



The District of Columbia's  
Multimodal Long-Range Transportation Plan

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## Pedestrian Element



October 2014





## The District of Columbia's Multimodal Long-Range Transportation Plan

**October 2014**

District Department of Transportation  
Policy, Planning & Sustainability Administration  
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Suite 400  
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### **moveDC Vision**

The District of Columbia will have a world-class transportation system serving the people who live, work, and visit the city. The transportation system will make the city more livable, sustainable, prosperous, and attractive. It will offer everyone in the District exceptional travel choices. As the transportation system evolves over time, the District will:

- Be more competitive and attractive locally, regionally, nationally, and internationally
- Have safer and more vibrant streets and neighborhoods
- Have cleaner air, streams, and rivers, and be more responsive to climate change
- Accommodate the travel needs of all residents, workers, and visitors regardless of age or ability
- Integrate the District's transportation system with the region's transportation network

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*A safe and vibrant walking environment is the foundation of a diverse transportation network*

# Pedestrian

## I. Everyone is a Pedestrian

Every trip—whether by bus, bike, car, or train—begins and ends with a walk. The pedestrian network is the very foundation of our transportation system. Increasing walking for any type of trip has the potential to reduce traffic congestion, add to the city's livability, and improve the environment and public health. The pedestrian network needs to work for people of all ages and abilities.

Washington, D.C. has a long history of investing in innovative technologies, treatments, and policies to encourage and support walking. The District is a city of walkers—1 in 8 of the city's residents walks to work, while the majority make one or more walking trips a day, whether out to lunch, to school and back, or home from the bus stop.<sup>1</sup> More than 880 miles of District streets have sidewalks on both sides, 150 miles of D.C. streets have sidewalks on one side, and the District has more than 150 miles of recreational paths and trails.

Strengthening the appeal and performance of the District's pedestrian system can reduce vehicle traffic and bolster the city's economy. Nationally, roughly 20% of auto trips taken are less than 1 mile in length—a distance most individuals can travel by foot if the pedestrian route is available, complete, safe, and appealing.<sup>2</sup> If the District can successfully convert even some of these short-distance vehicle trips to walk trips, congestion reduction benefits could be substantial.

This could happen in places as diverse as Forest Hills in upper northwest and Lincoln Heights in far northeast. Both communities lack complete sidewalk networks, limiting local access to schools, recreation facilities, and bus and transit stops—vital connections for residents. People with vehicles often find it easier to hop in the car to travel across Connecticut Avenue or East Capitol Street than cross those corridors on foot.

Improving pedestrian connectivity and safety means that more trips can be accomplished on foot for education, employment, and local shopping. More trips on foot could contribute to less traffic, relief for neighborhood streets, and more vibrant communities.

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<sup>1</sup> U.S. Census, American Community Survey, 2012

<sup>2</sup> U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, National Household Travel Survey. [www.fhwa.dot.gov/policyinformation/pubs/pl08021/fig4\\_5.cfm](http://www.fhwa.dot.gov/policyinformation/pubs/pl08021/fig4_5.cfm)



Improving pedestrian infrastructure and safety for the most vulnerable users, including children and aging residents, remains a priority

## II. Existing Conditions

Walking is the most fundamental form of transportation and is part of every trip.

### A. CORE FACTS

- The District ranks #7 on the list of walkable cities in the United States.<sup>3</sup>
- The District has the second highest percent of walking commute trips of U.S. cities at 11.9%.<sup>4</sup>
- The District has too many pedestrian deaths and injuries. In 2012, there were 12 pedestrian fatalities—roughly 2 for every 100,000 D.C. residents. This is much more than Seattle (0.32) but about the same as New York City (1.9).<sup>5</sup>
- The walking infrastructure in the form of sidewalks encourages the District's high percentage of pedestrians. In general, downtown is well-covered by sidewalks, while neighborhoods to the northwest and southeast lack sidewalks on one or both sides of the street. Overall 24% of the District's streets are missing sidewalks on one of both sides of the street. **Figure P.1** shows the existing pedestrian network, including sidewalks and gaps, existing trails, pedestrian corridors under study, and locations for sidewalk improvements.

### Notes on This Element

- Data used and referenced throughout this element was current as of December 2013, unless otherwise noted.
- Recommendations cited in this element will require further development as outlined in **Chapter 5**.
- Policies in this element are in addition to or augment current DDOT policies identified in the DDOT Policy Compendium.

- The District offers nearly **160 miles of pedestrian infrastructure within the recreation network**, which includes shared use paths, trails, and foot paths. The western half of the city has many green fingers with paths, including along the Potomac River, Glover Park, and Rock Creek Park. The eastern half of the city has fewer paths and trails.
- As of 2013, more than **1,600 traffic signals** exist within the District along more than 1,100 miles of non-freeway or interstate roads. While not all of these signalized intersections include complete pedestrian accommodations, they **represent opportunities for pedestrian integration and safer passage** for crossing walkers.

<sup>3</sup> Levels of Bicycling and Walking, 2012 Benchmarking Report, [www.portlandafoot.org/documents/mode%20share%20by%20city.pdf](http://www.portlandafoot.org/documents/mode%20share%20by%20city.pdf)

<sup>4</sup> U.S. Census, American Community Survey, 2012

<sup>5</sup> U.S. Department of Transportation, National Highway Traffic Safety Administration, Traffic Safety Facts, 2012

**Table P.1: Block Length and Intersection Density by Ward**

Ward	Area (Square Miles)	Total Roads (Miles)	Average Road Segment Length (Feet)	Total Intersections	Overall Intersection Density (Intersection/Square Mile)
1	2.5	59	412	476	190
6	6.2	135	392	1,040	168
4	9	170	427	1,222	136
7	8.8	147	426	1,089	124
5	10.4	162	440	1,195	115
3	10.9	174	467	1,118	103
2	8.7	121	451	838	96
8	12	137	482	922	77

Note: Area includes parks and water

- The District has dozens of unsignalized intersections on major arterial streets. In many cases, crossing an arterial street at an unsignalized intersection is difficult for pedestrians. As speed, volumes, and road widths increase, treatments at pedestrian crossings must be more robust.
- Intersection density (per square mile) and average block length (linear feet) are indicators of walkability. Intersection density speaks to the connectivity of the transportation network while block length influences crossing opportunities. **The efficiency and experience of the walking trip increases when there is a high degree of connectivity combined with a short block length.<sup>6</sup>** **Table P.1** summarizes these metrics by ward.
- Since 2005, DDOT's Safe Routes to School program has received federal funding to increase safety for District students who walk to school. Efforts to date have included participating in International Walk to School Day, conducting pedestrian and bicycle safety education and

training programs for kids, providing overtime enforcement funding for the Metropolitan Police Department (MPD), and hiring a full-time Safe Routes to School coordinator in January 2008.

- DDOT's School Crossing Guard Program works to improve the safety for students who walk, bicycle, or take transit to school. School crossing guards help students safely cross hazardous intersections and provide a safe and walkable environment for students to get to school.



*The District's sidewalks encourage pedestrian activity*

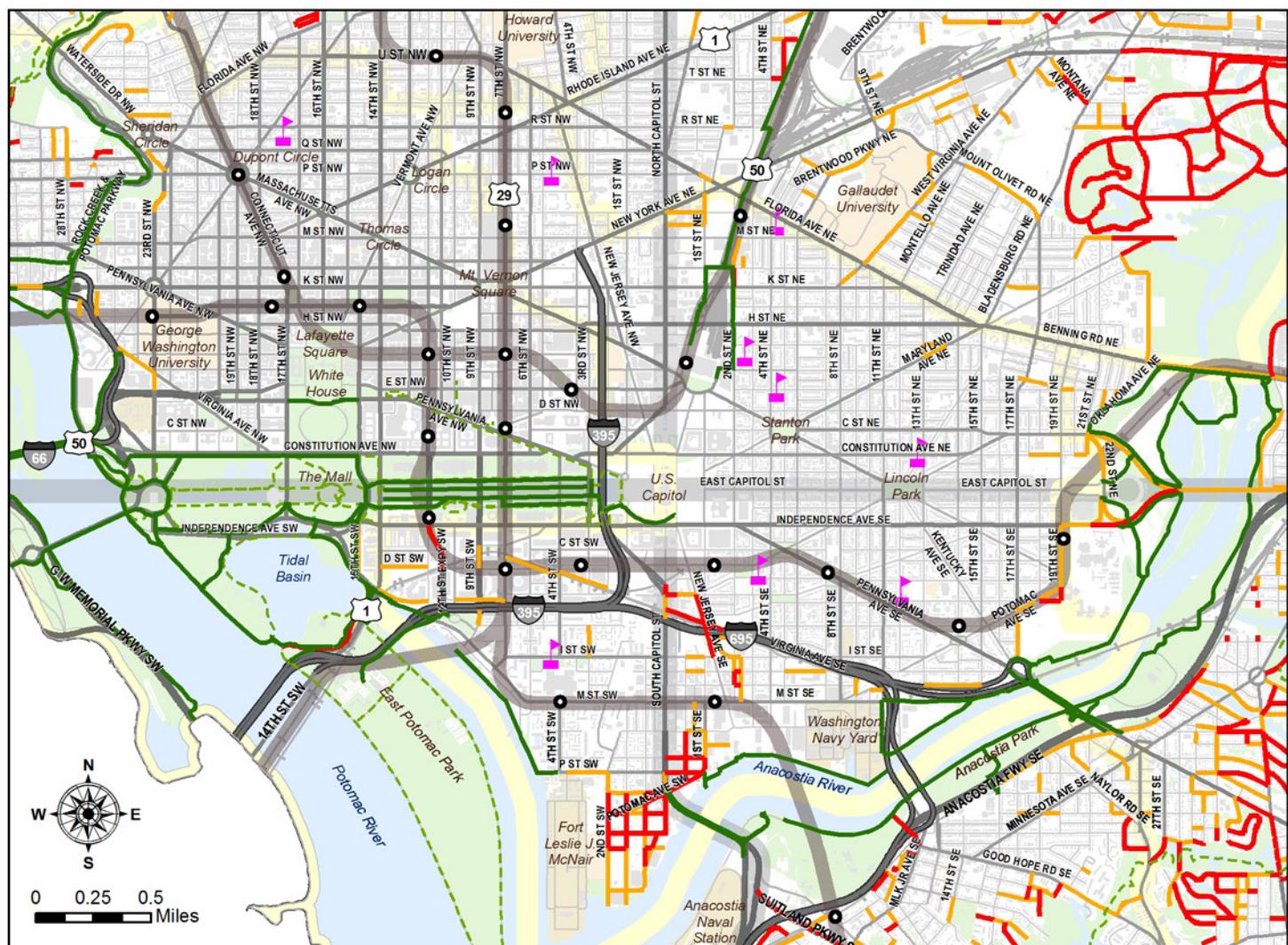
<sup>6</sup> Congress for New Urbanism recommends block density of 150 intersections per square mile ([www.cnu.org/connectedstreetnetworks](http://www.cnu.org/connectedstreetnetworks)). Block length averages range from 200–400 feet. Some communities use a maximum intersection spacing of 600 feet. See the range of examples at [www.vtpi.org/tdm/tdm116.htm](http://www.vtpi.org/tdm/tdm116.htm)

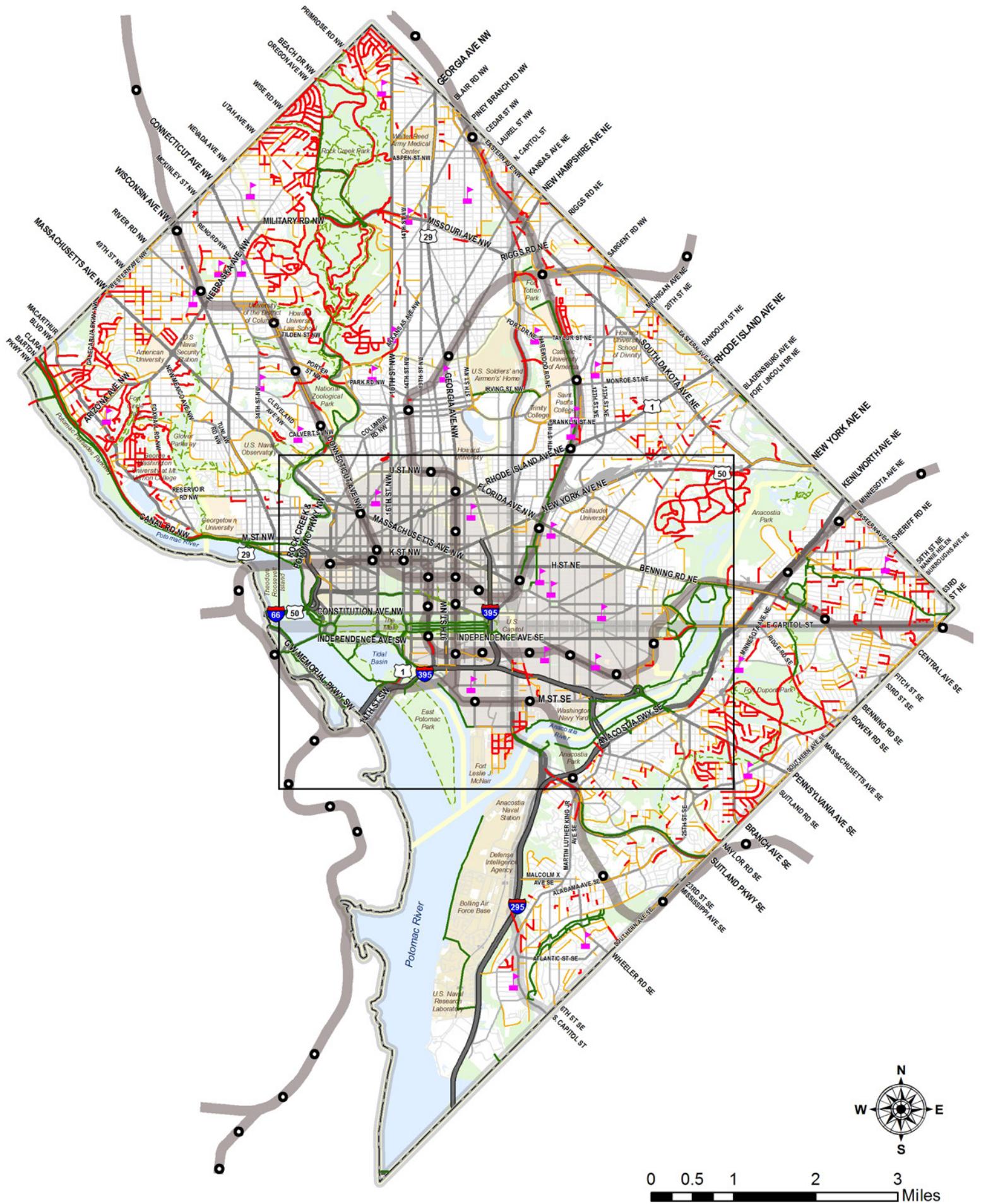
## FIGURE P.1 – EXISTING PEDESTRIAN NETWORK

This figure shows the existing pedestrian network including trails and gaps in the sidewalk network. The District has an extensive sidewalk and trail network; however, many gaps remain.

### Legend

Washington D.C. Boundary	Road	Trail
Quadrant Boundary	Railroad	Foot Path
Ward Boundary	Metrorail	Sidewalk on One Side Only
Water	Station	No Sidewalk
Park	Line	Safe Routes to School Program
University		
Military		





## B. NOTABLE SYSTEM ACHIEVEMENTS

D.C. has been awarded gold status as part of the Pedestrian and Bicycling Information Center's Walk Friendly Communities program.<sup>7</sup> Several factors support this accolade:

- **Great mix of land uses.** The District enjoys a rich and diverse mix of land uses that creates convenient walking opportunities in many parts of the District.
- **Generally continuous network.** 75% of District streets have sidewalks on both sides, which is a notable accomplishment.
- **Master plan highlights excellent changes.** The 2009 Pedestrian Master Plan tackles the physical network and local policies [including issuing policy positions on crosswalk innovations, such as Leading Pedestrian Intervals (LPI), High-intensity Activated crossWalk (HAWK) signals, and rapid flashing beacons] that have resulted in improvements to roadway design. The shift in policy direction is contributing to the creation of better quality streets for walking.
- Since 2008, **the D.C. Safe Routes to School program has provided planning assistance and significant implementation resources to more than 30 schools**, with more on the way. One school received the National Center for Safe Routes to School's James L. Oberstar Safe Routes to School Award in 2008.
- **In recent years, DDOT has systematically updated pedestrian signals and installed pedestrian countdown signals** at signalized intersections throughout the city. DDOT has installed LPIs at more than 120 intersections and the signal timing at all locations is based on a slower walk speed. In addition, "Turning Vehicles Stop for Peds" signs have been installed at selected intersections. In 2010, DDOT installed a "Barnes Dance" (all-red pedestrian signal phase) at the 7th and H Streets NW intersection and

also five Rectangular Rapid Flashing Beacons in other locations. In 2013, DDOT installed six HAWK signals at intersections in the city.

## How does DC compare to other regions?

The District **#7** on Walk Score's list of ranks **walkable cities** in the United States (2014)

D.C. has the **second highest percentage** of walking commute trips of U.S. cities at 11.9%\*

The District has been **awarded gold status** as part of the Pedestrian and Bicycling Information Center's Walk Friendly Communities program (2013)

\* U.S. Census, American Community Survey, 2012

## C. FUTURE DEMAND

D.C.'s population is growing every day, with a projected 170,000 additional residents expected to live in the District by 2040. 200,000 more jobs are projected to locate in the city by 2040. The District will see more than 2 million trips each day in 2040, accommodated by every mode. An increase of 110,000 more walking trips than occur today are projected in the moveDC plan, spread throughout the District but especially prominent where residential population will grow—in Columbia Heights, NoMa, Farragut Square, Navy Yard, Southwest Waterfront, and Anacostia—and where employment will grow, in the downtown core and the NoMa, Navy Yard, and Anacostia neighborhoods. For the District to function at its best, walking will need to be a large component, especially for trips less than 1 mile in length. To keep making D.C. a city of walkers, the District will need to continue to expand the pedestrian network, provide safe and convenient crossings, and, most importantly, design transportation infrastructure to reduce instances of pedestrian injuries and fatalities.

<sup>7</sup> The Daily Green. "The 15 Most Walkable Cities in America." [www.thedailygreen.com/environmental-news/latest/most-walkable-cities-460708#slide-1](http://www.thedailygreen.com/environmental-news/latest/most-walkable-cities-460708#slide-1) "Walking in Washington, D.C." [www.godgo.com/home/get-me-there/getting-around/walking.aspx](http://www.godgo.com/home/get-me-there/getting-around/walking.aspx)

## D. OPPORTUNITIES FOR IMPROVEMENT

While the District has achieved national recognition for its walkability, several opportunities for improvement remain, including:

- **Enhancing accessibility.** The District has dozens of uncontrolled crosswalks on high-speed, multilane streets. Using DDOT and Federal Highway Administration (FHWA) guidelines, DDOT should evaluate and improve these crossings. DDOT should improve existing signalized intersections with high pedestrian crash rates. DDOT should continue to invest in intersection improvements such as curb ramps, high-visibility crosswalks, and sidewalks that ensure the transportation system meets the needs of pedestrians of all abilities.
- **Improving the network outside of downtown.** Neighborhoods in northeast and southeast generally have longer block lengths and fewer sidewalks. These conditions negatively impact walking opportunities. DDOT should seek to provide pedestrian facility enhancements in these and other neighborhoods to improve the walking experience and accessibility.
- **Making priority investments.** DDOT should take a strategic approach to prioritizing the District's pedestrian needs to coordinate investments with critical locations such as areas near schools and transit stations or high-hazard locations. DDOT should consider geographic distribution of projects to ensure that the needs of downtown do not overshadow those of surrounding neighborhoods.
- **Promoting enforcement.** Changes to existing enforcement policies could increase motorist and pedestrian compliance in the District. In the 3-year period following the District's implementation of speed cameras to monitor vehicle speeds at 295 locations, the number of crashes at these locations has reduced by 17% and the number of injuries by 20%. Pedestrian-focused enforcement began in 2013 (data was not available at the time of this report). The District has the most robust automated enforcement in the country; however, it could benefit from a dedicated traffic enforcement



unit within the MPD. This unit would have the potential to contribute to further improvements in vehicular, bicycle, and pedestrian safety.

- **Improving intersection designs.** Closing gaps in the pedestrian network is important. Numerous intersections in the District are in need of enhanced pedestrian accommodations. DDOT should continue to invest in projects that improve intersection lighting, crosswalks, signage, pedestrian refuge islands, and pedestrian signalization and phasing.

### III. Recommendations

The District has a strong tradition of walking and pleasant pedestrian experiences starting with the *L'Enfant Plan* of grand boulevards and a street grid. moveDC builds on that tradition to ensure safe and welcoming walk environments through every Ward and neighborhood. The **Pedestrian Element** presents recommendations that will help achieve the goals of a fully multimodal transportation system that:

- Reduces the number of pedestrian injuries and fatalities
- Prioritizes pedestrians in transportation projects
- Creates a pedestrian environment that accommodates people of all ages and abilities
- Creates a fully-connected pedestrian network

The recommendations of moveDC are presented in three sections:

- Facilities
- Policies
- Education, promotion, and enforcement

**Figure P.3** shows the recommended pedestrian network including sidewalks and trails. The **Pedestrian Element** of the District's Multimodal Long-Range Transportation Plan serves as the update to the District's *2009 Pedestrian Master Plan*.<sup>8</sup>

#### A. MORE AND BETTER PEDESTRIAN FACILITY INFRASTRUCTURE

##### Recommendation A.1: Ensure all roadway reconstruction and real estate development projects include safe and convenient pedestrian facilities.

Hundreds of blocks of public space are reconstructed each year. The most cost-effective strategy for improving the pedestrian environment is for all new construction to include sidewalks that are standard width and that minimize curb cuts to avoid potential pedestrian and automobile conflict points. **Figure P.2** presents the zones to be considered when designing sidewalks. Proactively eliminating gaps in the sidewalk network also should

**Figure P.2: Public Space Zones**



Source: District of Columbia Public Realm Design Manual, 2011



Engaging and attractive urban design help create walkable neighborhoods

<sup>8</sup> Appendix P.1 presents the status of recommendations from the 2009 Pedestrian Master Plan as of December 2013

be included in all new or reconstruction projects. In 2010, the D.C. Council passed the ***Priority Sidewalk Assurance Act***, requiring DDOT to include sidewalks in reconstruction projects.

In addition to conditions after new projects open, safe and convenient pedestrian access should be provided during all construction activities. This includes providing a fully-functioning, clearly-signed pedestrian route safe from modal conflicts without requiring a significant detour.

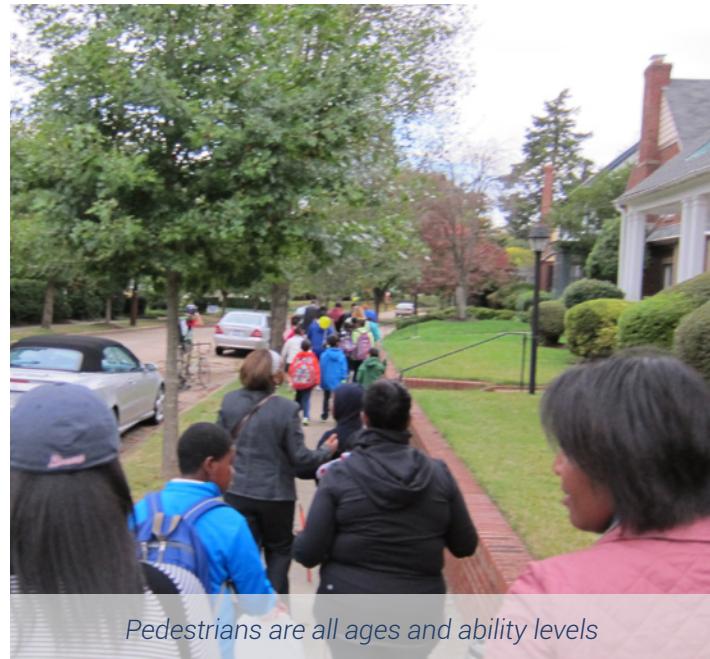
### **Recommendation A.2: Implement corridor-level pedestrian improvements in key areas.**

The **2009 Pedestrian Master Plan** analyzed street segments throughout the District based on two broad factors: "pedestrian potential" (how much pedestrian activity is expected in particular locations) and "pedestrian deficiency" (how challenging it is for pedestrians to travel along or cross particular streets). Pedestrian crashes were then overlaid to identify an initial set of priority corridors. All street segments with high potential for pedestrian activity and high deficiency were considered to be priorities for further evaluation and recommendations.

DDOT should continue to implement pedestrian safety and access improvements for these corridors, including sidewalk repair and construction, relocation of bus stops, signalization changes, reduced crossing distances at intersections, and a wide variety of other pedestrian safety improvements. DDOT should continue to evaluate and identify key corridors using this methodology.

### **Recommendation A.3: Create a pedestrian environment that accommodates people of all ages and abilities.**

All sidewalks should be constructed in conformance with the latest **Americans with Disabilities Act** (ADA) accessibility guidelines, but should also strive to meet the more standards of universal design—designs meant to produce environments that are accessible to people of all abilities—and the Architectural and Transportation Barriers Compliance Board's **Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way**.<sup>9</sup>



Where sidewalks are not possible, street design should ensure the environment is safe for walking. In addition to providing a complete network of sidewalks, pedestrian crossings should be established at all legs of an intersection unless a special exception can be clearly justified. Consideration also should be given to the benefits of street trees to enhance the walking environment, as well as signal timing for pedestrians to ensure a safe walking environment.

### **Recommendation A.4: Install new sidewalks.**

Creating a pedestrian environment that accommodates people of all ages and abilities starts with providing a sidewalk on at least one side of every street throughout the District. Approximately 10% of the blocks in the District have missing sidewalks on one or both sides of the street. The presence of sidewalks is critical to the safety of pedestrians.

The District should seek to have sidewalks on at least one side of every street and preferably on both sides of every street. On streets without sidewalks where no reconstruction is planned, DDOT should build sidewalks in accordance with the **2010 Priority Sidewalk Assurance Act** which lists the following priority areas: schools, parks and recreation facilities, transit stops, areas with pedestrian safety risks, and streets where residents have petitioned for new sidewalks.

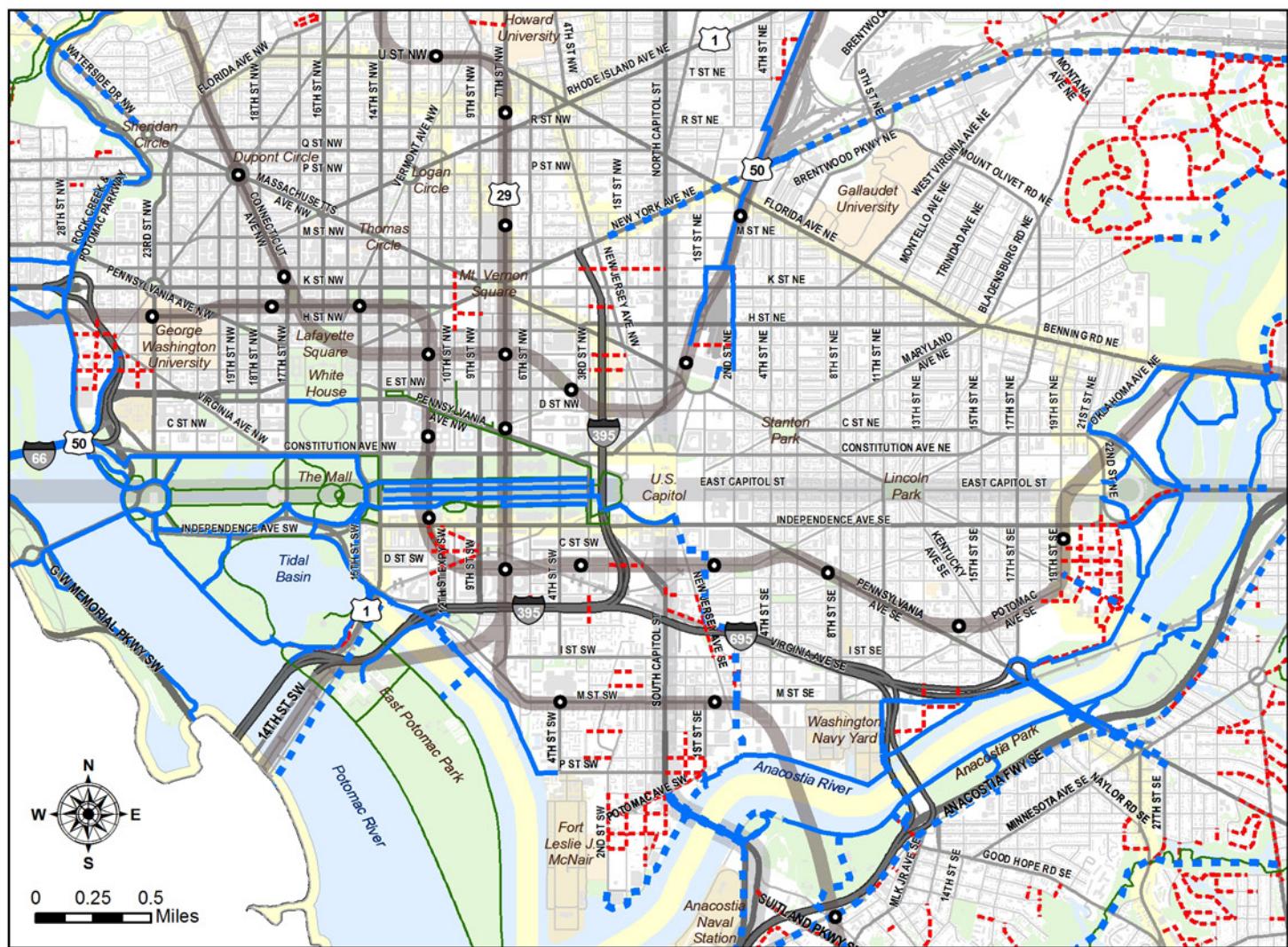
<sup>9</sup> [www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines](http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines)

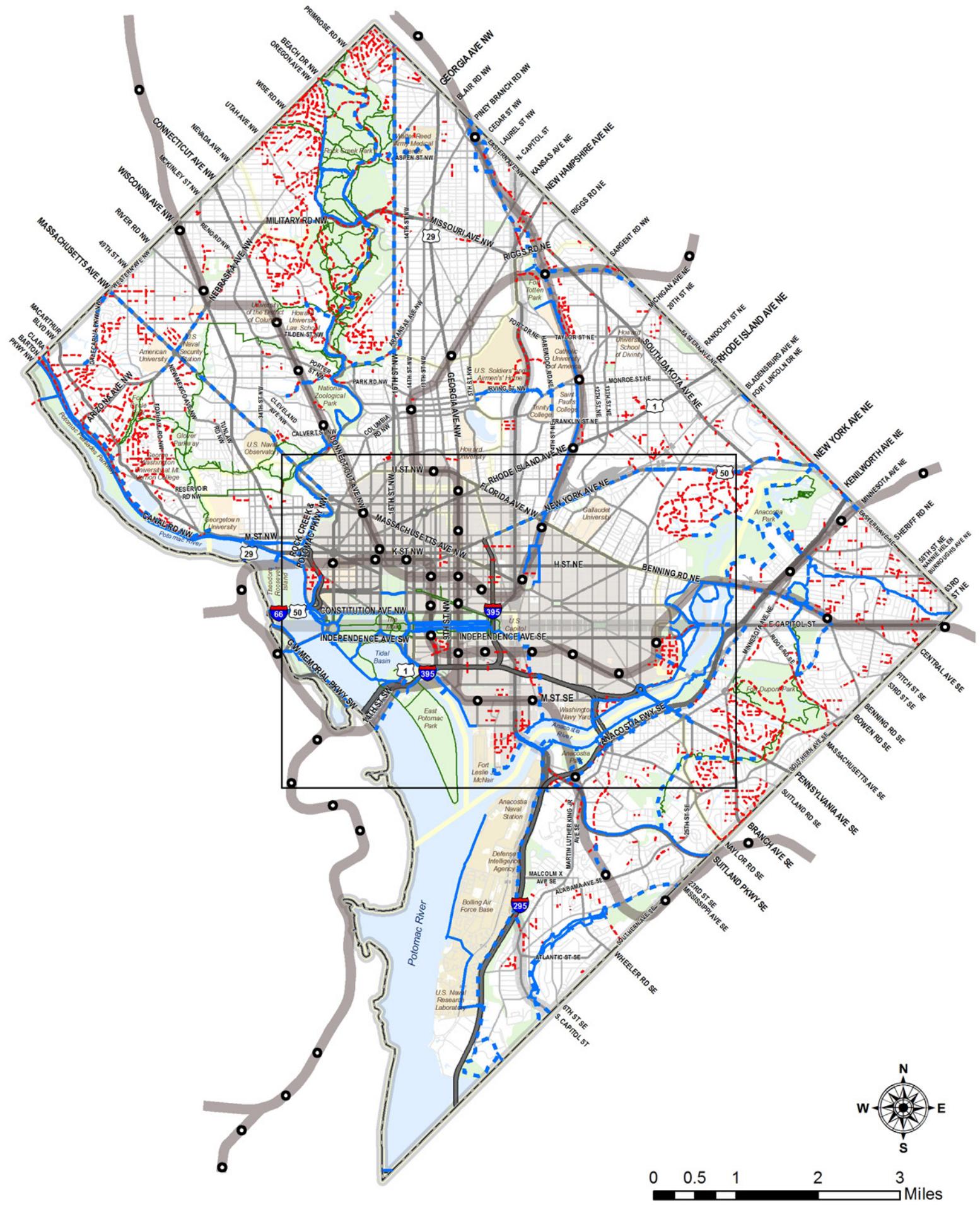
## FIGURE P.3 – RECOMMENDED PEDESTRIAN NETWORK

This map shows the recommended trail network as well as locations for new sidewalks.

### Legend

	Washington D.C. Boundary
	Quadrant Boundary
	Ward Boundary
	Water
	Park
	University
	Military
	Monumental Core
	<b>Existing Infrastructure</b>
	Trail
	Foot Path
	Metrorail Station
	Metrorail Line
	Road
	Railroad
	<b>moveDC Plan Elements - Future</b>
	Trail
	Sidewalk







*Regular maintenance is critical for a safe pedestrian environment*



*Connectivity is key to a thriving pedestrian network*

### **Recommendation A.5: Improve the system for prioritizing sidewalk maintenance and repair.**

DDOT should refine the system for inspecting sidewalks and identifying and cataloging needed repairs for sidewalks that fall within the maintenance responsibility of the District. The system should include a method for residents and visitors to make requests for specific locations in need of repair. Sidewalk repairs and reconstruction should be prioritized based on high pedestrian demand and poor walking conditions, requests, and meeting ADA guidelines.

### **Recommendation A.6: Improve pedestrian access and safety at controlled crossings and intersections.**

DDOT should make safety improvements at signalized intersections throughout the District where there is significant pedestrian activity (such as in the Central Employment Area and adjacent to Metrorail stations and schools), where there are conflicts between turning motorists and pedestrians, and where there are higher frequencies of pedestrian crashes. Pedestrian crossings should be provided across all legs of an intersection unless a special exception can be clearly justified. In addition, as intersections are redesigned, turning radii should be as tight as possible to slow turning vehicles and improve the visibility of pedestrians at intersections.

In locations with high pedestrian activity (pedestrians present at least 50% of the cycle at peak hour), particularly around transit stations, pedestrian actuated signals should not be used. In these cases, signal timing should be modified to provide a walk phase during each cycle. Sufficient time for pedestrians to safely cross intersections should be included in all signal timings.

### **Recommendation A.7: Improve pedestrian access and safety at uncontrolled crossings and intersections.**

The decision regarding where to mark crosswalks and what types of engineering treatments to use is complex. The most recent national research on pedestrian safety indicates that on multi-lane arterials with higher traffic volumes (more than 12,000 average daily traffic), uncontrolled crossings with marked crosswalks alone were associated with higher rates of pedestrian crashes.<sup>10</sup> In addition to marked crosswalks, these types of uncontrolled crossing locations require other engineering treatments, such as median refuge islands and pedestrian signals in order to improve the safety of pedestrians crossing the roadway. DDOT should continue to improve uncontrolled crossings throughout the city.



*Uncontrolled crossings should incorporate traffic calming measures whenever possible*

<sup>10</sup> Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations. Federal Highway Administration, 2005 available at [www.fhwa.dot.gov/publications/research/safety/04100](http://www.fhwa.dot.gov/publications/research/safety/04100)

### **Recommendation A.8: Improve pedestrian access and safety at bus stops while maximizing transit efficiency.**

Bus stops throughout the District are primarily located on the near-side of intersections. When bus stops are on the near-side of an intersection, pedestrians often cross in front of the bus, which blocks sight lines to adjacent traffic. Where possible, bus stops should be located on the far-side of intersections and at controlled crossings when located on higher volume multi-lane arterials. Far-side bus stops encourage pedestrians to cross behind the bus which improves visibility to other motorists. Bus stops located on the far side of signalized intersections also improve transit efficiency and minimize parking loss to neighborhoods.

In conjunction with Recommendations A.5 and A.6, intersections with bus stops should be a first priority for further safety studies, aligning stops with signals and shifting to far-side stops when appropriate.

### **Recommendation A.9: Create new street connections to maximize connectivity.**

When possible, DDOT should seek to reestablish street connectivity, increase intersection density, and maximize the functionality of the pedestrian network. This could take the form of new streets as part of development or connections that reestablish access along a historic right-of-way for some or all modes (such as the recent City Center project). Connectivity within the pedestrian network can be added as part of the general right-of-way or with pedestrian plazas.<sup>11</sup>

The District should prioritize connections that can reduce walking distances to and from transit stations or activity centers. Potential currently exists to establish new street grids through large campuses and institutions that are currently being considered for redevelopment, like the Walter Reed Medical Center. These new street connections do not need to be owned by the District to be successful as long as public access is provided.



### **Recommendation A.10: Establish a consistent policy towards traffic calming in neighborhoods.**

Traffic calming is effective in reducing negative impacts of vehicular traffic (especially speed, accident rates, and through-traffic volume on neighborhood streets). Achieving successful outcomes and sustained community support will be accomplished by using a broad palette of physical designs for traffic calming treatments as well as a consistent policy on the conditions in which each can be used.

The District has implemented traffic calming in many of its neighborhoods, including a program of Traffic Calming Assessments intended to observe traffic conditions and to identify opportunities. This program was designed to respond to neighborhood concerns and to evaluate a focused area of neighborhoods for ways that traffic calming approaches might be implemented. DDOT also has created the **Livability Program** to conduct neighborhood transportation planning studies and advance small-scale improvements to the public realm and safety.

As this program expands, it should shift from a policy of neighborhood-requested traffic calming to include standard assessments of where traffic calming is appropriate. These should lead to place-appropriate traffic calming techniques to ensure that design interventions are well coordinated with their neighborhood context. DDOT already permits a wide range of traffic calming design options, representing a sophisticated understanding of the practice.<sup>12</sup>

<sup>11</sup> Refer to Recommendations B.6 and B.9 in the Sustainability and Livability Element of this plan.

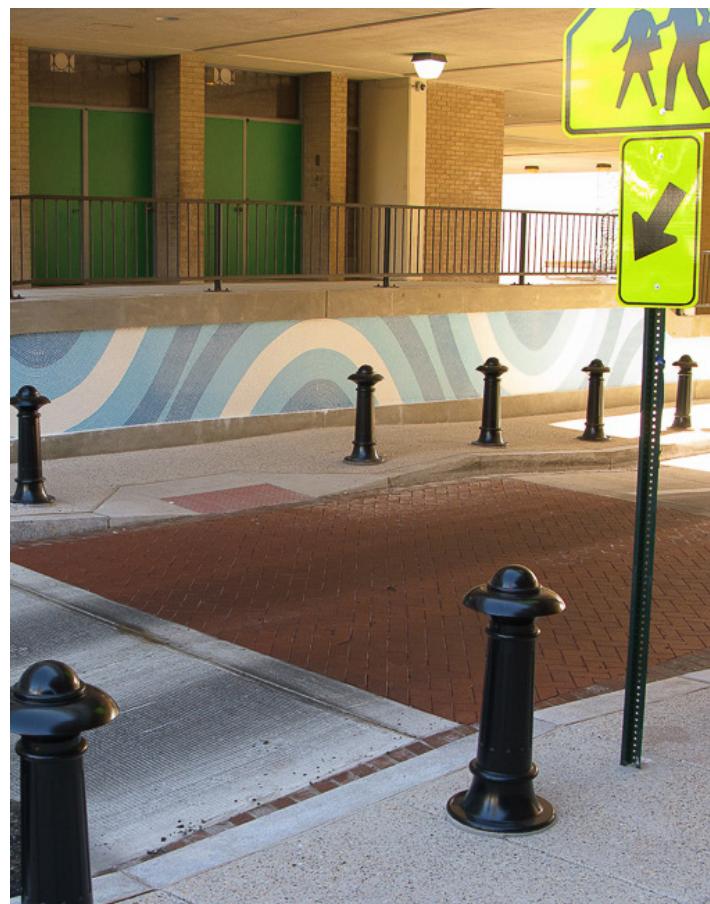
<sup>12</sup> Refer to the traffic calming page on DDOT's website (<http://ddot.dc.gov/service/traffic-calming>) for allowable traffic calming designs.

In addition to site-specific traffic calming, DDOT should establish a neighborhood-based approach to traffic calming that includes pairing a reduction of vehicle speeds with safety measures within a select area in order to create wider areas of improved safety and livability.

## B. ENACT MORE PEDESTRIAN-PRIORITYZING POLICIES

### Recommendation B.1: Incorporate pedestrian priority into planning, policy, and programming.

The District should adopt formal policy statements to confirm that pedestrians are the District's highest transportation priority. Ongoing DDOT policies, standards, and design guidelines also can reinforce this priority.



Changes to standard design guidelines can improve how pedestrian safety is integrated into normal street construction and maintenance

### Recommendation B.2: Revise the DDOT Design and Engineering Manual to better address pedestrian safety.

DDOT already has established many policies and standards with respect to pedestrian facility design. For example, the **DDOT Design and Engineering Manual** (the Manual) already addresses ADA guidelines, sidewalks, and traffic calming. Pedestrian issues are incorporated into many pieces of the Manual that address various aspects of roadway design.

A number of additions and adjustments are needed to address the safety and comfort of pedestrians—for example, there is a critical need to address the design of uncontrolled pedestrian crossings (those that occur at mid-block locations and at intersections where vehicle traffic is not controlled with a stop sign or traffic signal). Uncontrolled intersections exist throughout the District and represent a significant safety issue for pedestrians (also see Recommendations A.5, A. 6, and A.9).

The Manual included some recommendations from the **2009 Pedestrian Master Plan**. To supplement the Manual, DDOT developed **Pedestrian Design Guidelines** to highlight pedestrian engineering topics and depict detailed engineering guidance. The next update of the Manual, planned for 2014, should incorporate the prioritization of pedestrian safety and accessibility with leading-edge techniques.



DDOT completes the restoration of Old Market House Square in Anacostia

### **Recommendation B.3: Continue to provide adequate agency training and staff to implement pedestrian infrastructure.**

Ongoing education is needed to ensure that project consultants, DDOT planners, inspectors, engineers, and staff that oversee transportation studies and construction projects that impact the public right-of-way are aware of new pedestrian design policies and have the necessary information to carry them out. DDOT has hosted multiple training sessions and webinars since 2009 and should continue this practice.

### **Recommendation B.4: Evaluate progress on implementing the pedestrian design policies recommended in this plan.**

It will be important to evaluate progress in implementing policy changes over time, as well as to reassess next steps and priorities as new issues arise. DDOT should assess progress on policy changes and develop a plan for implementing policy changes and any factors limiting implementation. DDOT should identify interim policy statements that address key pedestrian safety and accessibility issues. **Appendix P.1** presents the status of recommendations from the **2009 Pedestrian Master Plan** as of December 2013.



## **C. PROVIDE MORE PEDESTRIAN-RELATED EDUCATION, PROMOTION, AND ENFORCEMENT**

### **Recommendation C.1: Provide educational campaign programs for new pedestrian facilities.**

Educational campaigns should be developed to alert residents, employees, and visitors of new pedestrian facilities within the District. As an example, DDOT developed an educational brochure for the pilot HAWK and the Barnes Dance (pedestrian scramble) so that all users would become aware of how to use these facilities.

### **Recommendation C.2: Expand the District's Photo Radar Speeding Reduction Program.**

Decreased motor vehicle speeds are essential to improving pedestrian safety in the District. Motorists exceeding posted speed limits are significant hazards for pedestrians. Higher vehicle speeds on non-freeway corridors tend to increase the frequency and severity of pedestrian crashes and reduce the comfort of pedestrians walking along the street.

MPD has been successfully operating an **Automated Red-Light Enforcement Program** since 199 and **Photo Radar Speeding Reduction Program** since 2001. Mobile photo radar units and fixed-location cameras are used in enforcement zones selected by MPD based on speeding history, speed-related incidents, and proximity to locations with vulnerable populations.

In November 2013, MPD expanded automated enforcement to include 16 stop signs and eight uncontrolled crosswalks. If successful, these new enforcement techniques should be expanded and evolve as technology improves.

### **Recommendation C.3: Expand the DDOT Pedestrian Program website.**

DDOT should continue to maintain the District **Pedestrian Program** web page. Additions to this page could include:

- Online tools for residents to evaluate and report conditions of the pedestrian environment
- Checklist of projects that have recently been implemented throughout the District
- Updates on status of the pedestrian elements of the **moveDC** plan



Wide crosswalks can improve conditions, increase driver awareness of pedestrian crossings, and improve safety conditions for all users

### Recommendation C.4: Expand DDOT's Pedestrian Safety Campaign efforts.

The District should continue and expand its current safety education program. Safety messages specifically related to pedestrians should be broadcast year round through media outlets including radio, TV, online and printed material only in targeted locations (such as the D.C. Department of Motor Vehicles [DMV], schools, and the DDOT website). Particular attention should be paid to revising driver education and testing standards.

The twice-annual regional **Street Smart Safety Campaign** continues to be DDOT's principal outreach tool for pedestrian safety education with award-winning new visual materials debuting in spring 2014.

### Recommendation C.5: Expand the Safe Routes to School program.

Through a combination of engineering, education, encouragement, and enforcement strategies, Safe Routes to School programs have the ability to impact traffic safety, traffic congestion, pollution, and air quality issues. They also present a unique opportunity to address personal safety concerns and significant child health problems while enhancing livability within the District.

It is important to note that the Safe Routes to School program does not encourage students to walk or bike alone in unsafe locations. It provides a method for improving conditions and encourages parents to walk and bike with students to school.

DDOT should increase coordination with the District of Columbia Public Schools, Deputy Mayor for Education, Office of the State Superintendent for Education, and the D.C. Public Charter School Board to identify schools to initiate Safe Routes to School programs that address all five "E's" (education, enforcement, encouragement, engineering, and evaluation). Involvement from other key community partners (health organizations, neighborhood groups, parent-teacher associations, advocacy groups, and others) should be sought in order to create sustainable programs that do not rely on continuous federal funding.

The goal is to offer a Safe Routes to School program to every District school interested in participating and to address pedestrian safety at all schools. The program currently serves public and private schools with kindergarten through 8th grade (per the original legislation), but should be expanded to cover public and private schools at all levels (preschool through high school).

DDOT should develop partnerships to ensure that comprehensive pedestrian and bicycle safety education is available to every District student. DDOT also should identify capital funding to implement recommendations stemming from school safety studies.

### Recommendation C.6: Educate motorists about safe operating behavior around pedestrians.

The District should educate motorists about pedestrian safety through media campaigns, driver's tests, and the distribution of written materials. DDOT also should directly engage taxi cab, bus, and truck drivers about safe driving behavior around pedestrians. DDOT should work with the DMV to incorporate safe driving behavior around pedestrians on the knowledge and road skills tests for obtaining a driver's license.

## IV. Performance

The plan's recommendations are intended to result in a safer, better connected, more attractive, and more appealing walking environment for everyone. The recommendations address policy, education, projects, and programs. The **moveDC** plan goals (described in **Chapter 1**) were used in the evaluation of the **Pedestrian Element**'s performance, similar to the other **Modal Elements** of the **moveDC** plan.

The Districtwide Travel Demand Model, the project's spatial analysis model, and qualitative reviews were used to develop the metrics for each pedestrian-related performance measure. The **Pedestrian Element**'s overall performance—by relevant goal category—is summarized in **Table P.2**.

**Table P.2: moveDC Pedestrian Element Performance**

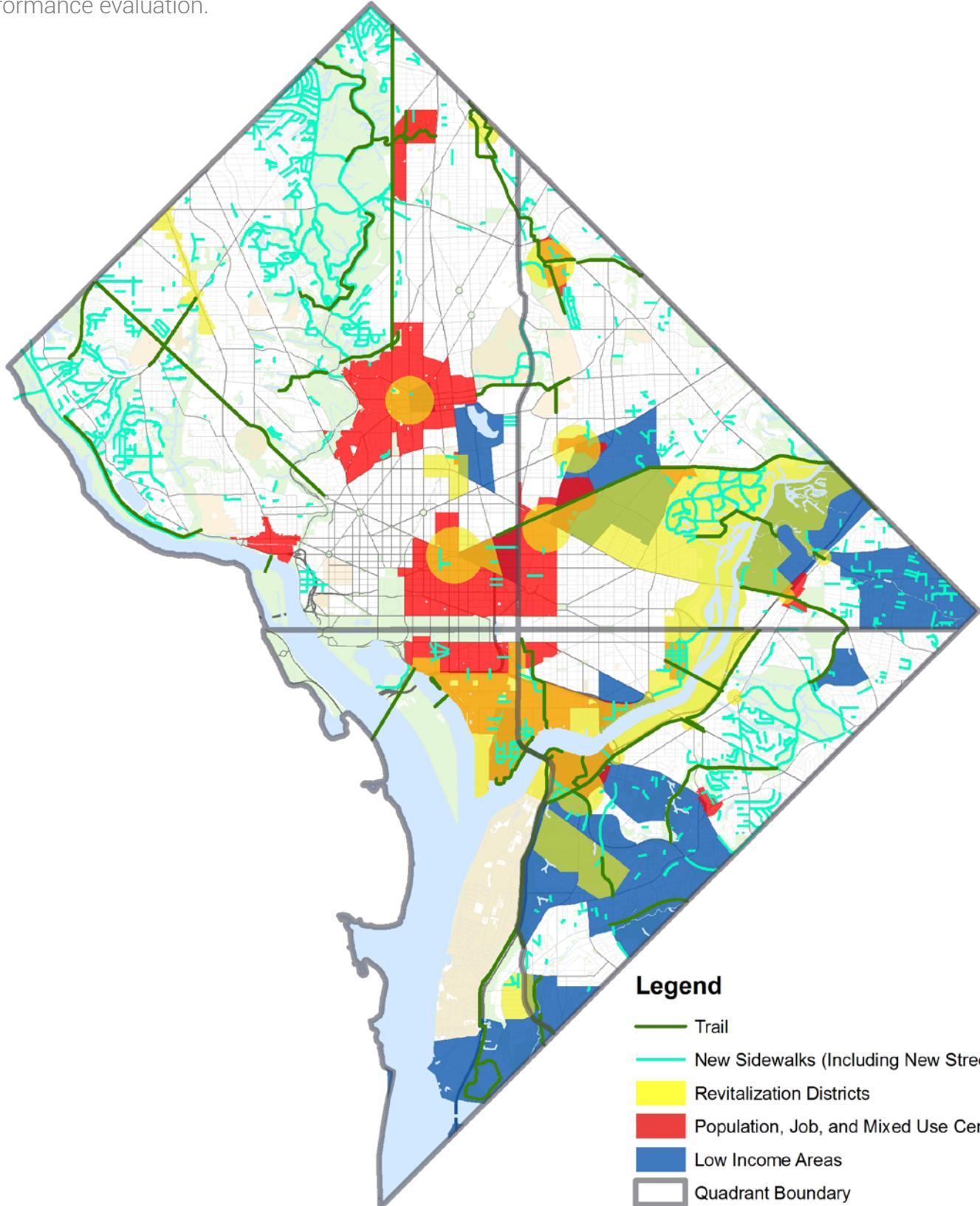
Goal	Metric	Performance
<b>Sustainability &amp; Health</b>	Increase non-auto mode split	<ul style="list-style-type: none"> <li>A 29% pedestrian mode share is forecast for trips that start and end in the District</li> </ul>
	Increase access to parks and green space	<ul style="list-style-type: none"> <li>Create new trails accessing 39 parks</li> </ul>
	Encourage active transportation for health benefits	<ul style="list-style-type: none"> <li>Accommodate people of all ages and abilities with sidewalk on at least one side of every street and safer street crossings</li> <li>Education on new pedestrian facilities</li> <li>Expanded Pedestrian Program website</li> <li>Expanded implementation of the Safe Routes to School program</li> </ul>
	Reduce air and water quality impacts of transportation	<ul style="list-style-type: none"> <li>Increase in non-auto trips has the potential to reduce air and water quality impacts</li> </ul>
	Prepare the transportation system for changing environmental and climatological conditions	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
<b>Citywide Accessibility &amp; Mobility</b>	Increase the person-carrying capacity of the transportation system	<ul style="list-style-type: none"> <li>Plan recommendations result in increased pedestrian capacity Districtwide compared to the existing (2013) network</li> </ul>
	Improve system reliability	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
	Reduce financial barriers to the lowest-income transportation system users	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
	Accommodate the movement and management of freight and goods	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
	Integrate the District's transportation system with the region's transportation network	<ul style="list-style-type: none"> <li>Connect with many regional trail facilities or regional trail initiatives including:           <ul style="list-style-type: none"> <li>Anacostia Park Trail/Prince George's County's Colmar Manor Park Trail</li> <li>Gallatin Street NE Trail/Prince George's County Trail Connection to West Hyattsville Metrorail Station</li> <li>Long Bridge Trail/Mount Vernon Trail in Arlington County</li> <li>New York Avenue NE trail/Prince George's County's Colmar Manor Park Trail</li> <li>Oxon Run Trail/Prince George's County's Oxon Run Trail</li> <li>Pennsylvania Avenue SE Trail/Prince George's County's Pennsylvania Avenue bicycle lane/trail</li> <li>Rock Creek Park (Beach Drive NW) Trail/Montgomery County's Rock Creek Trail</li> </ul> </li> </ul>

**Table P.2: moveDC Pedestrian Element Performance (continued)**

GOAL	METRIC	PERFORMANCE
Neighborhood Accessibility & Connectivity	Increase the coverage of all modal networks throughout the District	<ul style="list-style-type: none"> <li>Provide 100% of the forecast District population and employment with access to a sidewalk on every block by 2040</li> </ul>
	Increase the number of transportation choices for travel between city neighborhoods	<ul style="list-style-type: none"> <li>Increased ability to walk between city neighborhoods</li> </ul>
	Increase transportation availability to population centers and jobs, schools, amenities, and services	<ul style="list-style-type: none"> <li>Create new trails or sidewalks accessing four population centers, eight employment centers, and 13 mixed-use centers. (See <b>Figure P.4.</b>)</li> </ul>
	Increase transportation availability to economically challenged or targeted redevelopment areas	<ul style="list-style-type: none"> <li>New trails or sidewalks accessing 30 out of 33 low-income Census Tracts and 17 designated redevelopment areas. (See <b>Figure P.4.</b>)</li> </ul>
Safety & Security	Improve safety for all users	<ul style="list-style-type: none"> <li>Increase pedestrian safety by:           <ul style="list-style-type: none"> <li>Accommodating pedestrians of all ages and abilities with a sidewalk on at least one side of every street</li> <li>Improving access and safety at crossings and intersections</li> <li>Expanding the District's Photo Radar Speeding Reduction Program</li> <li>Continuing DDOT's Pedestrian Safety Campaign efforts</li> <li>Expanding the implementation of the Safe Routes to School program</li> </ul> </li> </ul>
	Improve redundancy of transportation networks to handle emergencies	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
	Expand sidewalk network	<ul style="list-style-type: none"> <li>Create at least 127 new miles of sidewalk by locating sidewalks on at least one side of every street in the District</li> </ul>
	Maintain ability to evacuate District in case of emergency	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
	Preserve key functions without impacting the transportation system	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
Public Space	Protect and enhance important corridors and urban landscapes	<ul style="list-style-type: none"> <li>Not applicable for this element</li> </ul>
	Make streets functional, beautiful, and walkable	<ul style="list-style-type: none"> <li>Accommodate pedestrians of all ages and abilities by providing a sidewalk on at least one side of every street</li> <li>Ensure all transportation and real estate development projects include safe, convenient, and functional pedestrian facilities</li> <li>Use the District's Public Realm Design Guidelines to incorporate landscaping and other visual improvements</li> </ul>
	Increase tree coverage	<ul style="list-style-type: none"> <li>DDOT sidewalk standards include tree box space</li> </ul>
Preservation	Maximize reliability for all District transportation infrastructure by investing in maintenance and asset management	<ul style="list-style-type: none"> <li>New sidewalks and trails will require maintenance; create a revolving cycle of improving each segment within the District on a 25-year repair and replacement schedule</li> </ul>

## FIGURE P.4 – MOVEDC PEDESTRIAN ELEMENT ACCESSIBILITY MAP

This figure shows District-designated revitalization districts; population, job, and mixed-use centers identified for **moveDC** planning purposes; and low-income areas based on U.S. Census data in the context of **moveDC** pedestrian network recommendations. This information was used in plan performance evaluation.





Pedestrian activity around the Navy Yard Metrorail Station after a Washington Nationals baseball game

## V. Vision to Reality

**moveDC** is a long-term plan for a reason—achieving its full vision will require decades of investment and continued commitment from city leaders and support from innumerable local and regional partners. The return on the city's investment of time and funds spent implementing the **moveDC** plan's recommendations will be creating stronger, more vital neighborhoods; sharing prosperity among all of the city's residents; meeting our responsibility to the environment; and making the District more competitive among its peers.

This section provides guidance for prioritizing and implementing **Pedestrian Element** infrastructure recommendations. Additional information on implementation can be found in **Chapter 5** of the **moveDC** plan.

### A. USING THIS ELEMENT

The **Pedestrian Element** is a starting point for investments in the pedestrian system for the District in the next 25 years. It presents needed and realistic pedestrian network investments and policy concepts that, together, support the **moveDC** plan's other elements in achieving the goals established as a part of the planning process.

The **moveDC** plan does not present specific and final pedestrian system design solutions, nor has the plan analyzed all of the pedestrian project-level trade-offs for individual components of the plan. The **Pedestrian Element** of **moveDC** will need to be updated periodically to take into account the many changes the future will bring that cannot be anticipated today. The need for updates is the recognition that some things always change in a city as dynamic as Washington, D.C.

Finally, some recommendations of **moveDC**, as with the **1997 Transportation Plan for the District of Columbia**, may not become reality. Regular updates to the **Pedestrian Element** in coordination with the overall **moveDC** plan will help ensure the **Pedestrian Element**'s recommendations continues to make sense in the context of changing demands on the system.

### B. PROJECT DEVELOPMENT PROCESS

Some of the pedestrian infrastructure recommendations included in the **moveDC** plan are already in the design process or ready for construction; however, the vast majority of **moveDC**'s recommendations will need to undergo additional evaluation and further development—consistent with established city processes prior to their implementation.

The DDOT **Environmental Policy and Process Manual, 2nd Edition** (2012) further describes DDOT's Project Development Process. The additional evaluation and development processes are likely to adjust the character, location, and other elements of some recommendations as they move toward implementation.

### C. IMPLEMENTATION THROUGH PARTNERSHIP

While the implementation of most capital infrastructure recommendations will be led by DDOT, some are likely to occur through partnership among DDOT and other agencies or organizations, or with DDOT in a support role to other agencies or organizations.

## D. INFRASTRUCTURE COSTS

The planning-level cost for identified **Pedestrian Element** infrastructure recommendations is \$57 million and was developed in current year (2014) dollars at a long-range planning level of detail and accuracy. Due to the nature of long-range planning, all costs should be reevaluated in future project development activities. With respect to the planning-level cost estimates shown, the following were generally assumed:

- Wherever possible, the cost estimates utilized project-specific costs, including costs from the Metropolitan Washington Council of Governments (MWCOG) **FY13-19 Transportation Improvement Program** (TIP), the FY14-20 District budget and other project-specific estimates
- Additional costs for **moveDC** recommendations were estimated using a generalized unit cost related to project type. The unit costs were derived from existing District project costs.

### Programs

In the context of implementation for **moveDC**, the term "program" is used to describe ongoing funding commitments for operations, education, maintenance, regular infrastructure improvements that are not defined as projects, or other items, such as debt service on Grant Anticipation Revenue Vehicle (GARVEE) bonds. Pedestrian program costs are estimated to be \$70 million. Additional information on costs for programs are presented in **Chapter 5**.

### Asset Management

Costs within this area of **moveDC** include ongoing assessments, maintenance, and repairs of transportation infrastructure. Estimated costs for pedestrian asset management are \$160 million and are presented in **Chapter 5**.

## E. BUDGETING PROCESS

**moveDC** was developed in a fiscally unconstrained environment, but DDOT recognizes that it operates in an environment constrained by available funding. While the financial plan in **Chapter 5**, identifies new sources of revenue to help close the cost/revenue gap, an annual gap is likely to remain throughout the plan's implementation horizon.

Because of this fiscal reality, **moveDC** has developed a methodology for prioritizing recommendations that can assist in the process of making annual budget decisions. This approach is described in **Chapter 5**. From a broad prioritization perspective, DDOT should take the following approach:

- Fund basic state of good repair (SOGR) and maintenance for existing programs
- Allocate additional resources that accelerate the pace of reaching SOGR for all infrastructure
- Fund critical transportation infrastructure investments to address deficiencies, safety, or capacity needs

Critical investments in transportation infrastructure have been prioritized in the **moveDC** plan, but many will still need to go through DDOT's Project Development Process prior to implementation. DDOT should only seek to advance investments that have the most merit to meet **moveDC**'s goals.

It should be noted that capital programs and asset management—both of which are related to ensuring safe and reliable operations and adequate maintenance of existing system assets—were not prioritized. The level at which each of these are funded is established through normal annual District budget processes.

## F. PRIORITIZATION PROCESS

In addition to ongoing programs that develop and improve pedestrian infrastructure, specific Districtwide sidewalk improvement projects are identified and prioritized based on an understanding of community and stakeholder support, the District's **Priority Sidewalk Assurance Act of 2010**, and pedestrian safety. Section 2.b of the **Sidewalk Assurance Act** states that for roadways that are missing sidewalks, but are not undergoing major construction, sidewalk installation priority will include:

- Missing sidewalks in school areas
- Routes that provide access to parks and recreational facilities
- Transit stops

Prioritization criteria for safety consider whether sidewalks are missing on one or both sides of a street and roadway classification. Sidewalks along streets with a higher classification and corresponding higher vehicular volumes and/or speeds, receive a higher priority for sidewalk installation than local streets with lower traffic volumes and speeds.

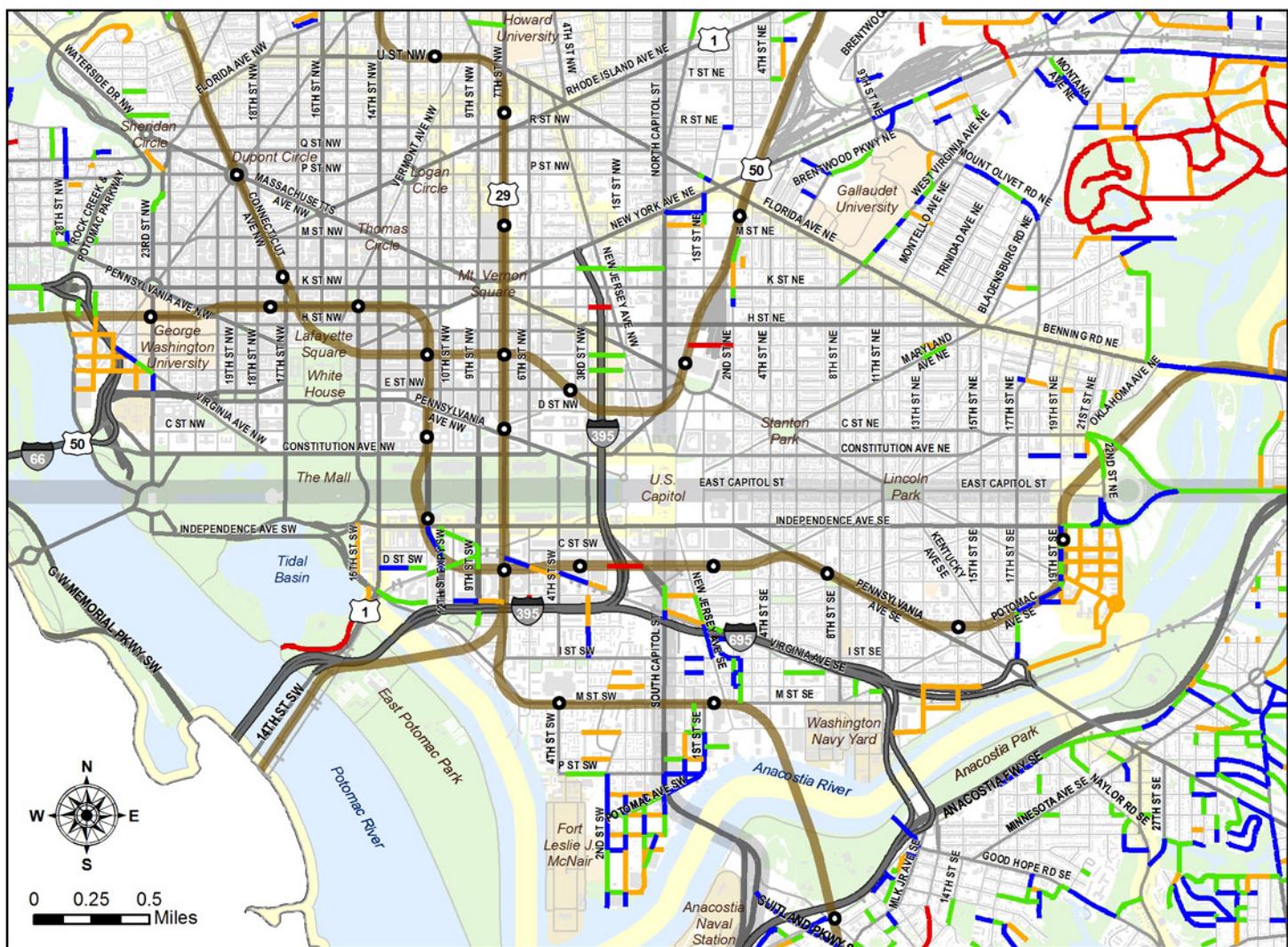
Sidewalk recommendations were evaluated using each criterion and then processed into four tiers. The tiers were then used to rank and organize priorities. Generally, investments within Tier 1 are assumed to be the highest priorities for implementation, whereas those in Tier 4 projects are lower priorities. **Figure P.5** shows tiered sidewalk priorities.

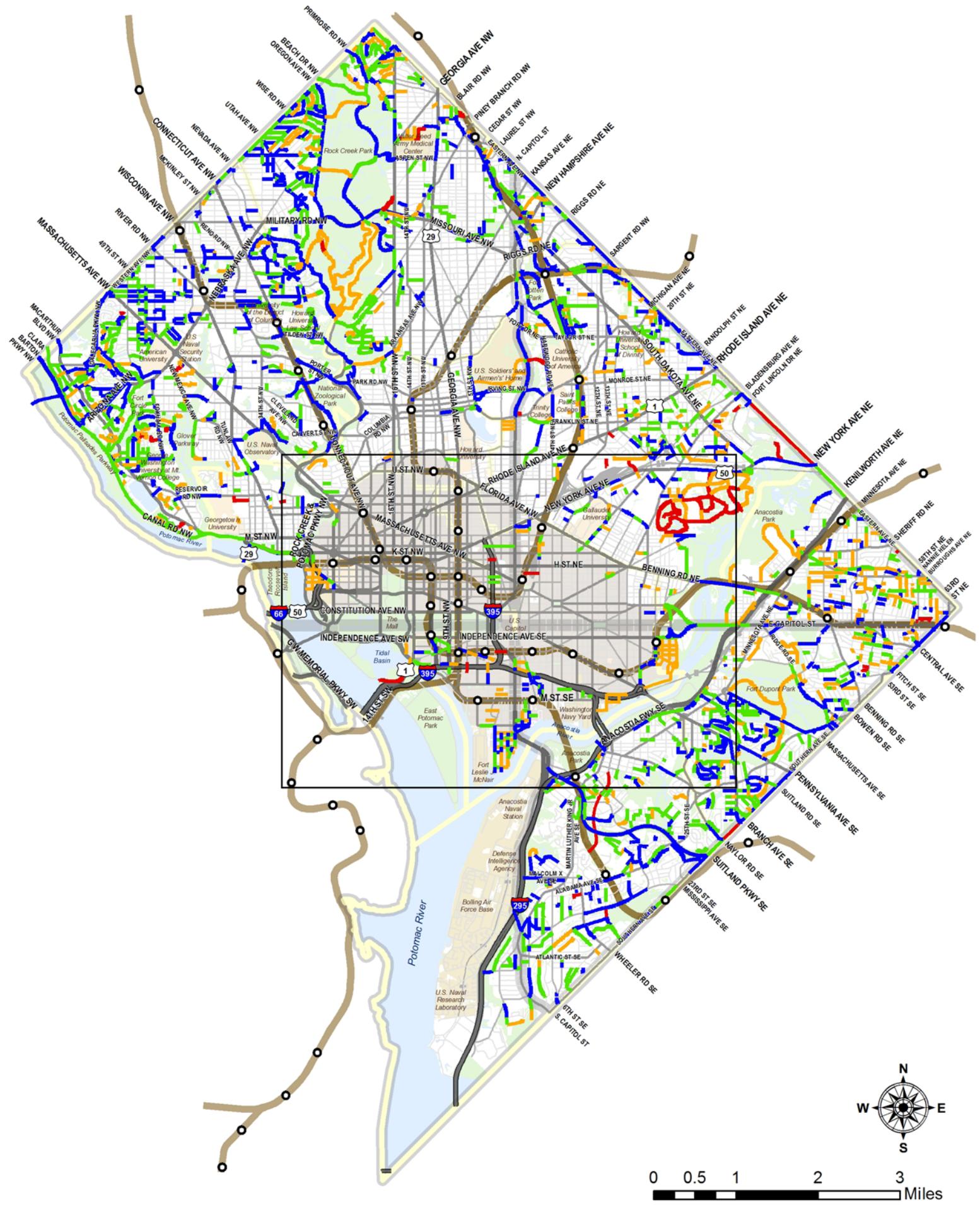
## **FIGURE P.5 – SIDEWALK PRIORITIES**

This figure shows sidewalk recommendations by tier.

## Legend

	<u>Quadrant Boundary</u>	<u>Existing Infrastructure</u>	<u>Tier</u>
	Quadrant Boundary		Metrorail Station
	Ward Boundary		Metrorail Line
	Water		Existing Trail
	Park		Railroad
	University		Road
	Military		
	Monumental Core		







The District of Columbia's  
Multimodal Long-Range Transportation Plan

