction projects through the encouragement and use of revenue-sharing money.

Pedestrian-Friendly Traffic Calming

Existing: Traffic calming is beneficial to pedestrians because it reduces motor vehicle speeds and is therefore encouraged on roadways where appropriate. Traffic calming improves the pedestrian experience by improving safety at crossing locations.

26. ***Action 1.9a: Update the Traffic Calming Guide for Residential Streets as necessary to ensure pedestrian (and bicycle) friendly design provisions are incorporated per AASHTO guidance.**
27. Develop state policies for the use of pedestrian hybrid beacons, road diets, and medians/pedestrian refuge areas to improve safety.

Updates to Manuals

Existing: With many new and updated manuals and guidance under revision, (e.g. NACTO Urban Street Design Guide, MUTCD, and the HCM 2010 considerable new or revised guidance and/or pedestrian accommodation design standards will be in place in the next few years.

28. ***Action 1.10a: VDOT should incorporate up-to-date pedestrian facility design guidance into ongoing review and updates of all VDOT manuals, guides, standards, and specifications that impact walking.**
 - Guidance should address retail street standards with generous sidewalks, parallel and on-street parking.
 - Design standards should be set for planting strips to allow space for snow removal, shade in summer, space for trash and recycle pick-ups, and temporary construction signs that do not block sidewalks.

Central Resource for Policies

Existing: VDOT has been making improvements in pedestrian policies. However, VDOT's various policies and memoranda can sometimes be difficult to locate and unclear as to how they should be integrated.

29. ***Action 1.11a: A central clearinghouse should be created on the Bicycle and Pedestrian Program website to serve as a quick reference page for VDOT's policies related to walking and biking.**

Element 2: Provide Staff with Resources to Integrate the Accommodations of Pedestrians in Projects and Programs

Existing: VDOT has established policies that address the needs of pedestrians. However, these policies are still being incorporated into the daily operating procedures of the Department. The Bicycle and Pedestrian Program provides leadership for this process.

Recommendation: Staff at all appropriate levels of VDOT should be provided training and guidance, as well as clear direction on their job responsibilities in order to ensure they design, construct, operate, and maintain roadways that accommodate the needs of pedestrians. The following specific actions should be undertaken:

Mission and Job Descriptions

Existing: VDOT's Bicycle and Pedestrian Program serves as an advocate for bicyclist and pedestrian needs within VDOT. Since the late 1970s, it has provided planning level technical assistance to state and local transportation planners, coordinated implementation of VDOT policies, and spearheaded bicycle and pedestrian education and safety awareness throughout Virginia.

30. ***Action 2.1a: To build on its current role, the VDOT Bicycle and Pedestrian Program should establish a mission statement which outlines the core responsibilities of the Program and Central Office staff.**
31. ***Action 2.1b: Review the March 5, 1998 Memorandum regarding District Bicycle and Pedestrian Coordinators' duties and responsibilities to determine if revisions are needed. Make appropriate updates.**

Training Opportunities

Existing: Due to the need for education on emerging pedestrian planning and design concepts and guidelines, as well as the need to enhance awareness of the Policy, additional staff training opportunities are necessary. The need for training sessions will be reduced over time as more VDOT staff and consultants become skilled in this area. However, the need for training will typically be required as new staff join the organization.



32. *Action 2.2a: VDOT should continue to offer a variety of regular multimodal transportation training opportunities for VDOT engineering, operations, maintenance and planning staff at all levels of the organization, as well as staff at Regional Planning Commissions, Metropolitan Planning Organizations, Planning District Commissions, and local governments.
33. *Action 2.2b: Training opportunities should include a variety of training venues such as in-person workshops and web-based seminars.

Staff Qualifications

Existing: In order to apply the Policy consistently throughout Virginia, knowledge of pedestrian planning and design is needed among various staff categories and positions within VDOT. As colleges and universities offer more extensive courses in urban planning and civil engineering, professionals entering the workforce increasingly bring pedestrian planning and engineering skills to the job.

34. *Action 2.3a: Where appropriate, VDOT should include pedestrian planning and design skills in position descriptions and hiring procedures.

Liability Issues

Existing: People regularly walk along Virginia's state roads to access schools, jobs, shopping, transit, and for health and recreation. Various policy statements of AASHTO, the MUTCD, FHWA, and VDOT make it clear that it is the responsibility of the Department to provide safe accommodations for pedestrians. Providing a sidewalk will not increase the Department's liability exposure, assuming the facility is designed in accordance with national and state-issued design standards and guidance, and adheres to the CTB Policy for Integrating Bicycle and Pedestrian Accommodations. In most instances, providing for the safety of pedestrians will decrease VDOT's liability exposure.

35. *Action 2.4a: Continue to provide guidance on liability issues as they relate to pedestrian facilities.

Element 3: Improve Pedestrian Outreach and Coordination

Existing: In addition to VDOT, there are many other agencies and organizations in the Commonwealth responsible for implementing pedestrian projects and programs. The activities of VDOT are interrelated with activities of outside organizations; therefore, a high level of coordination will benefit everyone.

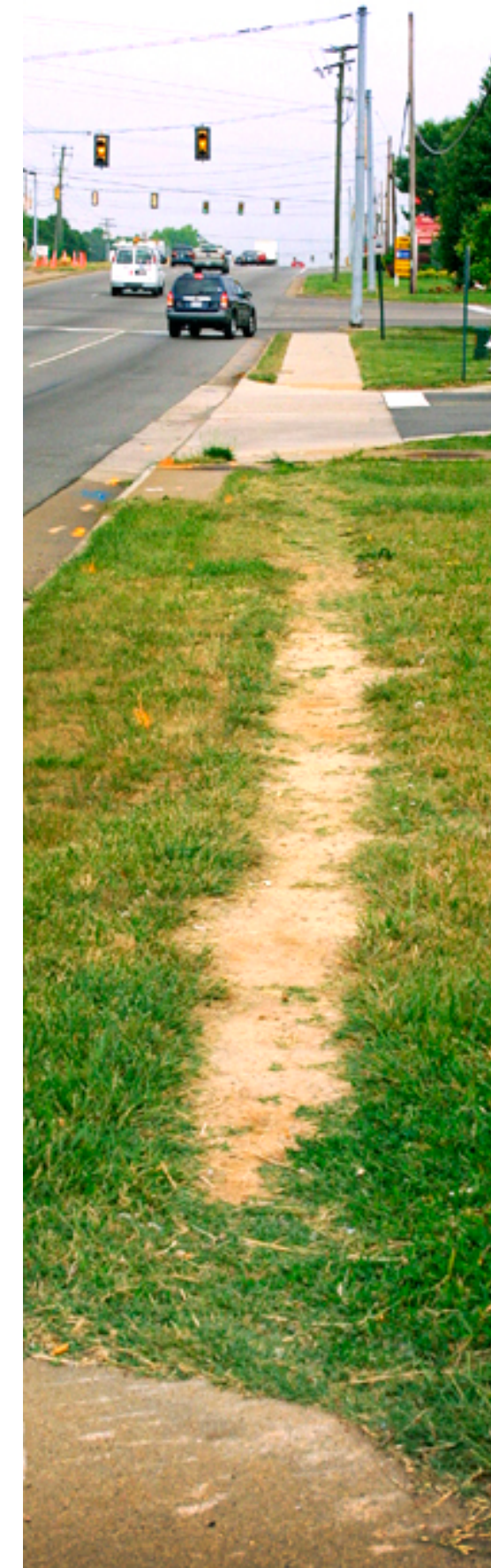
Recommendation: VDOT should continue to coordinate where appropriate with local government staff, Metropolitan Planning Organizations, parks and recreation departments, Planning District Commissions, other state agencies and non-profit organizations on pedestrian issues.

The following specific actions should be undertaken:

Local Coordination

Existing: Many local governments have developed bicycle/pedestrian master plans or included recommendations for pedestrian facilities in small area plans, regional and local transportation plans, and comprehensive plans. The Code of Virginia requires all governing bodies in the Commonwealth to have an adopted Comprehensive Plan with a transportation element, which is to be reviewed by VDOT before adoption (Subsection B of §15.2-2223 requires ALL localities' comprehensive plan transportation plans to be reviewed by VDOT). The extent to which VDOT can support the implementation of these plans depends on the Department's ability to readily access the recommendations of each Plan and determine the precise locations for proposed pedestrian accommodations.

36. * Action 3.1a: Develop and maintain a catalogue of adopted plans that include pedestrian (and bicycle) recommendations. Additionally, a GIS database of state-maintained roadways with existing or proposed pedestrian/bicycle accommodations should be maintained. This inventory should include Comprehensive Plans and stand-alone pedestrian (and bicycle) master plans.
37. * Action 3.1b: Ensure local plans are reviewed during project scoping to identify pedestrian improvements.
38. *Action 3.1c: Work closely with local governments to ensure the Policy is applied on locally-administered projects and to ensure that localities have access to resources that facilitate the process (e.g. Bicycle and Pedestrian Implementation Guide for Locality Involvement).
39. Encourage pedestrian accommodations to be clearly incorporated and identified in locality level planning documents (master plans and transportation plans) to ensure they are considered during corridor and planning studies and subsequently in project scoping, design, and maintenance.
40. Hold external informational sessions/workshops on Pedestrian (and Bicycle) Policy for relevant external parties and stakeholders (jurisdictions, District Planners, MPOs, traffic engineers, traffic system operators, consultants, trade groups, advocacy groups, and other interested parties) to form a stronger implementation foundation from which to work.
41. Coordinate with the DMV to educate motorists, pedestrians, and bicyclists regarding their shared responsibility to ensure safety.
 - Distribute existing materials on sharing the road with all users.
42. Encourage pedestrian stakeholder groups and advocates to become involved in the transportation planning process to ensure that their input for pedestrian/bicycle facilities is included.
43. Encourage localities interested in adopting DRPT multimodal guidelines to develop multimodal system plans and follow the VDOT approval process.





VDOT Bicycle and Pedestrian Website

Existing: There is currently a Bicycle and Pedestrian Program section available on the VDOT website containing a variety of information regarding the Program. This includes pedestrian laws and information on VDOT policies. Due to the breadth of the content available on the website, some of the content may be dated or lacking certain elements.

44. *Action 3.2a: Review the content and formatting of the Bicycle and Pedestrian Program Website quarterly to determine that the content and formatting are still applicable. VDOT should make necessary revisions and conduct periodic updates to this portion of the website to enable quick access to information.
45. *Action 3.2b: Add section(s) to the website serving as a centralized clearinghouse for all planning and engineering resources, e.g. links to information such as the MUTCD and RDM, catalogue of local and regional plans, and informational memorandums.

Coordinate with Communications and Public Affairs Offices

Existing: The VDOT Bicycle and Pedestrian Program has historically encouraged efforts and partnered with stakeholders to promote walking and pedestrian safety messages, including walk to school days.

46. *Action 3.3a: Increase communication relating to State Pedestrian Policy Plan improvements with VDOT Communications and Public Affairs Offices to expand knowledge of pedestrian and bicycle issues and programs. Strategies include coordination meetings with communications office staff and working with the offices to develop messages about bicycling and walking in Virginia. Additionally, this should include use of the VDOT YouTube channel to distribute bicycle, pedestrian, and motorist safety education video segments.

Pedestrian Advisory Committee

Existing: VDOT has established a Bicycle and Pedestrian Advisory Committee that meets twice a year.

47. Establish a pedestrian subcommittee of the existing Bicycle and Pedestrian Advisory Committee with a clear scope and list of responsibilities.

Coordination with the Department of Education

Existing: VDOT has made efforts to collaborate with the Department of Education and local school systems on bicycling and walking issues.

48. *Action 3.6a: Collaborate with the Department of Education, to ensure Virginia's school children have the option to walk (and bicycle) to school in locations where this can be done safely.
49. *Action 3.6b: Participate in Road Safety Assessments (RSA) for schools that are located on the State highway system, as requested. Where possible, school zone safety assessments should address pedestrian (and bicycle) access to schools, including providing street crossings and paved shoulders.

50. *Action 3.6c: Encourage the design of transportation infrastructure serving new schools to safely accommodate students that arrive on foot (or by bicycle).

Coordination with Colleges and Universities

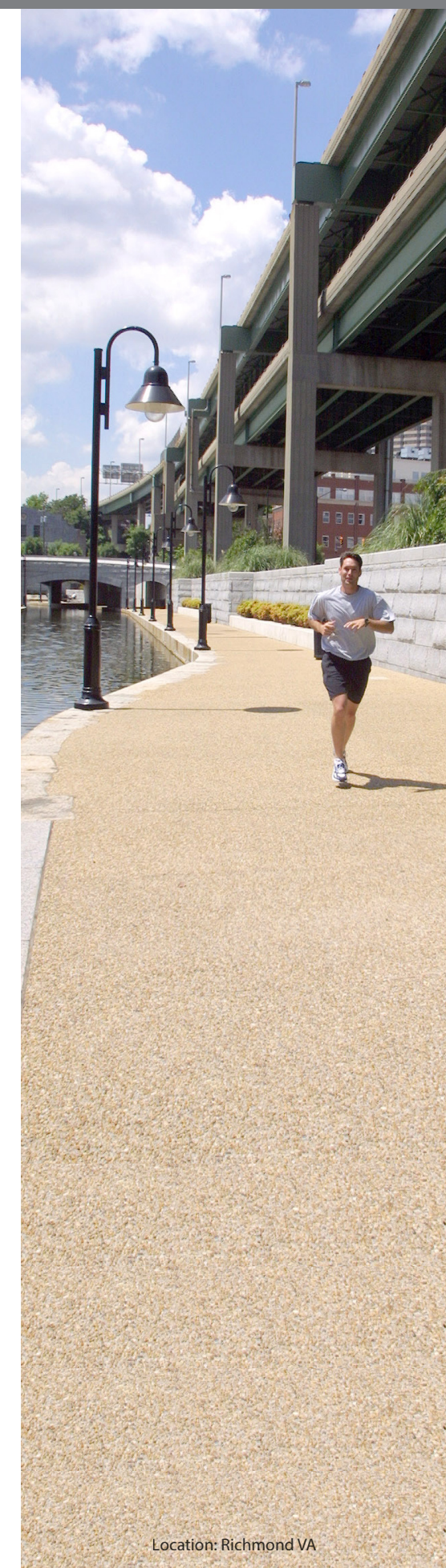
Many localities with colleges in Virginia show high levels of walking as walking is an ideal mode of travel on a school campus.

51. *Action 3.7a: VDOT should work with colleges and universities to support pedestrian access to campus and pedestrian safety on campus.
52. *Action 3.7b: VDOT should support the inclusion of bicycle and pedestrian planning and design courses or adding such elements within existing courses in college and university curricula.
53. *Action 3.7c: Pursue partnerships with colleges and universities aimed at developing and disseminating training opportunities and resources.

Coordination with Transit Agencies

Existing: Transit systems benefit by being accessible to multiple modes. Transit agencies that have strong pedestrian connections have a higher number of riders walking to the stop, increasing mobility to customers at each end of a transit trip. While VDOT does not have direct authority over any transit system, the Department serves an important support role.

54. *Action 3.9a: VDOT supports the concept of pedestrian (and bicycle) access along rail corridors. VDOT's Bicycle and Pedestrian Program will work with DRPT to facilitate implementation of these facilities. VDOT will also support and participate in rail transit access plans that are undertaken by organizations such as Washington Metropolitan Area Transit Authority (WMATA), Virginia Railway Express (VRE), and the National Railroad Passenger Corporation (AMTRAK). It will be very important to ensure that high-speed rail expansion in Virginia does not create barriers for pedestrians (and bicyclists); therefore these projects should anticipate the need for appropriate crossings.
55. *Action 3.9b: For smaller transit organizations, VDOT should play a supporting role in improving pedestrian (and bicycle) access to transit facilities. As part of this effort, VDOT should encourage improving roadway conditions for pedestrians (and bicyclists) accessing transit stations and stops by foot (and bicycle).
56. Work with transit operators to review pedestrian access and possibilities for improvement in the vicinity of new and existing transit facilities (bus stops, rail). Improvements could include marked crosswalks, pedestrian signal heads, mid-block crossings, pedestrian refuge islands and sidewalks.





Element 4: Measure and Evaluate Progress

Existing: VDOT has limited capacity to evaluate various conditions related to walking including use of existing facilities, mode share, or safety improvements.

Recommendation: Regular monitoring and evaluation of pedestrian performance measures will help ensure that walking is included in the everyday operations of VDOT. Established pedestrian performance measures will help document improvements in walking safety, and convenience throughout Virginia. This will provide data that can be used to help VDOT understand how various actions have improved pedestrian conditions and outcomes. The data required to track these performance measures will be collected by a variety of staff and divisions within VDOT. Some may also require assistance from state, regional, and local government partners and other stakeholders.

The following specific actions should be undertaken:

Performance Measures

Existing: Currently, there is no inventory of existing facilities and accommodations to demonstrate improvements resulting from the implementation of the Policy. Additionally, there is no statewide methodology in place to evaluate outcomes of accommodations, education, or safety improvements.

57. *Action 4.1a: Establish benchmarks needed for future tracking of pedestrian/bicycle-related implementation efforts and changes in ridership numbers over time. Measures that can be considered include daily utilization of key facilities, the number of sidewalk/bikeway miles implemented, the number of crashes, number of fatalities, percentage of students walking/bicycling to school, and other measures.

58. Establish a system for tracking pedestrian accommodations and costs.

59. Track the implementation of recommendations on VDOT roads using the process provided by this Plan.

Data Collection

Existing: Some usage data has been collected on a limited number of shared-use paths. However, the data collection is not routine or widespread and is limited to off-roadway facilities. Additionally, there is no inventory of existing pedestrian facilities or accommodations.

60. *Action 4.2a: Establish a long-term pedestrian and bicycle facility inventory and counting program, in coordination with towns and cities, Regional Planning Commissions, Planning District Commissions, and Metropolitan Planning Organizations. VDOT's role in the process should be to provide leadership in establishing consistent methodologies for pedestrian and bicycle counts and for inventorying non-motorized facilities including shared use paths, bike lanes, bike routes, and other facilities. VDOT should serve as a central repository of this information and should consider adopting FHWA data collection standards for bicycles and pedestrians

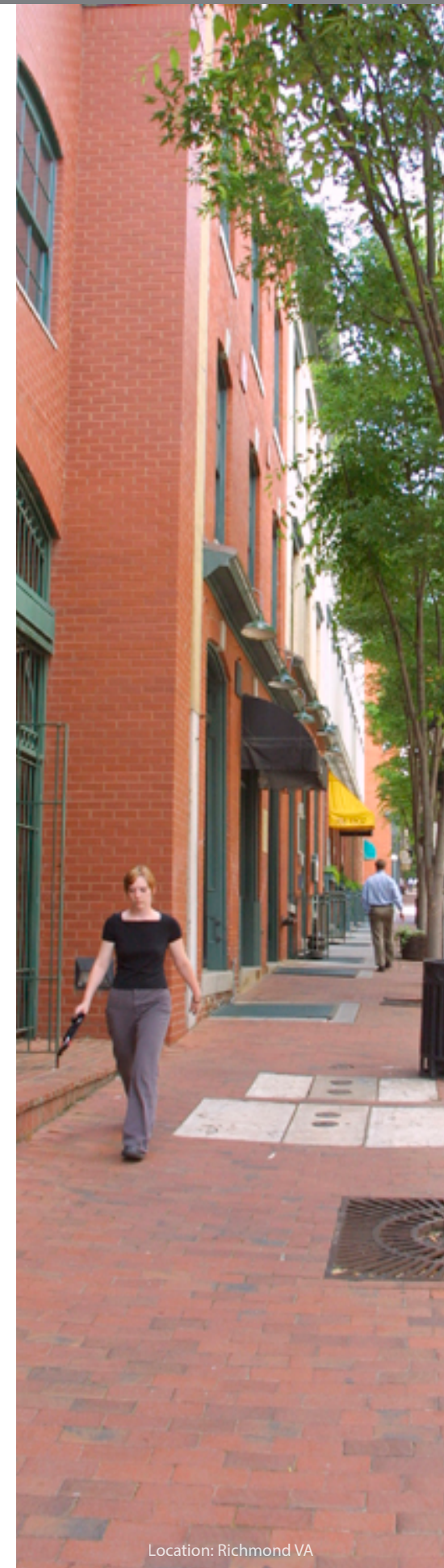
per the 2012 Traffic Monitoring Guide or the National Bicycle & Pedestrian Documentation Project process.

61. *Action 4.2b: Coordinate with organizations that have existing data collection programs to obtain statistically accurate data.

62. *Action 4.2c: Explore potential improvements needed to aid in the collection and categorization of pedestrian crash data and work with partner agencies to improve methods of collecting this data.

63. Provide technical assistance and encourage localities that collect bicycle/ pedestrian data to provide it to VDOT in the FHWA data format for bicycles and pedestrians per the 2012 Traffic Monitoring Guide

64. Create a new statewide ADA transition plan (VDOT).





6 Time Frame and Priorities

#	Action	Years	0-1	1-2	2-5	On-going
1	*Action 1.1a: VDOT should monitor national design standards (AASHTO, ADA/ Access Board, MUTCD, NACTO etc.) and adopt applicable standards as they are released.					•
2	Revise the VDOT resource “Example Planning Level Cost Estimates for Bicycle Facilities” to include Pedestrian Facilities or provide a tool like Statewide Planning Level Cost Estimates (worksheet) 2009.		•			
3	Design standards typically address new construction; develop design standards that address retrofiting pedestrian accommodations or adding accommodations to existing infrastructure.					•
4	Integrate policies related to pedestrian accommodations with design documents.					•
5	VDOT should encourage localities to use multimodal LOS in accordance with the HCM 2010.				•	
6	Assure minimum safe crossing times and protected pedestrian phases are incorporated in intersection signal timing plans.					•
7	VDOT should adopt the DRPT Multimodal System Design Guidelines as standards and incorporate them into the VDOT Road Design Manual.		•			
8	Pedestrian accommodations need to be addressed early in the planning and pre-scoping phases in the VDOT project development process, including the transportation element of the county comprehensive plan so that pedestrian needs may receive full consideration during the scoping process.					•
9	Action 1.2a: The decision tree should be revisited to ensure it clearly describes the process that should be undertaken to determine if an exemption to the Policy is warranted. At a minimum, a clarifying statement should be added on the decision tree that explains its proper use and how it directly relates to the Policy.		•			
10	Internal Audit should conduct an audit to independently assess compliance with the CTB Policy for Integrating Bicycle and Pedestrian Accommodations.					•
11	Conduct on-going gap analysis in the sidewalk network and prioritize needs based on pedestrian demand and land use, population density etc. Provide analysis to localities and MPOs and encourage the gaps to be filled in through a variety of funding sources, including proffers, State, Local, and Federal construction funds.					•
12	*Action 1.3a: Consider narrower lane widths in accordance with the Appendix A of the VDOT Road Design Manual, Geometric Standards.					•
13	*Action 1.4a: The value engineering process should consistently apply the CTB Policy for Integrating Bicycle and Pedestrian Accommodations. On projects where provision of accommodations will result in significant cost increases, attempts should be made to reconfigure geometry throughout the project to allow for inclusion of pedestrian accommodations without the need to acquire additional right-of-way.					•

#	Action	Years	0-1	1-2	2-5	On-going
14	Identify potential right-of-way costs related to pedestrian accommodations early in the process. These costs are often underestimated and can inhibit what is included in a project.					•
15	VDOT should encourage localities with projects in the areas of the U.S. Bike Routes 1 and 76, Beaches to Bluegrass Trail, the East Coast Greenway, James River Heritage trail, etc. should look for opportunities to provide additional pedestrian accommodations along the corridors to strengthen the network.					•
16	VDOT, DCR, and DRPT should conduct ongoing meetings to discuss potential rails to trails and rails with trails programs for both transportation and recreation to determine a common agenda, areas of responsibility and the best structure for collaboration on future projects.					•
17	*Action 1.6a: Develop a list of current roadways where pedestrian (and bicycle) access is restricted.		•			
18	*Action 1.6b: Develop a clear protocol to determine when prohibitions are warranted based upon objective criteria related to safety. This should apply to new roads and also should be used to review existing roads to determine if existing prohibitions still meet the criteria.		•			
19	*Action 1.6c: Encourage the construction of separated shared-use pathways in the ROW of controlled-access freeways and identify where this can be applied safely. This can offer the opportunity to provide continuous, long-distance bikeways. For example, Virginia has several highly successful pathways that were built along freeways, including the Custis Trail in the I-66 corridor.				•	
20	*Action 1.7a: Develop a directive to preserve and/or replace pedestrian (and bicycle) accommodations as part of maintenance or construction activities to ensure that pedestrian and bicycle facilities and/or accommodations are not inappropriately eliminated or obstructed.			•		
21	*Action 1.7b: Expand the information in the Maintenance Division Best Practices Manual on sidewalks and pedestrian facilities.		•			
22	Upgrade pedestrian infrastructure during maintenance activities as required by ADA.					•
23	When maintenance activities occur, opportunities to stripe crosswalks should be considered.					•
24	When pavement safety assessments occur outdated crosswalks and handicap ramps should be documented and programmed for improvement.					•

Note: Recommendations with an *(asterisk) are shared with the Bicycle Policy Plan.



#	Action	Years	0-1	1-2	2-5	On-going
25	Connectivity of the pedestrian network should be improved wherever and whenever possible. – Provide funds in the VDOT program for completing gaps between parts of existing pedestrian networks, or connecting larger adjacent networks. – Encourage independent construction projects that fill in sidewalk gaps in heavily populated areas or where the existing and future land use expectations support the need for a sidewalk. – Coordinate with local jurisdictions on sidewalk and path construction projects through the encouragement and use of revenue-sharing money.					•
26	*Action 1.9a: Update the Traffic Calming Guide for Residential Streets as necessary to ensure pedestrian (and bicycle) friendly design provisions are incorporated per AASHTO guidance.		•			
27	Develop state policies for the use of pedestrian hybrid beacons, road diets, and medians/pedestrian refuge areas to improve safety.				•	
28	*Action 1.10a: VDOT should incorporate up-to-date pedestrian facility design guidance into ongoing review and updates of all VDOT manuals, guides, standards, and specifications that impact walking. – Guidance should address retail street standards with generous sidewalks, parallel and on-street parking. – Design standards should be set for planting strips to allow space for snow removal, shade in summer, space for trash and recycle pick-ups, temporary construction signs that do not block sidewalks.					•
29	*Action 1.11a: A central clearinghouse should be created on the Bicycle and Pedestrian Program website to serve as a quick reference page for VDOT’s policies related to walking and biking.					•
30	*Action 2.1a: To build on its current role, the VDOT Bicycle and Pedestrian Program should establish a mission statement which outlines the core responsibilities of the Program and Central Office staff.			•		
31	*Action 2.1b: Review the March 5, 1998 Memorandum regarding District Bicycle and Pedestrian Coordinators’ duties and responsibilities to determine if revisions are needed. Make appropriate revisions.			•		
32	*Action 2.2a: VDOT should continue to offer a variety of regular multimodal transportation training opportunities for VDOT engineering, operations, maintenance and planning staff at all levels of the organization, as well as staff at Regional Planning Commissions, Metropolitan Planning Organizations, Planning District Commissions, local governments, and to consultants and other individuals.					•
33	*Action 2.2b: Training opportunities should include a variety of training venues such as in-person workshops and web-based seminars.			•		
34	*Action 2.3a: Where appropriate, VDOT should include pedestrian planning and design skills in position descriptions and hiring procedures.					•

#	Action	Years	0-1	1-2	2-5	On-going
35	*Action 2.4a: Continue to provide guidance on liability issues as they relate to pedestrian facilities.					•
36	* Action 3.1a: Develop and maintain a catalogue of adopted plans that include pedestrian (and bicycle) recommendations. Additionally, a GIS database of state-maintained roadways with existing or proposed pedestrian/ bicycle accommodations should be maintained. This inventory should include Comprehensive Plans and stand-alone pedestrian (and bicycle) master plans.				•	
37	* Action 3.1b: Ensure local plans are reviewed during project scoping to identify pedestrian improvements.					•
38	*Action 3.1c: Work closely with local governments to ensure the Policy is applied on locally-administered projects and to ensure that localities have access to resources that facilitate the process (e.g. Bike and Pedestrian Implementation Guide for Locality Involvement).					•
39	Encourage pedestrian accommodations to be clearly incorporated and identified in locality level planning documents (master plans and transportation plans) in order to ensure they are considered during related planning studies, pre-design discussions, scoping, design, maintenance, etc.					•
40	Hold external informational sessions/workshops on Pedestrian (and Bicycle) Policy for relevant external parties and stakeholders (jurisdictions, District Planners, MPOs, traffic engineers, traffic system operators, consultants, trade groups, advocacy groups) to form a stronger implementation foundation from which to work.					•
41	Coordinate with the DMV to educate motorists, pedestrians, and bicyclists regarding their shared responsibility to ensure safety. – Distribute existing materials on sharing the road with all users.					•
42	Encourage pedestrian stakeholder groups to become involved in the transportation planning process to ensure that their input for pedestrian/ bicycle facilities is included.					•
43	Encourage localities interested in adopting DRPT multimodal guidelines to develop multimodal system plans and follow the VDOT approval process.					•
44	*Action 3.2a: Review the content and formatting of the Bicycle and Pedestrian Program Website quarterly to determine that the content and formatting are still applicable. VDOT should make necessary revisions and conduct periodic updates to this portion of the website to enable quick access to information.					•

Note: Recommendations with an *(asterisk) are shared with the Bicycle Policy Plan.



#	Action	Years	0-1	1-2	2-5	On-going
45	*Action 3.2b: Add section(s) to the website serving as a centralized clearinghouse for all planning and engineering resources, e.g. links to information such as MUTCD and RDM, catalogue of local and regional plans, and informational memorandums.				•	
46	*Action 3.3a: Increase communication relating to State Pedestrian Policy Plan improvements with VDOT Marketing, Communication and Public Affairs Offices to expand knowledge of pedestrian and bicycle issues and programs.					•
47	Establish a focused subcommittee of the existing Bicycle and Pedestrian Advisory Committee with a clear scope and list of responsibilities.				•	
48	*Action 3.6a: Collaborate with the Department of Education, to ensure Virginia's school children have the option to walk (and bicycle) to school in locations where this can be done safely.			•		
49	*Action 3.6b: Participate in Road Safety Assessments (RSA) for schools that are located on the State highway system, as requested. Where possible, school zone safety assessments should address pedestrian (and bicycle) access to schools, including providing street crossings and paved shoulders.					•
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55	*Action 3.9b: For smaller transit organizations, VDOT should play a lead role in improving pedestrian (and bicycle) access to transit facilities. As part of this effort, VDOT should encourage improving roadway conditions for pedestrians (and bicyclists) accessing transit stations and stops by foot (and bicycle).				•	
56	Work with transit operators to review pedestrian access and possibility for improvement in the vicinity of new transit facilities (bus stops, rail). Improvements could include marked crosswalks, pedestrian signal heads, mid-block crossings, pedestrian refuge islands and sidewalks.					•

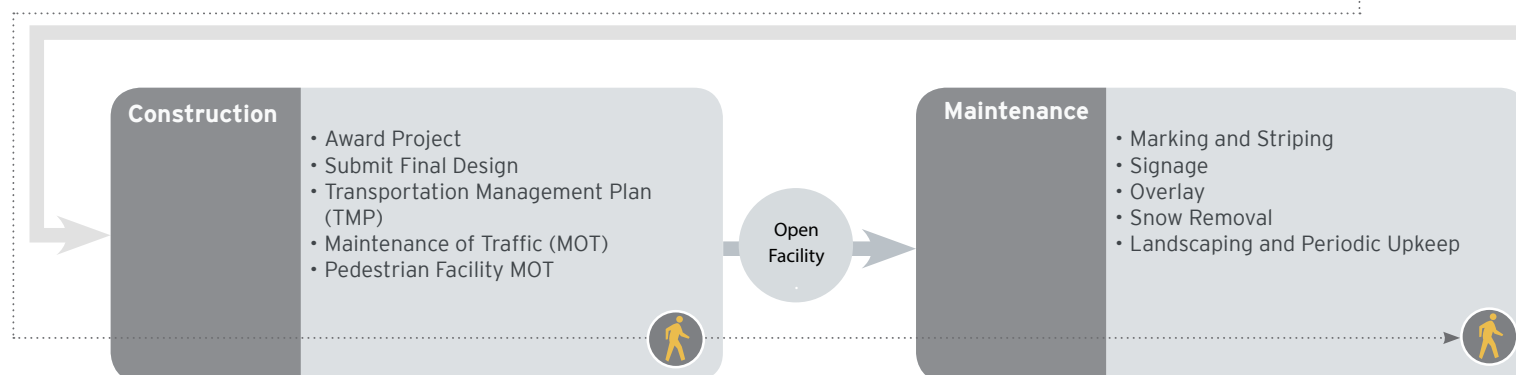
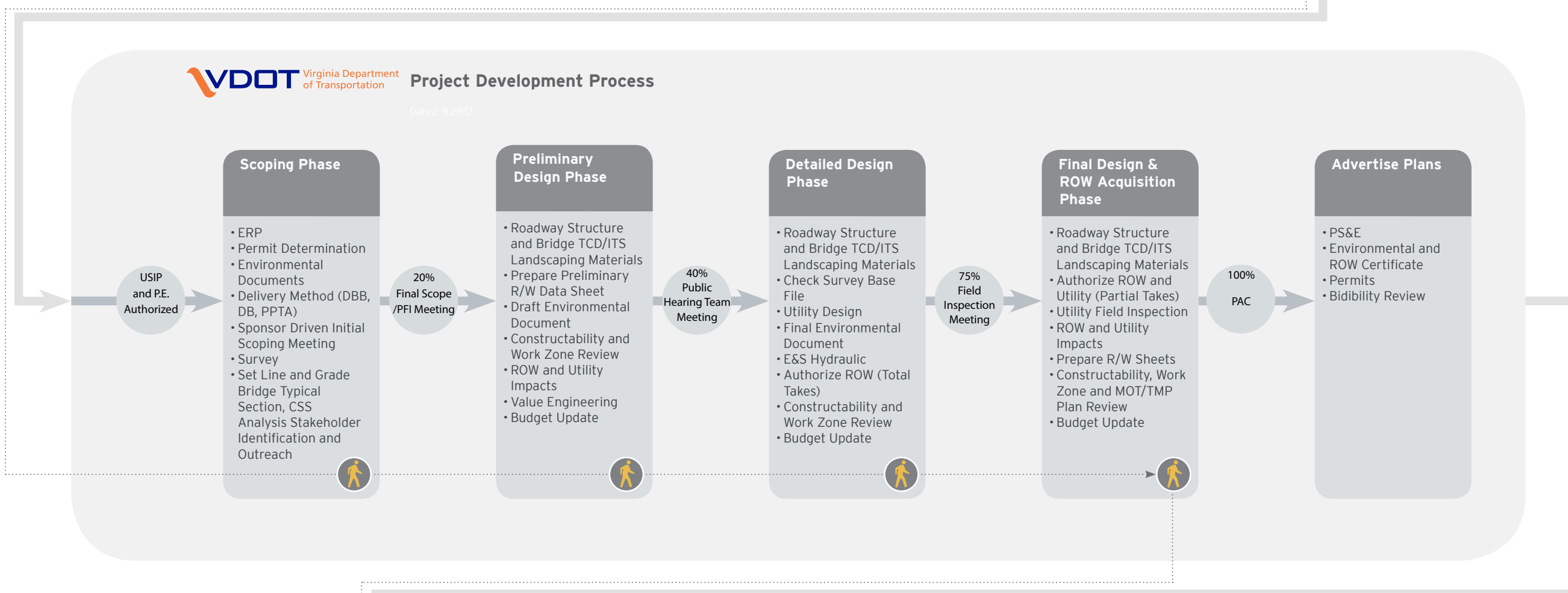
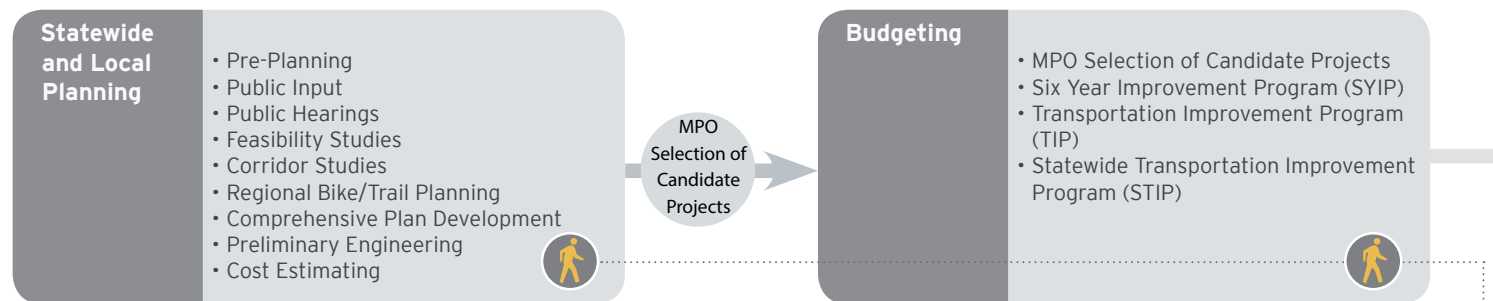
#	Action	Years	0-1	1-2	2-5	On-going
57	*Action 4.1a: Establish benchmarks needed for future tracking of pedestrian/ bicycle-related implementation efforts and changes in ridership numbers over time. Measures that can be considered include daily utilization of key facilities, the number of sidewalk/bikeway miles implemented, the number of crashes, number of fatalities, percentage of students walking/bicycling to school, and other measures.			•		
58	Establish a system for tracking pedestrian accommodations and costs.		•			
59	Track the implementation of recommendations using the process provided by this Plan.		•			
60	*Action 4.2a: Establish a long-term pedestrian and bicycle facility inventory and counting program, in coordination with towns and cities, Regional Planning Commissions, Planning District Commissions, and Metropolitan Planning Organizations. VDOT's role in the process should be to provide leadership in establishing consistent methodologies for pedestrian and bicycle counts and for inventorying non-motorized facilities including shared use paths, bike lanes, bike routes, and other facilities. VDOT should serve as a central repository of this information. (i.e. consider adopting FHWA data collection standards for bicycles and pedestrians per the 2012 Traffic Monitoring Guide).					•
61	*Action 4.2b: Coordinate with organizations that have existing data collection programs to obtain statistically accurate data.					•
62	*Action 4.2c: Explore potential improvements needed to aid in the collection and categorization of pedestrian crash data and work with partner agencies to improve methods of collecting this data.			•		
63	Provide technical assistance and encourage localities that collect bicycle/ pedestrian data to provide it to VDOT in the FHWA data format for bicycles and pedestrians per the 2012 Traffic Monitoring Guide					•
64	Create a new statewide ADA transition plan (VDOT).		•			

Note: Recommendations with an *(asterisk) are shared with the Bicycle Policy Plan.



Appendix A

Project Development Process and Pedestrian Accommodations

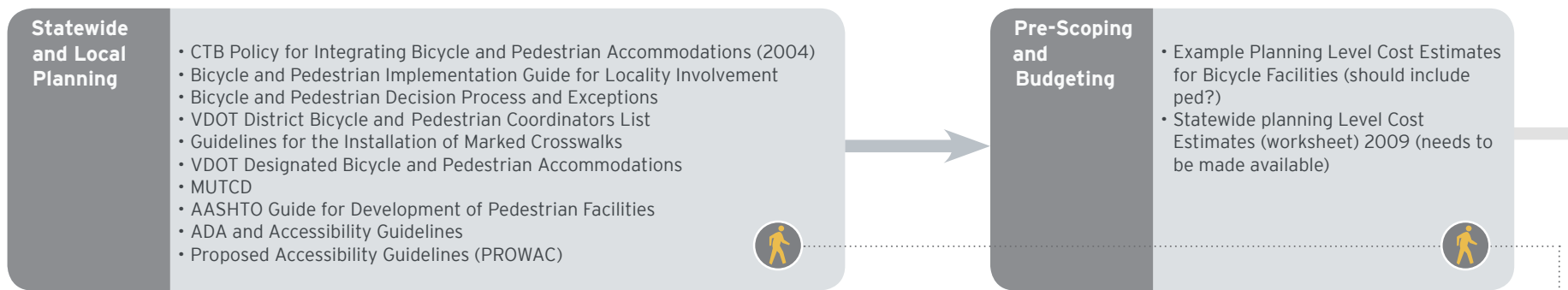


-Include Pedestrian Facility Accommodations
 -Refer to the State Pedestrian Policy Plan



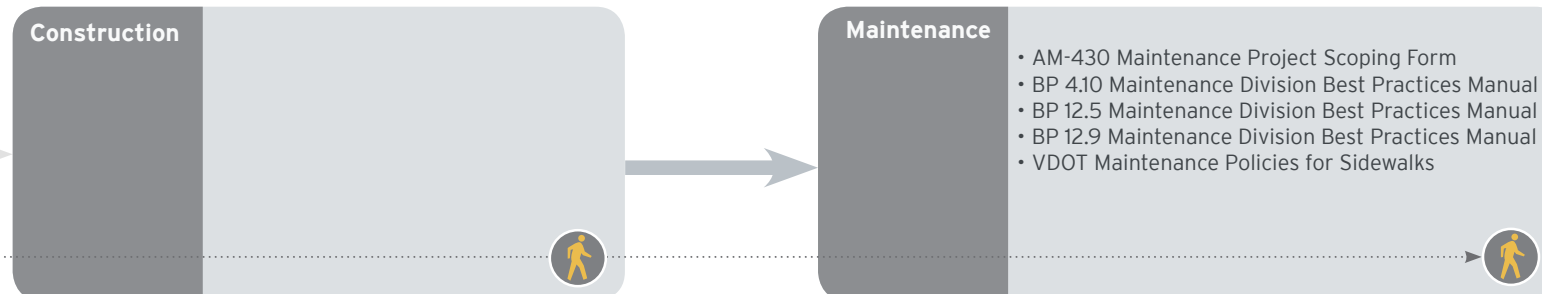
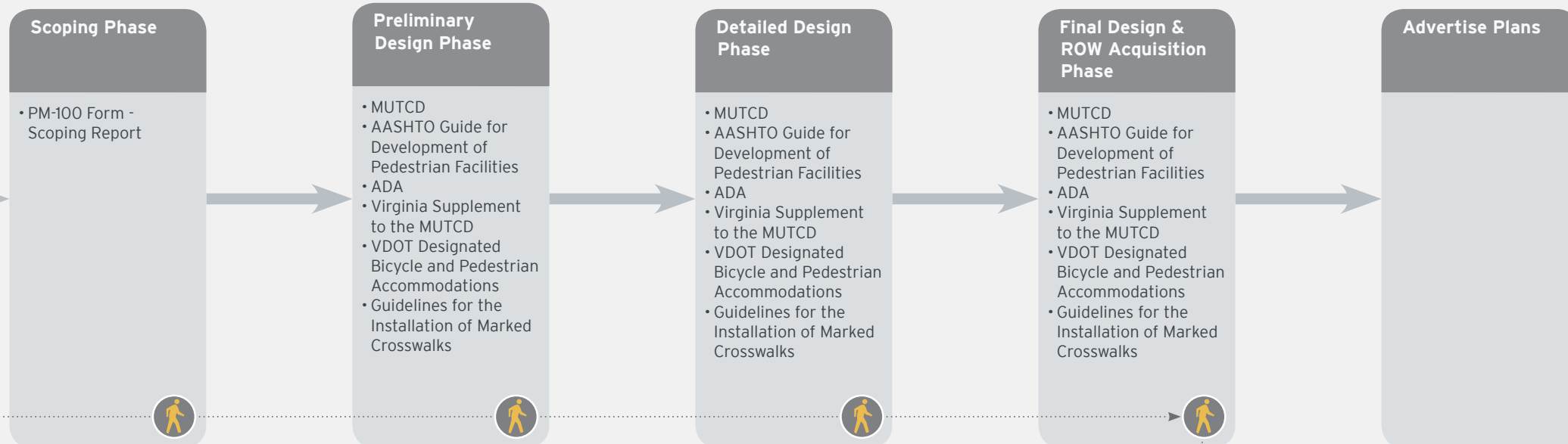
Appendix A (Continued)

Reference Documents and Tools for Each Step in the Project Development Process



Project Development Process

Dated: 8.29.12



- Include Pedestrian Facility Accommodations
- Refer to the State Pedestrian Policy Plan



Appendix B

Project Checklist

The intent of this checklist is to assist anyone in any phase of the Project Development Process (as shown on the previous four pages) to ensure that adequate bicycle and pedestrian accommodations are included in the project being considered, planned or designed.

The checklist below is intended to be a starting point. This document may need to be revised as regulations and policies are updated or as new ones are implemented.

Statewide and Local Planning

- Verify if the jurisdiction you are working in (County, City, Town) has planning documents/plans in place that include planned pedestrian accommodations. If working exclusively within a town or city, cross-check that the county plans do not have separate recommendations.
 - If plans are in place that include pedestrian accommodations they should be used as a starting point.
 - If no plans are in place, it is essential to develop a local master plan/transportation plan which includes pedestrian accommodations.
- Verify whether there are regional plans in place that may include pedestrian accommodations that cross your jurisdiction, i.e. multi-use trails.
- Has public input been received by the jurisdiction you are working in (County, City, Town) regarding needs for pedestrian accommodations?
- Verify that the project of record accommodates future bicycle and pedestrian use.
- Consult the CTB Policy for Integrating Bicycle and Pedestrian Accommodations for guidance.
- Particularly noted in the CTB Policy are factors supporting the need to provide bicycle and pedestrian accommodations; these include but are not limited to, the following and should be considered in the project development process:
 - The project accommodates existing and future bicycle and pedestrian use.
 - The project improves or maintains safety for all users.
 - The project provides a connection to public transportation services and facilities.
 - The project serves areas or population groups with limited transportation options.
 - The project provides a connection to bicycling and walking trip

generators such as employment, education, retail, recreation, and residential centers and public facilities.

- The project is identified in a Safe Routes to School program or provides a connection to a school.
 - The project provides a regional connection, or is of regional or state significance.
 - The project provides a link to other bicycle and pedestrian accommodations.
 - The project provides a connection to traverse natural or man-made barriers.
 - The project provides a tourism or economic development opportunity.
- If no bicycle or pedestrian accommodations are included in the project, are the Policy for Integrating Bicycle and Pedestrian Accommodations criteria met in terms of "Exceptions to the Provision of Accommodations?"
- Has the District Administrator approved the exception?
 - Has the Chief Engineer approved the exception?

Budgeting

- Does your project include appropriate pedestrian accommodations?
 - Are those accommodations included in the pre-scoping budget?
- Does adequate ROW exist to accommodate improvements?
 - If not, does the project budget include adequate funds for ROW acquisition?
- Does the project budget as identified in the SYIP, TIP, or STIP accurately reflect the dollars needed for the total project cost?

Scoping

- Check jurisdiction planning documents to assess whether existing planning has been done for pedestrian accommodations (as noted in the Planning Phase).
- Has associated environmental documentation been prepared?
- Does that documentation include bicycle and pedestrian accommodations?
- Are all relevant stakeholders involved in the process? This could include jurisdictional representatives, State organizations (VDOT, DRPT, DCR), the public, advocacy groups, etc.
- Has budgetary information (or preliminary cost estimates) been updated based on decisions from the Scoping process?

Preliminary Design Phase

- Has the proper public process/meeting(s) been held, and/or have meetings been scheduled as part of this step in the process?
- Ensure the environmental process is being conducted/completed.





- Assess utility impacts.
- Assess whether adequate ROW exists for the project.
 - If not, assess whether trade-offs can be made.
- Choose the appropriate DRPT transect in identifying appropriate levels of bicycle and pedestrian accommodations.
- Consult the appropriate design manuals:
 - MUTCD and the Virginia Supplement to the MUTCD.
 - AASHTO Geometric Design of Streets and Highways.
 - VDOT Road Design Manual, and VDOT Road and Bridge Standards.
 - ADA (Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way).
 - VDOT Guidelines for the Installation of Marked Crosswalks and other VDOT design manuals.
 - VDOT Institutional & Informational Memoranda.
 - AASHTO Guide for the Development of Bicycle Facilities.
 - AASHTO guide for the Development of Pedestrian Facilities.
 - Etc.
- Have cost estimates for the project of record been updated and if additional funds are necessary has the appropriate funding mechanism been updated/secured?

Detailed Design Phase

- Ensure pedestrian facilities have been designed to the appropriate standards as designated by VDOT and referenced in the VDOT Pedestrian Policy Plan.
- Have cost estimates for the project of record been updated and if additional funds are necessary has the appropriate funding mechanism been updated/secured?

Final Design & ROW Acquisition

- Have cost estimates for the project of record been updated and if additional funds are necessary has the appropriate funding mechanism been updated/secured?

Advertise Plans

- Ensure that the pedestrian elements are specifically identified in the advertisement.

Construction

- Refer to the Virginia Work Zone Pedestrian and Bicycle Guidance manual.

Maintenance

- Refer to the Maintenance Best Practices manual and the Maintenance Best Practices Manual for Bicycle and Pedestrian Facilities.
- If maintenance is being initiated in your jurisdiction, in areas where potential pedestrian improvements have been identified in a previous planning document, has the opportunity to make improvements been explored?



Appendix C

Virginia Department of Transportation Policy for Integrating Bicycle and Pedestrian Accommodations

1. Introduction

Bicycling and walking are fundamental travel modes and integral components of an efficient transportation network. Appropriate bicycle and pedestrian accommodations provide the public, including the disabled community, with access to the transportation network; connectivity with other modes of transportation; and independent mobility regardless of age, physical constraints, or income. Effective bicycle and pedestrian accommodations enhance the quality of life and health, strengthen communities, increase safety for all highway users, reduce congestion, and can benefit the environment. Bicycling and walking are successfully accommodated when travel by these modes is efficient, safe, and comfortable for the public. A strategic approach will consistently incorporate the consideration and provision of bicycling and walking accommodations into the decision-making process for Virginia's transportation network.

2. Purpose

This policy provides the framework through which the Virginia Department of Transportation will accommodate bicyclists and pedestrians, including pedestrians with disabilities, along with motorized transportation modes in the planning, funding, design, construction, operation, and maintenance of Virginia's transportation network to achieve a safe, effective, and balanced multimodal transportation system.

For the purposes of this policy, an accommodation is defined as any facility, design feature, operational change, or maintenance activity that improves the environment in which bicyclists and pedestrians travel. Examples of such accommodations include the provision of bike lanes, sidewalks, and signs; the installation of curb extensions for traffic calming; and the addition of paved shoulders.

3. Project Development

The Virginia Department of Transportation will initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking. Factors that support the need to provide bicycle and pedestrian accommodations include, but are not limited to, the following:

- Project is identified in an adopted transportation or related plan.

- Project accommodates existing and future bicycle and pedestrian use.
- Project improves or maintains safety for all users.
- Project provides a connection to public transportation services and facilities.
- Project serves areas or population groups with limited transportation options.
- Project provides a connection to bicycling and walking trip generators such as employment, education, retail, recreation, and residential centers, and public facilities.
- Project is identified in a Safe Routes to School program or provides a connection to a school.
- Project provides a regional connection or is of regional or state significance
- Project provides a link to other bicycle and pedestrian accommodations.
- Project provides a connection to traverse natural or man-made barriers.
- Project provides a tourism or economic development opportunity.

Project development for bicycle and pedestrian accommodations will follow VDOT's project programming and scheduling process and concurrent engineering process. VDOT will encourage the participation of localities in concurrent engineering activities that guide the project development.

3.1 Accommodations Built as Independent Construction Projects

Bicycle and pedestrian accommodations can be developed through projects that are independent of highway construction, either within the highway right-of-way or on an independent right-of-way. Independent construction projects can be utilized to retrofit accommodations along existing roadways, improve existing accommodations to better serve users, and install facilities to provide continuity and accessibility within the bicycle and pedestrian network. These projects will follow the same procedures as those for other construction projects for planning, funding, design, and construction. Localities and metropolitan planning organizations will be instrumental in identifying and prioritizing these independent construction projects.

3.2 Access-Controlled Corridors

Access-controlled corridors can create barriers to bicycle and pedestrian travel. Bicycling and walking may be accommodated within or adjacent to access-controlled corridors through the provision of facilities on



parallel roadways or physically separated parallel facilities within the right-of-way. Crossings of such corridors must be provided to establish or maintain connectivity of bicycle and pedestrian accommodations.

3.3 Additional Improvement Opportunities

Bicycle and pedestrian accommodations will be considered in other types of projects. Non- construction activities can be used to improve accommodations for bicycling and walking. In addition, any project that affects or could affect the usability of an existing bicycle or pedestrian accommodation within the highway system must be consistent with state and federal laws.

3.3.1 Operation and Maintenance Activities

Bicycling and walking should be considered in operational improvements, including hazard elimination projects and signal installation. Independent operational improvements for bicycling and walking, such as the installation of pedestrian signals, should be coordinated with local transportation and safety offices. The maintenance program will consider bicycling and walking so that completed activities will not hinder the movement of those choosing to use these travel modes. The maintenance program may produce facility changes that will enhance the environment for bicycling and walking, such as the addition of paved shoulders.

3.3.2 Long Distance Bicycle Routes

Long distance bicycle routes facilitate travel for bicyclists through the use of shared lanes, bike lanes, and shared use paths, as well as signage. All projects along a long-distance route meeting the criteria for AASHTO or MUTCD approved numbered bicycle route system should provide the necessary design features to facilitate bicycle travel. Independent construction projects and other activities can be utilized to make improvements for existing numbered bicycle routes. Consideration should be given to facilitating the development of other types of long distance routes.

3.3.3 Tourism and Economic Development

Bicycling and walking accommodations can serve as unique transportation links between historic, cultural, scenic, and recreational sites, providing support to tourism activities and resulting economic development. Projects along existing or planned tourism and recreation corridors should include bicycle and pedestrian accommodations. In addition, the development of independent projects to serve this type of tourism and economic development function should be considered and coordinated with economic development organizations at local, regional, and state levels, as well as with other related agencies. Projects must also address the need to provide safety and connectivity for existing and planned recreational trails, such as

the Appalachian Trail, that intersect with the state's highway system.

3.4 Exceptions to the Provision of Accommodations

Bicycle and pedestrian accommodations should be provided except where one or more of the following conditions exist:

- Scarcity of population, travel, and attractors, both existing and future, indicate an absence of need for such accommodations.
- Environmental or social impacts outweigh the need for these accommodations.
- Safety would be compromised.
- Total cost of bicycle and pedestrian accommodations to the appropriate system (i.e., interstate, primary, secondary, or urban system) would be excessively disproportionate to the need for the facility.
- Purpose and scope of the specific project do not facilitate the provision of such.
- Accommodations (e.g., projects for the Rural Rustic Road Program).
- Bicycle and pedestrian travel is prohibited by state or federal laws.

3.5 Decision Process

The project manager and local representatives will, based on the factors listed previously in this section, develop a recommendation on how and whether to accommodate bicyclists and pedestrians in a construction project prior to the public hearing. The district administrator should confirm this recommendation prior to the public hearing. Public involvement comments will be reviewed and incorporated into project development prior to the preparation of the design approval recommendation. When a locality is not in agreement with VDOT's position on how bicyclists and pedestrians will or will not be accommodated in a construction project, the locality can introduce a formal appeal by means of a resolution adopted by the local governing body. The resolution must be submitted to the district administrator to be reviewed and considered prior to the submission of the design approval recommendation to the chief engineer for program development. Local resolutions must be forwarded to the chief engineer for program development for consideration during the project design approval or to the Commonwealth Transportation Board for consideration during location and design approval, if needed for a project. The resolution and supporting information related to the recommendation must be included in the project documentation.

The decisions made by VDOT and localities for the provision of bicycle and pedestrian travel must be consistent with state and federal laws



regarding accommodations and access for bicycling and walking.

4. Discipline Participation in Project Development

VDOT will provide the leadership to implement this policy. Those involved in the planning, funding, design, construction, operation, and maintenance of the state's highways are responsible for effecting the guidance set forth in this policy. VDOT recognizes the need for interdisciplinary coordination to efficiently develop, operate, and maintain bicycle and pedestrian accommodations.

Procedures, guidelines, and best practices will be developed or revised to implement the provisions set forth in this policy. For example, objective criteria will be prepared to guide decisions on the restriction of bicycle and pedestrian use of access-controlled facilities. VDOT will work with localities, regional planning agencies, advisory committees, and other stakeholders to facilitate implementation and will offer training or other resource tools on planning, designing, operating, and maintaining bicycle and pedestrian accommodations.

4.1 Planning

VDOT will promote the inclusion of bicycle and pedestrian accommodations in transportation planning activities at local, regional, and statewide levels. These planning activities include, but are not limited to, corridor studies, small urban studies, regional plans, and the statewide multimodal long-range transportation plan. To carry out this task, VDOT will coordinate with local government agencies, regional planning agencies, and community stakeholder groups. In addition, VDOT will coordinate with DRPT and local and regional transit providers to identify needs for bicycle and pedestrian access to public transportation services and facilities.

4.2 Funding

Highway construction funds can be used to build bicycle and pedestrian accommodations either concurrently with highway construction projects or as independent transportation projects. Both types of bicycle and pedestrian accommodation projects will be funded in the same manner as other highway construction projects for each system (i.e., interstate, primary, secondary, or urban). VDOT's participation in the development and construction of an independent project that is not associated with the interstate, primary, secondary, or urban systems will be determined through a negotiated agreement with the locality or localities involved.

Other state and federal funding sources eligible for the development of bicycle and pedestrian accommodations may be used, following program requirements established for these sources. These sources include, but are not limited to, programs for highway safety, enhancement, air quality,

congestion relief, and special access.

VDOT may enter into agreements with localities or other entities in order to pursue alternate funding to develop bicycle and pedestrian accommodations, so long as the agreements are consistent with state and federal laws.

4.3 Design and Construction

VDOT will work with localities to select and design accommodations, taking into consideration community needs, safety, and unique environmental and aesthetic characteristics as they relate to specific projects. The selection of the specific accommodations to be used for a project will be based on the application of appropriate planning, design, and engineering principles. The accommodations will be designed and built, or installed, using guidance from VDOT and AASHTO publications, the MUTCD, and the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Methods for providing flexibility within safe design parameters, such as context sensitive solutions and design, will be considered.

During the preparation of an environmental impact statement (EIS), VDOT will consider the current and anticipated future use of the affected facilities by bicyclists and pedestrians, the potential impacts of the alternatives on bicycle and pedestrian travel, and proposed measures, if any, to avoid or reduce adverse impacts to the use of these facilities by bicyclists and pedestrians.

During project design VDOT will coordinate with DRPT to address bicyclist and pedestrian access to existing and planned transit connections.

Requests for exceptions to design criteria must be submitted in accordance with VDOT's design exception review process. The approval of exceptions will be decided by the Federal Highway Administration or VDOT's Chief Engineer for Program Development.

VDOT will ensure that accommodations for bicycling and walking are built in accordance with design plans and VDOT's construction standards and specifications.

4.4 Operations

VDOT will consider methods of accommodating bicycling and walking along existing roads through operational changes, such as traffic calming and crosswalk marking, where appropriate and feasible.

VDOT will work with DRPT and local and regional transit providers to identify the need for ancillary facilities, such as shelters and bike racks on



buses, that support bicycling and walking to transit connections.

VDOT will enforce the requirements for the continuance of bicycle and pedestrian traffic in work zones, especially in areas at or leading to transit stops, and in facility replacements in accordance with the MUTCD, VDOT Work Area Protection Manual, and VDOT Land Use Permit Manual when construction, utility, or maintenance work, either by VDOT or other entities, affects bicycle and pedestrian accommodations.

VDOT will continue to research and implement technologies that could be used to improve the safety and mobility of bicyclists and pedestrians in Virginia's transportation network, such as signal detection systems for bicycles and in-pavement crosswalk lights.

4.5 Maintenance

VDOT will maintain bicycle and pedestrian accommodations as necessary to keep the accommodations usable and accessible in accordance with state and federal laws and VDOT's asset management policy. Maintenance of bike lanes and paved shoulders will include repair, replacement, and clearance of debris. As these facilities are an integral part of the pavement structure, snow and ice control will be performed on these facilities.

For sidewalks, shared use paths, and bicycle paths built within department right-of-way, built to department standards, and accepted for maintenance, VDOT will maintain these bicycle and pedestrian accommodations through replacement and repair. VDOT will not provide snow or ice removal for sidewalks and shared use paths. The execution of agreements between VDOT and localities for maintenance of such facilities shall not be precluded under this policy.

5. Effective Date

This policy becomes effect upon its adoption by the Commonwealth Transportation Board on March 18, 2004, and will apply to projects that reach the scoping phase after its adoption.

This policy shall supersede all current department policies and procedures related to bicycle and pedestrian accommodations. VDOT will develop or revise procedures, guidelines, and best practices to support and implement the provisions set forth in this policy, and future departmental policies and procedural documents shall comply with the provisions set forth in this policy.

