

Protecting Pedestrians



Watching Out For Washington, DC Walkers

February 23, 2012



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**A report by the Committee on Pedestrian Safety
of the Council for Court Excellence**

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In 2005, the pedestrian fatality rate in the District of Columbia was 2.9 per 100,000 population—far exceeding the corresponding rates for Boston, New York, and San Francisco. Several members of the Board of the Council For Court Excellence petitioned for the creation of a CCE Committee on Pedestrian Safety to study and recommend means of reducing the frequency and severity of pedestrian traffic accidents.

The project was approved by the CCE Executive Committee, and the ad hoc Committee on Pedestrian Safety was established April 1, 2007. Members of the Committee included:

Dr. Edward J. Burger, Chairman
James D. Bishop
Susan Brinkerhoff
Magistrate Judge Evelyn B. Coburn
Ellen W. Eager
Samuel F. Harahan
Lawrence Hobart

Cliff Keenan
Victor E. Long
James P. Mecurio
James Nathanson
Paul Pearlstein
Judge Richard Roberts
Arabella Teal

A record 25 pedestrian fatalities in 2007 and 40% of highway deaths in the District involving pedestrians (compared with 25% for the region) provided immediate incentive to focus on this problem.

With its efforts to better protect walkers, the CCE ad hoc Committee on Pedestrian Safety quickly attracted the support of the American Association of Retired Persons and the Medical Society of the District of Columbia. In addition, a large number of other private and public organizations were contacted for information, ideas, and advice about how to tackle the task. See Appendix A for a listing. Committee members addressed pedestrian

safety issues in four appearances before committees of the District of Columbia Council.

Approaches to studying traffic safety are frequently divided into three concentrations: engineering, education, and enforcement. The Committee focused on enforcement in the belief that it is key to creating a culture of pedestrian protection while simultaneously providing an educational tool and a clue to engineering solutions.

The purpose of the investigation was to enhance safe passage for the Washington walker. Traffic accidents can have multiple effects on pedestrians, including psychological trauma, incapacitating injury, and long-lasting impairment; disruption of family life; inability to work and loss of income; doctor, hospital, and legal expenses; and creation of debt. Public policy should seek to minimize incidents that create these potential problems on the District's 1,100 miles of roadway with its 7,700 intersections and 13,000 city blocks.

This report is organized in three sections: (1) recommendations for action to better protect pedestrians, (2) a description of how and why walking is important in the District of Columbia, and (3) facts, statistics, and analysis that support report proposals.

Committee Recommendations

Recommendation #1

Fines for traffic violations by motorists, bicyclists, and pedestrians should be set and enforced at levels that impose a significant financial penalty for failure to comply with the law. The Metropolitan Police Department and the District Department of Transportation should carry out continuing studies of violations, and advise the District of Columbia Council of desirable changes in the levels of penalties to enhance compliance with traffic laws.

Recommendation #2

Steady, predictable, high-visibility enforcement of traffic safety laws on a year-round basis, by police officers and by cameras, is essential to properly protect Washington's pedestrians. MPD should establish specific annual targets for reduction of pedestrian traffic injuries and

fatalities by each MPD district, and assign an appropriate workforce to realize the goals. The D.C. Council should insure that adequate personnel and technical resources are available to all MPD districts.

Recommendation #3

A traffic safety unit with an adequately sized dedicated staff should be created in the MPD to carry out District-wide pedestrian safety programs, including coordination of individual MPD district actions and work of ticket-writing downtown traffic controllers.

Recommendation #4

DDOT and MPD should review the city's record in dealing with distracted driving in the District and report to the D.C. Council in 2012 on additional steps that might be taken to solve the problem, including (a) a possible city-wide ban on use of cell phones and portable electronic devices in moving vehicles, (b) a requirement that specified technology intended to increase safety be installed in new cars registered in the District, and (c) a hosting of a city test of an autonomous vehicle.

Recommendation #5

The District has a number of statutes governing the conduct of bicyclists and pedestrians that must be enforced vigorously and consistently to protect the public, but these laws should be expanded to definitively deal with electronic distraction as it relates to pedestrian safety. The D.C. Council should consider legislation such as a ban on use by pedestrians of electronic devices while crossing streets, and barring of bicyclists from employing mobile phones and music players during travel on city sidewalks or streets.

Recommendation #6

District government--the Council, MPD, and DDOT-- should actively encourage and support citizen involvement in the identification and correction of traffic problems that can result in injuries and fatalities on city streets. The city should publish an annual report on pedestrian accidents and summarize steps taken during the year to improve the situation.

Significance of Walking in Washington

The Committee found 12 reasons why walking in Washington, D.C. is such an important topic:

1. Washington is a pedestrian friendly-city characterized by tree-lined residential areas, broad avenues flanked with shops and cafes, low-lying commercial buildings situated near parks and open spaces, and wide distribution of museums and historical monuments. All can be visited easily on foot. A survey by the Brookings Institution rated Washington as the most walkable urban area in the country.

2. Walking is a weekday choice for many Washingtonians. District Department of Transportation (DDOT) reports that 12% of District residents walk to and from work—nearly twice the national average. An estimated 25% of District workers do not own a car, and 39% commute by public transportation.

3. Physical activity is increasingly identified as the basis for maintaining good health. Walking is an outdoor exercise that requires no special equipment and is available, regardless of age, for those not suffering impairment.

4. “People who live in neighborhoods where walking is comfortable and convenient are likely to be more familiar with their neighborhoods, and to have richer social connections to their community,” the District’s Master Pedestrian Plan points out. “Walkable neighborhoods and commercial districts provide safe and efficient ways for resident to travel on foot and have active street life. Walking can provide an enhanced quality of life for all District residents.”

5. Walking—and pedestrian safety--may be more significant for younger residents of the city than it is for older residents for several reasons. A DDOT accident study shows that the age group 21-30 years had the highest number of pedestrian-involved crashes from 2007 through 2009. The 2010 Census indicated that people in their 20s and early 30s now make up nearly a third of Washington’s population and were responsible for almost all of the city’s growth in the past 10 years to a population of 600,000-plus and expanding. Young residents have tended to locate in the center of the city—Capital Hill, Northeast, downtown, Shaw, and Logan Circle. They gravitate to sidewalk cafés, bike lanes, singles bars, and high-rise housing. They use

the Metro and walk or bike by choice or because they can't afford both a car and an apartment.

6. Because of age or economic circumstances, other District residents do not have access to an automobile. Double-digit unemployment and lack of income can also mean foot power is the only way to get around.

7. Traffic congestion encourages walking in Washington. More than 3.8 million vehicles are currently registered in the District and adjacent parts of Maryland and Virginia—an increase of 4% in the two states and 3% in the District since 2008. While the population of the Washington suburbs has grown by more than 60% since 1980, car-pooling has declined and the number of people driving alone has more than doubled during that period. Use of mass transit has expanded to 14% of commuters from 11% in 2000, but traffic snarls continue. Because of traffic clogs, commercial companies have added trucks in order to service to serve the same number of customers as other regions, and Metro has increased buses so as to maintain rush-hour schedules.

Downtown congestion grows despite frequent riders on the D.C. Circulator bus, people signing up for car sharing, and introduction of Smart Bikes.

INRIX, a private firm that monitors traffic nationwide, reports that in 2010 Washington was the fourth-most congested large urban area in the nation. INRIX found that the percentage of extra time a trip takes in the Washington area during peak periods as compared to the time it takes in uncongested traffic was 24%. The Texas Transportation Institute estimates that in 2010 Washington area drivers wasted 74 hours in yearly delay—more than three days--highest among all major cities—at a cost of \$1,495. For those who make the journey and absorb current high gasoline charges, the price of parking spaces at city meters or garages has gone up—with no significant increase in availability. At the same time, studies show an increasing number of daily auto journeys in the Washington region for reasons other than commuting to work.

8. Walking rather than driving has environmental benefits through reduction in carbon emissions, particulate matter, and smog-creating gasses released by auto engines. A research team from Brigham Young and Harvard universities found that reducing air pollution has extended average life expectancy by five months for urban residents in dozens of U.S. cities over the past two decades.

Reported the Washington Post in 2009: “People in and around the District benefited more than most because the region has enjoyed a greater reduction in airborne fine particulate matter, or soot, which is linked to heart and respiratory diseases, than many other metropolitan areas. Overall, D.C. residents were living roughly three years longer in 2000 than in 1980, and more than seven months of that improvement was attributed to the drop in airborne soot.”

9. Health costs to the city can be reduced by encouraging walking, which reduces obesity and circulatory problems. Benefits include decreased demands on ambulance services, reduction in the use of hospital emergency rooms, and a lowering of loss-of-work days. But pedestrians need to be protected. “About three times every day in the District, someone walking on a city street gets hit by a vehicle and an ambulance rushes to the scene,” the Washington Post reported last year. In 2010, ambulances responded to 1,299 calls for pedestrians struck, according to the D.C. Fire Department; about 216 pedestrians were hit per 100,000 in the District, compared to 169 in Baltimore and 120 in Philadelphia.

10. Increased strolling downtown, encouraged by enhanced pedestrian safety, is a boon to Washington businesses.

11. Expanded walking in a better-protected atmosphere can result in fewer accidents, decreased lawsuits, and lower insurance costs. The estimated price of a crash in the Washington region in 2011 was \$1,363.

12. Population of the Washington downtown area is about to expand with a new center city including hundreds of apartments, major hotel room accommodations, and significant office and retail space. This is the part of the District where the most accidents take place. Reported a DDOT accident study: “It can be observed that the Northwest quadrant recorded the highest number of reported motor vehicle collisions from 2007 through 2009. This is due to the fact that the NW quadrant represents 42.65% of area of DC; also, the Central Business District is located in the NW quadrant with a considerable amount of traffic volume.” Expectations are that the city’s strong job market, steady home values, stable government, and educated populace will attract new citizens to the central city. Most of these residents and users of the built-up area will be walkers.

Creating Deterrents to Adverse Actions

In 2007, the Committee on Pedestrian Safety carried out a study of penalties for traffic violations in the District for all users of our roads—drivers, pedestrians, and cyclists—and compared them with four other jurisdictions—Maryland; Virginia; Seattle, Washington; and Portland, Oregon. The jurisdictions were selected because the committee wished to know what kind of penalties neighboring states were giving, and how the District compared to two exemplary locations—Seattle and Portland—that are renowned for their pedestrian safety efforts.

The principal finding of the study, which was carried out by Committee member Susan Brinkerhoff, was that District traffic violation penalties were far lower than Seattle's or Portland's, and were generally lower than Maryland's or Virginia's. A comparison chart is shown in Appendix B. As attorney Brinkerhoff testified before the Committee on Public Works and the Environment of the Council of the District of Columbia on June 20, 2008:

“For drivers in DC, the penalties are \$25 and \$50 for most driving offenses, regardless of how much of a danger the violation poses to pedestrians such as failing to yield at a crosswalk. In Seattle, the penalty for failing to yield at a crosswalk is \$250 maximum, and in Portland it is \$360 maximum. In Virginia, certain designated and signed intersections carry a penalty of up to \$500 for failing to yield to pedestrians. The District's \$50 penalty is extremely low compared to the other jurisdictions. The \$50 penalty was also disproportionately small when compared to the much higher penalties in DC for violations that pose no immediate danger to human life, such as failing to secure a DC tag (\$100), parking in a handicapped space (\$250), or covering tags (\$500). Consequently, we included in our chart proposed fines for traffic violations in the District that were more in line with those of the exemplary jurisdictions.”

The Committee on Pedestrian Safety proposed allocation of points for certain driving violations. Points are important in the retention of a driver's license and imposition of insurance costs. Eight points result in suspension of a license and 12 points means its revocation. Understanding that violations may include certain number of points as a penalty can encourage compliance.

In addition to recommending a major increase in fines for failing to yield to pedestrians, the Committee proposed that penalties for a number of other pedestrian-related violations by motorists be raised to levels as high as \$300 per offense to discourage dangerous behavior.

The penalty levels suggested by the Committee also sought some proportionality among drivers, pedestrians, and bicyclists—all of whom may be the cause of an accident. The Committee proposed that fines for violations by bicyclists and pedestrians also be raised by major multiples in order to deter dangerous actions. MPD has testified that half of pedestrian fatalities involve pedestrian violations, such as crossing against the light or not using a crosswalk. D.C. Council hearings have recorded complaints that some bicyclists fail to obey red lights or stop signs.

Appendix B displays the proposed level of fines for bicyclists and pedestrians, as well as motorists.

Low levels for penalties fail to act as deterrent, and do not give police officers an incentive to enforce because they see little value in apprehension. As a District police commander told the Committee about motorists early in its study, small fines made it “cheap to drive badly in the District.”

Fines are not a fee or a tax. They can be avoided by complying with the law. Failure to do so means the resulting penalty represents a voluntary contribution. Public roads are not a private preserve. The privilege to use them is conditioned on respect for the rules and responsibility in following them. Pedestrians shouldn't have to cross the street as though their lives depended on it. Sanctions should be matched to risk, and there should be a high probability of fines for illegal behavior.

With the leadership of Councilwoman Mary Cheh, who introduced legislation in 2007, the City Council in late 2008 increased fivefold--to \$250--the penalty for failure to stop for a pedestrian in a crosswalk, plus the possibility of assignment of points. The legislation provided a similar level of fines for three other pedestrian protection infractions. Other fines for moving traffic offenses have since been boosted. The DDOT Pedestrian Master Plan supports similar principles.

Enforcement Essential to Education

While the level of penalties is highly significant, enforcement is the key to altering attitudes and actions. Higher fines and public involvement may well have helped motivate MPD action. Statistics released by the District of Columbia Metropolitan Police Department show an important and commendable enforcement trend over recent years involving pedestrian protection measures, including, by MPD code, failure to yield right of way to a pedestrian (T759), failure to yield to a pedestrian at a non-signalized site (T011), failure to yield to a pedestrian on a sidewalk (T782), and overtaking a vehicle stopped at a crosswalk for a pedestrian (T751):

Year	2005	2006	2007	2008	2009	2010	2011*
T759	1	3	41	35	173	533	742
T011	0	0	0	0	15	211	87
T782	0	0	0	0	51	51	37
T751**					16	53	40

**Enacted 2008
*Through September

MPD reports on pedestrian injuries and fatalities for a somewhat similar period show these numbers:

Year	2007	2008	2009	2010	2011
Injuries	612	592	657	NA	NA
Fatalities	25	14	16	14	7*

* Through September 25, 2011

DDOT's 2007 online survey of District residents asked what factors make it difficult or unpleasant to walk in the District. Among the 4,800 respondents, the top three out of four answers (with crime as #2) were drivers not stopping for pedestrians in crosswalks (#1--with nearly three times as many responses as #2); drivers running red lights (#3); and fast vehicle speeds (#4).

Vehicle speed is a major problem. When steel hits flesh, speed kills. The faster drivers travel, the narrower their field of vision, the less their time to react, the greater the distance they require to stop. At 40 miles per hour, a car will travel 59 feet in a second. Studies show that a pedestrian struck by an automobile moving at that rate has a 90% chance of dying. On the other hand, at 25 miles per hour, there is a 90% chance of survival.

It is estimated that speed is a factor in about one-third of all fatal crashes. Enforcement of posted limits helps put drivers on a “speed diet” to reduce the weight of accidents.

Experts also note that lower speed helps avoid tailgating, saves gasoline, and reduces the dangers of distractions such as cell phones and music players.

Photo enforcement cameras are a cost-effective means of discouraging speeders.

A 2008 report showed Montgomery County, Maryland speed cameras caused drivers to slow down on roads where cameras were located and suggested that drivers in other parts of the county eased off the gas for fear that cameras might be nearby. Data compiled by the Insurance Institute for Highway Safety showed:

At locations that had warning signs about the cameras and the actual cameras, the proportion of drivers traveling at 10 miles per hour over the speed limit fell by about 70%.

At locations with just warning signs, the proportion of speeding drivers fell by about 39%.

At other locations, with no signs and no cameras, the proportion fell by 15%.

Researchers compiled the numbers by measuring speeds before and after cameras and signs were placed and comparing those sites with similar areas in Northern Virginia that did not have cameras. A spokesman for the Governors Highway Safety Association declared that the statistics show that “automated enforcement works extremely well.”

Speed cameras are costly (\$100,000 each) but are extremely cost-effective compared to use of on-the-ground police officers whose salary, overtime,

and benefits might total about the same—and must be paid annually as opposed to a one-time investment.

In the District of Columbia in fiscal year 2007, a total of 340,454 speeding tickets were issued through photo radar cameras, and a total of 102,627 tickets for moving violations were generated by police officers—a 3-1 differential that dramatically increased the reach of the law in dampening speeding and freed manpower for other police purposes. In calendar year 2009, 16 fixed speed cameras and 16 mobile speed cameras resulted in 553,500 tickets. In 2011, there were 21 fixed speed cameras and 21 mobile speed cameras operating in the District. Tickets mailed as the result of radar activity show the following by calendar year:

Year	2007	2008	2009	2010	2011
Tickets	236,027	344,966	622,072	507,153	285,951

The aim of speed cameras is not to raise money but to reduce accidents. In fact, the success of the program would be measured by a *decrease* in money resulting from fines. When fines do result, the payments should be directed to a traffic safety program, not general governmental purposes.

Cameras are also a significant way to curb the running of red lights—a major concern in the District. For the period 2006 through 2011 there have been 47 red light cameras in the District. Tickets issued because of them show the following:

Year	2007	2008	2009	2010	2011
Tickets	64,915	83,884	84,482	83,222	137,161

Enforcement is a key to compliance. MPD carries out targeted crosswalk enforcement operations, a.k.a. “stings”, in addition to regular policing, but use of the tactic is dependent on other demands within the seven MPD districts. Periodic “Street Smart” sweeps and crackdowns on drunken-driving during holiday seasons are a help, however episodic citywide enforcement campaigns are not a substitute for day-to-day focus.

A good deterrence policy includes:

1. High certainty of detection of offenders.

2. Integrity of the enforcement system.

3. Quick and certain follow-through.

It is sometimes said that we need to establish a culture of driver/walker respect before we can see results. But the fact is that enforcement is education, and need brings acceptance. Drunken driving is not acceptable, and statutes provide for prosecution. Mandatory seat belt requirements save lives (“Click It Or Ticket”). Car seats protect children. We have laws limiting smoking in public; why would we allow “second-hand driving” any more than we want to inhale smoke from somebody else’s cigarette? If electricity in the home were as dangerous as driving, would we use it? No one would ride on a plane if the airline industry had the record of death and injury exhibited by automobiles. Enforcement of rules protects us. It should do so on the road.

Need for a Well-Staffed Traffic Unit

Creation of an adequately staffed dedicated traffic unit within MPD would represent a commitment to safety and open a career path for police officers. That unit should be charged with implementation of road safety rules and held accountable for its performance in reaching specific targets, including reduction of the number of pedestrians killed or injured in crashes with motor vehicles. Effective traffic enforcement is no accident. It’s planned.

In response to questions raised by the Chairman of the D.C. Council Committee on Public Safety and the Judiciary, MPD reported in March, 2011 that the Traffic Safety and Specialized Enforcement Branch has 21 officers and civilians, including the Crash Review Board (1), the Motor Carrier Safety Unit (7), Major Crash Investigation/Impaired Driving (7), and Automated Traffic Enforcement/Highway Safety (6). The total MPD force total approaches 4,000.

Downtown traffic control personnel given authority to issue tickets to pedestrians and bicyclists who violate city ordinances could supplement a strong MPD traffic safety unit.

As judged by citations issued in recent years, enforcement has picked up. Figures for 2009, 2010, and 2011 show increased activity in areas of traffic infraction. The question is whether with more adequate resources, the

results could be better. Nevertheless, it is perhaps pertinent to note DDOT's accident report finding that auto/pedestrian right of way collisions decreased from 2007 through 2009.

Year	Number of Collisions			Percentage		
	2007	2008	2009	2007	2008	2009
Collisions	1743	1505	992	6.47%	5.42%	3.54%

Dangers of Distracted Driving

Local law prohibits using hand-held cell phones and texting while driving. But expansion of electronic devices in motor vehicles raises new challenges to distracted driving in the District.

Manufacturers are turning cars into “living rooms on the road”, the New York Times has noted, making them “cocoon of communication systems and high-tech entertainment.” As one observer stated, a living room is stationary but on the road “my ‘room’ may collide with yours.”

The new “infotainment systems” can include Internet and e-mail access, DVD and MP3 players, computer keyboards and printers, GPS navigation systems, 3D maps, video games, and television. CTIA, the wireless industry association, counts 327.6 million wireless customer connections, equal to 103.9% of the United States population. Last year, the one-millionth mobile computer application went on the market. There are more and more electronic ties to cars. They represent a rapidly expanding safety threat by taking multi-tasking drivers’ eyes off the road. Looking down at a GPS screen to see where you are going means you are not looking where you are going.

Studies have shown that talking on a cell phone while driving poses a risk four times that faced by undistracted drivers and on a par with that of driving while intoxicated. Texting while driving might confer a risk of collision 23 times that of driving while undistracted. As reported in the New England Journal of Medicine in 2010: “Current data suggest that each year, at least 1.6 million traffic accidents (28% of all crashes) in the United States are

caused by drivers talking on cell phones or texting. Talking on the phone causes many more accidents than texting, simply because millions more drivers talk than text; moreover, using a hands-free device does not make talking on the phone any safer.” Asks Doctor Amy Ship, internist at Harvard Medical School: “How would you feel if the surgeon removing your appendix talked on the phone—hands free, of course—while operating?”

What happens when you add even more distractions, as car manufacturers are doing? What is the impact of smartphone apps and installed visuals that provide information on restaurants, gas stations, parking, movies, weather, and driving conditions? Will drivers be looking down at buttons and screens rather than through the windshield?

Research indicates that no one does multi-tasking well. Cognitive impairment--‘inattention blindness’--tends to take place. A driver may be psychologically excited or stimulated by a contact from outside or inside the car, react physiologically with a burst of adrenaline or a rush of feeling, and physically take eyes away from the road. The longer a motorist looks away from the road, the risk of a crash or near crash goes up exponentially—not linearly, a Virginia Tech Transportation Institute study noted.

“Unfortunately, drivers are being encouraged to do everything but drive,” stated Jonathan Adkins, spokesman for the Governors Highway Safety Association. “It’s a sign of the pressures of modern-day life to do 10 things at once. However, driving is a complex task, and our message continues to be that a singular focus is needed.”

The National Transportation Safety Board has recommended that states ban *all* cell phone use by drivers except in emergencies. “Every year new devices are being released”, noted Deborah Hersman, chairwoman of the N.T.S.B. “People are tempted to update their Facebook page, and they are tempted to tweet, as if sitting at a desk. But they are driving a car.”

One solution to the problem is to shut off the distracting devices when the car is moving. Electronic blockers are available which lock up a phone so it cannot be used to text, call, e-mail or surf the Web when the car is in motion. Incoming calls go directly to voice mail. Text messages do not appear. Calls to 911 are possible, and certain approved phone numbers can be set up in advance.

Courts might require installation of such blocking devices for a specified period of time following a distracted driving violation. Such an approach is similar to breathalyzer-ignition-interlocks currently installed in some jurisdictions where drunk driving is involved. Another suggested remedy would be to engineer cell phone towers to not transmit while a phone is traveling, or to install hardware in cars and software in cell phones that would disable phone functions when the car is moving.

Manufacturers are moving in another direction: introduction of voice-activated systems. Some new vehicles are rigged to read text messages aloud. Drivers can tap on a touch screen to send preset responses. “To date, there has been no independent research indicating a safety benefit to this technology, and until that benefit is demonstrated, we won’t be able to support it,” Adkins has declared. There is a question as to whether or not touching a key to send a pre-programmed text response is a violation of existing D.C. law prohibiting text messaging.

District statutes and MPD offense codes include several types of distracted driving violations, the most frequent charges involving activities such as eating and reading (T590), utilizing an electronic device (T591), and failing to observe signs and vehicle operations (T013). Record of 2005-2010 citations is shown below:

Offense Year	2005	2006	2007	2008	2009	2010
T591	7,528	8,372	11,207	12,938	10,956	13,714
T590	975	843	833	450	1,035	952
T013	1,534	1,535	1,427	1,363	1,366	1,422
Totals	10,037	10,750	13,467	14,751	13,357	16,088

Need for vigorous police enforcement is emphasized by findings that nearly 80% of crashes and 65% of “close calls” were caused by distractions that made the driver look away from the road for up to three seconds.

Adding technology could help protect pedestrians. Researchers are studying warning systems, external air bags, and softer “crumple zones” to reduce consequences of cars striking people. Volvo has developed a system to

actually take control of the car and apply the brakes automatically to prevent an accident. As described by New York Times writer John R. Quan:

“The new feature, which Volvo calls the Pedestrian Safety System, identifies pedestrians (and bike riders) in front of a vehicle using a video-camera similar to those of lane-departure warning systems. The camera and its computer controls are from Mobileye, a maker of vision-based safety systems based in the Netherlands.

“The camera sits at the top edge of the windshield, in front of the rear-view mirror. It scans up to 160 feet ahead with a 45-degree wide viewing angle, enabling it to pick out as many as 64 people. Coupled with a radar unit mounted behind the grille that looks ahead as far as 650 feet, and software fine-tuned over 330,000 miles of testing, the system assesses the collision probability based on the direction of the car and expected path of the pedestrians.”

Quan observed, “the reflexes of the computer will best those of an inattentive driver. Indeed, that’s the system’s main function—to avoid pedestrian accidents caused by distraction.”

Automakers seek to reduce risk in other ways, for example, by developing smartphone applications to automatically apply the brakes at a traffic light, alert drivers when a car is in the blind spot, and slow a vehicle when speed zones change.

The Google solution to distracted driving: self-driving cars. “Our cars memorize the road infrastructure in minute detail,” Sebastian Thrun, Google Fellow and research professor at Stanford, says. “They use computerized maps to determine where to drive, and to anticipate road signs, traffic lights and roadblocks long before they are visible to the human eye. Our cars use specialized lasers, radar and cameras to analyze traffic at a speed faster than the human brain can process. And they leverage the cloud to share information at blazing speed. Our self-driving cars have now traveled nearly 200,000 miles on public highways in California and Nevada, 100 percent safely.”

There are practical questions. How would police interface with a driverless car? What is the interaction of an autonomous car with a driver-directed conventional vehicle? Where does liability exposure and insurance coverage go? What happens if global positioning satellites fail?

Bicyclists, Pedestrians Part of the Problem

Every day in Washington, sidewalks and crosswalks are filled with people who are plugged into another environment—the ether. They are listening to music, talking on cell phones, using Blackberries, and texting messages. The phenomenon has resulted in a new iPhone application—Type n Walk. But walkers using electronics are still bumping, slipping, falling, and harming themselves through inattention. According to an Ohio State University study, slightly more than 2,000 pedestrians visited emergency rooms in 2008 because they became distracted and tripped, fell, or ran into something while using a cell phone to talk or text—twice the number from 2007, which had nearly doubled from 2006. The number of mishaps is probably much higher since not all injuries require emergency attention.

Bicyclists and runners face similar risks as they use earbuds or headsets to listen to Wi-Fi or work a smartphone whether on the sidewalk, in a bike lane, or on the roadway.

State legislators have been looking at the issue in recent sessions. In New York, legislation was introduced to ban use of mobile phones, iPods, or other electronic devices while crossing streets. A bill in Oregon sought to restrict bicyclists from using mobile phones and music players. In Virginia, it was proposed that bikers be barred from using a “handheld communication device.” In California, it was proposed that bicyclists be fined for multitasking. “We’re taught from knee-high to look in both directions, wait, listen, and then cross,” the New York sponsor said. “You can perform none of those functions if you are engaged in some kind of wired activity.”

Experts report that hearing sounds through two earbuds creates a powerful “auditory masking” that drowns out external sound and floods the brain.

While electronics users create dangers for themselves, they are also a threat to others because of failure to see people, note cautionary signs, spot crosswalks, observe traffic signals, and recognize the flow of walkers, bikes, cars, and trucks.

Community Involvement Required

Successful community traffic safety involves reaching out to citizens of the city for information, ideas, and advice. MPD has done it with citizen consultation. DDOT has done it with its Pedestrian Master Plan. The

District of Columbia Council has done it through hearings and creation of the Pedestrian Advisory Council. Citizen groups have done so by creation of such organizations as Connecticut Avenue Pedestrian Action and its pedestrian safety audit. The need for input and action continues.

Appendix A

Organizations Contacted and/or Consulted

District Department of Transportation

Metropolitan Police Department

District Department of Motor Vehicles

National Center for Bicycling and Walking

National Complete Streets Coalition

Washington Area Bicyclist Association

Coalition for Smarter Growth

Partnership for Safe Driving

Transportation Research Board of the National Academies

Federal Highway Administration

National Highway Traffic Safety Administration

American Association of State Highway and Transportation Officials

Transportation Division of the World Bank

Montgomery County, Maryland

Office of the District Mayor

District City Council

Insurance Institute for Highway Safety

AAA Foundation for Traffic Safety

Governors Highway Safety Association

Association of State Safety Engineers

Metropolitan Washington Council of Governments

Seattle Department of Transportation

City of New York

City of Baltimore

Community Action Council for 2nd District

Los Alamos County Transportation Board

University of Nevada

Oregon Highway Safety Office

Pedestrian and Bicycle Information Center

Iona Senior Services

D.C. Delivers

Sustainable Streets 2009

Appendix B

**Comparison of Traffic Violations for Motorists, Pedestrians, and Bicyclists
DC, Maryland, and Arlington County, Virginia**

User	DC Citation	DC Description	DC Fine	Suggested DC Fine	Maryland Fine ¹	Virginia Fine ²
Motorists	Due care provision	Every driver of a vehicle shall: <ul style="list-style-type: none"> • exercise due care to avoid colliding with any pedestrian up any roadway; • give warning by sounding the horn when necessary; and • exercise proper precaution upon observing any child or any confused or incapacitated person upon the roadway 	\$50	\$100-250	\$70 \$110 if contributing to accident	\$100 max and/or up to 10 days (specific to Arlington County)
Motorists	Special hazards as to pedestrians	The driver of every vehicle shall drive at an appropriate reduced speed when special hazard exists with respect to pedestrians, road or weather conditions	\$50	\$100-250		\$30 fine + \$51 processing fee (when driving through pedestrian safety zone)
Motorists	Failure to yield right of way to pedestrian at signalized intersection	b) 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.	\$50	\$300	\$80	\$30 fine + \$51 processing fee \$100-\$500 (only where signs to yield right-of-way to peds) (specific to Arlington County)
Motorists	Failure to yield right of way to pedestrian at un-signalized crosswalk	(a) 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.	\$50	\$300	\$80	\$30 fine + \$51 processing fee

¹ Maryland enacted Uniform Traffic Citations in 1980, which mandate fines for traffic violations and which are enforced by the state district courts.
² From Rule 3B-2, Uniform Fine Schedule, Rules of the Virginia Supreme Court.

User	DC Citation	DC Description	DC Fine	Suggested DC Fine	Maryland Fine ¹	Virginia Fine ²
Motorists	Passing a vehicle stopped for a pedestrian	Whenever any vehicle is stopped at a marked crosswalk or at an unmarked crosswalk at any intersection to permit a pedestrian to cross the roadway, the driver of any vehicle approaching from the rear shall not overtake and pass the stopped vehicle.	No fine set	\$300	\$80	
Motorists	Failure to yield right of way to vehicle or pedestrian while turning right on red	A vehicle facing a steady red signal may cautiously enter the intersection to turn right after stopping. The vehicle shall yield right-of-way to pedestrians within an adjacent crosswalk and to other traffic lawfully using the intersection.	\$50	\$300	\$90 \$130 if accident	
Motorists	Failure to give full time and attention to the operation of a vehicle	An operator shall, when operating a vehicle, give full time and attention to the operation of the vehicle	\$25	\$100		
Motorists	Failure to clear an intersection	No vehicle shall enter an intersection or marked crosswalk unless there is sufficient space on the other side of the intersection or crosswalk to accommodate the vehicle without obstructing the passage of other vehicles or pedestrians, not withstanding any traffic control signal indication to proceed.	\$25	\$150	\$50	
Motorists (relating to bicycles)	Opening door or permitting door to open on traffic side	No person shall open a door of a vehicle on the side where traffic is approaching unless it can be done without interfering with moving traffic or pedestrians and with safety to himself or herself and passengers.	\$25	\$100	\$70 \$110 if contributing to accident \$280 if intentionally open door to strike bicyclist	

User	DC Citation	DC Description	DC Fine	Suggested DC Fine	Maryland Fine ¹	Virginia Fine ²
Motorists (relating to bicycles)	Failure to yield right of way to vehicle at intersection	The driver of a vehicle intending to turn to the left shall yield right of way to any vehicle approaching from the opposite direction which is so close as to constitute an immediate hazard.	\$25	\$300	\$280 (failure of driver to exercise care to avoid collision with bicycle)	
Motorists (relating to bicycles)	Passing at a safe distance	The driver of a vehicle overtaking another vehicle proceeding in the same direction shall pass to the left at a safe distance....	\$25	\$300	"	
Motorists	Speed Restriction	On all streets and highways, unless otherwise designated in accordance with 2200.2, the maximum lawful speed shall be 25 MPH.	Varies			
Motorists	Blocking Crosswalks or Sidewalks	No person shall stop, stand or park a vehicle in any of the following places, except when necessary to avoid conflict with other traffic, in compliance with law or at the direction of a police officer or traffic control device: a) within an intersection, b) on a crosswalk, and f) in any driveway, alley entrance, or other way when stopping, standing or parking would obstruct the flow of pedestrian or other lawful traffic upon any sidewalk.	\$50	\$100	\$50	
Pedestrians	Walking suddenly into the path of a vehicle	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.	\$10	\$100 max	\$40	\$15 fine + \$51 processing fee (stepping into street where driver's vision obscured)

User	DC Citation	DC Description	DC Fine	Suggested DC Fine	Maryland Fine ¹	Virginia Fine ²
Pedestrians	Obstructing traffic	No pedestrian may obstruct traffic in the roadway.	\$20	\$100	\$40 (failure to yield when not in crosswalk) \$60 (standing in road to solicit rides, employment)	
Pedestrians	Walking against the "Don't walk" signal	No pedestrians shall start to cross the roadway in the direction of a "Don't Walk" signal.	\$20	\$100	\$40 for failing to obey "don't walk" signal \$80 for entering roadway against red traffic signal	\$15 fine + \$51 processing fee
Pedestrians	Crossing where prohibited	Between adjacent intersections controlled by traffic control signal devices or by police officers, pedestrians shall not cross the roadway at any place except in a crosswalk.	\$20	\$100	\$40	
Pedestrians	Walking in the street (when sidewalk provided)	Where sidewalks are provided, it shall be unlawful for any pedestrian to walk along and upon an adjacent roadway	\$10	\$100	\$40	
Bicyclists	Violating basic vehicle rules	Every person riding a bicycle on a highway shall be subjects to all the duties applicable to drivers of motor vehicles....	\$25	\$100		\$15 fine + \$51 processing fee (riding bicycle improperly on roadway)

User	DC Citation	DC Description	DC Fine	Suggested DC Fine	Maryland Fine ¹	Virginia Fine ²
Bicyclists	Riding on sidewalks prohibited within CBD	There shall be no prohibition against any person riding a bicycle upon a sidewalk within the District, so long as the rider does not create a hazard; provided, that no person shall ride a bicycle upon a sidewalk within the Central Business District....	\$25			
Bicyclists	Failure to yield to pedestrians on Sidewalks	Any person riding a bicycle upon a sidewalk shall yield the right-of-way to pedestrians and shall travel at a speed no greater than the posted speed limit of the adjacent roadway. Provide that such speed is safe for the conditions on the sidewalk	\$25	\$250		
Bicyclists	Failure to keep to the right side of the roadway	Upon all roadways of sufficient width, a vehicle shall be driven upon the right half of the roadway.	\$25	\$100	\$40	
Bicyclists	Suddenly leaving a sidewalk	No bicyclist shall suddenly leave a sidewalk and ride into the path of a vehicle which is so close that it is impossible for the driver to yield.	\$25	\$100		
Bicyclists	Headlight and rear reflector required at night	Each bicycle, when in use at night, shall be equipped with a white lamp on the front... visible from at least 500 feet and a red reflector on the rear... (a rear red lamp may be used [1201.3])	\$25	\$100	\$80 (front light & rear reflector or light required during unfavorable visibility conditions)	\$15 fine + \$51 processing fee
Bicyclists	Passing red light Failing to stop before right on red	A steady red signal shall have the following meaning: a) vehicular traffic facing the signal shall stop before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection; b) stopped vehicles shall remain standing until green, green arrow, or flashing yellow is shown except as provided in para C of this section	\$25	\$100-250		