Transportation, Public Works and Environmental Services

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District Department of Transportation

The District Department of Transportation (DDOT) is responsible for the planning, design, construction, maintenance, and operation of the District's roadways, regulation of public space, and the planting and upkeep of street trees. Central to these responsibilities is the stewardship of the public right of way. The agency's right of way real estate makes up nearly one-third of the District's land area; DDOT's transportation assets are valued at $46 billion. Table 10.1 summarizes the transportation assets of the District.

Transportation Vision and Mission

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

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

DDOT is guided by MoveDC's (District's long-range multimodal transportation plan) goals and objectives that outline its programmed investments, policy objectives and actions, and benchmarks for achievement over the coming years. The program is built upon solid understanding of our infrastructure needs and capacities and the critical investments necessary to move forward into the next decade. MoveDC has seven key goals:

1. Sustainability and Health: Advance 75 percent of all commute trips in the District by non-auto modes

- Increase non-auto mode split;
- Increase access to parks and green space;
- Encourage active transportation for health benefits;
- Reduce air and water quality impacts of transportation; and
- Prepare the transportation system for changing environmental and climatological conditions.

2. Citywide Accessibility and Mobility: Maximize system reliability and capacity for moving people and goods

- Increase the person-carrying capacity of the transportation system
- Improve system reliability
- Reduce financial barriers to the lowest-income transportation system users
- Accommodate the movement and management of freight and goods
- Integrate the District's transportation system with the region's transportation network

3. Neighborhood Accessibility and Connectivity: Support neighborhood vitality and economic development

- Increase the coverage of all modal networks throughout the District
- Increase the number of transportation choices for travel between city neighborhoods
- Increase transportation availability to population centers and jobs, schools, amenities, and services
- Increase transportation availability to economically challenged or targeted redevelopment areas

4. Safety and Security: Achieve zero fatalities and serious injuries on the District transportation network

- Improve safety for all users
- Improve redundancy of transportation networks to handle emergencies

- Expand sidewalk network
- Maintain ability to evacuate the District in case of emergency
- Preserve security of key functions without impacting the transportation system

5. Public Space: Reinforce Washington, D.C.'s historic landscapes and quality of neighborhood public space

- Protect and enhance important corridors and urban landscapes
- Make streets functional, beautiful, and walkable
- Increase tree coverage

6. Preservation: Maximize reliability for all District transportation infrastructure by investing in maintenance and asset management

7. Funding and Financing: Invest in transportation to achieve outcomes within the plan horizon

Transportation System Overview

As the nation's capital, the District is also at the core of one of the country's largest metropolitan areas and a complex, multimodal regional network. On an average workday, the District's population swells with the arrival of nearly 500,000 workers and 100,000 visitors who reside outside of the District. All of these travelers must be accommodated by the District's various transportation options. Unfortunately, congestion is often the result, particularly during the morning and evening commute periods. DDOT's role is to manage the transportation system and ensure it is kept in good condition.

The District has one of the most balanced transportation systems in the country. The DDOT's transportation network includes one of the country's most extensive mass transit systems, densities that support and promote transit use, a growing network of bicycle and pedestrian trails, and a unique system of radial boulevards which distinguish it from all other American cities. Washington's gracious avenues, bridges, and parkways are part of its history and a defining element of its urban form and character. With appropriate strategies in place, these transportation assets can enhance the quality of life in the city and increase the District's attractiveness while still performing their essential function to move people and goods.

Among large cities in 2012, the District is ranked second only to New York City in terms of the percentage of residents who bike, walk, or take public transportation to work. These modes are used by 54.6 percent of residents in the District, compared with 67 percent in New York. According to the 2013 American Community Survey 5 year estimates, 37 percent of the District's households have no automobile. Providing transportation choices that encourage additional residents to forego the single-occupant car and choose more efficient and environmentally friendly options such as walking, bicycling, and public transit is a key DDOT goal.

Total non-auto mode ridership has been on the rise in the District over the past five years. Figure 10.1 below shows the annual ridership for boardings by station/stop in the District. Since 2009, transit has overtaken drive alone as the most common commute mode for District residents, as shown in Figure 10.2. Commuting by bicycle has increased threefold in that time, and while walking has slowly climbed above 12 percent of commuters, this figure does not capture that walking is a portion of nearly every commute trip, particularly transit trips. The increase in transit use suggests there are likely more people walking longer distances as part of their commute.

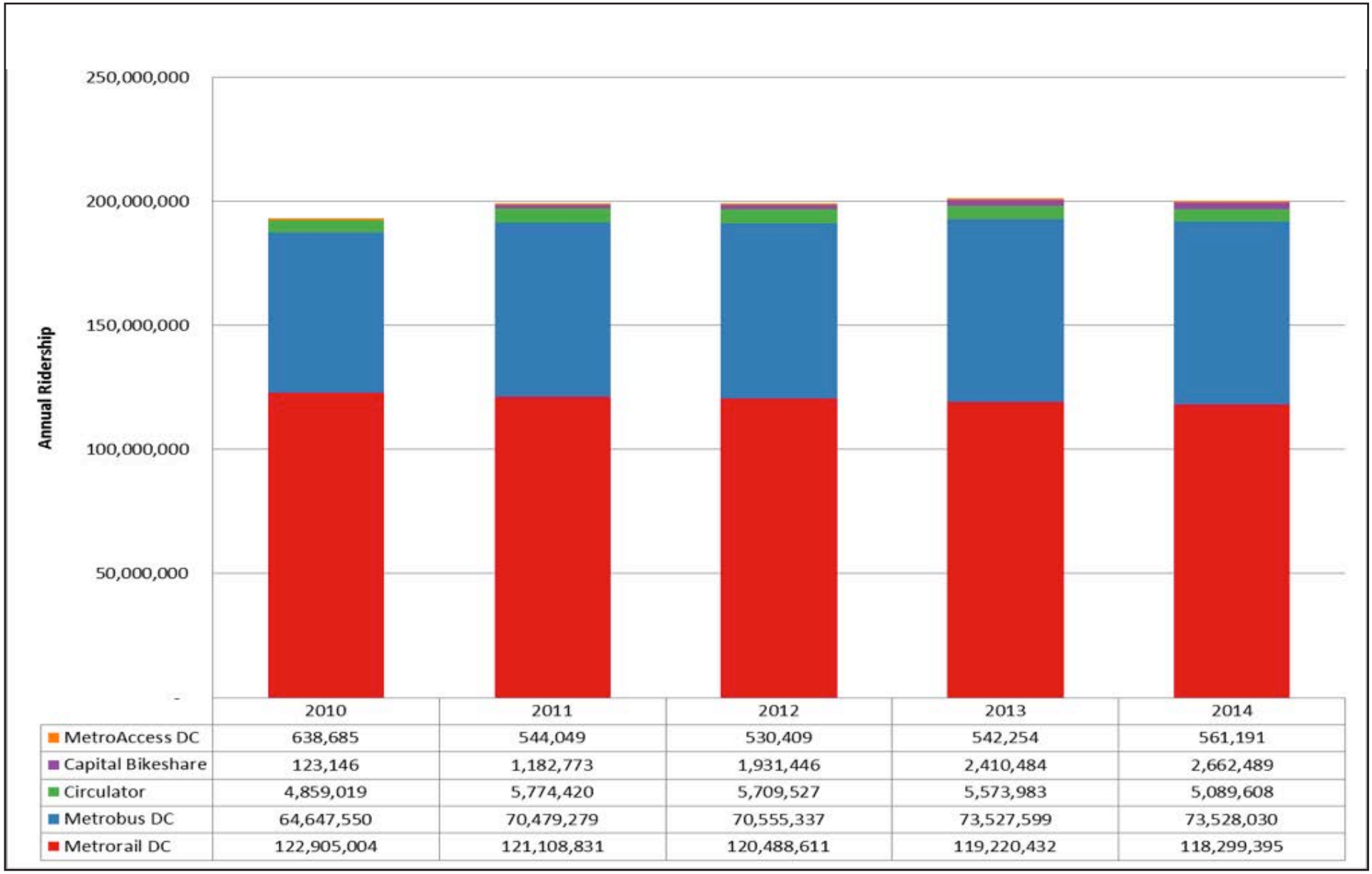
Table 10.1a. Transportation Assets in the District	
Transportation Asset	Description
Roadway System	1,146 linear miles of roadway
Bridges	228 (209 vehicle, 19 pedestrian)
Tunnels	16
Sidewalks	1,495 linear miles
Bicycle Routes	
On-road bicycle lanes Cycle tracks Signed routes Off-road trails Shared Lanes	64 linear miles 6 linear miles 88 linear miles 56 linear miles 15 linear miles
Capital Bikeshare	205 stations 2,797,341 trips in 2014 system-wide
Street Trees	137,000 (7,567 in FY 15planted)
Alleys	358 linear miles
Traffic Signals	1,652 traffic signals
Streetlights	71,000 streetlights
Parking assets	13,525 parking meters on 18,000 metered parking spaces
Circulator	Service on 43 linear miles; Ridership 5.1 million (2014)) 67 vehicles (includes 18 new vehicles delivered in 2015)
Streetcar	6 streetcar vehicles 2 streetcar operating & storage facilities 7 linear miles of track 15 streetcar stops/platforms 5 traction power substations
Source: District Department of Transportation	

Table 10.1b. Assets Not Owned By DDOT

Transportation Asset	Description	Transportation Asset	Description
Rail Mass Transit (Metrorail)	• 38 linear miles (total for region= 118 linear miles) • 40 stations (total for region = 91) • 119.2 million unlinked District passenger trips in 2013 • 273.8 million unlinked regional passenger trips in 2013	Airports	Three international airports located outside of the District but serving the metro DC region with combined 31.5 million enplanements in CY 2013 (0.25 percent increase from CY 2012) • Washington Dulles International (11.1 million enplanements; 49.3 million cargo tons) • Baltimore-Washington International (10.6 million enplanements; 20.9 million cargo tons) • Reagan National (9.8 million enplanements; 1 million cargo tons)
Bus Mass Transit (Metrobus)	• Service on 261 linear miles of road (total for region=1,201 linear miles) • 73.5 million unlinked District passenger trips in 2013 • 132.1 million unlinked regional passenger trips in 2013		
Commuter Bus Transit	Various commuter bus operators in Maryland and Virginia providing service into the District. • Maryland Transit Administration (4.2 million unlinked passenger trips in 2013) • PRTC OmniRide (1.8 million unlinked passenger trips in 2013) 1 • Loudoun County Commuter Bus (1.3 million unlinked passenger trips in 2013) • Martz Group (0.3 million unlinked passenger trips in 2013	Railroads	27.2 linear miles of rail line for freight and passenger rail service • Intercity passenger rail service o Amtrak (5 million boardings and alightings at Union Station in 2014) • Commuter rail service o MARC (9 million unlinked passenger trips in 2013) o VRE (4.5 million unlinked passenger trips in 2013) 1 • Freight rail (43.6 million cargo tons in 2013) o CSX o Norfolk Southern Union Station, within walking distance of the Capitol, provides connections to intercity bus and rail transit along with shared cars, rental cars and sightseeing services.
Intercity Bus Transit	Six providers provide intercity bus service from Union Station • BoltBus • DC2NY • Greyhound • Megabus • Peter Pan • Washington Deluxe		

Source: District Department of Transportation

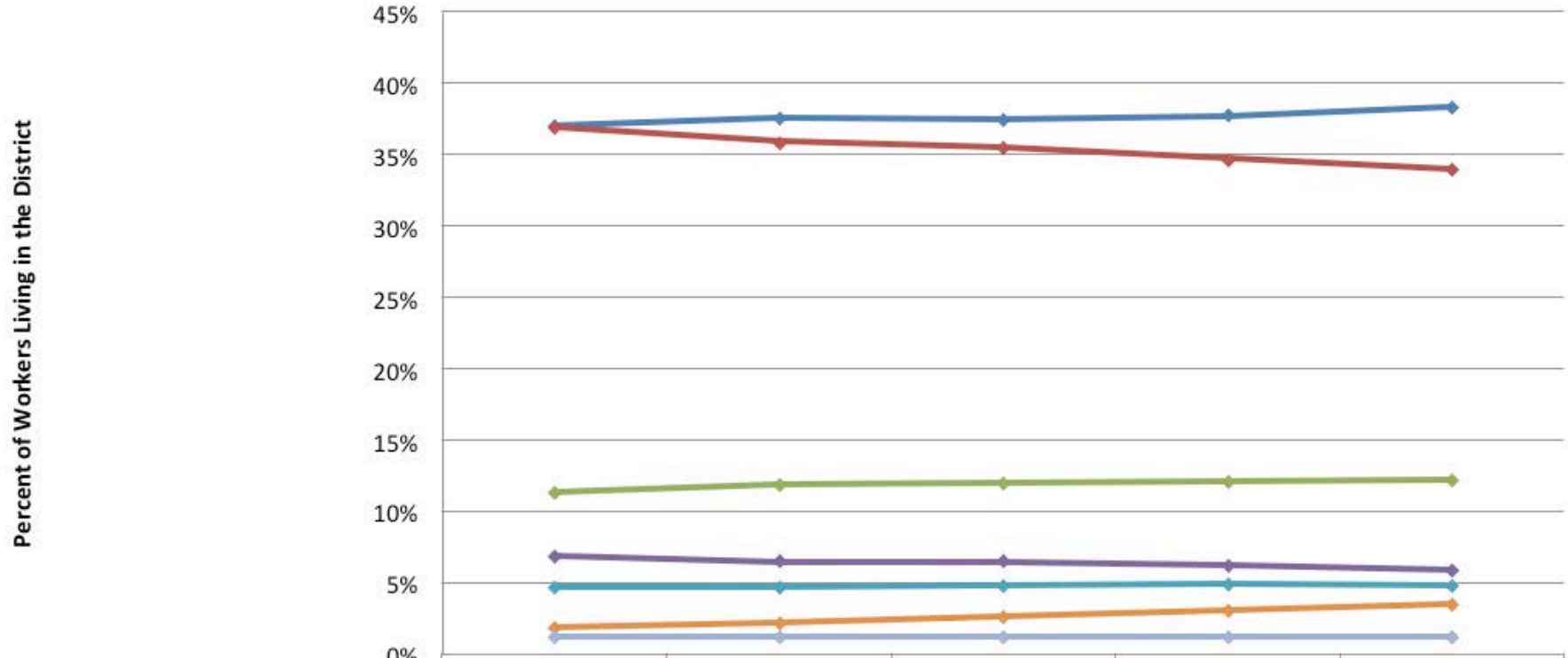
Figure 10.1. Non-Auto Mode Ridership, 2010-2014



	2010	2011	2012	2013	2014
MetroAccess DC	638,685	544,049	530,409	542,254	561,191
Capital Bikeshare	123,146	1,182,773	1,931,446	2,410,484	2,662,489
Circulator	4,859,019	5,774,420	5,709,527	5,573,983	5,089,608
Metrobus DC	64,647,550	70,479,279	70,555,337	73,527,599	73,528,030
Metrorail DC	122,905,004	121,108,831	120,488,611	119,220,432	118,299,395

Sources: WMATA, DC Circulator, Capital Bikeshare

Figure 10.2. Means of Transportation to Work for District Residents, 2009-2013



	2009	2010	2011	2012	2013
Transit	37.10%	37.60%	37.50%	37.80%	38.40%
Drive Alone	36.90%	35.90%	35.50%	34.70%	34%
Walk	11.30%	11.90%	12%	12.10%	12.20%
Carpool	6.90%	6.50%	6.50%	6.20%	5.90%
Work from Home	4.70%	4.70%	4.80%	4.90%	4.80%
Bicycle	1.90%	2.20%	2.60%	3.10%	3.50%
Taxi, Motorcycle, & Other Means	1.20%	1.20%	1.20%	1.20%	1.20%

Source: American Community Survey 5-year estimates 2009-2013.

Many of the transportation choices available within the District are not directly provided by DDOT, but the agency provides the infrastructure those systems operate on and exercises regulatory oversight on nearly all transportation in the District. The following sections describe the transportation choices in the District.

Roadway System, Vehicle Movement, & Safety

The District's roadway system consists of 1,146 miles of roadway, 228 vehicular and pedestrian bridges, and approximately 7,700 intersections. Approximately 19.5 percent of these intersections are signalized, with about one in three signalized intersections located within the downtown area. The roadways in the District are categorized by function, ranging from interstates and other freeways, which provide the highest degree of travel mobility, to local streets, which provide the highest level of access to land uses. The District regularly monitors and rates the condition of its roadways and bridges. In 2014, 80 percent of streets were in fair to excellent condition, which is consistent with other cities of the District's size. In 2015, only 12 of the District's 228 vehicular and pedestrian bridges were rated as structurally deficient, the lowest in decades.

Traffic congestion on the District's roadway network occurs primarily on the radial principal arterial roadways. The flow of traffic is greatly influenced by north-south movements along the I-95 corridor feeding into I-295 and I-395. These highways carry the heaviest daily traffic volumes in the District: I-395 over the 14th Street Bridge carries the highest volumes of any roadway in the District, with approximately 175,000 vehicles per day; volumes are slightly lower on I-295, with 80,000 vehicles per day. The limited number of crossings over the Potomac and Anacostia rivers generates higher volumes of traffic at these gateways than their counterparts in the northern portion of the District. The major arterials streets – New York, Connecticut, Massachusetts, and Rhode Island avenues – typically carry between 20,000 and 40,000 vehicles per day, with New York Avenue carrying slightly higher volumes (50,000-70,000 vehicles per day). Total vehicle miles traveled on all roadways in the District was 9.7 million miles in 2013.

Safety is DDOT's highest priority for the roadway network and the agency works hard to continually improve the system. As part of a new mayoral initiative in 2015, DDOT began implementation of Vision Zero DC, a government-wide effort to accelerate transportation safety strategies with a goal of eliminating all serious injuries and fatalities in our transportation system within ten years. Informed by best practices from around the world, Vision Zero DC will ensure the safety of all travelers including occupants of motor-vehicles, but will focus especially on the most vulnerable modes of transportation such as pedestrians and persons with mobility challenges; public transit users; and people on bikes. The initiative will prioritize highly-accurate data collection and analysis, effective enforcement of safety-related rules and laws, educational opportunities to foster a transportation-safety culture, and safe street design that accommodates all modes and levels of ability. By the year 2024, the District of Columbia aims to have zero transportation-related fatalities and serious injuries on its streets.

Project Safe Child – Child Safety Belt Program

Motor vehicle crashes are the leading cause of death among children ages 2 to 14, mainly due to the nonuse or improper use of child seats and seat belts. The proper use of child car seats is one of the simplest and most effective methods available for protecting children's lives.

The District of Columbia Government and DDOT have made it easier for District residents to protect their families. Project Safe-Child is a child safety seat program for residents of the District of Columbia. The purpose of this program is to provide DC residents' infant, convertible, and booster seats, depending on a child's age and size, at a reduced rate along with information and educational materials on how to properly buckle in children. The only requirement is to be a current DC resident.

Table 10.2. District Crashes, Quick Facts 2011-2013			
Year	2011	2012	2013
Total Collisions	17,951	18,428	19,456
Fatal Collisions	27	18	29
Injury Collisions	5,210	5,258	5,358
Property Damage Only (PDO) Collisions	12,714	13,152	14,069
Fatalities	32	19	29
Non-Fatal Injuries	7,335	7,268	7,505
Disabling Injuries	305	336	305
Non-Disabling Injuries	1,301	1,257	1,398
Total Vehicles Involved	35,095	36,446	38,382
Total Persons Involved	42,547	44,121	47,690
Total Pedestrians Involved	831	919	1,038
Total Cyclists Involved	594	596	628
Pedestrian Fatalities	9	8	12
Cyclist Fatalities	2	0	2
Fatalities / 100 Million VMT	0.89	0.52	0.79
Injuries / 100,000 Population	1,186.90	1,149.41	1,160.96

Source: Traffic Safety Statistics Report for the District of Columbia (2011-2013). April 2015.

Failure to properly secure child passengers according to DC law is subject to fines. First offender fines are $75, plus two points on the operator's license. First time offenders can choose to pay $25 and attend a Child Passenger Safety Workshop. For second-time offenders, the class plus $75 fine are mandatory. Fines increase to $125 for a third offense and $150 for subsequent offenses. Penalties for seat belt violations are $55 for child passengers and $50 for adults, plus two points on the driver's license.

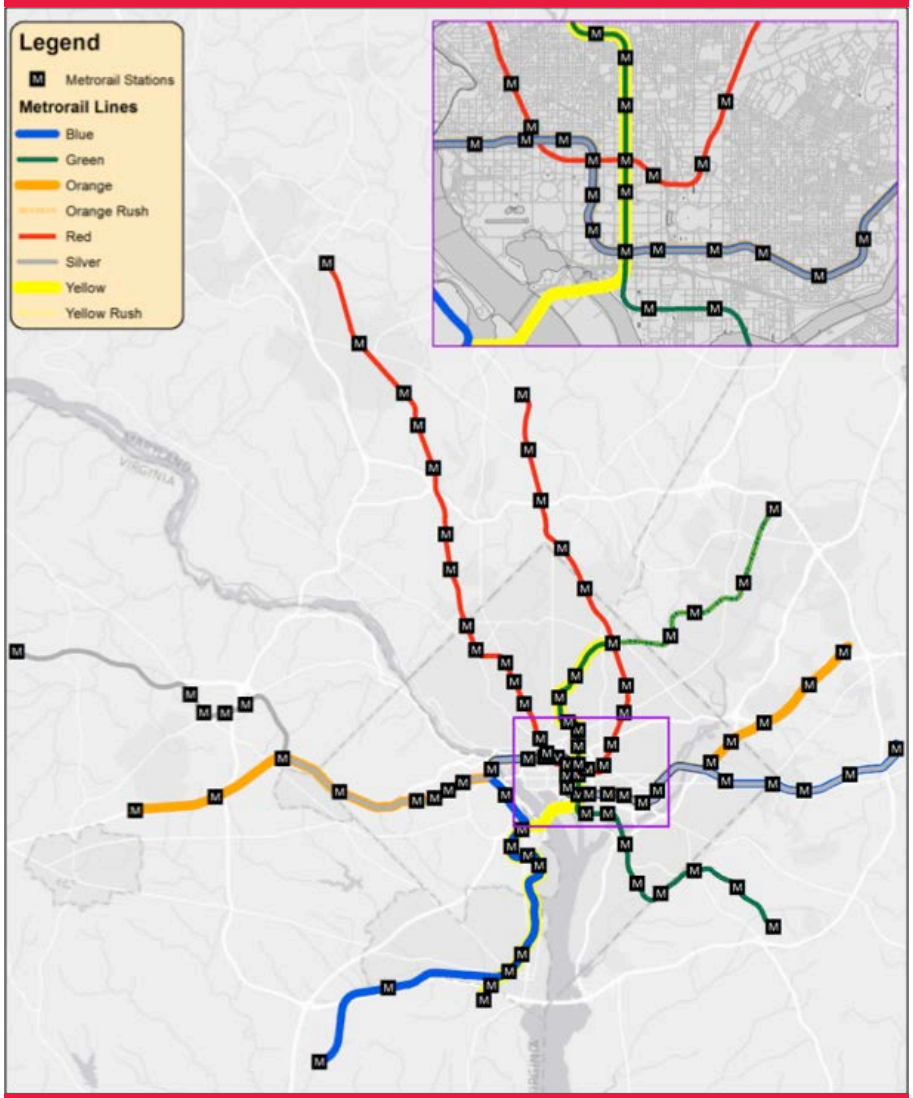
Transit Accessibility

The District and its region are served by the second largest rail transit system and the fifth largest bus network (measured by ridership) in the United States. The bus and rail systems are operated by the Washington Metropolitan Area Transit Authority (WMATA), which provides service throughout the Washington region.

Regional Rail and Bus Service

WMATA was created in 1967 by an Interstate Compact to plan, develop, build, finance and operate a balanced regional transportation system in the National Capital area. Construction of the planned 103-mile Metrorail system began in 1969 and was largely funded by the federal government. Currently, all operating costs of the system are borne by the compact signatory jurisdictions of the District, Maryland, and Virginia. The District, the State of Maryland, local jurisdictions in Northern Virginia, the Commonwealth of Virginia and the federal government all contribute capital funds, in varying degrees, to WMATA. An eight member board composed of representatives from the District, Maryland, Virginia and the federal government oversees the agency. The Metrorail system now totals 118 miles, 38.3 miles of which are located within the District itself. Close to half of the stations on the system -- 40 of 91 -- are located in the District. The Metrorail system is shown in Map 10.1.

Map 10.1. Regional Metrorail System (Inset on District CBD)



Source: District Department of Transportation

DC Circulator

The DC Circulator is operated as a partnership between DDOT, WMATA, and a non-profit organization known as District of Columbia Surface Transit, Inc. (DCST). The DC Circulator was conceived as "a simple, inexpensive, and easily navigable surface transit system that complements Metrobus and Metrorail." DC Circulator services are intended to stimulate economic activity by facilitating visitor access to neighborhoods in the District and to improve mobility for downtown workers around the central core during the workday. In line with these principles, DDOT established the Circulator with a simple $1.00 fare, all-day service frequencies of 10 minutes, and long spans of service (operating six or seven days a week from early morning late into the evening). Similarly DDOT purchased distinctive red buses with unique interiors (different from standard transit buses in the region), designed to promote faster entering and exiting of the vehicles.

Source: DC Circulator (Photo Credit: Sam Kittner)

Map 10.2. DC Circulator System

Source: District Department of Transportation

The DC Circulator is now a six-route bus system with service spanning into each of the District of Columbia's quadrants. The current network is a culmination of several route expansions and changes since the system's inception in July 2005. In 2014, the DC Circulator served 5.1 million riders on five routes. As of June 2015, DC Circulator operates a fleet of 67 buses and is the fourth largest bus system in the region in terms of ridership. The most recent expansion occurred in June 2015, when the Circulator launched its sixth route on the National Mall, in partnership with the National Park Service. The National Mall route added 15 stops near 27 museums and monuments along the seven mile route.

DC Streetcar

DC Streetcar is one of the key components in the District's transportation vision. The DC's Transit Future System Plan of 2010, developed by DDOT and WMATA, outlines a 37-mile network of modern streetcar lines operating in eight corridors. After the development of the 2010 system plan, as a way to prioritize this long-term streetcar goal, DDOT identified 22 miles, within the 37-miles proposed system, to be implemented first. Additionally, several planning studies were conducted at system and corridor levels. In 2014, the MoveDC plan identified 22 of the 37 mile planned system as the Priority Streetcar System that will:

- Link neighborhoods with a modern, convenient and attractive transportation alternative
- Provide quality service to attract and reach new transit ridership
- Offer a new premium transit option for District residents
- Reduce short inner-city auto trips, parking demand, traffic congestion, and air pollution
- Encourage economic development and affordable housing options along streetcar corridors.

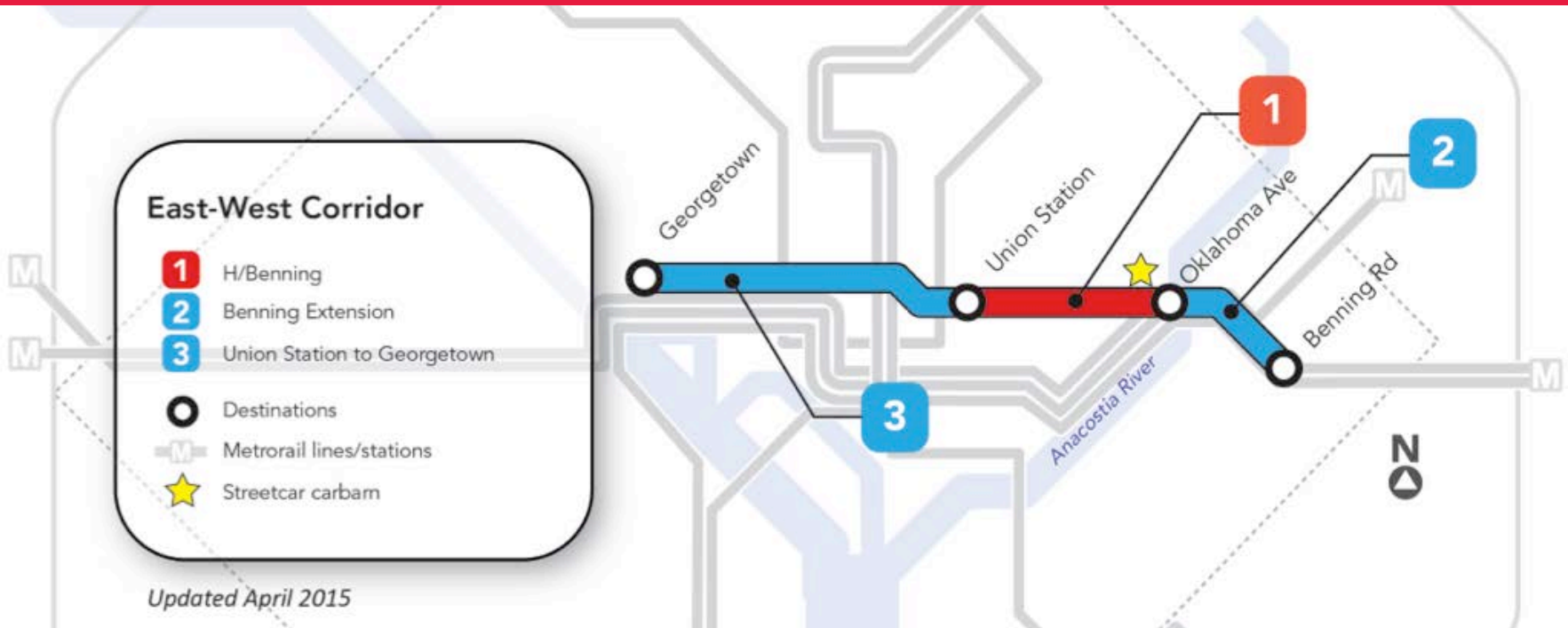
In 2015 after conducting a "Fresh Start" re-evaluation, DDOT decided to move forward with the priority on the "East-West Corridor (EWC)." The EWC will run from Georgetown to the Benning Road Metro Station when complete. The EWC includes the H Street/Benning Road Line, the Benning Extension, and the Union Station-Georgetown Extension.

The H Street/Benning Road Line completed construction in 2014 and is currently under system testing. Once in operation, it will become the first modern streetcar service in the District in 60 years. It will run between Union Station and Oklahoma Avenue NE. The construction of a permanent operating and storage facility, the Car Barn Training Center (CBTC) is underway and will be operational in the summer of 2017.

Both the Benning Extension and Union Station-Georgetown Extension are going through their respective environmental impact processes. In 2014, the Federal Transit Administration (FTA) issued a Finding of No Significant Impact (FONSI) regarding the Environmental Assessment on the Anacostia Streetcar Extension. The Anacostia project is in final design phase currently. In addition, DDOT initiated a planning study on North-South Corridor in 2013/14.

Source: DC Streetcar (Photo Credit: Howard Chang)

Map 10.3. Proposed Streetcar Lines and Priority Streetcar System



Source: District Department of Transportation

Bicycle Access, Facilities, and Safety

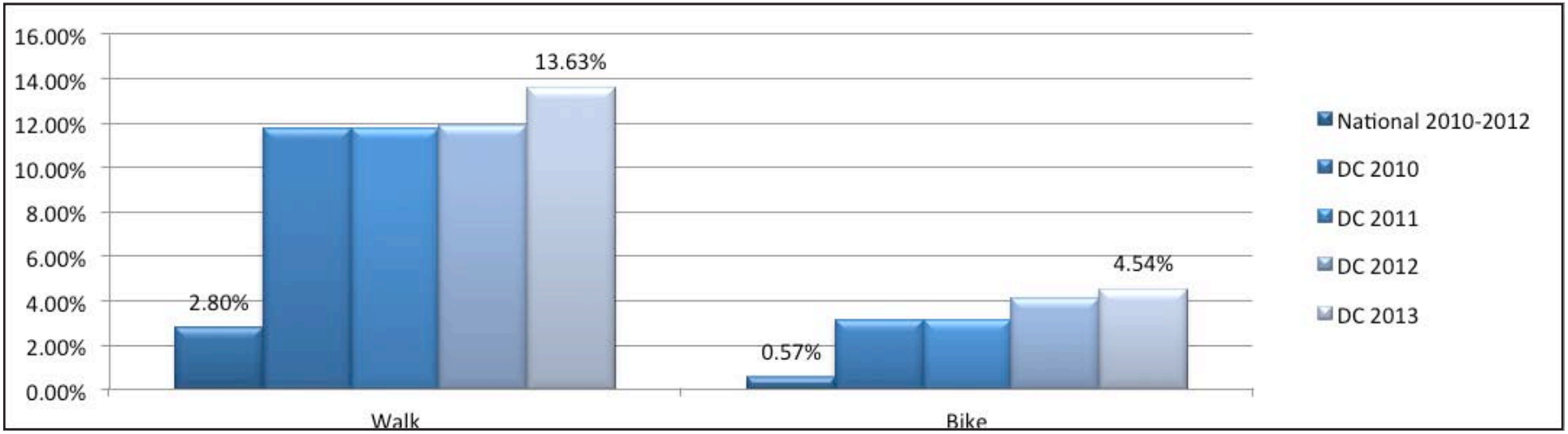
Bicycling has long been a part of the transportation mix in the District. In the late 19th and early 20th centuries, bicyclists, pedestrians, buggies, and streetcars all shared District streets before the advent of the automobile. The District's resurgent interest in bicycling as an alternative to motorized transportation grew in the 1970s in response to the energy crisis, and the first District Bicycle Plan was adopted in 1976.

The use of bicycles for transportation and recreation is increasing within the District. Between 2000 and 2013, according to the US Census, bicycle commuting nearly tripled, from 1.16 percent to 4.54 percent of all District-based work trips, continuing an upward trend since 1990. The 2005 Bicycle Master Plan called for 5 percent of all work trips to be by bicycle by 2015.

Currently, the District has 64 miles of on-road bike lanes, 6 miles of cycle tracks, 56 miles of off-road bike paths, 15 miles of shared lanes, and 88 miles of signed bicycle routes. The city is also working to improve bicycle connections through parks and green spaces.

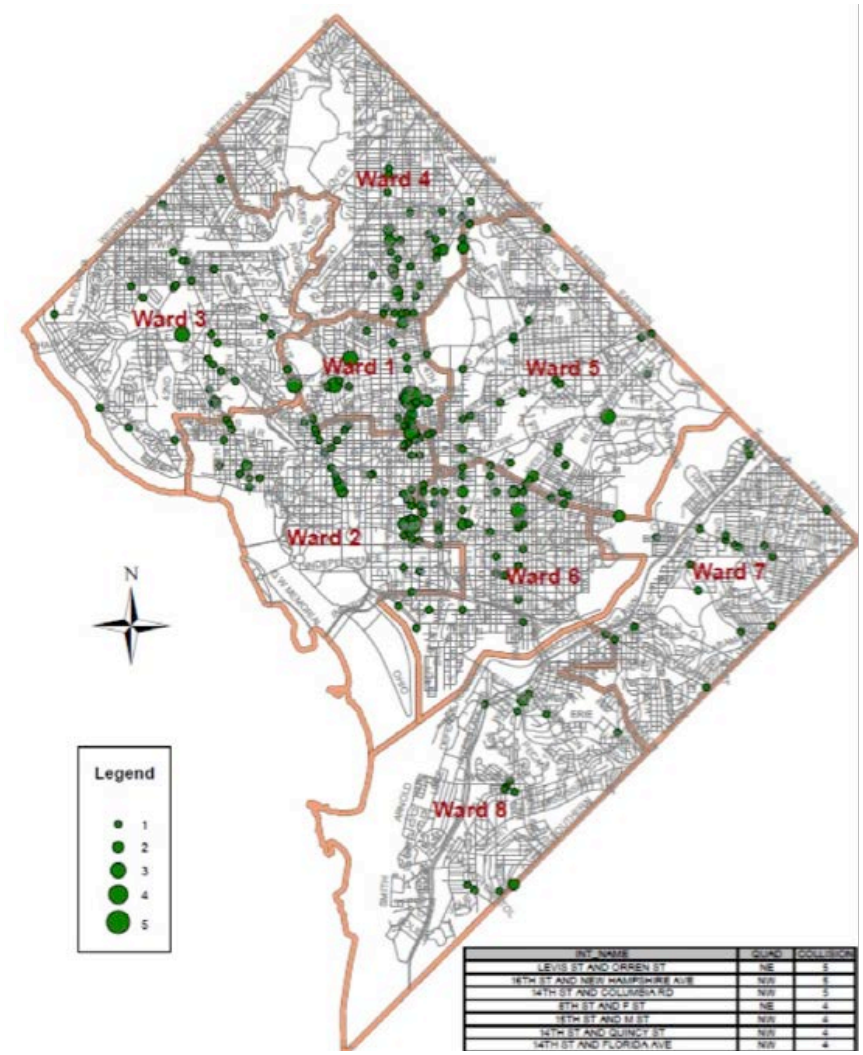
Safety is a continuing concern as bicycle usage increases. There was one bicycle fatality and 829 reported bicycle crashes in 2014.

Figure 10.3. Bicycle and Pedestrian Mode Share of District Residents, 2010-2013



Source: U.S. Census Bureau American Community Survey, 2010-2013

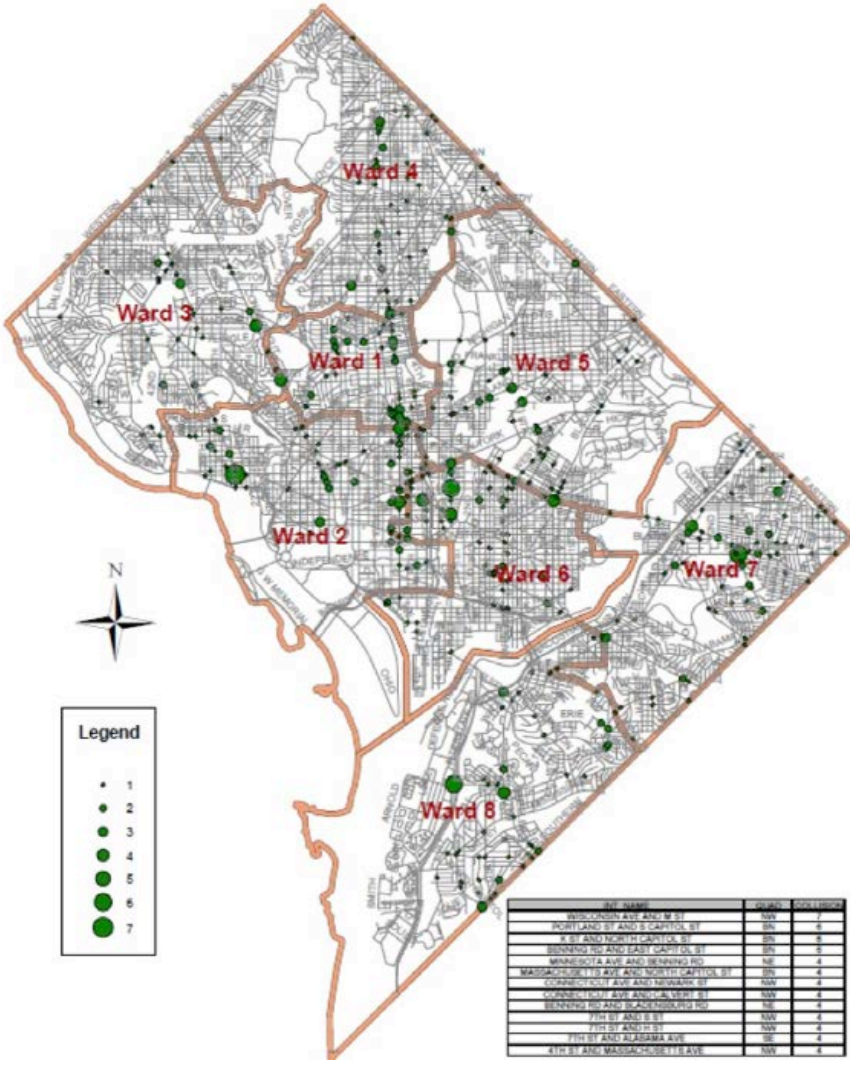
Map 10.4. Bicycle Involved Collisions at Intersections in 2013



INT_NAME	QUAD	COLLISION
LEVIS ST AND ORREN ST	NE	5
16TH ST AND NEW HAMPSHIRE AVE	NW	5
14TH ST AND COLUMBIA RD	NW	5
8TH ST AND F ST	NE	4
16TH ST AND M ST	NW	4
14TH ST AND QUINCY ST	NW	4
14TH ST AND FLORIDA AVE	NW	4

Source: Traffic Safety Statistics Report for the District of Columbia (2011-2013). April 2015.

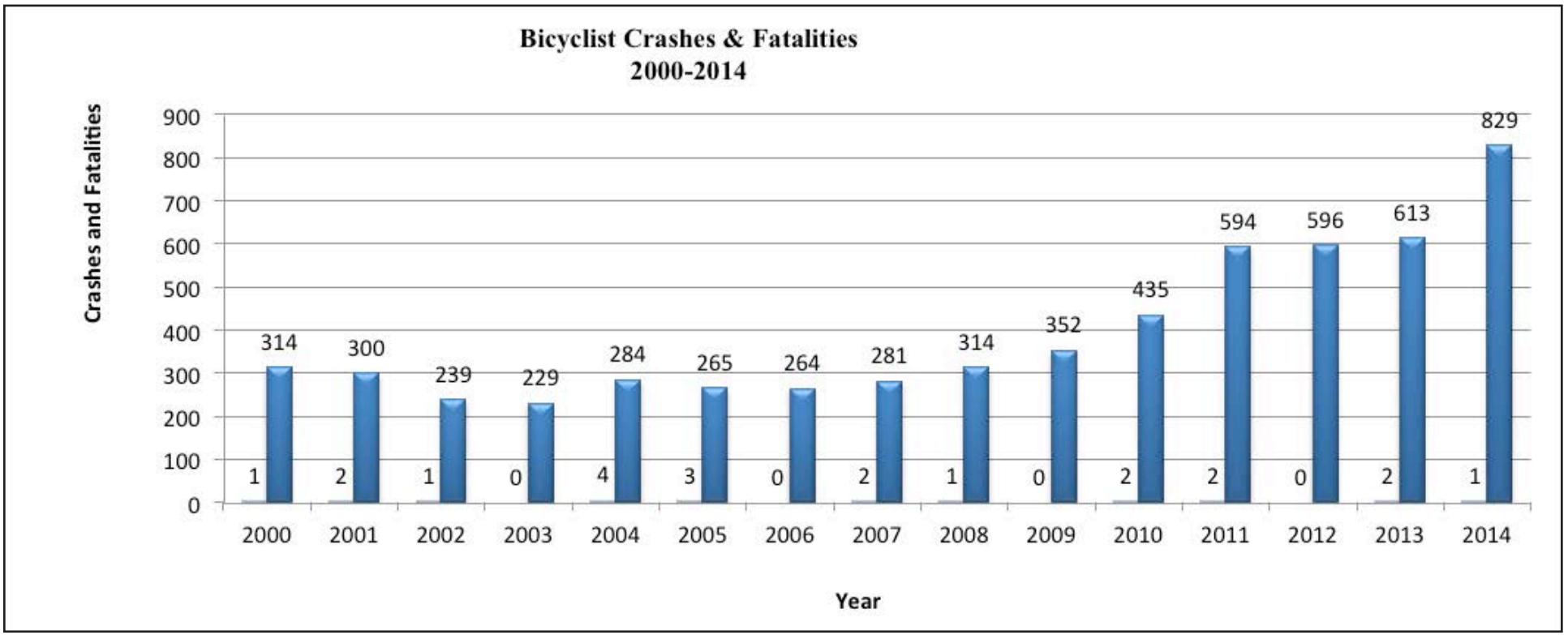
Map 10.5. Pedestrian Involved Collisions at Intersections in 2013



INT_NAME	QUAD	COLLISION
WISCONSIN AVE AND M ST	NW	7
PORTLAND ST AND S CAPITOL ST	SW	6
K ST AND NORTH CAPITOL ST	NW	5
BENNING RD AND EAST CAPITOL ST	SE	5
MINNESOTA AVE AND BENNING RD	NE	4
MASSACHUSETTS AVE AND NORTH CAPITOL ST	NW	4
CONNECTICUT AVE AND NEWARK ST	NW	4
CONNECTICUT AVE AND CALVERT ST	NW	4
BENNING RD AND SLADE/BURG RD	NE	4
7TH ST AND S ST	NW	4
7TH ST AND H ST	NW	4
7TH ST AND ALABAMA AVE	SE	4
4TH ST AND MASSACHUSETTS AVE	NW	4

Source: Traffic Safety Statistics Report for the District of Columbia (2011-2013). April 2015.

Figure 10.4. Bicycle Crashes and Fatalities, 2000-2014



Source: Traffic Safety Statistics Report for the District of Columbia (2011-2013). April 2015.

DDOT provides and facilitates a number of bicycle parking options throughout the District. In 2014, the District adopted regulations requiring secure, long-term bicycle storage in all multi-family residential buildings. This new regulation compliments the longstanding requirement for bicycle parking within office buildings. In addition to overseeing bicycle parking regulations for most office, retail, and service use buildings, DDOT installs bicycle racks and in-street corrals in the public space. The agency has previously held an artistic rack competition to engage and enhance the community, currently works with businesses through its "Bike Brand your Business" program to install specialized racks near local businesses, and works with the business improvement districts to install custom, neighborhood-designed racks.

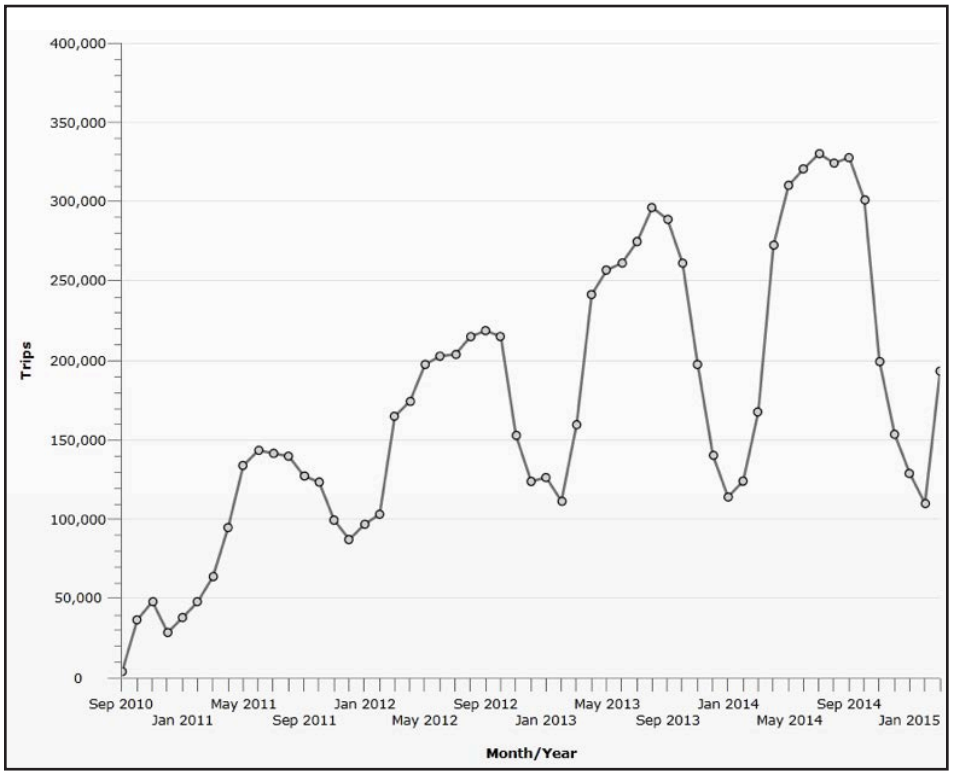
Capital Bikeshare

In September 2010, the Capital Bikeshare program was launched in the District and neighboring Arlington County, Virginia. It has since been expanded to Alexandria, Virginia, and Montgomery County, Maryland. The system provides publicly available bicycles 24 hours a day, 7 days a week at automated, solar-powered stations. One may purchase a membership in 24-hour, 3-day, 30-day, and annual quantity, in addition to a renewable "daily key." Depending on the membership type, a user accesses the bike by using either an RFID key fob directly at the bike's dock, or by entering a code at the dock that is received after using their credit card at the kiosk.

Capital Bikeshare Station and Bikes

Since its inception, the program has grown to include 205 stations within the District, has over 31,000 annual members, and has accommodated over 10 million bicycle trips system-wide on more than 3,000 bicycles.

Figure 10.5. Capital Bikeshare System-wide Trips by Month, September 2010 - January 2015



Source: District Department of Transportation

Pedestrian Access, Facilities, and Safety

The District's population density, interconnected grid of streets, wide sidewalks, and renowned park system has long contributed to a favorable environment for walking. In 2013, nearly 45,000 District residents (13.6 percent of the city's labor force) walked to work. The District has more than 1,600 miles of sidewalks. Pedestrian safety remains a focus and challenge for the agency. There were 12 pedestrian fatalities and 826 pedestrian injuries in 2013.

Improvements to pedestrian facilities enhance the quality of the walking and public transit environments and foster greater use of both modes. DDOT's improvements focus on reducing the number and severity of pedestrian-vehicle conflict points, such as through the use of leading pedestrian intervals at signalized intersections and High-intensity Activated crossWalK (HAWK) signals at midblock crossings. Leading pedestrian intervals at signals allow pedestrians to start their crossing before vehicles are given a green light. There are currently 154 signals with LPIs implemented. HAWK signals increase motorist awareness of pedestrians in the crosswalk when the crossing is not at an intersection. The District has 6 HAWK signals installed. Additional pedestrian improvements include clarified pedestrian routing, widened sidewalks, and improved aesthetic features such as landscaping.

Parking

Metered Parking

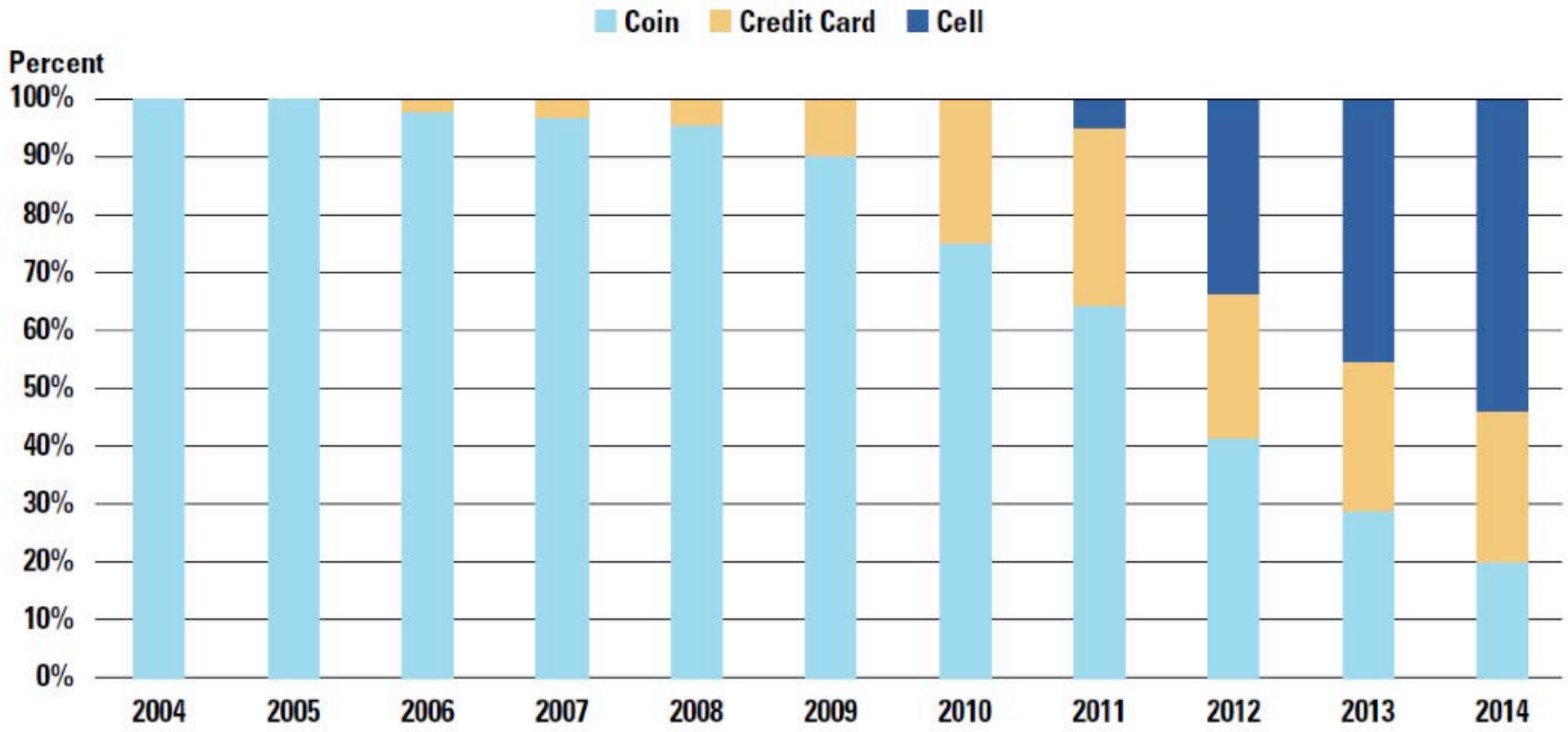
DDOT manages all of the public parking assets in the District of Columbia, including 18,000 metered parking spaces across the District and all of the curbside parking in the city's residential neighborhoods. For metered parking, there are 13,525 single-space parking meters (10,500 are solar powered smart meters) and 945 multi-space meters managing approximately 8,500 parking spaces.

The current electronic single-space meters were first deployed in 1998 and were a vast improvement over the mechanical meters that came before them. The meters offer better timing, the ability to accept credit card and coin payment, and allow for the use of electronic handheld devices to monitor and record repair and collection activities. Beginning in 2004, the Department began a program to upgrade these meters with newer next generation electronic mechanisms. This program continues today along with the conversion of some areas to multi-space meters. In 2009, DDOT introduced solar-powered smart meters into the District. These meters accept both credit card and coin payment and can be managed remotely by DDOT.

Introduced in 2009, the District's multi-space meters are solar-powered devices used to manage multiple parking spaces within a one block area. Users purchase time at the "pay and display" machine, then take a receipt the machine generates and display it on the passenger side dashboard of their vehicle. The machines accept both coin and bank card payments. Being introduced in late 2015, the second generation "pay by space" multi-space meters will offer users the ability to note on the meter what demarcated space they are parked at, without having to return to their vehicle and display a meter receipt.

In addition to accepting credit card and coin payments, the District offers pay by phone on all its meters. Currently being offered by ParkMobile, users can call in or use a mobile application to pay for their parking session. DDOT has the highest adoption rate for pay-by-phone in the world, with 55 percent of all parking revenue (25 percent of revenue paid by credit card and the remaining 20 percent paid by coins) currently being collected via this service in 2014.

Figure 10.6. Source of Parking Revenue in the District, 2004-2014



Source: District Department of Transportation

Electric Vehicle Parking

Starting in late 2010, DDOT installed its first curbside charging station in the U Street District to facilitate curbside access for electric vehicles. In 2013, two additional chargers were installed in Canal Park. Since the installation of these chargers they have resulted in:

- 74,933 MWh of electricity being used to charge vehicles,
- 31,471 kg of greenhouse gases avoided from vehicle emissions,
- 9,404 gallons of gasoline saved from vehicle consumption, and
- 8,865 vehicle charging sessions engaged.

Residential Parking

The residential permit parking (RPP) program was established in 1974 to:

1. Regulate commuter use of the curb space in residential areas; and
2. Enhance neighborhood stability.

The RPP program limits parking on designated blocks to those vehicles registered to residents and bearing an authorized permit. Residents must reside on an RPP-designated block in order to be eligible for a permit, with the exception of sections of Ward 1 where, since 2010, all Ward 1 residents may receive RPP permits, whether or not they live on an RPP block. Non-resident vehicles may typically park on RPP designated streets for up to two hours (a so called "grace period") or must have a valid authorized permit, such as a visitor parking pass. The restrictions generally apply from 7 AM to 8:30 PM Monday through Friday. More than 4,100 blocks are currently designated as RPP and as of March 2015 approximately 128,700 residential parking permits have been issued.

Residential Visitor Parking

The Visitor Parking Permit program (VPP) is designed to extend resident parking privileges to drivers who are visiting residents of Residential Parking Permit (RPP) zones. The Visitor Parking Pass is available to eligible households in Wards 1, 3, 4, 5, 6, 7, and 8, as well as Advisory Neighborhood Commission 2F. An eligible resident may register for a VPP either online at http://vpp.ddot.dc.gov, or by phone at (202) 671-2700. Each household may receive only one annual VPP. Currently more than 42,000 VPP have been issued. Fifteen-day temporary visitor parking permits are also issued by the local Metropolitan Police Department (MPD) stations or substations to District residents on behalf of their visitors or their contractors.

Carsharing

Carsharing is an important component of the District's transportation options for District residents, complementing bus, rail, bike, walking, and personal vehicle ownership. DDOT reserves and leases curbside parking spaces for the exclusive use of carsharing vehicles. Carsharing providers have a fleet of vehicles that are available to their members on demand, reducing the need for individual car ownership. There are 88 reserved on-street spaces throughout the District used by providers such as Zipcar and Enterprise. Those carshare providers also lease many more off-street spaces from private garages. Car2go, a point-to-point carsharing service, has a permit for 500 vehicles to park at any legal parking space in the District on an annual basis.

Streetlights

Streetlight Fixtures in the District

The Streetlight Section of DDOT maintains 71,000 street and alley lights, including overhead guide signs, underpass lights and "Welcome to Washington" lights. There are different types of light source in the City. The majority of the lights are high pressure sodium while the rest (about 5 percent) are mercury vapor, metal halide and incandescent. DDOT is working

toward phasing out the outdated fixtures and converting all the streetlights to energy efficient and cost saving light-emitting diode (LED) fixtures. DDOT has started to implement its LED conversion program and has currently replaced more than 2,000 non-energy efficient streetlights; DDOT intends to convert all lights to LED within the next five years.

The District of Columbia's Urban Forest

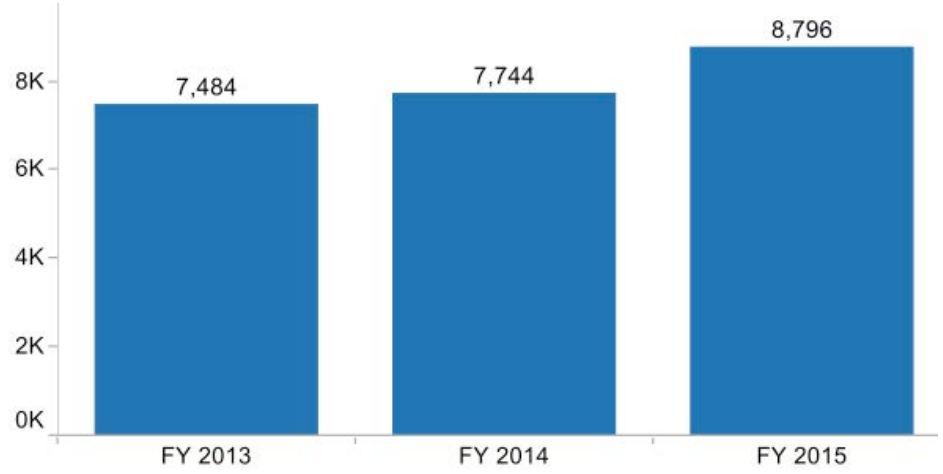
The Urban Forestry Administration (UFA) is tasked with managing all of the city's street trees and green infrastructure. The District already has one of the greenest tree canopies in the country, and UFA is leading the charge in increasing tree cover for the residents of and visitors to the District. From 2001 to 2006, the District increased its tree canopy cover to 37.1 percent, and is well on the way to reaching the goal of 40 percent by 2032. At the current rate of tree planting, approximately 7,500 street trees per year, the UFA is on track to meet all tree canopy goals set forth in the Sustainable DC program.

UFA has worked hard to make improvements in the overall design and environment for trees in the District. With the use of flexible paving materials, storm water friendly tree spaces, and new soil volume requirements, the next generation of street trees will live long and prosper. These efforts combined with DDOT's state of the art geographic information systems-based work management system allowed the staff at UFA to deliver high quality service citywide.

Tree planting on H Street NE corridor (March 2011)

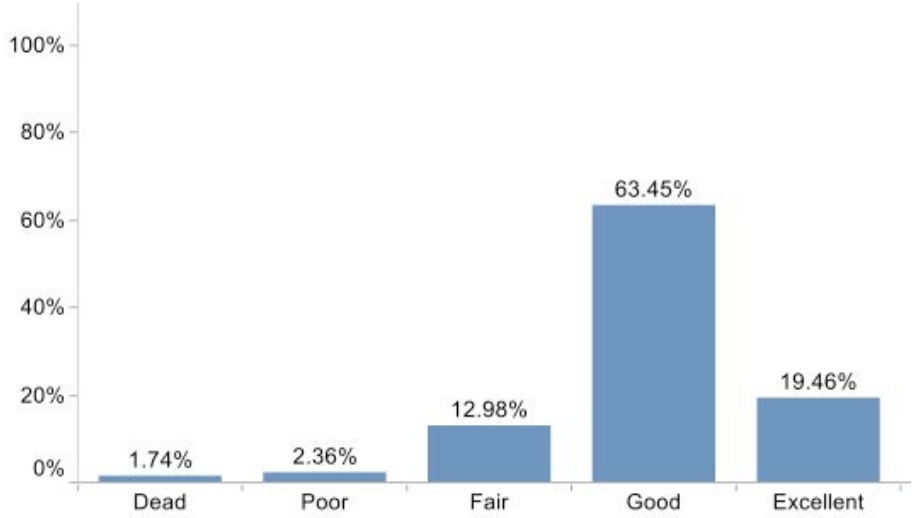
Source: District Department of Transportation

Figure 10.7. Number of Street Trees Planted, FY 2013-2015



Source: District Department of Transportation

Figure 10.8. Condition of Street Trees in the District, 2015



Source: District Department of Transportation

Program Activities

Transparency and Public Information

DDOT Compendium

The DDOT Compendium is an online reference that provides comprehensive information about all of DDOT's policies, procedures, and services. The Compendium contains a variety of materials - ranging from regulations, to federal legislation, to transportation studies, to frequently asked questions. It is organized alphabetically, by subject, and contains summary pages that provide links to all related documents and references.

The Compendium complements the innovative online resources already provided by DDOT and the District government, such as DDOT's website (www.ddot.dc.gov) for current department news and projects, DDOT's Transportation Online Permitting System (TOPS) for processing public space applications and permits, and 311 Online for accessing city service requests.

Customer Service

DDOT's Customer Service Clearinghouse implements the District Government's gold standard of customer service delivery, which is exemplified by prompt and thorough responses to customer calls and written correspondence. DDOT regards any person who contacts the agency as a valued customer, and the agency is committed to providing complete and timely responses to all inquiries. The Customer Service Clearinghouse also provides a reliable entry point for customers who request government services. DDOT receives approximately 60,000 service requests per year.

goDCgo

goDCgo is an initiative of the District Department of Transportation (DDOT). As part of DDOT's commitment to moving people and goods around DC as cleanly and efficiently as possible, goDCgo was created to provide employees, residents and visitors with the education and assistance they need to make more informed choices about traveling in the District.

The goDCgo program focuses on the reduction of single-occupant vehicle travel and promotes the use of more sustainable modes of transportation, such as bicycling, walking, carpooling, vanpooling and using public transit. The goDCgo website outlines an array of options for getting into and around the city and provides you with numerous resources to help plan your special trip or regular travel using a mode that minimizes your impact on the District's streets and our environment. The goDCgo team regularly attends events in the District to further promote our cause and educate the public about the benefits of using alternatives to driving alone.

The goDCgo Employer Services consultants work within the local business community to encourage similar behavior by employees who commute to the District for work and travel to business meetings and appointments throughout the day. By partnering with businesses, as well as organizations such as hospitals and universities, the goDCgo team is able to provide information and resources on a larger scale. Employers can strongly influence the way employees think about their daily commutes by implementing programs that encourage greater use of sustainable transportation modes. goDCgo aims to assist employers by helping them to craft programs which will suit the needs of their employees. Popular programs include transit subsidies, telework programs and alternative work schedules, all of which significantly reduce dependency on single-occupant car travel.

In collaboration with neighboring Arlington County, the goDCgo program helps to decrease traffic congestion, improve air quality and create a better quality of life in the metropolitan Washington, DC region.

System and Incident Management

Capital Improvements and Asset Management

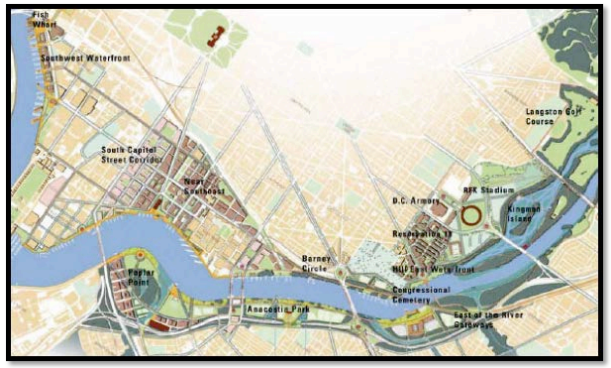
Every year, DDOT is working diligently to preserve, maintain and improve the District's transportation assets. Annually, DDOT works to rehabilitate and construct new sidewalks as well as rehabilitate or repave roadway surfaces.

In additional to transportation rehabilitation, DDOT engages in major capital improvements that reconstruct, enhance, as well as transform the existing transportation network.

Table 10.3. Rehabilitated Roadway/Sidewalk Mileage in the District 2010-2014			
Year	**Roadway Preservation**	**Roadway Repaving**	**Sidewalk Improvements**
2010	18.38	25.50	14.63
2011	30.13	26.77	55.00
2012	-	38.12	66.37
2013	22.73	9.36	1.48
2014	9.75	37.50	10.26
Source: District Department of Transportation			

Anacostia Waterfront Initiative

The 30-year, $10 billion Anacostia Waterfront Initiative (AWI) is transforming the shores of the Anacostia River into a world-class waterfront. Led by the District of Columbia government and embraced by 19 regional and federal agency partners, the AWI area straddles the Anacostia River and weaves through District Wards 5, 6, 7 and 8, stretching from the Tidal Basin to the District's northeast border with Maryland.



Initiated in 2000, AWI promises a clean river environment, new parks and other recreational facilities, more job-creating commercial centers, revitalized residential neighborhoods, and multi-modal transportation options. DDOT's role in AWI is to provide the infrastructure to achieve (1) better mobility for walkers, cyclists, transit riders, and drivers; (2) to reconnect communities on both sides of the river and to each other; while (3) supporting economic development goals for the initiative. The major DDOT AWI projects are discussed below.

11th Street Bridge Project

By far the largest DDOT project under construction to date, the 11th Street Bridge Project is critical to improving travel and achieving the larger vision of the AWI.

The project replaced two bridges built in the 1960s with three new bridges that separate local and freeway traffic. The new freeway bridges also provide missing interstate connections between I-695 (also known as the Southeast-Southwest Freeway) and DC-295, fixing a long-standing deficiency that forced motorists to use local streets to connect to and from both freeways. The new 11th Street Bridges provide critically needed infrastructure, relieve local streets of interstate traffic, and connect pedestrian and multi-modal traffic on both sides of the Anacostia River.

Project construction began in December 2009 and was declared substantially complete on May 26, 2015.

Anacostia Riverwalk Trail

The Anacostia Riverwalk Trail serves as the backbone of the Anacostia Waterfront, connecting residents, visitors, and communities to the river, one another, and numerous commercial and recreational destinations. Once complete, this 70 mile regional system of trails will provide seamless,

scenic travel for pedestrians and bicyclists along the river to the Fish Market, Nationals Park, Historic Anacostia, RFK Stadium, the National Arboretum, and 16 communities between the National Mall at the Tidal Basin and Bladensburg Marina Park in Maryland.

To date, 15 of the ultimate 28 miles of the Riverwalk Trail are open and heavily used. On both sides of the Anacostia River, just north of the John Philip Sousa Bridge, are two fiber-reinforced polymer (FRP), weathering steel bridges that allow bicyclists and pedestrians to cross over CSX railroad tracks. Construction on the four mile long Kenilworth Aquatic Gardens Segment of the Riverwalk Trail started in Spring 2014. This portion extends from Benning Road NE to the Bladensburg Waterfront Park in Maryland and is expected to be completed in 2016. Other planned segments to complete the Riverwalk Trail are to be constructed as part of the Buzzard Point Trail Project, the South Capitol Street Trail Project (under design by DDOT), and various partner development projects along Maryland and Virginia Avenues SE, or, in the case of the Arboretum segment, the National Park Service.

South Capitol Street Corridor Project

Rendering of the new South Capitol Street Bridge

The South Capitol Street Corridor Project consists of replacing the Frederick Douglass Memorial Bridge over the Anacostia River and transforming related sections of urban freeway into a beautiful scenic boulevard that increases pedestrian and vehicular safety, improves multi-modal transportation options, increases community accessibility, and supports economic development on both sides of the Anacostia River. Key project elements include:

- Building a new six-lane Frederick Douglass Memorial Bridge with dual 17 foot wide pedestrian/bike venue;
- Creating a new traffic oval west of the river that connects South Capitol Street, Potomac Avenue, and Q Street SW;
- Reconstructing South Capitol Street as a six-lane boulevard with an improved streetscape from the West traffic oval to D Street SE/SW and an at-grade intersection at M Street SE;
- Creating a new at-grade traffic oval east of the river that connects South Capitol Street, Suitland Parkway and Howard Road SE;
- Reconstructing the Suitland Parkway/Interstate 295 Interchange;
- Constructing a new diamond interchange on Suitland Parkway at Martin Luther King Jr. Avenue;
- Improving related portions of New Jersey Avenue, Howard Road, Firth Sterling Avenue, and Sheridan Road SE;
- Increasing bicycle and pedestrian facilities; and
- Improving drainage and storm water management throughout the corridor.

While preliminary engineering and right of way acquisition have been underway since January 2012, final federal environmental approval is expected in 2015. In the interim, DDOT has begun the procurement process for a design-build contractor for the Phase 1 portion of this two-phase project. The Request for Proposals is expected to be released to pre-qualified bidding teams in 2015 with final project completion of Phase 1 scheduled for Summer 2020.

DC PLUG Initiative

The District of Columbia experienced several extreme weather events from 2010 through 2012, resulting in widespread and extended power outages. In August 2012, a Mayoral order by Mayor Vincent C. Gray

established the Mayor's Power Line Undergrounding Task Force, charged with evaluating options that would prevent such outages. The 18-member panel included government officials, regulators, local utility industry executives and residents of neighborhoods often affected by power outages. The Task Force in May 2013 presented a recommendation to Mayor Gray for a unique public-private partnership between Pepco and the District Department of Transportation (DDOT) to underground select primary electric lines within public right of way. Enabling legislation was introduced to the Council of the District of Columbia, and the Electric Company Infrastructure Improvement Financing Act of 2014 became law in May 2014. The Public Service Commission of the District of Columbia in November 2014 approved the DC Power Line UnderGrounding (DC PLUG) Triennial Plan, which includes the selection of the first 21 overhead primary power lines to be placed underground.

The areas identified in the Triennial Plan include primary electric lines most affected by outages that occurred on the overhead electric system, primarily within Wards 3, 4, 5, 7, and 8. These wards have the greatest problems with electric service outages following major storms because of the inherent vulnerability of overhead power lines to damage from wind and downed trees. Secondary and service lines will remain overhead on the existing poles.

Benefits of the $1 billion, 10-year initiative include, but are not limited to, improved reliability day to day and during severe storms, reduced outages and faster restoration, and economic benefits including new jobs for District of Columbia residents. By undergrounding the primary mainline, primary lateral power lines, and associated equipment, Pepco is expecting, on average, to reduce the frequency and duration of outages caused by the overhead power lines by 95 percent on improved feeders. Improvement of electric service reliability will attract business investment, support economic growth, and upgrade a critical component of the District's infrastructure. The DC (PLUG) initiative will also contribute to the economy of the District of Columbia by stimulating economic growth through job creation. An important aspect of the DC PLUG initiative is a commitment to hire District of Columbia residents and contractors for the initiative.

Funding for the initiative will come through a combination of Pepco debt and equity ($500 million), funding provided by the District as part of DDOT Capital Improvement funding ($62 million up to $125 million), and funds obtained from securitized bonds issued by the District ($375 million). Recovery of the costs for the Pepco debt and equity and District bonds will come through two surcharges on Pepco customers' bills.

Traffic and Parking Enforcement

In the District, the Department of Public Works (DPW) has a major role in parking enforcement, while the Metropolitan Police Department (MPD) has a major role in traffic enforcement. In 2004, to supplement traffic and parking enforcement during morning and evening rush hours on the District's critical intersections plus for special events (presidential inaugurations, city designated special events, police and fire related activities), Mayor Anthony Williams had the Traffic Control Officer (TCO) program created. Originally a joint project between DPW, MPD, and DDOT, DDOT assumed full control of the program's operation and management in late 2007. Currently the TCO program is staffed at approximately 90 officers. The TCOs direct traffic as well as issue parking and moving citations against vehicles that impede pedestrian, bicycle, and vehicular traffic movements.

Security and Emergency Preparedness

Transportation has always played an important role in Washington's security by providing a means of evacuation as well as routes for emergency and relief services. The city must continue to plan for and safeguard its transportation system, protecting its value as a major component of our urban infrastructure and economy.

In light of the events of September 11, 2001, every major American city has embarked on emergency preparedness and traveler information systems designed to inform citizens how to respond in the event of an emergency. As the Nation's Capital, this is a critically important issue for the District.

Should the District face an emergency situation, the transportation system provides the means to evacuate residents, workers and visitors, as well as support the movement of emergency service response teams. Depending on the nature of an incident, individuals may need to rely on car, train, bus, bike, and/or walking. Maintaining and planning for a well-functioning system that can adapt to the needs of an incident is essential. Given the District's reliance on the regional transportation network in the event of an evacuation, close coordination with partners in Maryland and Virginia is also required.

DDOT is the lead District agency for all regional and federal emergency transportation coordination and activities within D.C. Another key agency is the District's Homeland Security and Emergency Management Agency, which partners with District agencies, businesses and communities to help plan for management of an emergency event. There is also increasing coordination between regional departments of transportation and other agencies, primarily through the Metropolitan Washington Council of Governments.

The region has identified 19 corridors radiating from downtown Washington as emergency event/evacuation routes. Each of the routes extends to the Capital Beltway (I-495) and beyond. Customized roadway signs allow for easy identification of direction; outbound signs direct motorists to I-495 in Maryland and Virginia, and inbound signs show images of monuments. Evacuation routes are also identified by special street name signs, which include the red and white District flag and an evacuation route label placed above the main sign.

In the event of an evacuation of the central business district, Pennsylvania Avenue, NW, between Rock Creek Park and the U.S. Capitol serves as the dividing line for routes. None of the evacuation routes cross each other, and no vehicles would be permitted to cross Pennsylvania Avenue. Traffic signals would be timed to move traffic away from the incident area. In addition, police officers would be present at 70 critical intersections on the evacuation routes within the District to expedite the flow of traffic and prevent bottlenecks. There are also six bike trails identified that could be used by cyclists or pedestrians in the event of an evacuation.

DDOT's emergency preparedness efforts often require regional collaboration with various stakeholders, including Maryland Department of Transportation and Virginia Department of Transportation, particularly when it involves information sharing and incident mitigation. Regional technologies such as CCTV linkages and other transportation resources have allowed the various jurisdictions in the region to receive real-time information for incident response. Such real-time response demonstrates the region's ability to be 'seamless' when responding to a regional incident.

Supporting Economic Vitality

Transforming Corridors through Great Complete Streets

Our avenues and boulevards are much more than simple transportation routes. They are a legacy of the 1791 L'Enfant Plan and remain one of the city's most distinctive features. They were designed to be beautiful corridors lined with distinctive buildings, generous tree canopy, and affording dramatic vistas. While many of the city's radial corridors do serve this function, many now also serve as major transportation arteries and handle tens of thousands of private vehicles each day as well as bicycles, trucks, and buses.

Different corridors in the city serve different functions. Some, like New York Avenue, carry heavy truck and commuter traffic. Others have wide sidewalks that provide a safe and pleasant environment for

pedestrians. Others were once vital neighborhood-serving shopping streets or streetcar guideways and are now checkered by drive-through and auto-oriented uses. As the gateways to our communities, the District's corridors should serve as both centers of civic and economic life for surrounding neighborhoods and as vital transportation corridors. The challenges facing the District as it plans for and reinvests in its corridors are to (1 balance the various transportation modes, (2 tailor its transportation strategies to the function of each major street, and (3 foster economic growth.

Improvement of the city's corridors—particularly public space along city streets—is an important part of the ongoing "Great Streets" initiative. Great Streets applies a multi-disciplinary approach to corridor improvement, comprised of public realm investments, land use plans, public safety strategies, and economic development assistance. Among other things, the initiative includes the construction of pedestrian safety improvements such as new sidewalks, lighting, signage and crosswalks. Such improvements are being used to leverage further investment in landscaping and public space by the private sector.

The Great Streets Initiative is a partnership of the District Department of Transportation (DDOT), the Deputy Mayor for Planning and Economic Development (DMPED), the Office of Planning (OP), and the Department of Parks and Recreation (DPR), among many others. The program concentrates on the following six designated corridors, three of which have been completed and three of which are partially complete or in development:

- H Street NE and Benning Road NE from North Capitol Street to Southern Avenue (completed)
- Nannie Helen Burroughs Avenue NE from Kenilworth Avenue to Eastern Avenue (completed)
- Pennsylvania Avenue SE from the Capitol complex to Southern Avenue (completed)
- Georgia Avenue NW and 7th Street NW from Eastern Avenue to Mt. Vernon Square (partially completed)
- Minnesota Avenue NE/SE from Sheriff Road NE to Good Hope Road SE (in development)
- Martin Luther King Jr. Avenue SE and South Capitol Street from Good Hope Road to Southern Avenue (in development)

Planning for the Future Transportation System

DDOT has recently developed a new long-range plan for transportation in the District to guide our investments. MoveDC is the District's long-range multimodal transportation plan (www.wemovedc.org) that kicked off in February 2013 and finalized in October 2014. MoveDC outlines a 25-year plan for expanding transportation choices and improving the reliability of all transportation modes. The public involvement process for MoveDC was far-reaching and unprecedented. One of the biggest successes of MoveDC outreach efforts was DDOT's engagement efforts with non-traditional participants by varying meeting locations, times, and days and utilizing social and traditional media, crowd sourcing, online surveys and countless face to face meetings. When the plan was finalized, DDOT also released a 2-Year Action Plan which outlines 36 specific actions for implementation. While MoveDC is primarily DDOT's plan, the planning process involved other District and regional agencies and some of the implementation actions required coordination and collaboration.

MoveDC received the American Planning Associations (APA) National Planning Excellence Award for Transportation Planning in April 2015. The Plan has also received the HONOR AWARD for the 2014-2015 American Council of Engineering Companies (ACEC)/ Metropolitan Washington Engineering Excellence.

Curbside Management Study

The DDOT Curbside Management Study is a planning document published in August 2014 that examines and describes local options for regulating and managing on-street public space in a way that maximizes reliable access to homes, places of work and worship, commercial businesses, and public facilities and amenities. The

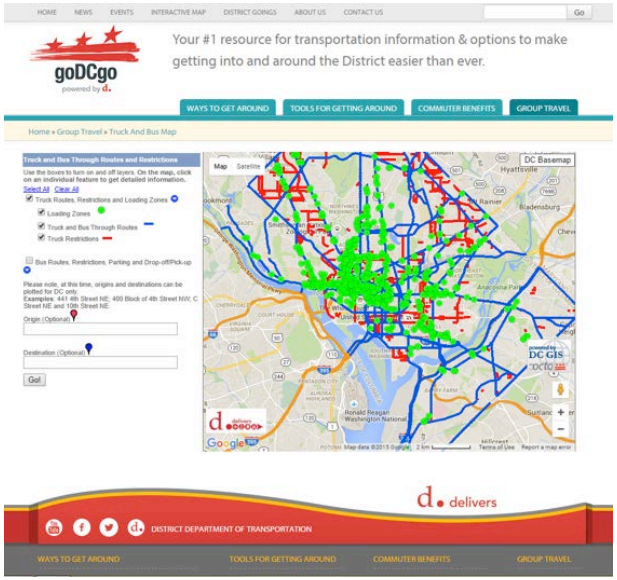
study identifies policy frameworks and supportive approaches to achieve this balance of access to curbside space. The study uses data on existing curbside resources, applied regulations, community demographics, registered vehicles, adjacent land uses, and other factors, to analyze curbside conditions and pressures, identifying various different contexts and situations in the District. The study includes a gap analysis of curbside supply and demand, and emphasizes four prototype categories of curbside management that reflect specific contexts of distinct areas of the District and the highest priority outcomes of area stakeholders. The document offers these categories to note that different areas of the District have distinctly different contexts and require appropriately adapted tools and applications. If implemented, policies for implementing the approaches require a flexible and responsive program that is data driven and continuously modified as District neighborhoods change and evolve, and curbside demands and uses with them.

The DDOT Curbside Management Study is available at: https://comp.ddot.dc.gov/Documents/District%20Department%20of%20Transportation%20Curbside%20Management%20Study.pdf

Freight Transportation Planning

Freight traffic in the District is expected to grow by approximately 75 percent by the year 2040. In order support current and future freight movement in the District, DDOT has established a curbside commercial loading zone management program to improve the use of commercial loading zones. Since January 1, 2015, commercial vehicles parking in a loading zone in the District have been required to pay for the use of the space. A commercial vehicle operator needs to either display an annual or daily permit or pay-by-phone immediately after parking. The intent of the program is to better manage the use of loading zones, reduce double parking and improve traffic flow. To date, 74 companies with 616 commercial vehicles have registered for an annual permit. Signage for 99 percent of the loading zones throughout the city (there are approximately 563 loading zones in the District) has been replaced to show the pay by phone ID associated with each loading zone. The District has begun compiling and analyzing data from ParkMobile, resulting in a more comprehensive understanding of loading zone usage and need.

DDOT completed the first District Freight Plan in 2014 to address issues surrounding freight transportation in the District and to have supporting information become the foundation for integrating freight priority projects in the District's planning process. The District Freight Plan contains strategies and recommendations to support sustainable future economic growth and balance the needs between communities and various industries in the District. The Freight Plan includes an inventory and profile of each freight mode, the role freight plays in the District's economy, detail on current and future freight flows into 2040, system capacity and operations by mode, and a strategic plan for the District to support a robust freight transportation and logistics system. The recommendations from the plan support jobs and the economy, provide efficient delivery of goods to residents and businesses, and maximize freight related development in specific corridors of the District. Best practices in other studies and current freight plans in other states and cities were consulted and thorough freight flow and economic analysis were conducted for inclusion in this report.



The Freight Transportation Planning group also created and launched an interactive Truck and Bus Map. The fully interactive map was

created to ensure safe and efficient commercial and logistical operation to support current and future growth in the District while maintaining quality of life, mitigating community impacts, and preserving transportation infrastructure. Suitable routes, loading and unloading spaces, as well as bus parking and pick-up/drop-off spaces are all displayed on the map. Map users can zoom in/out to any level and click on points of interest to get detailed information.

Motorcoach Planning

The District of Columbia attracts a high volume of motorcoach activity both from local sources and across the country as visitors come to experience the nation's capital. The volume of seasonal tour buses as well as ongoing sightseeing bus, commuter bus, and intercity bus services means that the city's roadways support a large number of motorcoaches year round. DDOT is responsible for managing this activity to ensure efficient and safe mobility of motorcoaches traveling in the city while mitigating community impacts and preserving the transportation infrastructure.

Approximately 1,900 motorcoaches travel into the District daily; this number swells from May – August during the tourist season. While there are a number of challenges associated with managing the high volume of motorcoach activity in the city, parking and the management of curbside space are key priorities.

In an effort to mitigate motorcoach activity at the curbside, the District passed bus right of way occupancy regulations in February 2014. These regulations required signage for commuter, sightseeing, tour, and shuttle bus operators with regularly scheduled bus stops operating in the District. The Motorcoach Planning group worked with all industry bus operators to ensure compliance with the new regulations by requiring a permit for all existing and new bus stops.

Managing the District's Public Space

Public space in the District of Columbia is defined as all the publicly owned land outside the property lines maintained in the records of the Office of the Surveyor. It includes roadways, tree boxes, sidewalks, and alleys. It also includes a uniquely Washington DC feature: public parking. Many people think this term refers to car parking in the curb lane. In fact the term public parking predates automobiles and the "park" in public parking is more akin to "park" land than to "park"ing lot. It is the largely landscaped area between buildings and the sidewalk. This network of green spaces is the largest park network in the District and is a vital component of the special identity of the District that makes it instantly recognizable.

Public space in Washington, DC is the legacy of nearly 140 years of work by public officials, volunteers, and citizens to build, maintain, and preserve a vital system of street trees and landscaping. However, this asset remains under threat by continuing proposals to allow automobile parking in public space and the continuing need to regulate and enforce inappropriate private use in public space. It is essential that the residents of the District of Columbia understand the parking system and recognize the multiple benefits it provides to the city as a whole. These benefits include public safety, walkability, urban sustainability, increased access to open space, and positive support for the image of the District of Columbia as "The City of Trees."

The preservation of the clear vistas and open views of the historic L'Enfant Plan has the welcome side effect of establishing a broad pattern of defensible space. The ability of pedestrians to have a clear view of their route ahead provides a feeling of comfort, may deter criminal activity, and allows for an adequate amount of space for an individual to react to possible threats. Current public space regulations limit the height of fences, walls, and hedges, allowing for more eyes on the street and clear sightlines. Allowing solid obstructions immediately adjacent to a pedestrian path, such as a car or a van, could blocks sight lines and create unsafe conditions. The public parking system first developed at a time when the vast majority of DC residents travelled the city by foot or mass transit.

Accordingly, it helps to support a pleasant experience for pedestrians, and uses that obstruct the movement of pedestrians have been resisted in the past. The existing balanced transportation system accommodates vehicular parking in the road right of way with on-street parking at the curb. Public space adjacent to streets and avenues is and should remain the domain of the pedestrian.

Current public space regulations minimize the amount of impervious surfaces, such as paved area for driveways, and maintain large soil volumes needed to maintain a healthy street tree canopy. DDOT is the District's steward of the public space, charged with permitting public space use as well as the enforcement of public space regulations. In FY 2014, DDOT conducted over 35,000 public space inspections.

Development Review

Through its Development Review team, within the Policy, Planning, & Sustainability Administration (PPSA), DDOT evaluates the impact of certain development actions on the District's transportation network. These actions may include land development related activities such as zoning (Zoning Commission or Board of Zoning Adjustment cases), permitting, Large Tract Reviews (LTR), or requests for operations or infrastructure changes to the District's transportation network, such as road and alley closings and dedications.

It is important to note that the Development Review team's role is advisory; it does not make decisions on any actions it reviews. Rather, the Development Review team thoroughly reviews proposals and makes informed, well-reasoned recommendations to the appropriate zoning, permitting, or reviewing bodies.

DDOT has a detailed process for reviewing development actions to assess their potential impacts to the District's transportation network and to ensure that they are mitigated consistent with DDOT's standards, policies, and practices. The Development Review process is accomplished in three phases:

- Impact/Mitigation – potential impacts from various actions are identified and appropriate mitigations are proposed;
- Permitting – permission is granted for use of public and private space; and
- Monitoring – outcomes are assessed upon completion of a project to determine if further action is required as needed.

Transportation Online Permitting System

The Transportation Online Permitting System (TOPS) is the online system that enables home owners, tenants, and businesses to apply for public space occupancy, construction, excavation, annual or rental permit required for use of the public space within the District of Columbia. TOPS allows individuals and businesses to apply for permits to occupy metered and unmetered curbside parking, sidewalks, alleys, or travel lane areas for personal activity or construction related work. It also allows facilitates the needed reviews developers need when submitting a zoning plan through the Development Review Branch. Once registered, the system makes it easy for users to log into their account anytime to apply for a permit, edit their application, upload plans electronically, or check the status of their application. Table 10.4 highlights the number of public space permits issued by TOPS.

Table 10.4. Public Space Permits Issued by TOPS, 2010 - 2014

Permit Type	2010	2011	2012	2013	2014
Annual Tag	0	144	2,562	2,265	2,526
Construction/PS Rental	5,160	7,832	8,398	10,732	12,841
Occupancy/Parking	7,721	12,719	18,165	20,535	22,259
Single Haul	0	648	2,710	2,579	3,031
TOTALS	14,891	23,354	33,847	38,124	42,671

Source: District Department of Transportation

Serving All Users

Title VI: Ensuring Equity in the Transportation Program

In implementing its transportation program, DDOT assures that no person shall on the grounds of race, color, national origin, age, disability, or gender, as provided in Title VI of the Civil Rights Act of 1964 and related statutes, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which DDOT receives federal financial assistance.

In order to comply with Title VI and meet the needs of an increasingly diverse population, DDOT gives special consideration to populations protected under Title VI in its transportation program. DDOT's Title VI Coordinator, located in Office of Civil Rights, oversees and works with each program administration to ensure Title VI compliance in the implementation of all DDOT programs. The Title VI Coordinator works with the leadership and staff in each administration, at various stages of planning and project development, to assist in collecting data critical to help assess the agency's actions on projects that may impact Title VI-protected populations in the District.

No cost translation and interpretation services are provided to the District's Limited-English Proficient (LEP) and Non-English Proficient (NEP) residents. In addition, vital agency documents are identified and translated into the six major languages (Amharic, Chinese, French, Korean, Spanish, and Vietnamese) that make up at least 3 percent of the District population, and made available to the public. DDOT emphasizes proactive and ongoing public involvement, targeting traditionally underserved communities.

In promoting equity considerations, DDOT is also committed to Environmental Justice and uses analyses and impact studies to identify and avoid disproportionately high or adverse human health and environmental effects of its program, policies and activities on minority and low-income populations.

Universal Access / Addressing Special Needs

As of the 2013 American Community Survey 5 year estimates, 11 percent of the District's population over 5 years old, or about 67,000 people, was counted as disabled. As the baby boom generation ages into its senior years, the demands for multi-modal transportation options are ballooning. An estimated 85 percent of Americans living to full life expectancy will experience some sort of permanent disability in their lifetime.

To promote a high quality of life for seniors and persons with disabilities, the District is engaged in a range of measures focused on affording independence and choice:

- Using technology to extend intersection crossing times to accommodate pedestrians with slower walking speeds;
- Providing well lighted, safe pedestrian paths along DC sidewalks, including compliant curb ramps, and accessible drop off and pick up areas;
- Providing convenient and fully accessible bus stops for the District (including DC Circulator Stations & WMATA Bus Metro Stations);
- Employing technology to improve accessibility to transit services by persons with disabilities and to enhance and attract greater Metro bus ridership; including such options as advance notice systems and integrated GPS based bus tracking systems.;
- Supporting and expanding home delivery services and home based opportunities; and
- Implementing Accessible Pedestrian Signal devices at all signalized intersections.

To move forward with this vision DDOT has outlined a transition plan to comply with the Americans with Disabilities Act and to safeguard the right to access for persons with disabilities.

Department of Motor Vehicles

The Department of Motor Vehicles (DMV) is a combined municipal and state Agency. The mission of DMV is to provide excellent customer service and to promote public safety by ensuring the safe operation of motor vehicles. The DMV provides the following core services to residents and non-residents:

- Provides ticket processing, noticing, hearing and hearing support services to residents and non-residents, in order to render legally sound decisions on parking, photo and moving violations, and to ensure proper processing of violation and fine payments for those infractions.
- Provides certification and inspection services to residents, businesses, and government entities so they may legally park, drive and sell their vehicles in the District.
- Provides driver certification and identification services to residents to ensure they have the proper credentials to reflect identity, residence and driving qualifications so they may legally operate their vehicles.

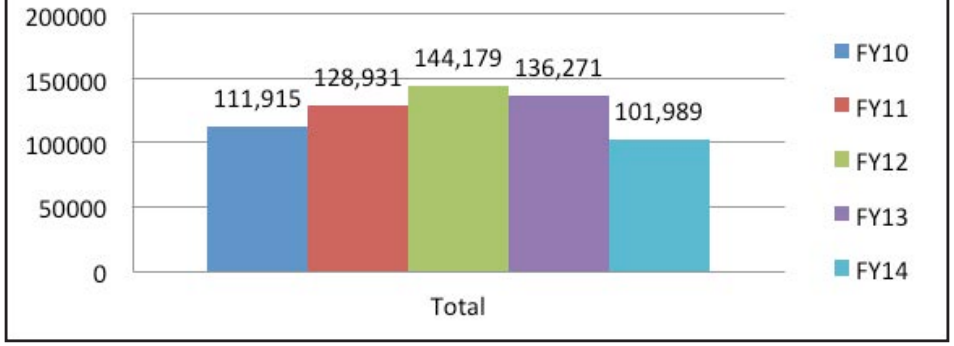
Through these core functions, the DMV provides service to approximately 537,000 licensed drivers and identification card holders (out of a population of 632,000) and 290,000 registered vehicles at four service centers. The Agency conducts adjudication services and collects ticket payments for more than 2.6 million tickets each year. DMV also conducts over 186,000 annual vehicle inspections. DMV interacts with DC residents and non-residents, with an average of 3,000 daily customer contacts—more than almost any other District government agency.

Services

Driver Licensing

The number of active driver licenses fluctuates throughout the year based on our transient population and the number of licenses that are expired or suspended/revoked at any given time. In FY10, the number of active drivers on September 30th was 347,467. In FY12, this number increased by 6% to 368,667. In FY14, this number increased, even more, by 8% to 400,661. The data that drives the processes and workload of DMV is related to the number of yearly driver license transactions. That data, which is highlighted in the chart below, reflects the District's increased population growth. Ensuring residents can safely maneuver on the District roadways continues to be a primary goal of the Agency.

Figure 10.9. Number of Yearly Driver License Transactions

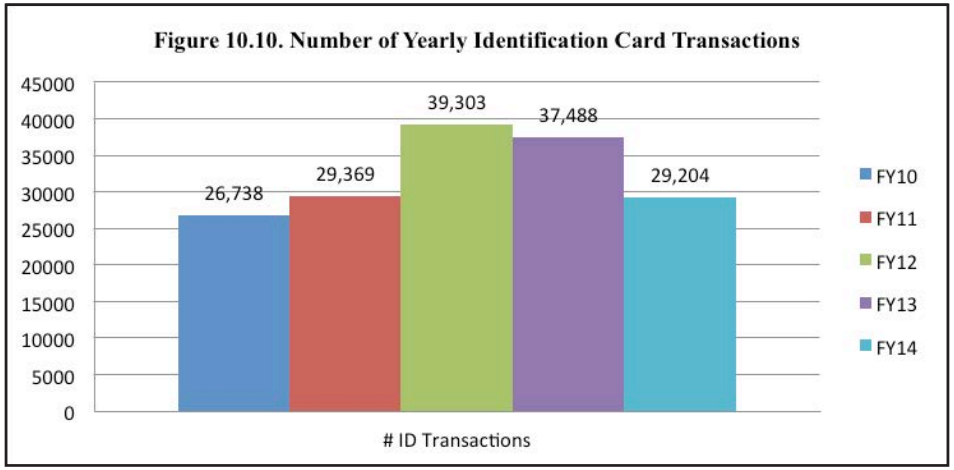


Source: Department of Motor Vehicles

Identification

Unlike driver licenses, the number of active identification (ID) cards fluctuates widely throughout the year based on the number of individuals who can no longer safely drive due to medical conditions or age. The number is also based on the number of licenses that are expired or suspended/revoked at any given time since many of these individuals must obtain an ID card for identification purposes. In FY10, the number of active ID cards on September 30th was 118,489. In FY12, this number increased by 11% to 131,736. In FY14, this number increased, again, by 8% to 142,353. The data that drives the processes

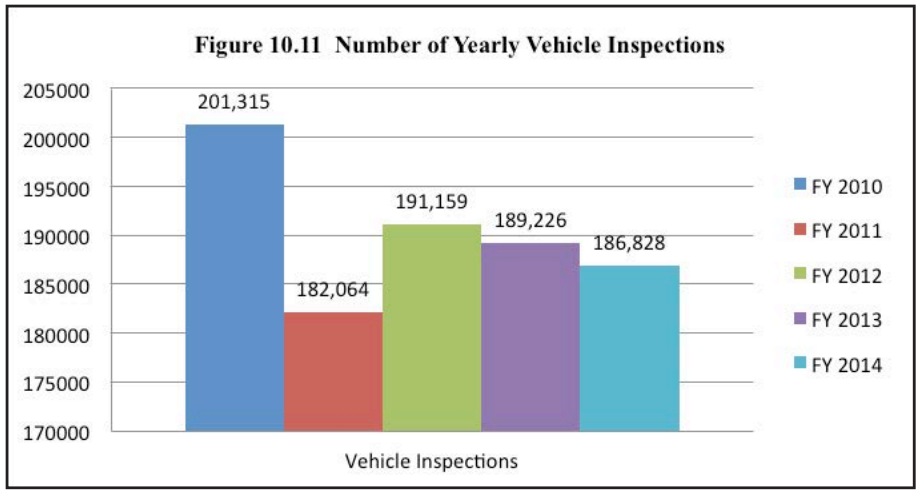
and workload of DMV is related to the number of yearly ID card transactions. These data, which are highlighted in the Figure 10.15, reflect the District's aging population.



Source: Department of Motor Vehicles

Vehicle Inspection

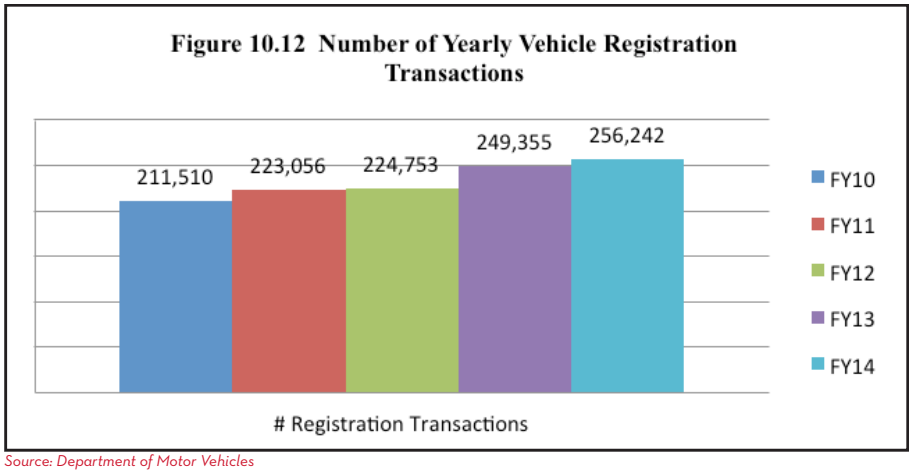
The number of vehicle inspections conducted throughout each year is based on the number of new residents registering vehicles, the number of inspection renewals and the number of vehicles which fail the inspection. This data, which is highlighted in the chart below, reflects the elimination of the passenger safety inspection in FY10. All vehicles must have a valid emission inspection prior to registration, and for hire and commercial vehicles must also have a safety inspection.



Source: Department of Motor Vehicles

Vehicle Registration

Similar to driver licenses, the number of active vehicle registrations fluctuates throughout the year based on our transient population and the number of registrations that are expired or suspended at any given time. In FY10, the number of active registrations on September 30th was 275,043. In FY12, this number increased by 3% to 284,424. In FY14, this number increased by 2% to 292,245. The data that drives the processes and workload of DMV is related to the number of yearly vehicle registration transactions. (Note: The transaction data also reflects the option of a one or two year registration period.)



Source: Department of Motor Vehicles

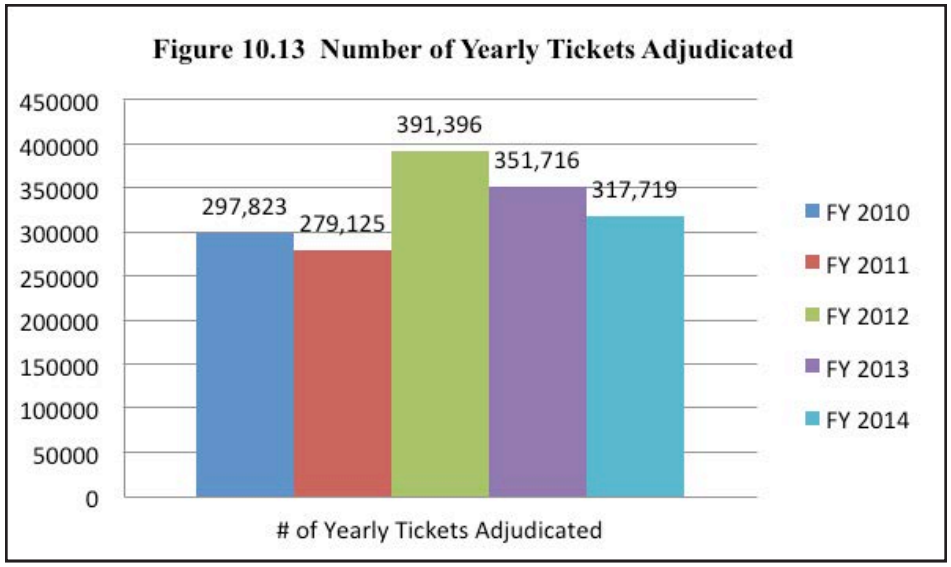
Ticket Issuance and Adjudication

Although DMV does not issue tickets, the number and quality of ticket issuance (parking, moving and photo) has a direct impact on the Agency's adjudication function. All tickets, believed by a customer to be in error, must be adjudicated through DMV for consideration of penalty reduction or ticket dismissal. Throughout the years, the number of tickets issued and adjudicated has steadily increased as the District focused more on enforcement as a mechanism to ensure parking/vehicle compliance and safety. The Table 10.5 and Figure 10.24 below show the overall correlation between increased ticket issuance to increased ticket adjudication. Additionally, the District collects an average of $194 million per year in ticket revenue.

Table 10.5 Number of Yearly Tickets Issued

# of Tickets Issued	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Parking	1,771,644	2,008,352	1,893,533	1,803,587	1,672.504
Moving	144,062	129,940	102,945	96,775	84,630
Photo	635,691	461,159	821,339	689,642	359,795
Total	2,551,397	2,599,451	2,817,817	2,590,004	2,116,929

Source: Department of Motor Vehicles



Source: Department of Motor Vehicles

Accomplishments

In compliance with federal requirements, DMV is now producing REAL ID compliant credentials. The REAL ID credential requires a one-time revalidation of source documents when obtaining, renewing or requesting a duplicate DC driver license or identification card. This validation will enable DMV to ensure each customer's identity, issue a federally compliant REAL ID driver license/identification card and ensure our residents will have access to those limited federal facilities which will require a US passport or REAL ID credential to enter.

In compliance with the requirements of the Driver's Safety Amendment Act of 2013, DMV is issuing a limited purpose credential. This allows for the issuance of a driver license, permit or identification card to undocumented residents or US citizens who do not have a social security number. This initiative directly relates to the safety of all residents because it ensures those driving on the District's roadways have been properly tested, for both driving knowledge and driving skills.

In an effort to decrease fraud, DMV moved to a new driver license and identification card design, as well as a central issuance process. DMV licenses and identification cards are no longer issued over the counter. Customers receive a temporary license or identification card valid for 45 days, and their new credential is sent to them by mail.
In an effort to better serve the citizens of the District, DC DMV opened a fourth service center location in Northwest Washington in Georgetown. This facility, which provides licensing, titling and registration services, hosts a spacious waiting area and a parking garage. It has been well received, by both residents and employees, alike. This facility has provided additional capacity to process increased DC population and undocumented residents.

Department of Public Works

The Department of Public Works (DPW) provides municipal services in two distinct program areas: environmental services/solid waste management and parking enforcement. Both contribute to making District streets and public spaces clean, safe, attractive and accessible. DPW's Solid Waste Management Administration performs a number of daily operations including trash, recycling and bulk collection, sanitation education and enforcement, graffiti removal, public litter can service, fall leaf collection, and street and alley cleaning. SWMA employees also are the backbone of the District's snow and ice removal program.

DPW's Parking Enforcement Management Administration is responsible for enforcing the District's on-street parking laws, removing abandoned and dangerous vehicles from public and private property, and operating the District's impound lot. Approximately 200 parking officers monitor 17,000 meters and 3,500 blocks of residential zoned parking. In addition to routine enforcement, the Parking Services Administration is charged with booting and towing operations and with removing abandoned vehicles from public and private property.

Behind the scenes, DPW's Fleet Management Administration supports municipal operations by procuring, fueling and maintaining thousands of District government vehicles, from sedans to heavy equipment, e.g., trash trucks, dump trucks and mechanical street sweepers. Fleet Management also is responsible for purchasing environmentally friendly, alternative-fuel vehicles (AFV) for the city.
Visit DPW's Website: www.dpw.dc.gov; Facebook: http://www.facebook.com/pages/DC-Department-of-Public-Works/99012516086; Twitter: http://twitter.com/#!/dcdpw

DPW Mission

The mission of the Department of Public Works (DPW) is to provide environmentally healthy municipal services that are both ecologically sound and cost effective, including:

- Immaculately groomed neighborhoods,
- Accessible, safe parking, and
- Top quality fleet support for all District agencies.

DPW Vision

We, the world-class professionals of the Department of Public Works are proud of the excellent service we provide. Our services are essential to the fabric and aesthetics of our community. We are well-trained and masters of our craft consistently delivering the highest quality service. In every interaction -- with citizens and each other -- we use respectful communications and model superior customer service behaviors.

Because our life blood is customer satisfaction, we anticipate constituents' needs and consistently measure our performance to ensure we exceed expectations. We use state-of-the-art technology to quickly address customer concerns and reduce the percentage of repeat calls. Customers are pleased and compliment our responsive, environmentally-friendly approach to ensure public safety and enhance our city's quality of life. Customer loyalty is further assured

by the accessibility and interaction they have with Department managers and executives.

Our leadership team offers timely feedback and helpful follow-up to consistently deliver results and creatively turn errors into teaching/learning moments. Team members collaborate to leverage strengths and overcome barriers to productivity, as well as customer and employee satisfaction. They ensure that employees have the resources, cross-training, developmental opportunities, and support required to reach their full potential.

As a result, DPW is recognized as the "Preferred Choice" service provider and employer -- the world-class benchmark against which other jurisdictions are measured.

Technology Driven DPW Services

While trash and recycling collections, parking enforcement, vehicle repairs and other DPW services look the same as they have for decades, today they are driven by technology.

How Technology Improves Delivering Solid Waste Services

When DPW began making appointments to collect residents' bulk items, such as air conditioners, refrigerators, rugs and furniture, the Department applied route mapping technology to chart the most efficient route. As a result, bulk collection is among DPW's most requested and appreciated services. That same technology was applied to increasing the efficiency of the residential mechanical street sweeping program as well as trash and recycling collections.

The District's population is growing. In 2000, it was 572,059 and grew to an estimated 658,893 in 2014. More people mean an increased demand for DPW's sanitation services. Again, the route mapping technology proved particularly beneficial when DPW instituted a complex, comprehensive overhaul of its trash and recycling collection routes beginning in 2007. The purpose was to rebalance the routes to reflect population gains and losses across the District's neighborhoods. Prior to 2007, DPW undertook a route rebalancing effort in the 1960s. At the time, the Voting Rights Act of 1965 was under discussion in Congress and no technology was involved in adjusting trash collection routes.

Since the residential mechanical street sweeping program began in the mid-1990s, the surge in the District's pedestrian population, especially in its most densely populated neighborhoods, has led to program expansion. To better manage this expansion, once again DPW employed route mapping technology. The mechanical street sweeping program is designed to help reduce litter. It first began in neighborhoods where signs are posted advising motorists that parking restrictions are enforced while street sweeping is underway. As the environmental benefits of mechanical street sweeping became more pronounced, DPW expanded the program to neighborhoods where no signage was posted so the program now is citywide.

DPW also has taken advantage of the flexibility its Website provides as an information tool. New residents need to know when their trash and recycling will be collected, what items are allowable and what items should not be put into either the trash or recycling can. By going to the DPW Website – dpw.dc.gov – and clicking on http://collectionday.dcgis.dc.gov/ residents can enter their address and their collections day(s) appear.

This same technology has been applied to DPW's leaf collection program. Residents can see when their leaves will be collected and learn the status of the collections on their block. In FY 2015, DPW began uploading photographs of the work in progress.

In FY 2014, DPW distributed new Supercans, trash cans and recycling cans to District residents who live in single family homes or apartment buildings with up to three units. As part of the distribution, DPW created a database of its customers by recording the serial number on each can and the address where they were delivered.

In FY 2012, DPW's Solid Waste Education and Enforcement Program (SWEEP) implemented an automated ticket issuance and database

system called eSWEEP. Now, inspectors use tablets to capture violations and generate Notices of Violations. Through a series of interfaces, inspectors have access to property owner information in the field. By generating and transmitting notices electronically, eSWEEP eliminates the most time consuming of manual tasks—data collection, administrative paperwork, sorting, printing and mailing notices to violators to make processing exponentially faster.

eSWEEP consolidates data from five inter-departmental databases, including the 311 center, which had been obtained manually. The system auto-fills the majority of data before the inspector even arrives on site, minimizing collection and administrative work considerably.

The tablet captures evidence with a built-in camera, instantly attaching high quality photographs to the NOV file that is sent to the Office of Administrative Hearings (OAH). The property owner also receives the NOV with these photographs.

How Technology Improves Delivering Parking Enforcement Services

With the start of the 21st century, parking enforcement became DPW's technology epicenter. The introduction of License Plate Recognition Systems opened the doors to multiple applications. DPW boot crews now use this technology to quickly identify vehicles with two or more outstanding photo or parking tickets and immobilize them. The boot is released once the tickets and other fines are paid.

Residents also benefit from LPRS because it is used citywide to identify vehicles parked in residential neighborhoods beyond their allowed time. In fact, DPW's most requested service is increased parking enforcement in residential neighborhoods.

LPR technology includes an infrared scanning capability that allows Residential Out-of-State Automobile (ROSA) night time enforcement officers to use this technology to identify potential vehicles whose owners did not register them within 30 days after moving into the District.

DPW was among the first parking enforcement agencies to begin using a handheld device to write parking tickets. The latest innovation is the use of smartphones by ticket writers. By introducing smartphone technology, DPW has realized the following benefits:

- The larger screens provide the officer a much better view of the confirmation screen prior to printing a ticket.
- Smartphones are easier to use with easier access to drop-down menus.
- Real-time ticket data transfer data to the Department of Motor Vehicles is more efficient than the overnight download of data from the handheld equipment.
- Smartphones provide superior photo quality for TicPix day and night ticketing photos.

A major innovation occurred in FY 2011, when DPW uploaded TicPix, an online catalogue of images of parking violations that illustrate for motorists why DPW issued them a parking ticket. A motorist enters the ticket number and license tag. Click "Submit" and images of the illegally parked vehicle appear.

After seeing the images, a number of motorists wanted to pay their tickets immediately, which led DPW to adding a link to the Department of Motor Vehicles' site for online ticket payments.

Since DPW introduced smartphones and began transferring ticketing and photo data in real-time, parking managers have been able to review tickets often on the same day they were issued. Now staff can quickly determine errors and relay information to supervisors and managers to alert officers either the same day or at the next day's roll call. DPW also reduced the turnaround time to post photographs to the TicPix Web page from 72 hours to less than 24 hours.

Additionally, a software upgrade now requires officers to enter the license plate number twice on a ticket, which is similar to the double entry performed when typing a password. This has reduced license-tag entry errors by 96 percent.

The advances in parking meter technology have created a better experience for motorists by eliminating the search for coins to put in the meter. DPW and the District Department of Transportation partnered to introduce new parking meter technologies in 2010, and that partnership continued through the procurement of new meters (single-space and multi-space) and the launch of the pay-by-cell program through Parkmobile. DC is the largest program with pay-by-cell. This level of cooperation has resulted in a better experience for customers and also has improved the quality of service.

Another important partnership is that between DPW and the Metropolitan Police Department. DPW provides MPD with real-time information about stolen or wanted vehicles. This initiative uses all parking enforcement equipment, including smartphones and license plate recognition systems to wirelessly transmit all captured parking data, including tickets, timings and reads. This data is then compared to a wanted/stolen vehicle data base allowing MPD to respond to the vehicle's location. Since its introduction in 2012, DPW has reported the locations of thousands of wanted or stolen vehicles to MPD in real time.

DPW also is upgrading the impound lot management system to improve efficiency of the towing operation. The result is better information provided to accurately track, manage and report on dispatch and lot management operations, increase overall operational efficiency, and improve the exchange of data with other District agency systems by providing the capability to perform near-real-time transactional data sharing.

How Technology Improves Delivering Fleet-related Services

Motor vehicle repairs are as old as the Ford Model T. Today's vehicles are replete with sophisticated technology and DPW's Fleet Management Administration is using technology to maintain the District's fleet of passenger vehicles as well as heavy vehicles used to collect trash, sweep the streets, repair street lights and provide other services.

The District government became the first in the nation to use Zipcar technology to manage its motor pool. This allowed the government to reduce the number of vehicles as well as create a more efficient means to share vehicles.

FY 2014-2015 Fleet Information Technology Update:

- Implemented the citywide Web Fleet Management system used primarily by DPW, the Department of Fire and Emergency Medical Services and MPD Fleet to support the management and operations of their Fleet Maintenance operations.
- Implemented use of ruggedized handheld tablets with barcode scanners for use by the Parts Shop for inventory control and stock accountability.
- Implemented a citywide Fuel Management System to allow DPW to manage the fuel sites without credit cards or fuel keys. It also provides greater accountability in fuel management.
- Implemented a citywide Fuel Automatic Tank Gauge and Leak Detection System to support the management and operations of the District's fuel sites.
- Installed wireless access points throughout the DPW FMA Administration Building and Maintenance Facility to provide wireless capability to mechanics/technicians to use tablets or computers to assist with diagnosing vehicle problems.
- Acquired specialized computer technology, e.g., scan tools, diagnostic software, handhelds, etc. to assist DPW FMA technicians and staff in the maintenance, repair, fueling and administration of the District's vehicles and equipment.

- Installed Zonar technology (GPS, asset tracking, pre and post-Commercial Driver's License operator maintenance diagnostic checks) for medium/heavy asset management.
- Installed GeoTab technology (GPS asset tracking) for light vehicle asset tracking.

DPW also upgraded the tried and true FASTER system that's been in use for 19 years. By acquiring new software, DPW is better able to successfully manage the fleet through improved reporting and enhanced analytical tools.

Since 2008, the District has been cited among the top 25 Greenest [government] Fleets in the country. The use of alternative fuel vehicles also was profiled by PBS's Motorweek, which featured several of DC government vehicles, including trash trucks, street sweepers and plug-in electric vehicles.

The Metropolitan Washington Council of Governments selected the District of Columbia for its COG-Vision Fleet Pilot Fleet Assessment. The purpose of the pilot assessment is to demonstrate the cost-effectiveness of plug-in electric vehicles to local governments through comprehensive analysis and implementation models. Vision Fleet has established an innovative model for municipal vehicle fleets that addresses obstacles to EV adoption.

And the District is not only meeting its federal alternative fuel vehicle requirements, we are exceeding them. The District also has reduced its use of gasoline by 40 percent, while the federal requirement is a 25 percent reduction. And that is why the federal government is seeking the District's advice to share with other jurisdictions. Our use of biodiesel allows us to meet District requirements as well federal requirements.

How Technology Improves the Snow and Ice Removal Program

While the most visible aspect of the snow and ice removal program is the plows winding their way along District streets, the success of the program is based on technology in the trucks, under the streets and bridges, perched upon traffic signals and street lights, and in the Snow Team's headquarters. The use of technology begins before a driver turns a key in a truck.

Before snow season starts, new drivers acquire skills while seasoned drivers refresh their skills by using the snow simulator. This equipment replicates the sound and feel of a 6-wheel dump truck and tests drivers' skills when faced with various scenarios likely to be experienced during a snow storm.

When a snow/ice storm is predicted, the DC Snow Team (DPW and DDOT) uses a variety of technology platforms to determine the best mix of resources to help make streets and bridges safe for vehicles and pedestrians. Pavement and air conditions are monitored through the Roadway Weather Information Stations.

Even before plow drivers and other staff are notified when to report for duty, technology is in use through the Storm Trak Application, which tracks costs of snow events and other year-round emergencies, e.g., on-going training for administrative personnel.

Tracking progress during a storm is conducted using several methods. Through the automated vehicle locator system, DPW better tracks assets during snow events, and new modems and salt/plow sensors are being used. Zone Captains have greater situational awareness and real-time location of assets and salting and plowing activity through their in-field notepads. During the 2014-2015 snow season, DPW introduced a new brine production system to increase production and load brine more efficiently. Also, new specialized sidewalk equipment to clear bridge sidewalks was acquired.

During a snow storm, residents are most interested in knowing if their street has been treated with salt and/or plowed. By going to www.snow.dc.gov, they will find the Snow Response Reporting System to track plows working in their neighborhood. The site also provides useful information about how to prepare for winter weather and the importance of working with their neighbors to clear the sidewalks of snow and ice.

Table 10.6 Parking Enforcement by the Numbers, FY 2012- 2014			
Indices	**FY12**	**FY13**	**FY14**
Number of parking tickets issued	1,481,138	1,359,140	1,337,253
Audited Parking Revenue	$69,390,005	$62,354,398	$61,815,702
Vehicles immobilized via booting	15,409	16,009	11,089
Abandoned vehicles removed from public and private space	702	589	671
Vehicles towed by DPW	38,633	37,250	35,204
Vehicles towed or relocated for rush hour violations	17,161	16,141	16,583
Source: Department of Public Works			

Table 10.7 Solid Waste Services by the Numbers, FY 2012-FY 2014			
	FY12	**FY13**	**FY14**
Total trash tons collected	96,444	93,827	91,963
Total tons bulk trash collected	2,944	2,594	2,558
Tons of all recyclables collected/diverted	34,273	37,670	40,174
Fall leaf collection - tons composted	7,838	4,994	5,698
Fall leaf collection - tons	8,203	5,920	6,054
Total sweeping tonnage	2,521	3,817	2,580
Alley cleaning tonnage	2,613	2,802	1,753
Litter cans tonnage	6,851	6,509	7,225
#Notices of Violation issued for sanitation violations	18,812	22,041	20,612
Tons transferred (trash, recycling)	454,076	450,021	431,211
Source: Department of Public Works			

District Department of Energy and Environment

About DOEE

The District Department of Energy and Environment (DOEE) is the leading authority on energy and environmental issues affecting the District of Columbia. Our mission is to improve the quality of life for the residents and natural inhabitants of the nation's capital by protecting and restoring the environment, conserving natural resources, mitigating pollution, and educating the public on ways to secure a sustainable future. Using a combination of regulations, outreach, education, and incentives, DOEE administers programs and services to fulfill our mission. We work collaboratively with other government agencies, residents, businesses, and institutions to promote environmentally responsible behavior that will lead to a more sustainable urban environment. DOEE's programs fall into four main categories: (1) natural resources, (2) environmental protection, (3) energy, and (4) urban sustainability.

Natural Resources

Despite its urban characteristics, the District of Columbia contains a vibrant and diverse natural environment, characterized by major rivers, parks, wetlands, habitats, and ecosystems. The close proximity of these natural features to busy workplaces, commuter routes, and neighborhoods creates unique challenges, but also greater opportunities to enjoy their benefits.

Water in the District

Clean water is essential for human health and wildlife, for commerce and industry, and for recreation. Our main waterways in the District are the Potomac and Anacostia Rivers and Rock Creek, all of which are part of the Chesapeake Bay Watershed. Drinking water in the District originates from the Potomac River.

Watershed Protection

The Watershed Protection Division of DOEE conserves the soil and water resources of the District and protects its watersheds from nonpoint source pollution. Responsibilities include reviewing building permit applications, providing technical assistance to developers and the general public, and conducting inspections at construction sites. In addition, DOEE provides watershed education and outreach, monitors and restores stream habitats, demonstrates innovative nonpoint source control technologies, and coordinates watershed cleanup activities and policy development.

Rain garden at DOEE Headquarters, 1200 First Street NE. Source: DOEE

DOEE staff monitoring water quality of the Potomac River. Source: DOEE

Water Quality

DOEE's Water Quality Division works to restore and protect the surface and ground waters of the District. This includes setting and enforcing water quality standards, conducting water quality monitoring, inspecting and investigating illicit discharges, water quality permitting and certification, biological sampling and fish tissue analysis, and assisting in residential drinking water testing. Additional duties include response support services for spills, certification of National Pollution Discharge Elimination System (NPDES) permits, dredge and fill permits, and review and approval of well permits.

Stormwater Management

DOEE's Stormwater Management Division administers and coordinates District stormwater policy and initiatives to protect and restore waterways. This includes responsibility for the District's federally issued Municipal Separate Storm Sewer System (MS4) permit, development of local stormwater policies, long-term strategic planning to improve water quality, and management of stormwater revenue and federal grants to meet stormwater quality objectives. DOEE also manages the stormwater retention credit trading market as well as the implementation and enforcement of the Bag Law and bans on coal tar pavement sealants and expanded polystyrene.

Green roof at Woodson High School. Source: DOEE

Fisheries and Wildlife

DOEE's Fisheries and Wildlife Division designs and implements fisheries and wildlife conservation programs that promote ecological sustainability, elevate environmental awareness, and encourage citizen action through education, stewardship, and community involvement. Focus areas include recreational angling, fisheries management, fisheries and wildlife surveys, habitat management, and aquatic resources education. DOEE manages the Aquatic Resources Education Center, a federally owned property located in Anacostia Park for living aquatic resource education, aquiculture, and fisheries science.

Fisheries and Wildlife Facts:

- DOEE sells more than 6,500 fishing licenses annually generating between $65,000.00 and $85,000.00 each year.
- The District spawns and releases a total estimate of 1,000,000 American and hickory shad each year.

Monarch butterfly nectaring on Pickerelweed plant at Kenilworth Aquatic Gardens. Source: DOEE

Environmental Education

Through DOEE's environmental education programs, the agency educates teachers and students about the connections between their personal actions and the health of their natural surroundings. DOEE staff work in a close partnership with District of Columbia Public Schools and Public Charter Schools. Programs focus on wildlife, stewardship of local waterways within the Chesapeake Bay watershed, and energy conservation.

Anacostia Environmental Summit. Source: DOEE

Green Infrastructure

While land use and buildings are critical components of sustainable development, green infrastructure (low-impact development) provides measures that minimize stormwater runoff from a given site and reduces the impact of development on the environment. Green infrastructure includes green roofs, bioretention, rain gardens, cisterns, rain barrels, permeable pavement, landscaping with native plants, and a host of other innovative ideas that combine to stop polluted runoff from reaching the District's waterways.

One way DOEE manages stormwater runoff across the District is through its RiverSmart programs, which offer financial incentives for residents to retrofit their property with green practices that control stormwater runoff and flooding.

Rain barrel at a District residence. Source: DOEE

Rain garden at a District residence. Source: DOEE

Pervious pavers at a District residence. Source: DOEE

Enforcement and Environmental Justice

DOEE is the primary enforcer of the District's environmental laws. As such, DOEE develops enforcement policies and procedures, maintains data on enforcement activities, manages civil infractions (environmental tickets), and facilitates staff training on enforcement and case management matters. In terms of environmental justice, DOEE ensures that District citizens who are low-income, minority, or have limited English proficiency receive fair treatment under environmental laws and have meaningful opportunities to participate in environmental decision making undertaken by DOEE.

Environmental Protection

A primary goal of DOEE is to protect the health and well-being of the city's residents, workers, and visitors. In doing so, DOEE conducts monitoring and enforcement activities to help improve air quality, reduce exposure to toxic containments in the environment, and remediate contaminated sites. Central to this work is policy enforcement and ensuring adequate protections to make sure our homes are healthy and lead-free.

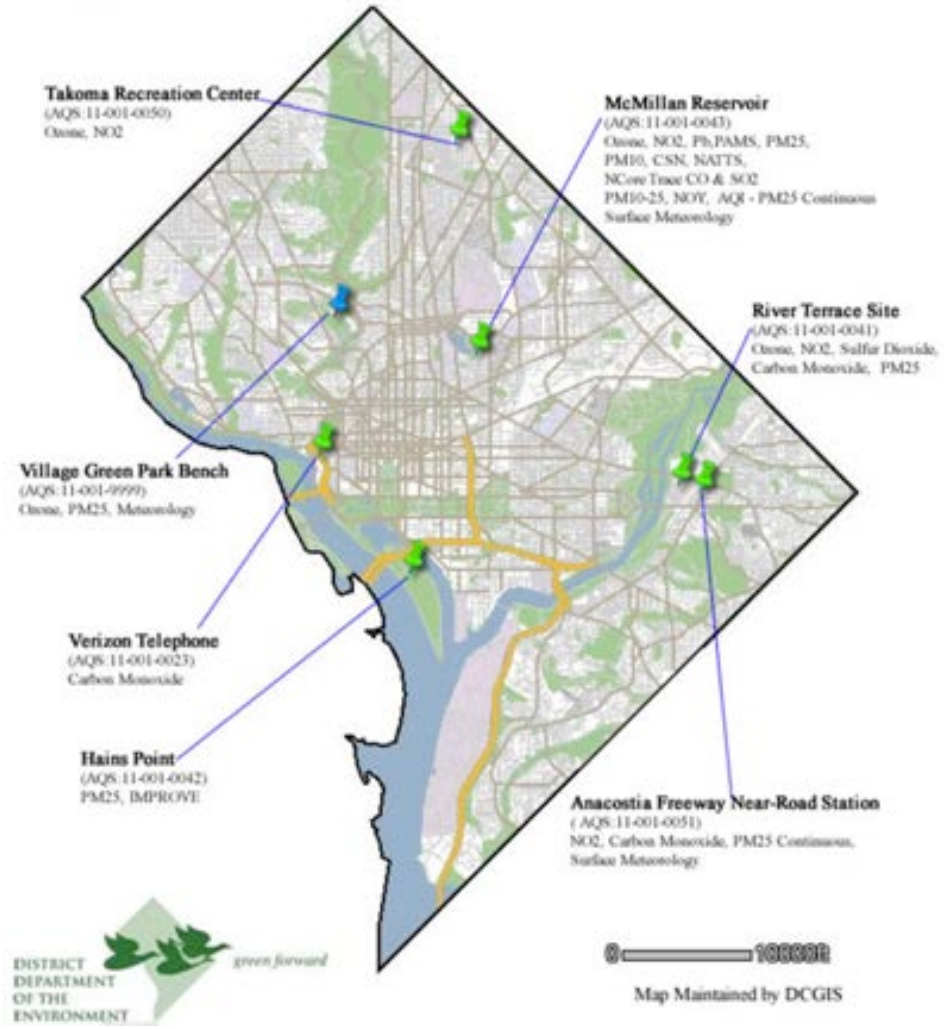
Air Quality

DOEE's Air Quality Division works to protect the health and welfare of the District's residents, workers, and visitors by reducing the concentration of pollutants in the air. For the six main air pollutants that are regulated, the District is below the federal health-based air quality standards for all but one pollutant—ozone. Notably, nearly three-quarters of the ozone in the District comes from sources in other states located upwind.

DOEE's air quality work centers on monitoring and assessing ambient air quality, developing and implementing air quality improvement plans and strategies, issuing permits to sources of air pollution, and conducting enforcement to make sure the regulations are followed. The District has six stations that monitor ambient air quality 24 hours a day, 7 days a week. The District's ambient network is comprised of 42

monitors collecting data on over 100 pollutants. DOEE provides real-time air quality information and air quality forecasts in collaboration with partnering agencies in the metropolitan area.

Map 10.6. District's Air Monitoring Network Map



Source: DOEE

Air monitoring station at National Zoo. Source: DOEE

McMillan air monitoring stations. Source: DOEE

To control ground-level ozone or "smog," the District implemented a law to limit engine idling and administers a comprehensive vehicle emissions inspection program. DOEE also has programs that permit and enforce the removal of asbestos, in addition to educating residents about the dangers of radon.

Hazards and Waste

Waste and hazardous materials raise several challenges for our urban environment. Improper waste management can result in chemicals leaching into soil and groundwater. Additional pollution from waste may reach rivers and streams through stormwater runoff. DOEE monitors, inspects, and where necessary, takes enforcement action at facilities that manage hazardous materials, including generators of hazardous waste, facilities with petroleum tanks, and applicators of pesticides. DOEE also undertakes and oversees the cleanup of contaminated properties.

Lead and Healthy Housing

Lead is a powerful neurotoxin, exposure to which can cause serious, often irreversible health effects. Young children, especially those under six years old, are at particular risk of harm. Over the years, lead was used in several everyday products. Most significantly, the use of lead in house paint has resulted in a prevalence of lead paint in the District's older housing stock, most of which was built before 1978. To mitigate lead contamination, DOEE:

- Enforces the District's lead laws to keep housing and child-care facilities safe;
- Promotes lead screening of all children under age 6 in the District;
- Works with the families of children whose blood tests show levels of lead equal to or greater than five micrograms of lead per deciliter of blood; and
- Helps property owners, contractors and other members of the regulated community comply with the District's lead laws.
- Lead is not the only environmental health threat lurking in residential housing. Other health and safety concerns include mold, radon, carbon monoxide, and indoor allergens. DOEE's Lead and Healthy Housing Division is taking steps to identify and help minimize health risks associated with these and other environmental health concerns.

Energy

DOEE offers EnergySmart DC programs and services to help residents and businesses use energy efficiently. To help defray the cost of investing in renewable energy and energy conservation, several financial incentives are available to eligible customers.

Sustainable Energy Utility

The DC Sustainable Energy Utility (DC SEU) helps residents and businesses use less energy, generate their own energy cleanly, preserve the environment, and create green jobs for District residents. The DC SEU provides energy efficiency and renewable energy programs for all major market segments, and identifies and leverages opportunities to bring additional funding to the DC SEU. Last year, the DC SEU created over 85 full-time jobs, served 47,000 households, invested $6.1 million in energy efficiency improvements in low-income housing, spent $4.2 million with locally-owned Certified Business Enterprises, and installed renewable energy generating systems in 114 homes.

Property Assessed Clean Energy

The DC Property Assessed Clean Energy (DC PACE) program provides flexible, long-term, competitively priced financing for energy efficiency upgrades with a focus on the commercial building sector. The aim is to lower operating costs, increase cash flow, improve occupant health and comfort and, boost property value. PACE financing can be used to fund energy and resource efficiency improvements and renewable energy installations.

Renewable Energy Incentives

An alternative to traditional fuel (oil, gas, and coal), renewable energy comes from sources such as sunlight, wind, rain, geothermal heat, and biomass—sources that are continually replenished. Renewable energy reduces dependence on a shrinking supply of fossil fuels and helps reduce the greenhouse gases that lead to climate change.
The Solar Advantage Plus Program (SAPP) provides rebates to solar installers to cover the full cost of installing solar PV panels on single-family homes owned or rented by low-income District residents.

Photovoltaic installation on a District rooftop. Source: DOEE

Weatherization and Low Income Home Energy Assistance

The Low Income Home Energy Assistance Program (LIHEAP) provides financial assistance to eligible low-income District households to meet the rising cost of home energy bills. The Weatherization Assistance Program (WAP) focuses on reducing heating and cooling costs through air infiltration reduction in homes of low-income families, while ensuring safe and healthy operating equipment, in addition to other measures to increase the energy efficiency of the households. DOEE serves approximately 28,000 low-income residents each year.

Municipal Aggregation Program

The DC Municipal Aggregation Program (DC MAP) procures electricity on behalf of the District government and other electric ratepayers by allowing DC licensed electricity suppliers to compete for the rights to supply electricity to an aggregated group of DC ratepayers. DC MAP helped the District earn the Environmental Protection Agency (EPA) Green Power Community of the Year

Award for 2014. The current DC MAP contract includes 100% renewable energy supply.

Energy Benchmarking

Under the Clean and Affordable Energy Act of 2008, public and private buildings report their energy performance data annually to be rated using ENERGY STAR software. Benchmarking allows building owners, managers, and investors to track and assess energy and water consumption within individual buildings as well as across the entire portfolio of buildings. Benchmarking can also help to set investment priorities, identify under-performing buildings, verify efficiency improvements, and can result in EPA recognition for superior energy performance.

Urban Sustainability

In addition to environmental protection, energy, and natural resources, DOEE is working to create a greener, healthier, and more livable city in all eight wards. This is done through implementing the District's sustainability plan, developing innovative policies and programs for green building, climate change action and adaptation, and coordinating with other District agencies, private sector partners, and the community to increase the long-term environmental sustainability of the District.

Sustainability is based on a simple principle: Everything we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony and that permit fulfilling the social, economic and other requirements of present and future generations.

Sustainable DC

Sustainable DC is the District of Columbia's initiative to make DC the most sustainable city in the nation. Led by DOEE's Urban Sustainability Administration and the Office of Planning, it is a collaborative effort involving 27 District agencies and tens of thousands of members of the District community. Residents are coming together, developing plans to make their neighborhoods healthier and greener; major institutions are launching new bold programs to reduce the amount of energy and water they consume; and small businesses are trying new methods to send less waste to landfills. As of April 2015, 85% of the 143 actions in the Sustainable DC Plan were underway and another 8% were complete.

Climate Change

The District of Columbia is committed to addressing climate change by minimizing carbon pollution and increasing the District's resilience to our changing climate. Sustainable DC establishes goals and targets for responding to climate change, including commitments to:

- Reduce greenhouse gas emissions by 50% below 2006 levels by 2032 and 80% by 2050.
- Advance climate adaptation and preparedness to make the District resilient to future climate change.

Climate change initiatives to reduce carbon pollution and prepare for climate impacts are underway across District agencies. DOEE's Urban Sustainability Administration is the primary driver behind climate action planning and tracking progress towards our goals.

Key initiatives include:

- Climate Adaptation and Preparedness Planning: assessing the likely impacts of climate change and identifying solutions to make the District more resilient.
- Climate Action Planning: charting the path to reduce emissions 80% by 2050.
- Greenhouse Gas Inventories: measuring progress towards minimizing the District's climate impact.

Green Building

Green building is an approach to design, construction and operations that conserves resources while it protects human health. Green buildings use less energy, consume fewer natural resources such as water and forest products, and emit fewer pollutants into the environment. DOEE's Urban Sustainability Administration leads city-wide green building policy and programs for the District and supports the vision set forth in the Sustainable DC Plan, including commitments to:

- Retrofit 100% of existing commercial and multi-family buildings to achieve net-zero energy standards by 2032.
- Meet net-zero energy use standards for all new construction projects by 2032.
- The District is a national leader in green building and has earned many accolades, including:
- 1st city in the nation to pass a law, the Green Building Act of 2006, requiring green building certification for both the public and private sectors.
- 1st city to pass all major chapters of the 2012 International Green Construction Code, adopted in 2013.
- 1st among large cities in LEED certified projects and square footage on a per capita basis.
- 1st among large cities in ENERGY STAR certified buildings and square footage on a per capita basis.
- 1st in green power purchases among cities in the U.S. for three years running.
- 3rd most energy-efficient city in the United States, according to the American Council for Energy-Efficient Economy (ACEEE) 2015 City Energy Efficiency Scorecard.

By continually encouraging market transformation, funding research that promotes innovation, and collaborating with the community and private sector on best practices, DC will remain a leader in green building deployment and protecting our environment.

Equity

Social equity is a critical component of sustainability, but one that is often most complicated and difficult to address. DOEE's Urban Sustainability Administration is working to increase equity in sustainability through:

- Hiring new staff specifically trained in equity policy;
- Incorporating equity into agency policies and programs to ensure participation of all residents; and
- Increasing community engagement in underrepresented communities and populations through enhanced communications and new partnerships.

Business Services

Environmentally responsible businesses help ensure a more sustainable urban environment. Business owners, managers, and employees must understand and comply with the District's environmental regulations. DOEE staff is available help businesses improve their environmental performance. Here is a short list of green business options to consider:

- Join the Smarter DC Challenge, a public-private partnership that helps businesses save energy and money.
- Take advantage of energy efficiency incentives offered through the DC Sustainable Energy Utility (DCSEU).
- Consider purchasing EnergyStar™ appliances that can save your business money.
- Generate stormwater credits.
- Reduce greenhouse gas emissions and save money.
- Learn how the District Bag Fee and Styrofoam™ ban can affect your business.
- Apply to become a RiverSmart Community and work with your local EcoDistrict.
- Get technical assistance for Green Building laws and codes.