



POLICY GUIDE

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POLICY GUIDE

1. MULTIMODAL AND SYSTEMWIDE

A. Policies

1. Prioritize the needs of trips that start and/or end in the District over those that use D.C. as a through route.

The District needs to preserve existing capacity to ensure a balanced system that offers modal choice for residents and visitors within the district. This should guide priority over any trips that use D.C. as a through route.

The District's Interstate highways, although designed primarily to offer access to and from central Washington, nonetheless carry traffic through the District and serve an important regional function. This function should be maintained and the Interstate highway system in the District should be kept in a state of good repair.

2. Plan for routes and stations to connect across transportation modes and jurisdictional boundaries.

DDOT should work internally and with its regional partners to ensure that projects—transit, bicycle, pedestrian, technology, and vehicular—that connect across the District boundary align and are consistent with adjoining jurisdictions' plans. Investments in the transportation system connecting with regional neighbors have the potential to enhance the function of the transportation system in the District of Columbia.

Using the same approach, all transit stations should be opportunities for multimodal connections, with walking and biking serving as easy beginnings or endings of any transit trip. Coordination among these project opportunities should be facilitated through the Metropolitan Washington Council of Governments and between the District and affected/adjoining jurisdictions.



3. Establish modal priorities on District streets.

Every non-local street should prioritize pedestrians,



accommodate driving and local deliveries, and support one of the following modes:



Protected bicycle facilities



Dedicated high-capacity surface transit lane(s)



Dedicated freight routes

Or



A combination of these modes in simpler accommodation

Decisions on which modes will be prioritized on streets are illustrated in the moveDC Plan and based on network connectivity, land use, and travel demand.

4. Allow flexible use of rights-of-way during non-peak periods.

Vehicular traffic volumes in the District are highest during weekday commute times. On weekends and during off-peak weekday periods (middays and evenings), traffic volumes are considerably lower and many streets have available capacity that can be repurposed for other uses including pedestrians, bicycles, and recreational space.

In addition to the many special events that use the District's roads on a yearly basis, the District should work with citizen groups to identify locations and time periods where rights-of-way can be used for purposes other than vehicular travel. Weekend closures of Beach Drive in Rock Creek Park are already an example of this type of flexible use, as are the many neighborhood festivals in the District.

5. Create a pedestrian environment that accommodates people of all ages and abilities.

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 four percent 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 because they provide an accessible travel path that is separated from traffic.

The District should seek to have sidewalks on at least one side of every street and preferably on both sides of every street. All sidewalks should be constructed in conformance with the latest ADA Accessibility Guidelines, but also should strive to meet the more robust standards of Universal Design and the Architectural and Transportation Barriers Compliance Board's proposed accessibility guidelines



in the Public Right-of-Way Access Guide for the design, construction, and alteration of pedestrian facilities in the public right-of-way. Where sidewalks are not possible, streets should provide safe walking space within the roadway.

In coordination with providing a complete network of sidewalks, pedestrian crossings should be provided across all legs of an intersection unless a special exception can be clearly justified. As part of this recommendation, street trees should be considered a significant benefit to the walking environment (and offer a return to Washington, D.C.'s historic aesthetic) and should be included throughout the District. The Sustainability and Livability Element provides recommendations on street trees and other elements that contribute to the creation of quality places in public spaces.

6. Review all District of Columbia projects to ensure that they provide bicycle accommodation.

DDOT should review land development and transportation projects and studies to ensure that bicycles are accommodated. These projects can provide key bicycle connections or create significant barriers to bicycle travel. For common bicycle facility projects, DDOT should streamline the design and review process. Bicycle Program staff should review projects early in the process to increase understanding of bicycle issues among different groups working on all stages of each project.

DDOT should adopt a standard Bicycle Checklist to ensure that all transportation projects in the District accommodate bicycle transportation. This Bicycle Checklist could be included in the forthcoming (2014) update of the *DDOT Design and Engineering Manual*. Bicycle considerations should be included from the planning and scoping to design and construction of all projects.

In addition, all agencies and consultants of the District government should consider bicycle issues in the scoping and review of all projects. Distributing responsibility to address bicycle needs throughout all District agencies will allow the Bicycle Program manager to influence projects during their initial conception and to consider long-range bicycle planning needs. This can be achieved by educating other agency staff and consultants about the moveDC bicycle element and about the principles of bicycle planning and design.

7. Provide go anywhere, all day transit.

The District's transit network should allow residents, workers, and visitors the ability to travel anywhere in the District by transit in a convenient and reliable manner. By expanding and upgrading the District's public transport network over the next 30 years, the system will provide excellent accessibility throughout much of the city, not just downtown. With this degree of accessibility, users will be able to use the transit system as much as they would use their car and be able to go anywhere in the District. For most places, this means at least 18 hours of service in a day. On some key corridors, where demand would warrant, it means around-the-clock service.

8. Connect different modes to each other and across jurisdictional boundaries.

DDOT should work internally and with its regional partners to ensure that projects connecting across the District boundary align with adjoining jurisdictions' plans. Investments in the transportation system in



larger parts of the region should support the capacity and functionality of the District of Columbia's transportation system. Non-motorized and transit modes should be prioritized in support of the overall moveDC Plan, though roadway improvement projects should also be coordinated.

The moveDC Plan recommends high-capacity surface rapid transit compatible and/or coordinated with the following regional initiatives:

- *Long Bridge high-capacity transit line and Arlington County's planned Columbia Pike and Crystal City-Potomac Yard transitways*
- *Wisconsin Avenue NW high-capacity transit line and Montgomery County's MD 355 South (Wisconsin Avenue) bus rapid transit line*
- *Tenleytown-Brookland high-capacity transit line and Montgomery County's MD 355 South (Wisconsin Ave) bus rapid transit line*
- *16th Street NW high-capacity transit line and Montgomery County's Georgia Avenue bus rapid transit line and the Purple Line*
- *North-South D.C. Streetcar line and Montgomery County's Georgia Avenue bus rapid transit line and the Purple Line*
- *Rhode Island Avenue NE high-capacity transit line and Prince George's County's Bladensburg-Takoma-Langley Park transitway*
- *Pennsylvania Avenue SE high-capacity transit line and Prince George's County's Pennsylvania Avenue transitway*
- *South Capitol Street high-capacity transit line and Prince George's County's National Harbor transitway*

Using the same approach, all transit stations should be opportunities for multimodal connections, with walking and biking serving as easy starts or finishes of any transit trip.

9. Continue to support agency partners in implementing various plans that serve District needs and support District goals.

This recommendation highlights the desire and necessity for DDOT to collaborate with partner agencies to deliver seamless transit service for residents, workers, and visitors traveling to, from and within the District. Such activities include:

- *Support for WMATA's Momentum Plan*
- *Support to WMATA in implementing parts of the Regional Transit System Plan including the new Potomac River Metrorail tunnel and a new downtown Metrorail loop separating the Orange/Blue lines and the Yellow/Green lines*
- *Support to VRE and MARC as they expand service*
- *Support enhancements to Union Station and L'Enfant Plaza*

10. Create new or reestablish historic street segments to maximize connectivity.

When possible, the District should seek to restore street connectivity to maximize the functionality of the street network in providing local access. Recommendation A.8 in the Infrastructure Investments section of the Vehicle Element describes specific locations for potential new street connections.



Additional street connections should be implemented where possible. These connections could take the form of new streets as part of development projects or could occur independently along a historic right-of-way. The District should prioritize those connections that can reduce walking distances to and from transit stations or activity centers. While the District will seek to create new street connections, it should not generally seek to add vehicle lanes or vehicle capacity in the street system by moving curbs and reducing the quality of the pedestrian environment.

11. Move traffic efficiently and safely by optimizing traffic signal operations on all major roadway corridors and updating corridor traffic signal timing on a regular basis.

Beginning in 2011, DDOT began to modernize the District's traffic signal system. In coordination with the system modernization, a 5-year traffic signal timing optimization project began. The traffic signal optimization project includes replacing outdated traffic control software and equipment at intersections and re-timing traffic signals. When complete, more than 1,600 signals will be upgraded. Current plans are for traffic signal timing to be evaluated and reassessed on a 5-year rotating basis.

The modernization of the citywide signal system will add critical new features to support the increasingly complex multimodal needs of the District's transportation system. The system should include transit beneficial features such as transit signal priority and pre-emption. It also should include features that enable better active and real-time management of the system during events and special situations. Emergency vehicle pre-emption should be considered as the system is modernized. Actuated bicycle signalization and special bicycle signals should be incorporated at key locations.

12. Improve multimodal travel reliability and reduce congestion through area and corridor management strategies.

As the District continues to grow, managing vehicle access on key corridors and to key destinations through price or minimum vehicle occupancy may become an important approach to providing reliable access to activity centers. The District's congested entry routes, including freeways and bridges as well as the Central Employment Area, are areas to explore occupancy and pricing as ways to manage congestion, as referenced in Recommendation A.5.

Lane management typically uses price and/or occupancy requirements to manage vehicular demand in designated lanes or on roadway facilities. Typically, high-occupancy vehicles and transit vehicles are permitted to use managed facilities at a discounted rate or for free.

In addition to corridor-specific pricing and vehicle occupancy strategies, area management strategies should be considered. The best known examples of area pricing are based on a cordon area and typically involve center cities and the places and times of day with the highest concentrations of travel demand. Cordon pricing requires investment in vehicle detection and payment collection technology prior to it taking effect.

A cordon area in the District could be implemented for weekday trips into the Central Employment Area at a rate approximately equivalent to a round-trip peak period Metrorail fare. Revenues from the zone should be dedicated to operations and maintenance of the managed facility (or area) and toward



projects that expand the person-moving capacity of the transportation system, including those providing greater access to the priced areas or corridors.

The aforementioned approaches to managing demand also would help to manage the reliability and accessibility of goods movement and delivery in the District. In addition, they would help to improve the District's air quality by reducing the amount of delay per vehicle throughout the transportation network.

Fees collected as a part of area or corridor pricing strategies should apply to all single-occupant vehicles, whether they are from the District or not. Pricing strategies should seek to exempt high-occupancy vehicles from fees.

13. All transportation investments also should be State of Good Repair projects.

DDOT should seek to align project programming and funding between projects intended to bring the transportation system to a State of Good Repair (SOGR) and new construction and enhancement projects. The purpose of doing this is not only to combine funding sources and realize efficiency in project delivery, but also to demonstrate an agency commitment to showing that repair and maintenance of the transportation system are just as important as major changes to it.

SOGR refers to maintenance and rehabilitation projects that keep infrastructure in a sound and functional condition and offset the need for more costly, extensive maintenance into the future. For DDOT, the logistical needs of these projects, such as maintenance of traffic, mobilization of work crews and equipment, and potential temporary impacts on parallel infrastructure systems (such as utilities) represent project costs. To the extent that other adjacent or connected projects can be integrated into the SOGR project, an overall cost savings may be achieved by reducing the outlay of resources needed for these functions of project delivery. This may require additional environmental analysis on a project-by-project basis.

14. Incorporate TDM programs in all development projects that impact the District's right-of-way.

The District should ensure TDM programs are provided for all development projects that impact the District's right-of-way. This would establish TDM as an important element for site and transportation access, with different quantities and types of TDM programming for different development intensities and in context with the transportation options available within any given neighborhood.

TDM programs do not need to be onerous; however, all developments have a role to play in reinforcing the District's commitment to vehicle trip reduction. There are design-based TDM measures that all developments can provide without requiring ongoing investment or operation. These include:

- *Leaving space and providing Wifi in lobbies for information and connections to taxi/transit/ridesharing services*
- *Ensuring that designs reflect moveDC pedestrian and bicycle plans*
- *Ensuring adequate pedestrian and bicycle facilities under current codes as well as any anticipated requirements above and beyond the master plan*
- *Provide bikeshare/carshare facilities on-site for use by the public*



- *Orienting development to the street and allowing for a clear path from the front door to transit facilities*
- *Managing parking in a way that reflects the urban nature of the District*
- *Participation in neighborhood programs/promotions*

Efforts could be as simple as acknowledging receipt of an information packet describing the District's multiple transportation programs when a building permit is approved (the person obtaining the permit would be responsible for supplying the materials to the building occupants). These and other low- or no-cost options are items that all developments, regardless of size, could incorporate.

15. Protect the physical environment through low impact design (LID).

DDOT should incorporate LID into streets to be consistent with the efforts of the District Department of the Environment, which seeks to reduce stormwater runoff pollution and has in place a vigorous stormwater program and stringent citywide regulations. Major initiatives include significantly reducing stormwater pollution flowing into the area's water bodies by making the land "spongier" and creating financial incentives for the installation of stormwater retrofits.

16. Evaluate the role of the District's transportation investments in regional economic development.

The District should articulate the regional economic benefit of strategic transportation investments in infrastructure located in the District. The District of Columbia's transportation infrastructure may be located within the city's boundaries, but it often is essential to the region's mobility. Investments that the District makes improve access to the Washington area's largest employment center (and the largest in the United States outside of New York) and undoubtedly benefit residents of neighboring Maryland and Virginia by maintaining a functional and reliable transportation system in the city.

The long-term viability of D.C. continuing to make these kinds of investments—many of which are very large—is closely tied to making a regional business case for their benefit to the entire region. This may not yield direct financial assistance from the other states, but it can help to guide discussions of how to prioritize transportation projects in regional long-range plans, how Maryland and Virginia may be able to offset D.C.'s outlay of resources through increased support for transit operations or other regionwide contributions, and how these states can help D.C. in appealing for federal funding assistance that benefits the entire region.

17. Support a regional infrastructure bank for mega-projects.

The District should start a dialogue on and support the formation of a regional mega infrastructure bank. Usually executed at the state level or regional level, infrastructure banks can be used to help to fund and deliver projects that are critical to a region's (city's or state's) development that could not otherwise fit into fiscally constrained programs.

The Federal state infrastructure bank (SIB) program currently in place was established in the SAFETEA-LU transportation bill, although SIBs have been allowed in some form since the mid-1990s. The SIB program allows states to establish infrastructure-specific revolving funds in partnership with USDOT



and for these funds to be capitalized with federal funding. They allow loans at reduced rates, financing of bonds, credit lines, bond insurance, and other loan guarantees.

Washington, D.C.'s state-equivalent status means that it may be able to develop such a program, but most likely should look to do so in partnerships with other regional partners.

18. Identify a variety of funding and delivery approaches for construction and operations of the transportation system.

DDOT should continue identifying and pursuing opportunities in Public-Private Partnerships (PPPs or P3s) for infrastructure delivery. There are many different combinations of the way in which PPPs can occur, but the goal of nearly all of them is to deliver infrastructure projects more effectively (time and monetary cost). The combination of funding from public and private sectors can significantly expand government agencies' purchasing power for projects and reduce their time in delivery (planning, design, and construction).

A Federal Transit Administration survey of eight PPPs for transit projects found that the surveyed projects were operational one to six years earlier than planned and realized cost savings of \$1 to \$38 million. As with design-build and design-build-operate-maintain project delivery (both described below), PPPs also reduce the need for separate bids at each project stage, and private companies in a PPP often bid for a project with a fixed fee and thus do not require time for lengthy negotiations of financial terms.

DDOT has used approaches such as design-build-to-budget on recent District projects, including the 11th Street Bridge and the H Street Streetcar Line.

19. Support ways legislation to allow private funding to complement public investments.

Public-Private Partnerships (PPPs or P3s) are an increasingly popular method of financing major infrastructure projects. The combination of funding from public and private sectors can significantly expand government agencies' purchasing power for projects. DDOT should support District efforts to allow funding mechanisms like these partnerships so that public investment in public projects can be parlayed with private funds to increase the total funding available. P3s can range from coordinated operations and marketing, as with the D.C. Circulator to design-build partnerships that include financial arrangements to accelerate project delivery.

20. Further formalize the data collection, evaluation, sharing, and monitoring program within DDOT.

Unified data collection and monitoring programs are a key means of identifying where changes to the transportation system are needed, creating universal application of policies and standards, and providing informed evaluation as to what is most effective after implementation. DDOT should establish a program across its different administrations to allow consistent data formats, regular updates, and systematic means of evaluation and monitoring of transportation system performance. This policy also includes making public access to as much non-personal or non-proprietary data as possible in real time or close to it.



21. Encourage open data to stimulate public and private collaboration in data exchange and creation of valuable information for operators and consumers.

To the extent possible and reasonable (to protect privacy and other appropriate rights), DDOT should collect and compile data from existing systems and those being planned in an open format. The amount and type of data that is collected from systems throughout the transportation system and by its users is staggering.

The primary issues to open data lie in access permissions and rights to data and the format in which it is stored. Getting data out of systems and having it available for use in analytical and operational purposes can have tremendous benefits in terms of delivering more effective and efficient transportation solutions. Innovation begins with a full understanding of issues and data access is among the keys to understanding those issues.

22. Develop Integrated Corridor Management applications including use of 511.

Integrated Corridor Management (ICM) is a comprehensive set of strategies deployed to gain operational efficiencies and provide travelers with better information along transportation corridors. Strategies include multimodal applications in traveler information and corridor technology applications to create better mobility and improved operations. Successful ICM implementation in D.C. and neighboring states could result in better utilization of available multimodal system capacity by serving key travel routes, improving system operations, reducing the severity and duration of congestion, and increasing travel time reliability.

Many scheduled and unscheduled events that affect D.C. daily. Weather and security concerns can severely disrupt travel throughout the city. 511 services can be used to direct messages to a wide audience throughout the city. By directing travelers to 511, website, mobile application, and phone systems, critical messages can be distributed using one tool to help people make informed decisions about travel. 511 technology has been used for decades in some states and remains a viable communication mechanism.

B. Education, Promotion, and Enforcement

1. Enhance transportation education at all levels.

Safer streets require more than physical improvements. They also require users to understand their own responsibility to safely use the system for themselves and others. A key approach to achieving this is safety education for the public and for owners, managers, and operators of the system.

For the public, educational materials should be integrated into school curricula and day-to-day communication. In addition, information should be shared through regular programs and materials hosted and developed by the Department of Motor Vehicles. DDOT currently develops educational and awareness campaigns through National Highway Safety Transportation Administration (NHTSA) grants and through the region's Street Smart campaign. DDOT should continue to support the promotion of transportation education into D.C. school curricula to help further educate people on transportation.



For owners, managers, and operators, new information related standard operating procedures, agency standards, laws, regulations, policies, and guidelines should be incorporated into regular and/or mandated training programs.

2. Enforce the rules of the road for all users.

Safety is the most basic standard for a transportation network. The District supports a culture of safety for all modes throughout the District, and encourages respect for all users by all users. DDOT should assist the Metropolitan Police Department (MPD) to provide effective enforcement of the laws for all users.

DDOT should continue to work together with MPD, the Department of Motor Vehicles, and Department of Public Works to provide education and outreach regarding the rules of the road. Education related to newer laws pertaining to bicycles, pedestrians or new facilities, should also be provided to those enforcing laws to ensure greater consistency and effectiveness.

3. Use technology to support enforcement of transportation rules and regulations.

The District's photo-enforcement efforts, including new technologies aimed at enforcing pedestrian laws, help to reinforce the overall culture of safety. The District should continue to use and explore new ways technology can expand the District's culture of safety and enforcement of transportation rules and regulations. In the future, the District should explore the ways in which technology can improve enforcement of transit only facilities, enhance safety in bicycle facilities, and support the management of transportation facilities and areas.

4. Enhance strategies for engaging with the public through mobile computing, social media, and crowdsourcing.

Interpersonal connectivity is a "new normal" and something that has implications for any group or agency with customers or constituents. Companies are increasingly building relationships with their customers both for customer service and feedback. The best companies are actively mining customer sentiment to rapidly fix problems before they "go viral." DDOT must find ways to engage its road users, both a source of crowdsourced information on topics such as current conditions and maintenance issues, and as taxpayers that will increasingly expect transparency from their public servants. Traveler information is currently an expected service that DOTs provide and social media is simply the next logical extension.

In a similar vein, DDOT manages valuable construction and road condition information. The low barriers to entry in application development are leading to the proliferation of mobile applications to take advantage of this sort of data. DDOT should adopt an "open data" model for this information, particularly construction and planned event information. This would involve creating portals to make these data available to the public and developers to incorporate them into "apps."



2. PEDESTRIAN ELEMENT

A. Policies

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.

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 the Americans with Disabilities Act, sidewalks, and traffic calming. Pedestrian issues are incorporated into many pieces of the manual that address various aspects of roadway design.

There are a number of additions and adjustments that 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.

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

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.

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.



B. Education, Promotion, and Enforcement

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 treatments.

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 and Photo Radar Speeding Reduction Program since 1999 and 2001, respectively. Mobile photo radar units and fixed-location cameras are used and enforcement zones are selected by MPD based on speeding history, speed-related incidents and proximity to locations with vulnerable populations such as children.

In November 2013, MPD expanded automated enforcement to include stop signs (16 locations) and uncontrolled crosswalks (8 locations). If successful, these new enforcement techniques should be expanded and evolve as technology improves.

3. Expand the DDOT Pedestrian Program website.

DDOT should continue to maintain the District Pedestrian Program web page on its website. 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*

4. Continue DDOT's Pedestrian Safety Campaign efforts.

The District should continue 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, 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 principle outreach tool for pedestrian safety education with award-winning new visual materials debuting in spring 2014.



5. Expand the implementation of 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 teach associations, advocacy groups, and others) should be sought in order to create sustainable programs that do not rely on continuous federal funding in order to continue.

3. BICYCLE ELEMENT

A. Policies

1. Use Bicycle Level of Service as a way to measure and prioritize bicycle investments on District streets.

DDOT should seek to improve at least one letter grade of BLOS for one percent of District lane miles per year, prioritizing streets currently operating at BLOS E or F.

2. Update District of Columbia laws, regulations, and policy documents to address bicycle accommodation.

Some current D.C. laws, regulations, and policies regarding bicycles are outdated and do not reflect current bicycle safety requirements or needs. Changes should be made to the *District’s Comprehensive Plan* (District of Columbia Municipal Regulations [DCMR] Title 10), *Zoning Ordinance* (DCMR Title 11), *Traffic and Parking Regulations* (DCMR Title 18), *Open Space and Safety Regulations* (DCMR Title 24), and *DDOT Design and Engineering Manual*.

3. Provide training to District staff and consultants.

Implementing the recommendations in *moveDC* requires that District staff and consultants be familiar with bicycle issues and the Plan recommendations. The Bicycle Program office should hold regular trainings on *moveDC* and on bicycle facility planning, design, operations and maintenance. Training sessions should be conducted for DDOT, DDOT consultants, Office of Planning, Department of Public Works, National Parks Service, and the Metropolitan Police Department (MPD), as necessary.



4. Report regularly on Bicycle Master Plan implementation.

DDOT should prepare annual reports on bicycle crashes and bicycle facility mileage in the District. Bicycle trips should be included when census data is available, and should be included if DDOT or another agency implements a travel survey in the District. The Bicycle Advisory Council¹⁴¹ may help establish milestones for progress on Plan recommendations, which may also be addressed in the annual reports. These reports should be available on the Bicycle Program web page.

5. Improve bicycle crash reporting procedures.

DDOT should work with MPD and the U.S. Park Police to report bicycle crashes more accurately. National studies show that less than half of all bicycle collisions with vehicles are reported to the police or in another official manner. Underreporting causes crash trends to be missed by the police and not included in DDOT safety initiatives. DDOT should assist MPD in improving the process for reporting bicycle crashes.

6. Collect more data on bicycle use and bicycle facilities.

DDOT should collect more data on bicycle use and facilities in the District. Better data can be used in annual reports, demonstrate the effects of the Bicycle Program, and justify budget allocations for bicycle transportation. The following types of data should be considered:

- *Bicycle counts on trails and streets (manual and automated)*
- *On- and off-road bicycle facility characteristics*
- *Counts and behavioral observations before and after a bike facility is installed*
- *Neighborhood travel diaries or District-wide surveys to find information about all types of bicycle trips*

DDOT should conduct research (including surveys) to determine opinions of bicycling in the District.

7. Continue to provide adequate agency training and staff to implement bicycling.

DDOT should continue to support the Bicycle Program Office.² DDOT should explore assigning a designated bicycle specialist in each administration.

8. Re-evaluate regulations on sidewalk riding to address conflicts in high-volume pedestrian corridors.

DDOT should re-evaluate where the use of sidewalks by bicycles can be permitted. In evaluating where to allow the use of sidewalks by bicyclists, the following should be considered:

- *Low Bicycle Level of Service on adjacent streets (BLOS of D, E, or F)*

¹⁴The District of Columbia Bicycle Advisory Council (BAC) is a body established by law (D.C. Code Section 50-1604) to advise the Mayor and District agencies on matters pertaining to bicycling in the District, and to make recommendations to the District's Bicycle Coordinator on the budget and focus and implementation of the District's Comprehensive Bicycle Transportation and Safety Program

² The Office of Bicycle Transportation and Safety must have at least three staff members (D.C. Code, Section 50-1603)



- *Sidewalk width of at least 6 feet in residential districts or 8 feet in commercial districts*
- *Limited right-of-way, especially in the traveled way of the street*
- *Limited (or non-existent) cross street and driveway cuts*
- *High degree of visibility of sidewalks, especially from intersecting streets and median breaks*

Even when bicycles are permitted to be ridden on sidewalks, bicyclists should observe a 5 mph speed limit, yield right-of-way to any pedestrian, and give an audible signal (such as ringing a bell) before overtaking and passing a pedestrian. Appropriate signage should indicate where bicycles are permitted to ride on sidewalks.

9. Allow bicycles to travel in some separated bus lanes where service runs at medium headways and the roadway is of a moderate grade.

moveDC recommends many miles of dedicated transit lanes. While not ideal as bike facilities, the accommodation of cyclists should be considered when designing transit priority streets and dedicated transit lanes. Whenever possible, physically separated transit lanes should be at least 14 feet wide to accommodate buses and bicyclists passing each other. While these streets and lanes will have high frequency transit service, there will still be additional capacity which can be used by bicycles.

The highest priority for dedicated transit lanes should be transit. Bicycles should not be able to use these lanes when transit frequency increases to more than one bus every three minutes or when the street has a grade (hill) of enough significance and/or length to slow bicyclists considerably, thereby negatively impacting the transit operation.

B. Education, Promotion, and Enforcement

1. Educate bicyclists about safe bicycling.

The District should educate bicyclists about traffic safety and compliance with applicable laws. Materials should emphasize helmet use and obeying traffic laws. DDOT should partner with advocacy groups and MPD to expand messaging and better educate members on bicycle safety.

2. Educate motorists about safe operating behavior around bicyclists.

The District should educate motorists about bicycle 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 bicycles. DDOT should work with the D.C. Department of Motor Vehicles (DMV) to incorporate safe driving behavior around bicyclists on the knowledge and road skills tests for obtaining a driver's license.

3. Enforce traffic laws related to bicycling.

DDOT should assist MPD with the enforcement of laws related to bicyclist and motorist behavior. MPD should target unsafe bicycling practices such as red light running, wrong-way riding, and riding on Downtown sidewalks. They also should target motorists who speed, run red lights, and pass too close to



bicyclists. MPD, DDOT, and the Department of Public Works should ticket and tow vehicles that park in bicycle lanes.

4. Continue the District's Safe Routes to Schools program.

When educating cyclists, it's best to start young. In 2002, DDOT launched a youth pedestrian and bicycle safety project that became the education piece of the Safe Routes to School program. The program has now reaches thousands of children in about 20 schools every year. The DDOT contractor maintains a cargo van containing bikes, helmets, and all materials necessary for delivery of the program. Contractor staff schedule and teach classes in D.C. elementary and middle schools during the school year and at community events in the summer months.

This program should be evaluated and expanded. Supporting efforts also should be undertaken by the D.C. Department of Parks and Recreation. Efforts to encourage bicycling to school should continue to be complemented by a program to improve the safety of the routes students take to school.

5. Continue to distribute the District of Columbia bicycle map to a wide audience.

DDOT should continue to produce a large number of D.C. bicycle maps for the general public. Maps should be easy for all residents and visitors to obtain. DDOT will update the bike map every year to reflect improvements in bicycle facilities. The map should continue to be distributed by DDOT with the help of WMATA, DPR, NPS, and tourism organizations at the following destinations for bicyclists:

- *Metro stations*
- *Metro buses*
- *D.C. park and recreation centers*
- *Retail businesses*
- *Libraries*
- *Parks*
- *ANCs and other community groups*

6. Incorporate bicycling into the District's TDM program.

In 2006, DDOT launched goDCgo, a comprehensive marketing program aimed at employers and employees to encourage sustainable commuting and to help meet the region's air quality goals. Bicycle transportation is a key part of the program, which has now expanded to residential properties and universities. DDOT should continue to expand the goDCgo program and the bicycle message within it, including targeted outreach on bicycling.

7. Increase the visibility of bicycling in the District government and encourage bicycle commuting.

DDOT should continue to support Bike to Work Day, promote bicycle-friendly D.C. government worksites, and encourage use of bicycle transportation among city service providers, such as police, parking enforcement agents, and building inspectors. These actions will set a positive example for residents of the District.



DDOT should continue to encourage District employees to bike to work. DDOT and the Department of General Services (DGS) should make sure all D.C. government offices have adequate bike parking. Encouragement efforts could be expanded to offer monetary incentives to employees who ride to work, making bicycles available during the day for bicycling to meetings, and providing shower facilities in buildings.

Expanding the Bike to Work program for District government would make the program easier to market to other employers. District agencies could boost their efforts by creating a Bike to Work Day competition. The agency with the highest number of employees bicycling to work could receive an award.

DDOT also should explore providing Capital Bikeshare (CaBi) membership to all District employees and incentivize use of CaBi instead of the District vehicle fleet.

DDOT should also continue to maintain the District Bicycle Program web page on its website. Additions to this page should include up to date information on plans and activities.

8. Inform residents about bicycle transportation opportunities on an individual basis.

DDOT should work with the Metropolitan Washington Council of Governments (MWCOG), WMATA to provide tailored marketing of alternative transportation, including bicycling, to individuals.

Known as TravelSmart³, the program works by sending letters to all homes in a specific neighborhood.¹⁶ These letters would ask residents to respond if they were interested in having a specially-trained representative show them how to make one of their typical trips by bicycle. Program representatives or bicycling advocacy group members would come to the resident's home or workplace to ride with the resident on their bicycle trip. This program could be an extension of MWCOG's existing Commuter Connections program.

9. Continue to market the District as an "Active Vacation Destination."

DDOT should continue to work with local tourism and hospitality stakeholders to market the District as an "Active Vacation Destination." Bicycle transportation for visitors can be promoted by:

- *Distributing the D.C. Bike Map to all tourism organizations*
- *Encouraging tourism organizations to distribute the D.C. bike map*
- *Offering Capital Bikeshare information and passes*

Bicycling offers a wide range of personal and societal benefits that go far beyond transportation. These include individual health, economic development, and community security. DDOT should partner with colleague agencies and organizations to maximize awareness of these benefits. DDOT should work with the following agencies:

³www.transport.vic.gov.au/projects/travelsmart



- *D.C. Department of Health (DOH) and area hospitals to promote bicycling as part of the effort to prevent obesity, diabetes, heart disease, and cardio-vascular disease.*
- *Office of the Deputy Mayor for Planning and Economic Development and the D.C. Chamber of Commerce to quantify the value of bicycle accessibility as an economic advantage for D.C. businesses.*
- *MPD to promote bicyclists as 'eyes on the street' to increase neighborhood security.*

10. Support bike rides and events in the District of Columbia.

The District currently has several major bicycle events, including Bike DC and Bike to Work Day. Each of these events draws thousands of participants.

The District government should continue to support these and other bicycling events in the city. Support can be provided through DDOT and MPD. Advocacy groups and business organizations also can help rally the community behind these events.

3. TRANSIT ELEMENT

A. Policies

1. Establish minimum performance metrics for evaluating dedicated transitways.

DDOT should adopt minimum performance metrics for evaluating the creation of dedicated lanes for transit. Future conversion of shared travel lanes to dedicated transitways should be based on the transit ridership on a corridor compared to the delay of transit vehicles due to mixed traffic. In general, when the number of people riding transit along a corridor is equal to the number in vehicles in a general traffic lane, a lane should be converted to exclusive transit use, or examined for such conversion where it is clear that significant trade-offs may be untenable or difficult to manage. According to research from the Transit Cooperative Research Program, "Generally, at least 25 buses should use the lanes during the peak hour. (Ideally, there should be at least one bus per signal cycle to give buses a steady presence in the bus lane.)"⁴

2. Emphasize cooperation among the region's planners and operators.

As the District changes, transit service must evolve to meet shifting needs. Led by DDOT, more proactive service planning among jurisdictional partners—not just operators—will help to improve coordination among modes as well. Such coordination can help to improve the transfer experience and also to improve other types of feeder services beyond the transit system. Improving pedestrian and bike access to transit can not only improve connectivity to the transit network, but also can enhance safety, comfort, and attractiveness of the system. Changes that are championed and supported by DDOT and WMATA may have a stronger chance of implementation.

In the future, it is likely that transit services in the District will continue to be operated by many different agencies and private companies. Deliberate and purposeful cooperation and coordination will be needed to ensure the delivery of efficient and effective services.

⁴ TCRP Synthesis 83, Bus and Rail Transit Preferential Treatments in Mixed Traffic, Federal Transit Administration, 2010



The District should take a leadership role in increasing partnerships among the area's transit operators. This partnership could be used to develop a defined family of services around which future planning and implementation efforts are focused. It also could be used to conduct planning for services on an area-wide basis (Districtwide or sub-area) to achieve the most effective use of each service in the family of services. Last, the partnership could help in the pursuit of joint and cross-jurisdiction beneficial initiatives in high-capacity surface transit (streetcar, bus rapid transit, light rail, and rapid bus), Metrorail, and commuter rail, so that all services support each other, maximizing the efficiency of each individual element.

3. Implement standards for frequency and span by transit function.

Many systems establish a cascading set of service frequencies (how often each route runs) and span of service (how early and late, and which days each route runs), according to how various service types complement the overall transit system. There are many ways to organize a service framework and it must be customized to suit the needs of those traveling within the system or network. DDOT should work with the region's transit operators to establish consistent frequencies and spans for different service functions. An example service framework from San Francisco's MTA is shown in Table T.3.

The starting point should be the region's core routes and services operating in downtown, such as Circulator, streetcar, and high frequency bus lines. Services operating in the core and Downtown should operate at least 18 hours a day, 7 days a week at 15-minute or better (shorter duration) frequencies. A span and frequency of service such as this would offer most people service when they need it without the need for a schedule. A minimum service frequency of 15 minutes also is recommended for high-capacity surface transit (HCT) in off-peak periods. During peak periods, HCT service is recommended to operate with greater frequency.

Some parts of the District are unlikely to support fixed-route transit service due to their density, land use mix, and street network density. In many of these areas, people would still benefit from reliable transit services; however, the services may need to be destination-specific and/or responsive to demand. Service standards should help identify where demand responsive and destination-specific (or trip purpose-specific) services would be efficient and effective than fixed route services.

DDOT should provide an appropriate level of transit service to lower demand areas through point or route deviation transit services. Point and route deviation services generally operate along a route and have a range of allowable deviation to enable them to more directly pick-up or drop-off passengers based on demand.

With this type of service, operators may define zones and average or maximum distances for deviation from the route based on travel times and distance to/from established fixed route services. Generally, system operators tend to examine moving fixed route services to flexible services where route productivity falls below 30 to 50 passengers per hour. Flexible services generally operate in the range of



5 to 20 passengers per hour.⁵ Flexible services can be delivered directly by a single operator, through partnership between operators or through cooperation among public and private entities.

B. Education, Promotion, and Enforcement

1. Eliminate the transfer penalty between transit modes.

Currently, passengers traveling between Metrorail, Metrobus, and the Circulator must pay the fare for each service when making transfers, which can result in an additional cost of at least \$2 per trip during peak hours. Though additional fare payments are reduced by \$0.50 when patrons use SmarTrip—WMATA's electronic fare card—any additional payment is often viewed as a penalty by passengers whose trip simply requires several services.

The District should work with WMATA to remove the additional fare. This would reduce people's out-of-pocket cost of taking transit and reinforce a message of an integrated transit system to patrons. Removing this barrier between services could help people perceive the system as seamless and coordinated, which have the potential to encourage increased use. To implement this recommendation, DDOT and its partners should consider charging no more than the difference between bus and rail trips, much like the way in which transfers between local and express buses are addressed. Fully eliminating the transfer penalty could cost as much as \$85 million per year. This cost has not been factored into the moveDC financial plan at this time, so funding for this would need to be balanced against other priorities in the plan.

2. Further reduce the barriers to transit access in low-income neighborhoods.

When people opt to pay less to ride a slower transit service, they are sacrificing their time and ultimately the District's potential for economic productivity. This is especially prevalent in low-income neighborhoods further outside of downtown where travel times into education and job centers require significantly longer travel times by bus than by train. To further increase transit access, the District should continue to reduce the cost of rail trips starting or ending at stations in low income neighborhoods. Precedent programs to achieve this objective already exist, including the Anacostia Special Bus Fare, where the District funds discounted transfer for WMATA riders transferring from bus to rail using SmarTrip cards at the Anacostia Metro Station, and SmartTrip cards reduced from \$5 to \$2 and made accessible at local retailers in low income neighborhoods.

3. No special farecard should be needed to pay for District transportation services (WMATA, Circulator, CaBi, Commuter Rail, carshare, and parking).

Paying for transportation in the District should be simple for everyone, regardless of their transit trip. A passenger on any transit mode should be able to use a bank-issued payment card, credit card, ID card, or mobile phone to pay their fare. This would be a shift from making every traveler use a common fare payment option and require a shift in current technology for most of the District's existing transportation network.

⁵ Best Practices in Transit Service Planning, prepared for the Florida Department of Transportation Research Center. University of South Florida Center for Urban Transportation Research, March 2009



DDOT is working with other transit agencies in Washington Metropolitan area to test and install the next generation fare collection system for the region. New Electronic Payment Program (NEPP) is an advanced transit fare collection and validation system built on open architecture. The Region will migrate from the current proprietary SmarTrip system to NEPP in the near future.

4. Require employers to provide access to pre-tax non-auto transportation benefits.

Across the United States, many municipalities promote pre-payment of transit fares for individual users where bulk purchases (as described in Recommendation C.6) are not economically feasible or where there is not sufficient interest. The most common approach to this is through payroll deductions that are exempt from taxes. The next step is to require employers of a certain size to offer this benefit. A bill requiring employers with 50 or more employees to offer pre-tax payroll deductions for non-auto transportation benefits has been introduced to the D.C. Council.

5. Offer transit bulk fare media purchases for organizations.

DDOT should work with the area's transit operators to offer bulk purchases of transit fare media for organizations. This would allow an individual end user to pay a lower price for transit fares, even beyond any discounts realized by purchasing passes over individual fares. This has the potential to increase employee incentive to use transit as an alternative to driving. Bulk fare media purchases also provide transit agencies up front funds at a lower marginal cost than individual fares paid on the day of travel.

Bulk fare purchase programs work best with large population bases, including large employers and universities purchasing fares for students. Pricing and management of these bulk fares are typically organized by the service providers and not a local government.

6. Brand the family of transit services.

Each part of the family of services should be uniquely branded based on purpose instead of operator. DDOT should work with the region's transit operators to develop and implement consistent branding based on function within the family of services. Transit services provided by DDOT—Circulator, CaBi, and streetcar—should share a coordinated visual identity (logos, websites, vehicle design, color palettes, and marketing materials) and complementary messaging.

4. VEHICLE ELEMENT

A. Policies

1. Manage vehicular speed for safety and efficiency.

The District should emphasize safety and vehicle speed management in the design of all streets. Street design elements should help self-enforce the posted speed limit. The District also should evaluate speed limits to assess the tradeoffs between time and safety.

In addition to traffic operational benefits of a steady vehicle speed profile, lower vehicle speeds tend to result in fewer and less severe crashes for all modal users. In the case of pedestrians and bicycles,



vehicular speeds of less than 20 mph result in significant safety benefits in terms of crashes resulting in fatality or severe injury.

Many people believe that the regulation of the transportation network to promote low vehicular speeds results in longer travel time and more congestion along a given street. While this can certainly be the case, in most instances it is not. The stop-and-go nature of urban driving, combined with the practical matter of intersection capacity, results in an optimum urban street capacity at a speed of approximately 25 mph.

2. Preserve key freight corridors for goods movement.

Goods movement and delivery needs must be coordinated with multimodal system demands to allow goods to be moved efficiently and safely, without impeding overall system balance or endangering other modal travelers (especially bicycles and pedestrians).

Urban areas around the world have had to address dramatic increases in freight movement in the last 20 years. Globalized production models and supply chains have meant that goods manufactured overseas must be distributed back to markets where they are consumed. This has been increasingly through low-cost container shipping, which has resulted in significant truck traffic on major and minor travel routes. Challenging globalized production are just-in-time delivery models and reduced on-site inventories at supply locations. These models and inventory management approaches have created demand for more frequent deliveries by more services and have resulted in less-coordinated deliveries.

The District should provide adequate freight movement infrastructure in designated freight corridors while also improving safety for all users in these corridors. Preserving these corridors means maintaining design standards compatible with larger vehicles, while also seeking to put into place treatments that reduce conflicts between large vehicles and other users. One example is the current standard's limitation on commercial vehicles reversing in public space.

3. Support reduced emissions for consumer and commercial vehicles.

The transportation sector is one of the most significant emitters of air pollution. Zero and low emission engines are an area where transportation policy can have a direct impact on improving the environment.

Electric vehicles and hybrid vehicles that use batteries charged from an external source or charged by other means are a significant opportunity to maintain current personal mobility while reducing auto emissions. DDOT's *Electric Vehicle Fleet Program* is working to bring hundreds of electric cars and charging stations to the District. DDOT should continue to explore opportunities to increase the inventory and citywide distribution of publicly-accessible electric vehicle charging stations in public spaces throughout the District.

Natural gas is another alternative to gasoline. It produces less carbon dioxide when combusted. As of 2009, approximately 12 percent of DDOT's vehicle fleet was fueled by natural gas, whereas 79 percent was fueled by diesel or unleaded gas. DDOT should support the aforementioned and other zero and low emission engine technologies to help reduce emissions for consumer and commercial vehicles.



5. 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 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.

Further expansion of this program 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 that 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.

6. Support autonomous vehicle implementation and connected vehicle research, using D.C. as a test bed for the nation.

Autonomous and connected vehicles have the potential to improve safety, efficiency, and mobility while also reducing parking challenges and improving air quality. Successfully implemented, autonomous vehicles can offer people the convenience of driving, without many of its negative impacts and challenges. Like any new technology, additional study of autonomous vehicles is needed to evaluate things like safety in a complex urban environment.

With or without autonomous vehicles, connected vehicle technology can offer people a safer, more efficient, and more predictable driving experience, while at the same time, allowing the transportation system to perform better.

Successfully implemented, connected vehicle technologies could transform operations for the District by helping to reduce crash frequency and severity, providing data to traffic managers in real-time to optimize system performance, providing travelers better information to make informed travel choices and to understand the impact of those choices, and permitting vehicles to talk to the system to increase vehicle energy efficiency and system operational efficiency. The District could become an urban test bed for both autonomous vehicles and connected vehicles through policy and legal support.



5. FREIGHT ELEMENT

A. Policies

1. Encourage off-peak deliveries.

In the short-term, the District is planning to conduct a pilot program for off-peak deliveries (7:00 p.m. to 6:00 a.m.) to assess its impact on traffic congestion and delays, accommodation of parking for commercial vehicles, and impact on delivery travel times. The pilot program may entail monetary incentives and coordination with Advisory Neighborhood Commissions (ANCs).

2. Support last-mile delivery/pick-up using bicycles.

The District should support bicycle freight operations by District businesses. Bicycle freight delivery can contribute significant benefits to the transportation system and improve livability. Last-mile delivery by bicycle can reduce the volume of trucks, vans, and other vehicles in areas such as the Central Employment Area (CEA), helping to reduce traffic congestion, improve air quality, and reduce noise.

3. Preserve existing maritime freight infrastructure.

DDOT should participate in preservation of existing Anacostia River and associated Potomac River navigation channel and dock access for the current petroleum product and stone/sand/gravel delivery by tug/barge. DDOT should work with other District agencies to avoid encroachments related to waterfront development into berthing locations or navigation channels in rivers.

4. Prioritize investments that improve integrated express service.

DDOT should prioritize investments that improve integrated express service to reduce overall truck demand. Integrated express operators (also known as couriers) move the customer's goods door-to-door, providing shipment collection and transport via truck and then by aircraft. Integrated express carriers commonly operate vans and trucks, mainly on arterial roadways, providing pickup and delivery of high value, lightweight, and time-sensitive commodities. Examples of investments that improve integrated express service include:

- *Providing defined freight zones on streets in office districts and retail centers within the city to allow for ample box truck and van parking*
- *Improving truck mobility on arterial roadways and expressways frequented by integrated express carriers*

5. Support preservation and enhancement of rail throughput in the District of Columbia.

The District of Columbia is a major gateway for rail freight moving through the Mid-Atlantic region, but it is not a major generator of rail freight. The District should be a good steward of the portion of the regional freight rail network that is within its borders by supporting feasible rail system capacity expansion efforts. DDOT should work with Maryland, Virginia, and I-95 Corridor Coalition states to help assure that East Coast railroad mainlines can be improved to permit greater use of freight rail.



6. Improve truck movement data collection and forecasting.

DDOT should increase data collection related to truck operations and goods movement to improve understanding of freight operations. Examples of additional data collection efforts could include:

- *Requesting mobile phone based travel time and speed data that may be made available by FHWA*
- *Conducting surveys of shippers, carriers, and receivers to understand freight movement freight decision making with respect to choice of mode, routes, and time of day of goods movements*

In addition, DDOT should support MWCOG in the development of a trip-based freight model, which would provide more detailed information about truck trip patterns, as well as impacts to District and the region.

B. Education, Promotion, and Enforcement

1. Improve outreach and technologies for integrating route and real-time information to freight carriers.

DDOT should work with commercial GPS providers and map companies to incorporate District truck route information into GPS devices. At the same time, DDOT should ensure up-to-date truck route information online is available for use in commercial GPS applications.

2. Develop a dynamic truck routing web application.

DDOT should develop a dynamic truck routing application based on real-time traffic conditions. Dynamic routing systems route vehicles to their shortest-path destination, based on up-to-date speed and delay conditions. The application could be tied to DDOT's existing interactive online Truck and Bus Map, which provides information on truck and bus through routes and restrictions, loading zones, drop-off/pick-up locations, and tour bus parking.

3. Establish a DDOT Freight Advisory Committee.

DDOT should establish a Freight Advisory Committee to facilitate a forum for freight-related topics and to advise on freight-related priorities, issues, projects, and funding needs. The committee should consist of a diverse group of freight stakeholders and would benefit both the freight industry and the District by providing a structured method for information exchange. It also could serve as a resource for sharing data and proposing future studies.

4. Conduct periodic truck freight stakeholder surveys.

In coordination with MWCOG, Maryland, Virginia, and/or other freight system operators, DDOT should gather input from truck freight stakeholders through comprehensive periodic surveys (every 2 to 3 years) to identify bottleneck locations, parking concerns and physical factors and conditions that may constrain the safe operation of commercial vehicles.



5. Expand freight safety and education campaigns.

There is a need for a broad-based public understanding of the hazards associated with trucks, passenger vehicles, pedestrians, and bicycles circulating in dense urban areas. The District should take advantage of the resources provided by Federal Motor Carrier Safety Administration (FMCSA) to help better educate both the public and freight stakeholders on these issues.

6. TRANSPORTATION DEMAND MANAGEMENT (TDM) ELEMENT

A. Policies

1. Require employers (20 or more employees) to provide access to pre-tax non-auto transportation benefits.

Across the United States, many municipalities promote pre-payment of fare media for individual users where bulk transfers are not economically feasible or where there is not sufficient interest. The District requires employers of a certain size to offer non-auto transportation benefits through payroll deductions that are exempted from tax liability. This, in conjunction with TDM requirements in development review, should be explored as a way to actively reduce the number of drive-alone trips that new District developments generate.

2. Require employers to provide a transportation allowance so employees base travel decisions based on their own priorities.

Employees could be provided a monthly stipend directly by their employers for use in offsetting commute travel expenses including transit passes, vanpool fees, parking passes, or other expenses associated with carpooling, bicycling, and walking to work. The District should require employers to charge employees to park and property owners to unbundle the cost of parking from leases. Any surplus funds could be “cashed-out” by the employee or resident.

3. Develop policies and incentives to “car-lite” living.

DDOT should investigate the feasibility of financial incentives for car-free living, including tax incentives, as households without a vehicle place fewer demands on the city’s roadway and curbspace networks, generate fewer environmental emissions, and generate less opportunity for crashes. The District should further support car-lite living by continuing to dedicate on-street parking spaces for carsharing vehicles and continuing to allow carsharing vehicles to use curbspace throughout the city.

4. Coordinate with MWCOG to further regionwide TDM initiatives to reduce solo automobile trips into the District.

As almost 3 of 4 of the District’s workers live in other jurisdictions, and 2 of 3 vehicles being driven on District streets originate outside of the city, it is critical to work throughout the region to reduce auto demand within the District. The District should support regionwide TDM programs to reduce auto demand on District streets. As the regional transportation planning organization, MWCOG should lead these efforts with strong support from Washington, D.C. A first step in this effort could be to set a regionwide commute mode share target, so all regionwide municipalities can have a common goal to



strive to attain. The District should work with MWCOG to institute a regionwide effort to implement adopted TDM policies, ensure regional coordination and consistency, and increase public awareness of transportation issues and options.

B. Education, Promotion, and Enforcement

1. District government buildings should serve as a model for TDM efforts and compliance.

The best way to support the District's TDM initiatives is to incorporate them into District operations. As a major tenant throughout the city, the District can help many buildings expand their TDM programs. DDOT will work with all District agencies to determine existing TDM programming available in buildings where District staff are located, propose options for expanding TDM options in those buildings, and develop a model TDM program for when District departments move to new buildings.

2. Encourage employers to support and utilize the public transit services.

Throughout the District, many employers provide shuttles for their employees. While these shuttles provide a valuable transit service, the private shuttle routes often duplicate public transit routes but restrict who can ride. This results in lower passenger efficiency per vehicle and increased congestion on the roadway. To improve roadway operations and simplify travel for all transit riders, the District should encourage employers to consolidate services and leverage funding to help improve the public transit system.

3. Implement *TravelSmart* and individualized marketing to target transportation demand.

TravelSmart is an innovative way to encourage environmentally friendly ways to travel. The concept, used in more than 300 projects around the world, identifies individuals who want to change the way they travel and uses personal, individualized contact to motivate them to think about their travel options. *TravelSmart* provides customized information and training to help people take transit, bike, walk, or carpool for some of their trips. *TravelSmart* gives participants just the information they ask for to help them get started, or to keep on walking, biking, taking transit, or carpooling. Those who don't want information are left alone. The District should implement a *TravelSmart* program similar to the first U.S. large-scale project in Portland, OR, where more than 14,000 people were contacted.

TravelSmart includes a four-step program:

1. *Before Survey. Initial survey to determine how household members currently travel.*
2. *Individualized Marketing. Personalized contact for those who expressed an interest in traveling using environmentally friendly modes. Those people who are not interested are left alone.*
3. *After Survey. One year after the initial survey, a random survey is conducted to measure changes in travel behavior.*
4. *In-Depth Study. Home interview with selected households determining the potential for travel behavior change. Interview aimed at collecting information on the reasons behind their mode choice. Assessment of whether non-SOV mode actually could have been a viable option to the*



car. If there is a viable option, personalized information and assistance about traveling provided, including the option for a personal home visit from a "Travel Ambassador".

Implementation of the Portland *TravelSmart* program resulted in a 44 percent increase in transit trips, plus additional increases in walking and biking trips. *goDCgo's* extensive TDM information and staff support provide an ideal establishment for implementation of a *TravelSmart* program.

4. Document transportation conditions in a commute report.

MWCOG's *State of the Commute* annual report provides valuable data on the travel patterns throughout the region. DDOT should offer additional funding for MWCOG to collect data for an expanded survey sample of District-residents. This data will become the basis to determine whether District initiatives are effectively influencing travel characteristics, and can be analyzed for consistent patterns of place, time, and purpose of journey.

5. Encourage data collection and sharing with private sector partners to monitor travel pattern and TDM effectiveness.

Districtwide travel data is valuable, but can be difficult to use to determine the effectiveness of specific TDM program. To learn what TDM programs work best, site-specific surveying is needed. As part of requiring TDM for all developments per Recommendation B.1, each development should also be encouraged to conduct an annual survey that asks residents and/or employees about their travel patterns, which TDM programs they utilize, and what additional programs would they use if provided. This data could be provided to DDOT for aggregation and analysis to benchmark TDM performance at the site-level and citywide.

6. Encourage developers to adopt alternative transportation-related credits related to green building certification.

Green building certification represents an opportunity for nationwide TDM guidance. *Leadership in Energy and Environmental Design* (LEED) provides nationwide guidance while the District of Columbia's *D.C. Green Construction Code* provides local guidance.

The 2014 *D.C. Green Construction Code* demonstrates the city's commitment to being a leader in sustainability. Under the code, construction projects have several alternatives to satisfy green requirements including LEED Certification.

LEED Certification is a green building program for which projects satisfy prerequisites to earn points toward different levels of certification. Fourteen points currently fall under the category of Sustainable Sites, four of which are assigned to Alternative Transportation: Public Transportation Access, Bicycle Storage & Changing Rooms, Alternative Fuel Vehicles, and Parking Capacity and Carpooling. DDOT and the District Office of Planning (DCOP) should encourage developers to seek the full alternative transportation credit for developments in suitable locations. LEED Certification includes inspection after one year of occupancy to verify that programs are adopted.



7. PARKING AND CURBSIDE MANAGEMENT ELEMENT

A. Policies

1. Capture and reinvest revenue for transportation improvements.

The District currently dedicates revenues from parking meters to pay for part of the annual WMATA operating budget. As is the case for most transportation investments, the cost of transportation improvements is frequently the biggest barrier to implementation. The District should continue to use revenues from parking to fund complementary multimodal strategies, such as transit improvements and bikeshare expansion.

2. Formalize curbside priorities/prioritization approach.

Demand for curbside access will continue to intensify as the District's resident, commuter, and visitor populations increase. Competing needs and desires for the use of curb lanes include not only public parking, but also multimodal investments or innovative projects in the curb lane such as bike parking corrals, CaBi stations, parklets, or pedestrian plazas.

For most of these uses to function effectively, all other uses must be prohibited from the same space; DDOT should develop standards that effectively formalize and prioritize the uses of the right-of-way during various times, conditions, and locations. Formalizing a set of curbside-use priorities also will make the decision-making process more transparent.

One of the mobility policies of moveDC is that all major streets must prioritize pedestrians, accommodate vehicles and deliveries, and support at least one other mode. As planning for individual projects moves forward, there may be tradeoffs between curbside parking uses and mobility for other modes. DDOT should develop a policy and approach for evaluating the tradeoffs between parking and mobility in the project planning and development process.

3. Encourage a balance of parking demand between private parking facilities and on-street parking.

DDOT should work with off-street parking operators to implement strategies to better balance short- and long-term parking needs and accommodate additional demand in private facilities. Currently, rate structures in many private parking facilities disincentivize short-term parking, making low-cost public curbside spaces a more desirable option.

Offering parking rate structures that are reasonable for short-term parkers and long-term parkers can help manage curbside parking demand and maximize the use of off-street facilities. Combining off-street parking rate strategies with the complementary strategy of raising on-street parking rates commensurate with demand would help optimize the overall use of on-street and off-street parking. It also has the potential to increase the attractiveness of other travel modes for long- and short-distance trips.

When private garages close before local businesses, additional demand is placed on curbside parking from drivers who want to stay later. The District should encourage publicly accessible parking garages



within walking distance of commercial uses to consider aligning garage hours of operation with neighborhood activity.

B. Education, Promotion, and Enforcement

1. Use data to understand trends in parking demand.

DDOT should continue and expand data collection on parking utilization and vehicle ownership to understand parking demands and policy needs. For example, carshare access has consistently been found to reduce vehicle ownership rates among households, particularly in areas also offering first-rate transit connectivity. The District already supports carsharing (and reduced parking demand per household) by dedicating on-street parking spaces and establishing curb management policies for carsharing operations. Documenting the impact of curbside carshare vehicles on vehicle-availability rates among nearby households should inform discussions about RPP in the District.

DDOT also collects information on the usage of metered parking through a variety of means. This data should be used to engage stakeholders on parking management decisions and made available to the general public whenever feasible. As new parking programs are developed, DDOT should embed data collection and analysis within the program design.

8. SUSTAINABILITY AND LIVABILITY ELEMENT

A. Policies

1. Support biodiversity and remove invasive plant species.

To conserve biodiversity and remove invasive species, the District should require the use of native and approved tree and plant varieties for all landscaping and plantings in the District's right-of-way, including parks and public spaces. The use of native species helps reduce the need for irrigation since native species are better adapted to the District's climate conditions. DDOT should also coordinate with DGS, DDOE, and DPR to expand this approach to other District-owned lands.

2. Ensure coordination with utility companies to protect and preserve the tree canopy.

Construction and maintenance work associated with utility projects in the District often impact streets and frequently, street trees. UFA should require utility companies to protect and preserve existing healthy street trees whenever possible. In the event that an existing tree cannot be suitably protected during construction or as a result of the outcome of construction, the utility company should appropriately replace the tree (or trees) with an appropriate and approved tree (species and size).

3. Continue to promote and identify opportunities for innovative stormwater design.

The District has 360 miles of alleys, most of which are covered by hard, impermeable surfaces that produce large volumes of stormwater runoff. Green alleys, on the other hand, use LID techniques to keep stormwater and pollutants from entering the sewer system, streams, and rivers. DDOT should continue to promote and identify opportunities throughout the District for innovative stormwater design solutions.



4. Support existing policies that capture and prevent stormwater discharge.

Existing policies such as RiverSmart, right-of-way standards, Green Streets, and tree planting are aimed at capturing and mitigating stormwater discharge into the District's right-of-way. DDOT should promote and support these policies so that they are implemented across the District.

5. Promote and incentivize public-private partnerships (P3s) for stormwater management.

DDOT should work with District agency partners to promote and incentivize public-private partnerships for the development of stormwater management facilities. A prime example of opportunities for P3 stormwater management initiatives are redevelopment projects.

6. Improve accessibility to public spaces, amenities, and facilities in the public right-of-way.

To ensure that community spaces are providing the greatest benefit to the District, it is important that people of all ages and ability levels be able to access them. Amenities and facilities should be identified as high-priority destinations for multimodal access, so that the greatest range of residents can access them.

7. Encourage and manage temporary use of public space.

Managed appropriately, public open space has the potential to flexibly accommodate many different uses and users under a wide range of circumstances. Some spaces that carry moving vehicles and people can often be partially or fully closed to accommodate special events. Similarly, space that stores vehicles (parking lots, on-street parking), can often be re-purposed for short, or at times, extended periods of time to allow its use for other appropriate uses. A sample of appropriate temporary public space uses includes:

8. Improve attractiveness of public space.

Creating public places for people takes more than simply providing the space; it requires making it attractive, functional, and safe so that people are drawn in and comfortable spending time staying there. Well-designed spaces often become highly used and can meaningfully strengthen neighborhood character, safety, and economics. Where appropriate, DDOT should incorporate light, greenery, art, and human-scale design into public space to help it become a place that people are excited to use and proud to have in their neighborhood.

9. Reevaluate value of underutilized right-of-way.

Streets and public right-of-way make up a significant portion of open space in the District. In some locations, these spaces are underutilized, unfriendly to pedestrians, and unsupportive of surrounding businesses and destinations. DDOT should identify and evaluate innovative opportunities to reclaim or transform underutilized rights-of-way through studies, public participation, and demonstration projects to create inviting public spaces in the District that support a multimodal transportation network. Examples of underutilized rights-of-way in the urban environment that have been transformed in other cities include slip lanes, service roads, curb cuts, and traffic islands.



B. Education, Promotion, and Enforcement

1. Enforce soil volume requirements.

DDOT should enforce soil volume requirements for the planting of new trees in the District. Soil volume requirements for urban trees help ensure root growth and prevent soil compaction. It also protects adjacent sidewalks and roadways from impacts due to root growth. Soil volumes can impact the longevity of a tree, as well as the likelihood that tree roots will be able to adequately access air and water in a constrained urban condition.

DDOT Urban Forestry Administration has established the following soil volumes for street trees in the District:

- *Large Trees. 1,500 cubic feet of soil within a 27 foot radius*
- *Medium Trees. 1,000 cubic feet of soil within a 22 foot radius*
- *Small Trees. 600 cubic feet of soil within a 16 foot radius*

2. Increase citizen stewardship of public trees through Canopy Keepers or other outreach activities programs.

DDOT should expand its outreach for Canopy Keepers and grant programs such as the Green Grant Initiative, which provides funding to organizations seeking to improve the District's urban canopy. The Canopy Keeper Program allows residents and businesses to adopt new trees. In agreeing to adopt a tree, a sponsor is then responsible for watering and maintaining the tree for two years after it is planted.

DDOT's Urban Forestry Administration has set a goal to have 50 percent of the new trees planted annually adopted. Currently, of 7,000 trees planted each year, approximately 1,300 are adopted. Expansion of the program has the potential lead to greater engagement and awareness of District residents about sustainability initiatives and reduce tree maintenance costs for UFA.

3. Increase participation in urban forestry advocacy.

DDOT should increase its participation in advocacy for protection, maintenance, enhancement, and expansion of its urban tree canopy. The District of Columbia Grove (DCGrove.org) is part of The American Grove, a national online community created to engage and encourage citizen to plant trees and protect the urban tree canopy. Additionally, UFA should use its existing partnership with Casey Trees, an active non-profit dedicated to restore, enhance, and protect the tree canopy of the District, to expand tree advocacy and education programs.

4. Develop a Placemaking in Public Space program.

DDOT should develop a placemaking in public space program to encourage and actively promote opportunities for enhancement in ineffective and under-used spaces citywide. Any enhancements within the public realm should prioritize safety and functionality of the space and carefully consider the



impacts of the change to the space prior to any modifications being made. Examples of placemaking include:

- *Green infrastructure*
- *Public art*
- *Beautification projects*
- *Public plazas*
- *Café seating*
- *Parklets*