CHAPTER 3: EXISTING CONDITIONS FOR NON-MOTORIZED TRANSPORTATION

Overview

Across the region conditions for bicycling and walking vary at least as much as the number of people bicycling and walking. The region has excellent long-distance separated facilities, and an urban core and certain regional activity centers that have good pedestrian and bicycle facilities. On the other hand, much of the region is built at low density, often around cul-de-sacs, and lacks safe bicycle or pedestrian facilities, safe ways to cross the major roads, or destinations within reasonable walking distance even if facilities existed. Some activity centers such as Tyson's Corner have developed to fairly high density, yet lack facilities for walking and bicycling, and rely upon the automobile for internal circulation.

Bicycle connections with transit are generally good, with bicycle parking, bus bicycle racks, and bikes permitted on metrorail at most hours. Walking is the primary mode of access to transit, but conditions for pedestrian access are uneven.

Pedestrian and bicycle safety is a significant problem across the region, even in the outer jurisdictions where walking and bicycling are less common. The most dangerous conditions are found in areas that were built for the automobile, but are now home to many people without automobiles.

Legal rights and responsibilities of motorists, pedestrians, and bicyclists are fairly similar across the region. However, pedestrian and bicycle-related law enforcement has traditionally had less law enforcement resources devoted to it than other categories of traffic enforcement. Many jurisdictions are stepping up their enforcement efforts as part of the region's annual Street Smart Pedestrian and Bicycle Safety campaign. The Street Smart program consists of a one-month blitz of radio, transit, and print advertising, together with a pedestrian enforcement drive in participating jurisdictions.

Shared-Use Paths

The Washington region is renowned for the quality and extent of its major shared-use paths. Shared-use paths are typically located in their own right-of-way, often a canal, railway, or stream valley, or in the right-of-way of a limited-access highway or parkway, such as the George Washington Memorial Parkway. The region has approximately 190 miles of major shared-use path, either paved or level packed gravel surface suitable for road bikes. Well-known trails include the W&OD and Mount Vernon Trails in Virginia, and the C&O Canal, Capitol Crescent, and

Rock Creek Trails connecting the District of Columbia and Maryland. Many of the region's shared-use paths go through heavily populated areas, connect major employment centers, and get significant commuter traffic. More information on trails in the Washington region can be found at http://www.bikewashington.org.

The region continues to build new trails along stream valleys and in conjunction with major highway projects, but there is not a large remaining inventory of the disused rail lines which often provide the best opportunities for shared-use paths.

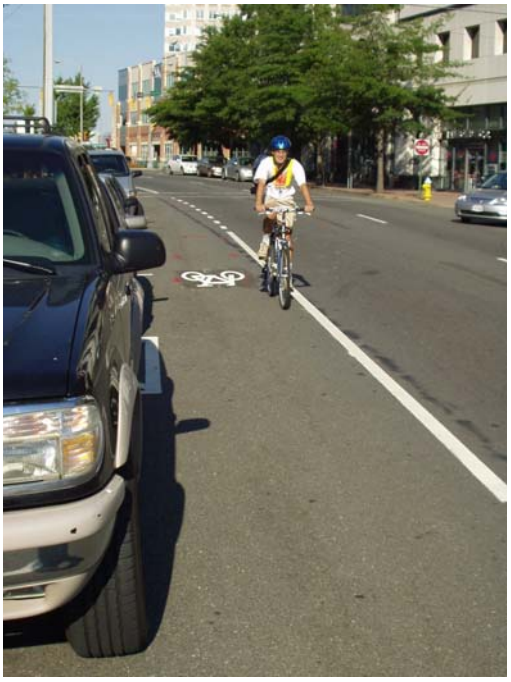
Side-Paths

Side-paths differ from shared-use paths in that they do not have their own right of way, but are closely adjacent to a roadway, and thus subject to more frequent conflict with driveways, side streets, and turning traffic. Side-paths differ from sidewalks in that they must be at least eight feet wide and paved with asphalt.

The Washington region has approximately 300 miles of side-paths. Montgomery County and VDOT's Northern Virginia office have ambitious plans for adding side-paths to new highways, so the regional mileage of side-paths is likely to grow considerably.

Bicycle Lanes

Far less expensive than separated paths are on-street bicycle lanes. Bicycle lanes are marked lanes at least 4' wide in the public right-of-way that are by law exclusively for use by bicyclists, . Bike lanes are usually marked with bicycle symbols and arrows, which emphasize the correct direction of travel. Bike lanes encourage cyclists to ride in the correct direction, define the road space that cyclists are expected to use, increase cyclists comfort level, and call attention to the presence of cyclists on the roadway. Bicycle lanes are not generally considered safe or adequate for pedestrians, though in rural areas where sidewalks are lacking the roadway shoulder serves as both a bicycle lane and as a pedestrian facility.



The region has relatively few bicycle lanes, the bulk of which are located in the District of Columbia and Arlington County. The District of Columbia currently has 19 miles of bicycle lanes, up from 2 in 1995, and Arlington County has 20 miles, up from 3 in 1995. The regional mileage of bicycle lanes can be expected to expand significantly in the future as the District of Columbia, Arlington County, and Montgomery County all have ambitious plans to expand their bicycle lane mileage. A

map of regional bicycle paths, lanes, and on-road routes can be ordered at www.adcmap.com.

Signed Bicycle Routes

The region has hundreds of miles of signed bicycle routes. Signed routes have the advantage of being inexpensive and informative for cyclists who may learn of a route they had been unaware of. A signed route has not necessarily had any improvements apart from signing.

Bridges

Currently the southernmost opportunity for cyclists and pedestrians to cross the Potomac is at the 14th Street Bridge. When the Woodrow Wilson Bridge project is finished, bicyclists and pedestrians will be able to cross the Potomac on the capitol beltway at Alexandria. The Memorial Bridge, the Theodore Roosevelt Bridge, the Key Bridge, and the Chain Bridge all have bicycle and pedestrian facilities. To the north cyclists and pedestrians may use the ferry at White's Ferry, which connects Montgomery County and Loudoun County. Cyclists may use the bridge at Point of Rocks connecting Frederick County with Loudoun County, though it has no separated facility.

On the Anacostia separated bicycle and pedestrian facilities of varying quality are available on the South Capitol Street (Frederick Douglas Memorial) bridge, the 11th Street bridge, the East Capitol Street Bridge, and the Benning Road Bridge.

Bicycles and Public Transit

The region has made tremendous progress integrating bicycling and public transit, with secure bike parking available at most rail stations, bicycles permitted on metrorail at most times, and most of the buses in the region now equipped with bicycle racks. Specific agency policies and facilities are described below.

Rail

Bicycles are allowed on Metrorail at any time except weekdays from 7 to 10 a.m. and 4 to 7 p.m., and Fourth of July. No permit is required. Only folding bicycles fully enclosed in a carrying case are permitted on MARC and VRE.

Bicycle racks or lockers are available at most Metrorail stations. Table 3-1 below shows the number of lockers and rack spaces at each metro station. Racks are first-come, first served. Details on bicycle parking locations and locker rental can be found at http://www.wmata.com/metrorail/bikeracks.cfm

All VRE stations and most MARC stations have bicycle racks.

Bus

Metrobuses all have racks on the front that carry not more than two bicycles. No permit is required. Information on how to use bus bike racks is available at www.waba.org.

Montgomery County Ride-On, Arlington Transit, and Annapolis Transit buses are all equipped with bicycle racks, as are many Maryland Transit Administration buses.

Park and Ride

Of the 175 park and ride lots in the Washington DC-MD-VA Metropolitan Statistical Area, about 50 have bike lockers or racks.

Pedestrian Access to Transit

82% of metrobus passengers walk to transit, and 60% of all metrorail trips start with the passenger walking to the rail station. However, the quality of pedestrian access to metrorail and metrobus varies widely. Many rail stations were built with an emphasis on motor vehicle access. Bus stops are often placed in areas with no sidewalks or available crosswalks. Inventorying conditions and making recommendations for specific locations is beyond the scope of this plan, but there have been a number of efforts to do so, such as MTA's Access 2000 Study, the MWCOG's Walkable Communities Workshops, the efforts of the Bike Parking Work Group of the Bicycle and Pedestrian Subcommittee, and efforts in Fairfax County to improve bus stop safety.

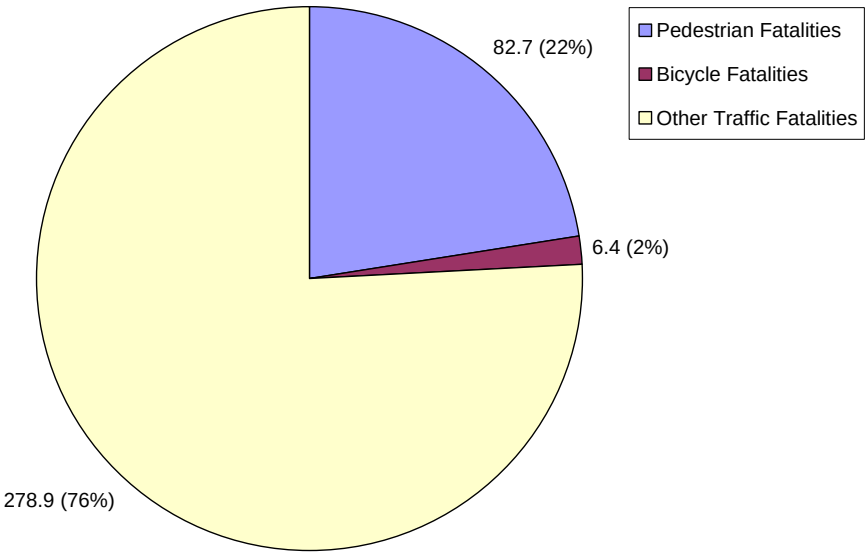
Pedestrian and Bicycle Safety

A. The Scope of the Problem

Pedestrian safety is a major problem nationally and in the Metropolitan Washington region. Of 42,643 traffic fatalities in the United States in 2003, 4,749, or about 11%, were pedestrians. Urban areas have higher pedestrian fatality rates than rural areas. The Washington-Baltimore region ranks 22nd out of the 50 largest metropolitan areas in terms of pedestrian deaths per capita.

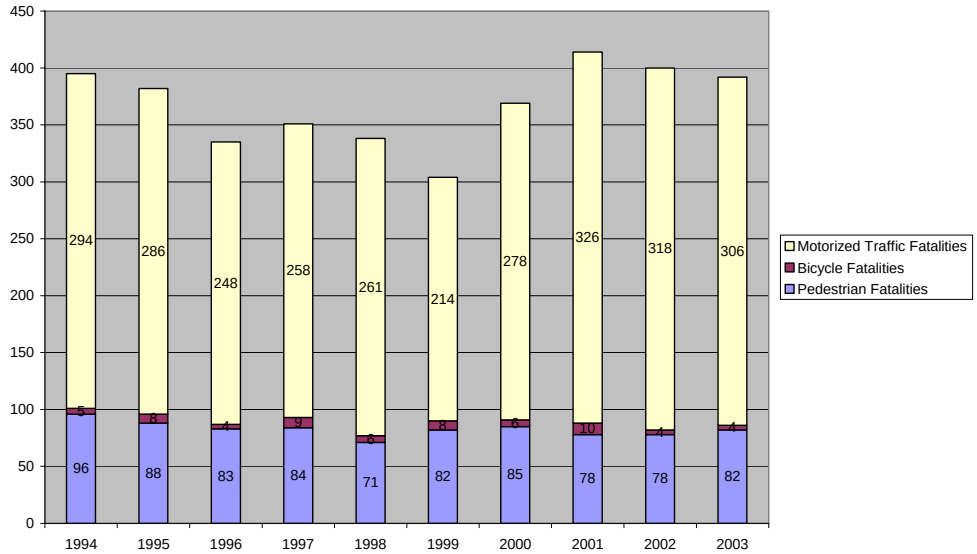
Pedestrians and bicyclists account for nearly a quarter of those killed on the roads in the Washington region. Over 2600 pedestrians and bicyclists are injured every year, and 89 are killed. Chart 3-1 shows pedestrian and bicycle fatalities in the Washington Region, as a proportion of total traffic fatalities.

Chart 3-1: Average Annual Pedestrian and Bicycle Traffic Fatalities in the Washington Region, 1994-2003



Traffic fatalities vary considerably from year to year. Chart 3-2 shows the annual totals for the years 1994-2003. Overall traffic fatalities were stable, and pedestrian and bicycle fatalities showed a slight downward trend. However, population and vehicle-miles traveled rose significantly during the period, and the mode share of walking fell. Fewer people were killed walking because fewer people walked.

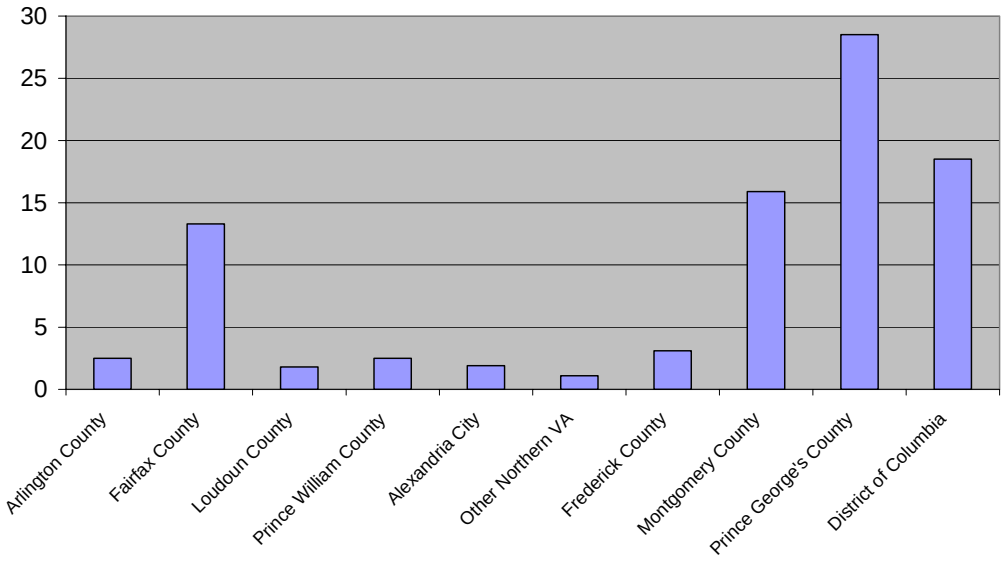
Chart 3-2:
Pedestrian, Bicycle and Motorized Fatalities in the Washington Region



B. Distribution of Pedestrian and Bicycle Fatalities by Jurisdiction

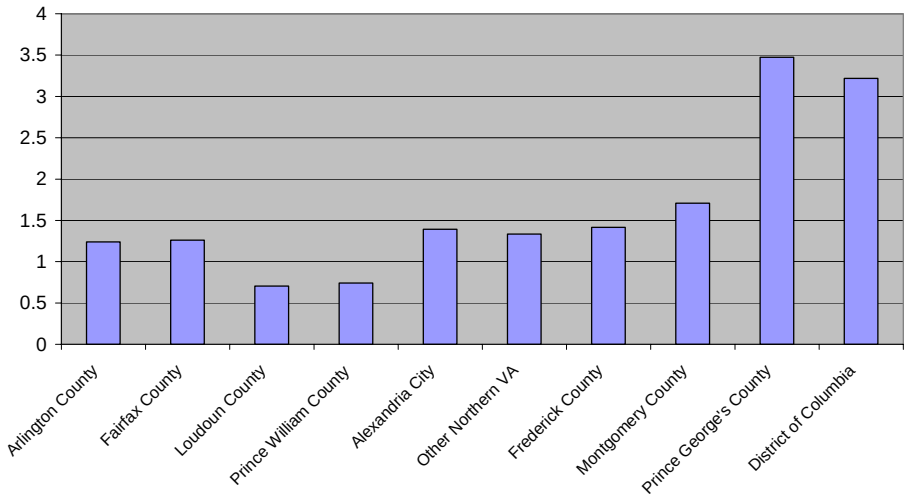
Outer jurisdictions had fewer pedestrian fatalities than inner jurisdictions, as seen in Chart 3-3.

Chart 3-3:
Average Annual Pedestrian and Bicyclist Fatalities, 1994-2003



Even when calculated as a rate per 100,000 population, outer jurisdictions had lower fatality rates than inner jurisdictions, a difference that probably reflects the very low pedestrian and bicycle mode share of the outer jurisdictions, as well as a high daytime population in the District of Columbia relative to resident population. Pedestrian and bicycle fatality rates in each jurisdiction are show in Chart 3-4.

Chart 3-4:
Average Annual Pedestrian and Bicyclist Fatalities Per 100,000 people, 1994-2003



Walking and bicycling appear to be safer in the urban core than in the inner or outer suburbs. The rate of pedestrian fatalities does not directly correspond to the number of people walking. Urban core residents are four to six times as likely to walk to work as outer jurisdiction residents, but are only twice as likely to be killed in a pedestrian or bicycle crash. And as previously noted, the urban core's fatality numbers probably include many non-resident workers, so the fatality rate per population overstates the danger of walking in those jurisdictions. The urban core has good pedestrian facilities, low traffic speeds, and drivers expect to see pedestrians and bicyclists.

In general the pedestrian crash rate tends to fall as the number of pedestrians at a location increases. There is safety in numbers. Doubling the number of pedestrians at an intersection already crowded with pedestrians will usually result in little, if any increase in pedestrian crashes.[1] Similar effects have been noted for cyclists, with cities having the highest rates of bicycling also having the lowest crash rate per bicycle trip.[2] If more people walk and bike it will become safer, especially if facilities are improved and other measures are taken to improve pedestrian and bicycle safety. High levels of walking and bicycling are associated, in advanced industrialized nations, with very low crash rates.[3] Holland has half the overall traffic fatality rate of the United States, despite a very high walk and bike mode share.

Experience of other nations shows that it is be possible to reduce pedestrian and bicycle fatalities while increasing walking and bicycling. It is not possible to eliminate pedestrian fatalities by eliminating pedestrian facilities and discouraging walking – even

[1] Raford, Noah. *Space Syntax: An Innovative Pedestrian Volume Modeling Tool forPedestrian Safety*. Presented at the 2004 TRB Conference, Janurary, 2004. (TRB2004-000977) p. 8.
[2] Denmark Ministry of Transport (1994) *Safety of Cyclists in Urban Areas: Danish Experiences.*
[3] Pucher, John. "Making Walking and Bicycling Safer: Lessons from Europe," *Transportation Quarterly,* Summer 2000.

our least pedestrian-oriented jurisdictions have a substantial number of pedestrian fatalities. There will always be people without cars, and there will always be some trips that will be made on foot. Our most dangerous areas for walking have high-speed roads and poor pedestrian facilities, together with a poor and immigrant population that lacks automobiles.

C. Factors contributing to Pedestrian and Bicycle Crashes

Data from the Washington region indicate that drivers are about as likely as pedestrians to be at fault in a crash. Males aged 18 to 34 are disproportionately involved in pedestrian crashes. Males are also more likely to be hit as pedestrians. Alcohol is a serious problem for both pedestrians and motorists, affecting approximately one third of crashes.

Legal Status of Bicyclists and Pedestrians

Bicyclists are considered vehicles under most circumstances, and have the same rights and responsibilities as operators of motor vehicles. Bicyclists must ride in the same direction as traffic, use lights after dark, and yield to pedestrians. Cyclists should generally ride as far to the right as is practicable, except when preparing to turn left, passing, or when obstacles or pavement conditions make riding on the right unsafe or impractical. Rules relating to bicycles are summarized on page E-4 of the Council of Government's Bike to Work Guide, which is available at http://www.mwcog.org/commuter/Bdy-bike2.html. Virginia bicycle laws are available at http://virginiadot.org/infoservice/bk-laws.asp.

Pedestrians are not vehicle operators and are not subject to the same rules. Persons on ollerblades, skateboards, etc. are considered pedestrians, but bicyclists are not. Motorists must yield to pedestrians when making turns across adjacent crosswalks. "Jaywalking" is legal in most locations, but pedestrians must yield to motorists if they are crossing at a location other than a crosswalk. Pedestrians may not cross at mid-block if they are between two signal-controlled intersections; they must use the crosswalk. Tables 3-1 and 3-2 summarize the rules in each state regarding pedestrians.

Table 3-1:
Pedestrian Traffic Law—Motor Vehicles Drivers

Rule	District of Columbia	Maryland	Virginia
Crosswalk Definition	Same as Maryland	Any intersection of two roadways is a legal crosswalk, whether marked or not. Pedestrians have the same rights in marked crosswalks as in unmarked crosswalks	Same as Maryland
Blocking a Crosswalk	Same as Maryland	A motorist may not park	Same as Maryland

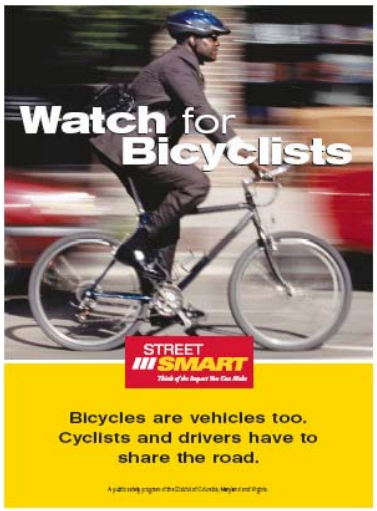
		or stop in a crosswalk	
Sidewalk	Pedestrians have the right of way in the sidewalk. Parking on the sidewalk prohibited.	Pedestrians have the right of way in the sidewalk	Pedestrians have the right of way in the sidewalk
Right Turn on Red	Same as Maryland	Vehicles turning right on red must yield to pedestrians in the crosswalk	
Turn on Green		Vehicles turning either right or left on a green light must yield to pedestrians in the adjacent crosswalk	
Red Light	A pedestrian who has begun crossing on the walk signal shall be given the right-of-way by the driver of any vehicle to continue to the opposite sidewalk or safety island, whichever is nearest.	Motorist should stop before the crosswalk, or if no crosswalk is striped, before the intersection	Same as Maryland
Stop-Controlled or Uncontrolled Intersection	The driver of a vehicle shall **STOP** and give right of way to a pedestrian crossing the roadway within any marked crosswalk or unmarked crosswalk at an intersection.	Motorist must stop for any pedestrian in the same half of the roadway as the motorist, or who is approaching from the adjacent lane in the other half of the roadway. No motorist may pass another vehicle which has stopped for a pedestrian	Same as Maryland, unless the road has a speed limit of 35 mph or more, in which case the motorist has the right of way.

Table 3-2:
Pedestrian Traffic Law—Pedestrians

Rule	District of Columbia	Maryland	Virginia
Green light	Same as Maryland	A pedestrian facing a green light (other than a turn arrow) may cross the roadway, within a marked or an unmarked crosswalk	Same as Maryland
Red light	Same as Maryland	Pedestrians shall not enter the roadway on a steady red light	Same as Maryland
Pedestrian Control Signal	Same as Maryland	Pedestrians shall not enter the roadway when there is a flashing “Don’t Walk” or “Wait” indicator	Same as Maryland
Stop-controlled or uncontrolled intersection	Same as Maryland	Pedestrians may cross the roadway within a marked or unmarked crosswalk	Same as Maryland, except the pedestrian must yield to motor vehicle traffic if the speed limit is 35 mph or more. Pedestrians may

			not disregard approaching traffic when entering or crossing an intersection
Crossing at Other Than Crosswalks	Essentially the same as Maryland, but with a specific prohibition on walking suddenly into the path of a vehicle: (a) No pedestrian shall suddenly leave a curb, safety platform, safety zone, loading platform or other designated place of safety and walk or turn into the path of a vehicle which is so close that it is impossible for the driver to yield.	(a) If a pedestrian crosses a roadway at any point other than in a marked crosswalk or in an unmarked crosswalk at an inter section, the pedestrian shall yield the right-of-way to any vehicle. (b) If a pedestrian crosses a roadway at a point where a pedestrian tunnel or overhead pedestrian crossing is provided, the pedestrian shall yield right of way to any vehicle. (c) Between adjacent intersections at which a traffic control signal is in operation, a pedestrian may cross a roadway only in a marked crosswalk. (d) A pedestrian may not cross a roadway intersection diagonally.	
Pedestrians on Roadways	Same as Maryland	(a) A pedestrian may not walk on a roadway where sidewalks are provided. (b) Where no sidewalk is provided, a pedestrian may walk only on the left side of the roadway, facing traffic.	Same as Maryland

Pedestrian and Bicyclist Enforcement and Education: The "Street Smart" Campaign



Enforcement and interpretation by the police and the judiciary of laws with respect to walking and bicycling are arguably as important as the wording of the laws. Enforcement of laws with respect to pedestrians and bicyclists has historically been a low priority for most law enforcement agencies, and compliance with rules regarding yielding to pedestrians in the crosswalks, pedestrian compliance with pedestrian signals, and bicyclist compliance with traffic laws is correspondingly low.

Efforts to enforce pedestrian laws have been stepped up in conjunction with the "Street Smart" pedestrian and bicycle safety campaign. The Street Smart campaign is a one-month blitz of radio, transit, and print advertising. The goal of the campaign is to change driver and pedestrian behavior in order to reduce deaths and injuries. Motorists are urged to "Stop for Pedestrians" and "Watch for Bicyclists," pedestrians are urged to "Take the time to cross safely". All materials, including radio spots, are translated into Spanish. One-month campaigns were held in October, 2002, April, 2004, and June, 2005. Another one-month campaign will probably take place in Spring, 2006.

Street Smart was created in 2002 by the region's governments in response to an ongoing regional pedestrian and bicycle safety problem. Since the region is a single media market, a unified regional campaign is the most cost-effective approach. The program is supported by federal funds made available through state governments, with local funds matching the federal funds, and is administered by the National Capital Region Transportation Planning Board.

Evaluation results show that the prime target audience, male drivers aged 18 to 34, is hearing the message. Surveys taken before and after the campaign show that they are: awareness of the Street Smart messages rose by 22 percentage points among male drivers aged 18 to 34 after the April, 2004 campaign. Driver yielding behavior has improved significantly since the campaign began.

Law enforcement helps reinforce the campaign message. Law enforcement has been used effectively as part of anti-drunk driving and seatbelt advertising campaigns. Research shows that fear of fines and legal consequences is more effective at changing behavior than fear of death or injury. Also the TV and press media often covers enforcement stings, increasing the public's perception that they are likely to be ticketed for breaking the law.

Coordination with law enforcement has improved steadily. It was always recognized that a media campaign needed law enforcement, both as a sanction that can be mentioned in the ads, and as a tool to gain additional earned media attention for the campaign. Several major law enforcement agencies carried out pedestrian enforcement drives during the June, 2005 campaign. Political leaders and law enforcement officials are supportive of the campaign, and it is likely that law enforcement will be further enhanced in future years.