

District Department of Transportation

CURBSIDE MANAGEMENT STUDY



August 2014



DISTRICT DEPARTMENT OF TRANSPORTATION

Curbside Management Study

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Executive Summary

Executive Summary

The public curbside—the space along the street between travel lanes and sidewalk—is precious real estate. Within this limited space, many essential activities of city life transpire. Buses pull in and out delivering thousands of passengers and patrons a day. Goods are delivered. Residents and visitors come and go. Shoppers and diners arrive and depart. It is an active place, the use and management of which affects the vitality of adjacent businesses and the hospitality of local neighborhoods.

Demands on the curbside space are many and varied—residents, workers, visitors, patrons, deliveries and travelers of all means and modes. The needs and desires for curbside use are not uniform throughout the District. In some areas, competition for curbside space is fierce, while in other areas demand is comparatively light.

Of course curbside demand is nothing new. Since the dawn of the era of autos, cities have struggled to balance and manage the multiple and often conflicting demands of curbside users. Parking meters were one of the early devices used to control demand. First installed in the District in 1938, they were intended to encourage curbside consumers to move along when their business was done. Thirty-five years later, in 1974, the residential permit parking program launched to discourage commuter intrusion into residential areas. This was followed by policies for loading zones, car share use, visitor parking, intercity bus and many more. Over the years, evolving pressures and politics have layered policy upon policy, revision upon revision.

While each amendment and initiative responded to the particular need at the time, this incremental policy approach did not holistically reassess curbside management as an integrated system. Despite the diverse conditions of the central downtown, dense mixed use neighborhoods, or lower density outer neighborhoods, policies were crafted and implemented with a broad brush, tailored only in so much as individual policies were or were not mapped to an area.

E.1 VISION, GOALS AND OBJECTIVES

The vision for curbside management in the District of Columbia is to manage the curbside resources in such a way as to provide reliable access to homes, places of work and worship, commercial establishments and public facilities and amenities.

This simple statement implies within it that:

- Goods can reliably get to market and the curbside can accommodate sufficient patron demand to ensure strong and diverse commercial areas within the District;
- Residents will have reasonable certainty of finding curbside parking within walking distance of home; and
- All modes of access (transit, bicycle, strolling and parking) are comfortable, efficient and attractive and the mobility system as a whole flows smoothly.

The many meetings held with community stakeholders as a part of the Parking Think Tanks of 2012 helped define the following goals for curbside management:¹

- Preserve access to residential areas for the use of residents.
- Promote and facilitate commerce by prioritizing customer and commercial vehicle access in commercial areas.
- Ensure the safety of all transportation users including pedestrians, cyclists, transit users, and motorists.

The purpose of this curbside management study was to identify policies and supportive approaches to achieve the above vision and goals. In doing this, the curbside management strategies pursued a number of objectives to support transportation systems, services and management that:

- Preserve residential neighborhoods as desirable and accessible places to live for a variety of household types, ages, abilities, and income levels.
- Support commercial districts as vibrant, accessible centers of urban commerce.
- Provide all users affordable, viable access to essential District assets and amenities (e.g. transit, employment, schools, goods, and services).
- Support growth in the District while protecting quality of life and economic strength.
- Enable a safe, reliable, efficient, and modally-balanced transportation network.
- Provide fair and predictable policies, appropriate to the varying contexts across the District, and progress and adapt in a logical process to accommodate rapidly changing challenges, innovations, and opportunities

¹ "2013 Parking Action Agenda." DDOT. <http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2013%20Parking%20Action%20Agenda.pdf> (accessed March 26, 2013).

E.2 PROCESS

Using data on existing curbside resources, applied regulations, community demographics, registered vehicles, adjacent land uses, and other factors, the study analyzed curbside conditions and pressures, identifying the different contexts and situations in the city. Public comments provided at general and focused meetings were assessed and a statistical survey to gauge the priorities of the “(wo)man on the street” was conducted. Through the process, project staff dialogued with partner agencies, business entrepreneurs and those engaged in commercial goods delivery to understand the needs and the opportunities for policy and operational improvement.

Data analysis: The study process began with an assessment of existing baseline data of curbside resources, permitted users, reserved or designated spaces/uses, adjacent land uses and trip generators, and population characteristics. Data was mapped and analyzed to illustrate the diverse circumstances, contexts, demands and constraints across the various neighborhoods of the District.

Policy inventory and program organization: Existing policies and organizational structures for policy development, implementation and enforcement were inventoried, drawing from past policy and organizational assessments. The study team discussed roles and limitations of implementing or enforcing curbside management with partner agencies as well as recommendations for improvement.

Best practices: The study researched some of the most innovative thinking and approaches from across the nation with regard to metered and commercial parking management, residential permit parking, visitor parking, loading and deliveries, and technology applications.

Public and stakeholder priorities: Public and stakeholder concerns and priorities articulated in the many Parking Think Tanks were reviewed and summarized, as were the findings and results of an on-line survey administered by the agency. Resident and institutional (such as houses of worship) priorities in particular were well recorded through this input.

Although representative of many concerned stakeholders, participants in both the Parking Think Tanks and on-line survey were self-selected and did not statistically represent the broad range of District residents and their priorities and willing trade-offs in curbside management. Public input was therefore augmented with a statistically rigorous professional market survey of a broad and representative cross-section of District residents.

Retail and local businesses are essential to vibrant local neighborhoods and a competitive and livable city. Retail and main street businesses uniquely depend on curbside

space for produce and goods delivery, patron access, and attractive and inviting streets that are good places to do business. However, small “mom and pop” entrepreneurs often lack time or energy to attend public meetings to provide their critical input. Therefore the study went to them and their suppliers to explore real versus perceived needs for curbside space in supporting and strengthening local businesses.

Define approaches: One of the main challenges of curbside management is that the desired outcome is not the same in all areas for all users. For some, the critical priority is to protect residential parking from outside pressures; while for others, the concern is affordable access to all the resources and opportunities the District has to offer regardless of where they are or where residents live.

The study, therefore, defined an array of purposefully diverse approaches to curbside management to serve starkly different priorities. These approaches provide a starting point for communities to define for themselves the priorities for their own communities and the necessary trade-offs they are willing to accept to achieve them.

Toolbox of policies and practices: The report concludes with a summary of policies, tools and practices appropriate and effective to pursue the articulated approaches and serve the defined priorities for local curbside management.

E.3 GAP ANALYSIS

In most respects, curbside management in the District reflects the state of the practice of many major U.S. cities. While both the commercial and residential aspects of curbside management have evolved over the years, the system is largely reflective of long standing approaches. The District leads in several important ways including the adoption of modern meter and payment technology, the embracing of performance and demand-responsive parking ideologies, innovation around commercial loading, and adoption of new urban mobility services such as bike share, car share, non-motorized facilities and enhanced transit.

But gaps remain. The fragmented governance of curbside management deserves reassessment as a potential obstacle to more nimble and effective policy implementation. While embracing the philosophy of performance parking, DDOT still requires effective strategies, real time data monitoring capability and timely processes to achieve it. Although on par with many peers, there is a need, in particular, to revise residential parking management to reflect the diverse conditions of the District.

E.4 APPROACHES TO CURBSIDE MANAGEMENT

After evaluation of curbside supply and demand in the District, needs and objectives of diverse stakeholders, and review of gaps and opportunities, the study identifies four approaches to curbside management that are responsive to the varied contexts of distinct areas of the city and the highest priority outcomes of area stakeholders.

- **Local Amenity Support (a.k.a. Walkable Neighborhoods)** – This approach begins from the premise that all District residents should be able to meet their typical daily needs—school, shopping, entertainment, recreation, and swift transportation connections to employment—within an easy walk of home. This approach prioritizes local businesses and destinations.
- **Equitable Access** – This approach recognizes that although the District as a whole has many excellent commercial, educational, and other amenities, these are not equally distributed throughout the city and that residents with few quality amenities require access, at a reasonable cost, to these benefits in the city.
- **Resident Priority and Protection** – With a focus on residential protection, this approach prioritizes curbside uses for existing local residents over new developments or outsiders.
- **Managed Availability** – This approach seeks to strike just the right balance—“just enough” available on street parking to meet local needs without having too much that may go unused and attract local speeding or non-neighborhood gatherings. Managed availability uses price as a medium with which to find this balance

Statistically significant surveys of District residents, together with focus group meetings and interviews with retail and restaurant business owners, advocates and suppliers confirmed the varied needs and defined approaches as being necessary in appropriately applying curbside policies to achieve local priorities.

E.5 A BLUEPRINT FOR THE FUTURE

The curbside management approaches above represent a significant departure for the District; recognizing that different areas of the District have distinctly different contexts and require appropriately adapted tools and applications. 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.

This report recommends approaches appropriate for various parts of the District as well as near and long term activities to improve curbside management. The report is intended as the beginning of a focused discussion of solutions rather than a final answer.

Recommended activities include:

- In the near term DDOT should focus on better using technology including for visitor parking permits and adjustments to performance parking districts; as well as reviewing the application of current District curbside policies to ensure consistency and conformity with established regulations.
- DDOT should also continue implementation of many initiatives already underway including metered loading zones, expansion of performance parking areas, and addressing accessible parking needs.
- In the midterm, DDOT should initiate conversations to determine which of the outlined approaches best address local needs and the acceptable tools to achieve the desired outcomes and seek necessary legislative authority.
- Reform in the governance structure is recommended to better serve curbside management policy development, implementation, enforcement and adjudication.
- In the long term, DDOT should implement curbside reforms to programs and policies as appropriate per the outcome-oriented approaches

Curbside reform will be a prolonged process requiring continued monitoring, adjustment and evaluation.

1 Defining the Challenge and Its Context

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“District of Columbia officials, after threshing all suggestions, came up with the conclusion that the only solution [to parking] satisfactory to all would be that cars ‘should automatically disappear upon one’s arrival at work, and then reappear at the completion of the day’s work.’”

—*The Rotarian*, 1946¹

1.1 HISTORIC DEMAND

Curbside management in Washington, DC is not a challenge of recent years—it has dogged planners for many decades. In 1908 the Ford Motor Company debuted the Model T, ushering in the auto era for American cities. As auto ownership and use grew, so too did demand for space at the curbside to park the vehicles. Cities struggled with how to maintain the accessibility of curbside space for autos while still accommodating the traditional users—pedestrians, peddlers, bicyclists, and horses—and maintaining movement on the streets themselves.

The public curbside was a chaotic space—largely unregulated and unorganized—as cities adapted to this new technology and its associated demands. They began by first designating the appropriate place and arrangement for parking by all modes. When this alone did not resolve the supply and demand issue, many cities introduced parking

time limits, but this proved difficult to monitor and enforce. In 1935, Carl Magee invented the first parking meter in Oklahoma City. The new device facilitated enforcement of the time limits in commercial areas and encouraged drivers to free up the space after they had completed their business.

Even as parking meters began to tame the curbside congestion in commercial areas, pressure rose in residential areas. The combined forces of increased population, rising auto ownership rates, and increased driving from outer areas to inner communities for work, worship and play brought more vehicles competing for the limited space in residential neighborhoods. Blocks near commercial main streets and major employment centers had more acute competition. The Residential Permit Parking program was launched almost 40 years ago to protect residents from commuter parking.

Changing growth trends throughout the Washington region brought changing impacts to parking demands in the city. Residents moved out of the city into suburban communities but still came back to frequent the institutions, such as houses of worship, that played an integral role in their lives. A quote from a 1957 survey of churches in what is now the Ward 2 Shaw area sounds familiar still today:²

1 Kennedy, G. Donald. “The Parking Problem Can Be Solved.” *The Rotarian*. April 1946. Pp. 44. <http://books.google.com/books?id=8UMEAAAAMBAJ&pg=PA44&pq=PA44&hl=en#v=onepage&q&f=false>

2 Northwest Urban Renewal Area Church Survey” National Capital Planning Commission <http://comp.ddot.dc.gov/Documents/Northwest%20Urban%20Renewal%20Area%20Church%20Survey.pdf> (Accessed March 2014)

Figure 1 Testing the First Parking Meter in the District of Columbia (November 14, 1938)



Source: Library of Congress

“Parking is a problem for churches, as well as the area as a whole. Very few of the churches have parking facilities of their own.Two have made arrangements with commercial lots for use of their facilities during Sunday services. ...Churches have experienced, or are experiencing, a movement of their congregations into the environs. In spite of the outward migration, many members retain these central church ties.”

1.2 SUPPLY AND DEMAND

The District Department of Transportation (DDOT) manages 1,392 miles of public curbside. Curbside space is generally available for anyone to use, at least for short durations, except curbside restricted due to traffic safety restrictions and specific, reserved uses including approximately:³

- 100,000 RPP spaces:
- 1,400 loading zone spaces
- 600 diplomatic spaces;
- 300 motorcycle spaces; and
- 6 electric vehicle charging spaces⁴
- 17,000 metered parking spaces and 230,000 other spaces

In 2010, there were 211,653 vehicles registered in the District in total;⁵ 40,599 vehicles have a residential parking permit, allowing them to park in their designated zone without any limitation on time, and over 110,000 annual visitor parking passes, granting residential permit parking privileges to guests of District residents. Approximately 52% of commuters travel to jobs in the District by car and on any given workday there are from 250,000 to 300,000 vehicles engaged in a work trip. Seventy-four percent of the vehicles come from outside the District.

In the last decade, the District has undergone a period of rapid growth, reversing a half-century of population decline. The roughly 1,100 new residents arriving in the city each month (in 2013) have attracted equally robust growth in new high density residences, retail businesses, dining and entertainment venues and commercial offices.

The additional businesses have also reversed the long-standing retail leakage, where retail and dining spending by local residents was primarily in shopping districts outside of the city. Today, beyond merely commuting into the city

for work, residents of the region travel to the District for its restaurants, retail offerings, and entertainment. Many arrive by private auto and seek space at the curbside to store their vehicle while patronizing city businesses, placing further pressure on the commercial curbside and spilling over into adjacent residential areas.

1.3. GOVERNANCE STRUCTURE

Parking policy development, deployment, enforcement, and adjudication are handled in different units and/or agencies of the District of Columbia Government.

Policy, Regulation, and Operation

The District Department of Transportation has the primary responsibility for developing policies governing the use of public space in the District, including policies governing use of curbspace.

DDOT’s Policy, Planning and Sustainability Administration (PPSA) develops governing policies and overall priorities for curbside management. PPSA also determines the areas for geographic application of the policies, issues and responds to public notice, and participates in program evaluation.

DDOT’s Traffic Operations Administration operationalizes policies through the use of parking technology, signage, and operational systems. TOA also manages parking revenue collections from metered spaces.

DDOT’s Public Space Regulatory Administration operationalizes policies through the issuance of permits for the private use of public curbspace.

Enforcement and Adjudication

The Department of Public Works has primary responsibility, with DDOT and MPD assuming a supportive role, for enforcement of both metered parking and residential permit parking.

In the case of any dispute with enforcement violations, the Department of Motor Vehicles adjudicates.

Permit Distribution and Operator Licensing

The Department of Motor Vehicles (DMV) has primary responsibility for distribution of residential curbside use permits (RPPs) in conjunction with regular vehicle licensing and renewal activities.

The Metropolitan Police Department (MPD) was named in the original RPP legislation as the issuer of 15 day visitor parking permits from their precinct offices. MPD offices are located throughout the city and are opened 24/7, thus providing residents with ease of access. DDOT recently

³ Spaces determined on an average vehicle parking space length of twenty (20) feet.

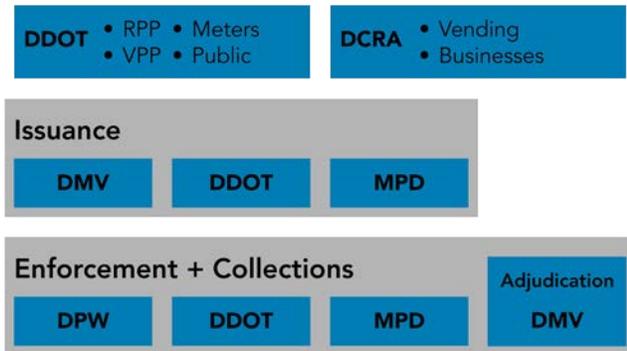
⁴ Public Road Length, 2006. U.S. Department of Transportation Federal Highway Administration. <http://www.fhwa.dot.gov/policy/ohim/hs06/html/hm10.htm>

⁵ State Motor-Vehicle Registrations – 2010. U.S. Department of Transportation Federal Highway Administration. <http://www.fhwa.dot.gov/policyinformation/statistics/2010/mv1.cfm>

began issuing annual visitor parking passes to residents by mail and upon request.

The Department of Consumer and Regulatory Affairs (DCRA) provides business licenses for valet parking providers. Valet location permits are issued by DDOT. DDOT and DCRA together regulate mobile roadway vendors who impact and occupy the public curbside.

Figure 2 Governance Structure for Curbside Management



The federal government has control over some curbside block frontages—particularly concentrated on or in the vicinity of the National Mall.

The Council of the District of Columbia has authority over setting basic parking rates for metered parking (although DDOT has latitude to independently adjust it in some instances).

1.4 TODAY'S CHALLENGES

Although much has changed over the decades since the introduction of meters and the residential permit parking program, much remains the same. The District still has the pressures of commuter and non-resident intrusions into residential communities to manage. The city still strives to meet the demands of commercial areas and still wrestles with parking for schools, houses or worship, and other community institutions.

Even while these old demands remain, new demands have arisen. Car share, slugging, valet parking and intercity bus services are all important mobility options that require some curbside access. Bicycle use has rapidly grown and with it the demand for bicycle parking. Post 9/11 security concerns, the needs of foreign missions, and tourism services are curbside demands unique to Washington as the nation's capital. Curb extensions are welcome additions that create a more walkable place, but also consume curbside real estate. Main streets have gained and lost and regained popularity as shopping and dining destinations. Neighborhood

demographics have changed over time bringing changes in curbside demand as well.

Today the curbside management challenge is to:

- Continue to address the traditional and emerging demands for curbside use while promoting economic vitality and protecting neighborhood quality of life;
- Recognize that the District of Columbia is not a homogeneous place. Different land use contexts and community characteristics result in different needs and priorities for curbside use.
- Establish a clear and consistent, yet nimble program for curbside management that can adapt as demands change over time or new users emerge.

1.5 GOALS AND STUDY OBJECTIVES

The vision for curbside management in the District of Columbia is to manage the curbside resources in such a way as to provide reliable access to homes, places of work and worship, commercial establishments and public facilities and amenities.

The goals are to:⁶

- Preserve access to residential areas for the use of residents.
- Promote and facilitate commerce by prioritizing customer and commercial vehicle access in commercial areas.
- Ensure the safety of all transportation users including pedestrians, cyclists, transit users, and motorists

Within this are several broader objectives for how curbside management nests within, enables, and serves the larger transportation system and services including to:

- Preserve residential neighborhoods as desirable and accessible places to live for a variety of household types, ages, abilities, and income levels.
- Support commercial districts as models of vibrant, accessible centers of urban commerce.
- Provide all users affordable, viable access to essential District assets and amenities (e.g. transit, employment, schools, goods, and services).
- Support growth in the District while protecting quality of life and economic strength.
- Enable a safe, reliable, efficient, and modally-balanced transportation network.

⁶ "2013 Parking Action Agenda." DDOT. <http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2013%20Parking%20Action%20Agenda.pdf> (accessed March 26, 2013).

- Provide fair and predictable policies, appropriate to the varying contexts across the District, and progress and adapt in a logical process to accommodate rapidly changing challenges, innovations, and opportunities.

2 Existing Policies and Procedures

2 Existing Policies and Procedures

The District Department of Transportation (DDOT) manages all of the public curbside parking assets in the District of Columbia including metered parking spaces and all of the curbside parking on public streets in the city's residential neighborhoods. DDOT has established several special programs and pilots aiming to ensure the limited parking resources provide the maximum benefit to the city's residents, visitors and workers. Core curbside managed resources include:

1. Commercial (metered) parking
2. Special purpose parking
3. Residential parking
4. Non-auto systems support

2.1 METERED PARKING

DDOT manages approximately 18,000 metered parking spaces (see Figure 3). Metered parking has two goals:

1. Maintaining consistent access to short-term parking spaces near retail and service destinations; and
2. Improving traffic circulation in commercial areas.

Demand Zones

Metered parking areas are designated as either "normal demand zones" or "premium demand zones." The normal demand is assumed by default. Premium zones are specifically designated for those areas that are subject to very high parking demand throughout the day, whether due to commuter traffic, a concentration of urban retail or jobs, or some combination thereof. Parking rates in premium zones are \$2.00/hour while the rates are \$0.75/hour for spaces in normal demand zones. In January 2010, hours of operation for all metered spaces in the District were extended to 7 AM - 6:30 PM Monday through Saturday for normal demand zones and to 7 AM – 10 PM in all premium demand zones.¹

Figure 4 shows the geographic locations of the two different types of parking meter zones.

In addition to normal and premium demand zones, in March 2008 DDOT began implementing performance parking zones (PPZs). Under the law that authorized the establishment of PPZs (the Performance Parking Pilot Zone Act of 2008 (DC Law 17-279; DC Code § 50-2531 et seq.), DDOT has greater flexibility in setting and adjusting meter rates

and related enforcement days and hours, adjusting parking fines, and establishing zone-specific parking management targets. The Performance Parking Pilot Zone Act established the first PPZs in two District neighborhoods: Columbia Heights (Ward 1) and the Capitol Hill/Ballpark District (Ward 6) as a result of two (2) major large scale developments opening in the District in 2008, including the eighty three thousand square meters (83,000 m²) DC USA retail development in the Columbia Heights neighborhood and the Events DC Nationals Park, home of the Washington Nationals Major League Baseball team. In November 2012, a third PPZ was legislatively established along the H Street NE corridor from 3rd Street NE to 15th Street NE/Benning Road NE in advance of development stemming from the new DC Streetcar operation in the corridor. The performance parking zone designation overrides normal or premium demand zone policies (see Figure 5).

Performance parking zones have four goals:

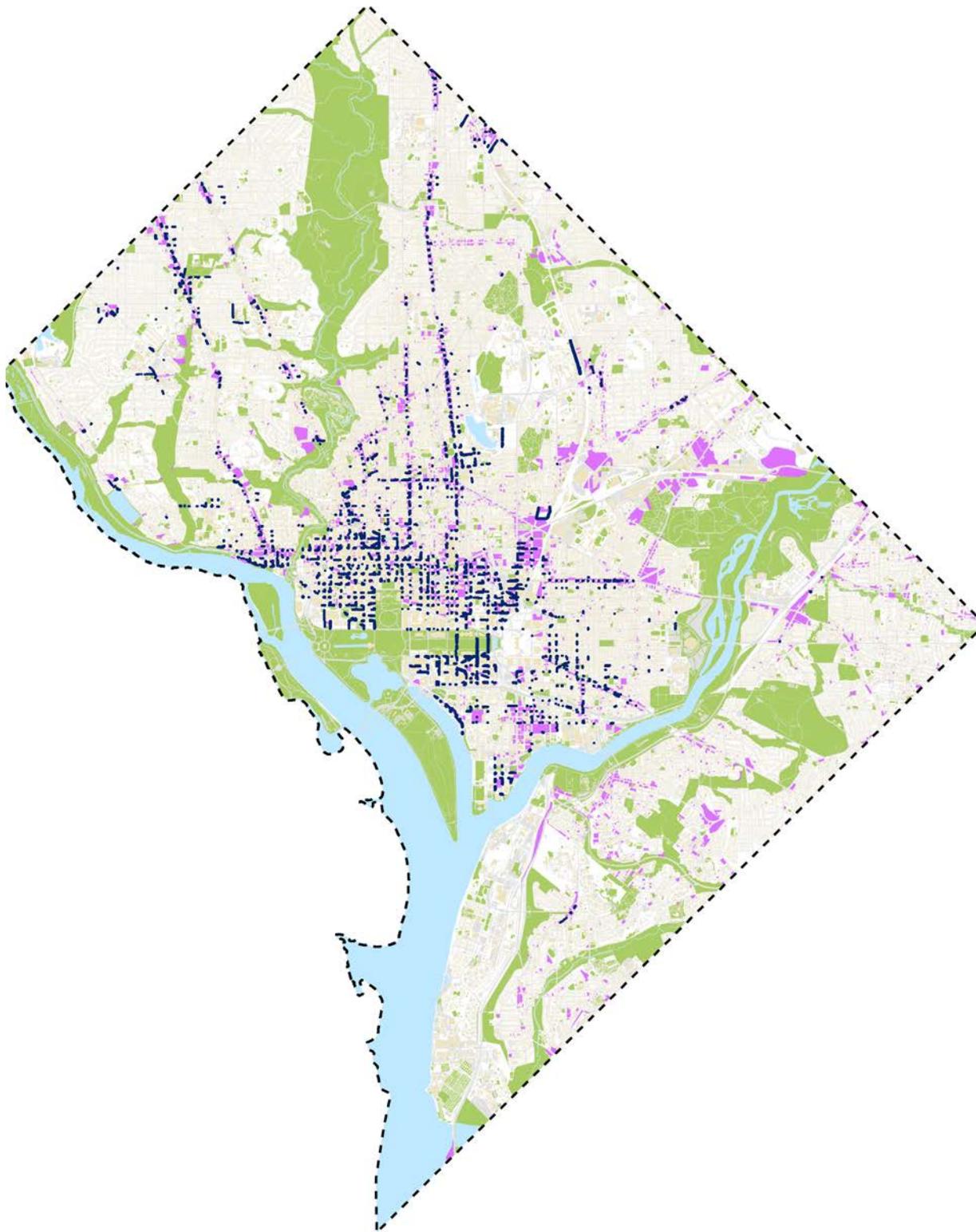
- Protect resident parking in residential zones
- Facilitate regular parking turnover in busy commercial areas
- Promote the use of transportation modes other than driving
- Decrease vehicular congestion within each zone

DDOT uses a variety of tools to manage parking demand in the PPZs to meet the goals of the program. Tools include adjusted meter schedules, rates, and hours of operation, enhanced parking fines, and enhanced Residential Permit Parking restrictions, including "Resident-Only" restrictions to minimize potential spillover effects.²

¹ Prior to this change, there was a decade long practice of not charging for parking on Saturdays at most of the District's metered spaces, and only the areas near the Verizon Center and M Street in Georgetown required payment through 10:00 PM.

² Performance Based Parking Pilots." DDOT. <http://ddot.dc.gov/node/546422> (accessed March 28, 2013).

Figure 3 Metered Parking and Commercial Areas



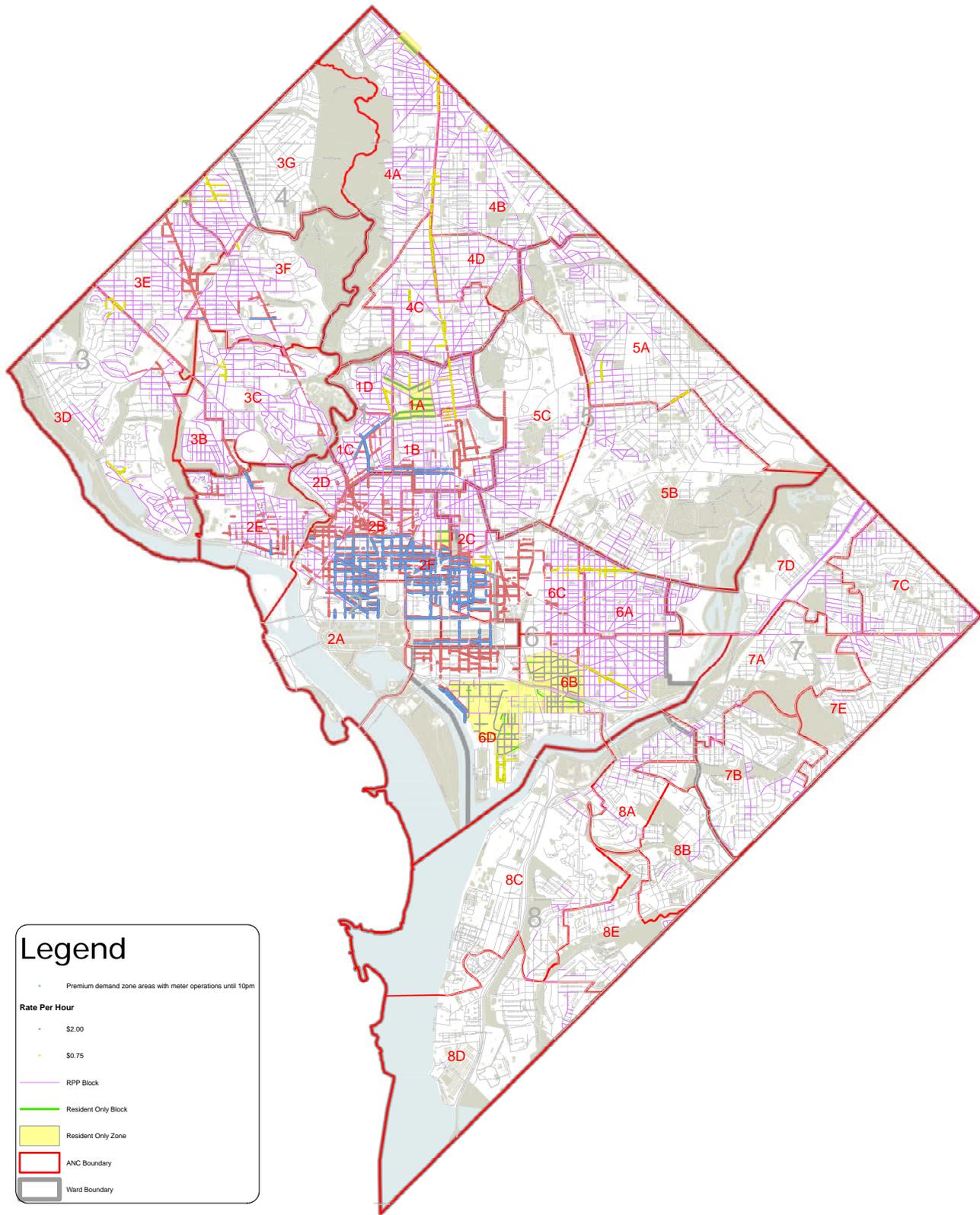
LEGEND

- Parking Public Meters
- 2006 Existing Commercial Land Use

0 2.5 5 Miles

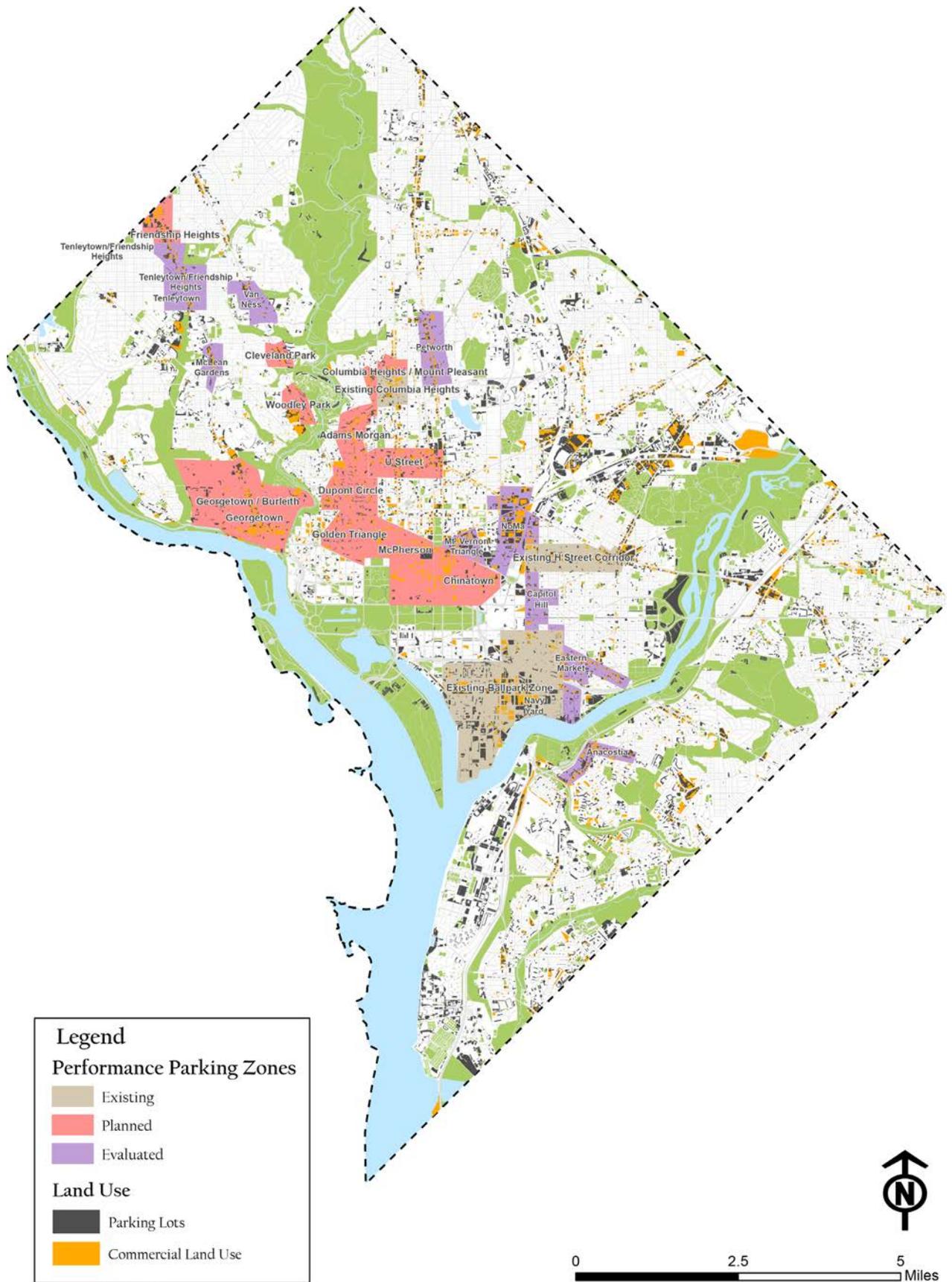
A north arrow pointing upwards, enclosed in a circle with the letter 'N'. Below it is a horizontal scale bar with markings at 0, 2.5, and 5 miles.

Figure 4 Parking Meter Rates and Resident Permit Blocks and Areas



<p>Scale 1:21,000</p> <p>0 0.15 0.3 0.45 0.9 1.2 1.5 Miles</p>	<p>The base map was compiled from aerial photography and satellite data acquired in 2010 and 2011. All mapping is referenced to the Maryland State Plane Coordinate System 1983 based on American horizontal datum and 1988 vertical datum in meters.</p>	<p>Data Source: DDOT/OCTO</p>	<p>Date Created: January 3, 2012</p>	<p>Disclaimer</p> <p>The information contained on this page is NOT to be construed or used as a "legal description". Users of the Department of Transportation (DDOT) data are provided no warranty or assurance regarding the map information. Any errors or omissions should be reported to the District Geographic Data Systems Division of the Office of Information Technology & Innovation. DDOT is not responsible for any damages, including but not limited to loss of data, lost profits, business interruption, loss of business information or any other pecuniary loss that might arise from the use of the map or information it contains.</p>	<p>Government of the District of Columbia Vincent Gray, Mayor</p> <p>District Department of Transportation Terry Bellamy, Director</p>
	<p>Map Type: Standard</p>	<p>Expiration Date: Unknown</p>	<p>Created By: DDOT GIS</p>		
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Figure 5 Existing and Proposed Performance Parking Areas



Meter Technology

DDOT made several recent upgrades to its meter technology to improve payment compliance, offer a variety of price and payment options, reduce system costs and increase meter performance and reliability. All District metered parking spaces are served by smart meters, multispace meters, and/or pay-by-phone options.

As of June 2014, approximately 40% of the District's current single-space meter inventory consists of smart meters which accept multiple payment options and have the ability to be managed remotely through wireless technology.³ DDOT expects to convert the entire existing coin-only meter inventory to smart meters, by the end of 2015. Additionally, there are currently 550 solar-powered multispace meters in the District managing approximately 4,200 parking spaces. Each multispace meter has a digital display, providing users with transaction information, including time of day, amount of time purchased, and expiration time. Like smart meters, multispace meters accept coin and bank card payments. The multispace meter generates a receipt from an internal printer, which the driver displays on the passenger side dashboard of the vehicle.⁴

Pay-by-phone is available for all metered parking blocks and provides an alternative to coins or a credit card swipe, allowing drivers to pay for on-street parking with their phones, and to receive a text message when their paid time is set to expire. ParkMobile, the parking vendor, charges a convenience fee of \$0.48 for each pay-by-phone transaction (or \$0.30 per transaction for participants who load a "virtual wallet" with pre-paid parking). These transaction fees represent a significant premium for pay-by-phone usage, and yet adoption of pay-by-phone and particularly smart phone usage has been rapid. Pay-by-phone users must have a cellular phone or other electronic device and a credit or debit card to utilize the system. Approximately 40% of all meter transactions are conducted through pay-by-phone as of 2013.⁵

Motorcycle/Motor Driven Cycle Parking

DDOT has allocated a number of curbside zones in commercial areas for metered motor-driven cycles (colloquially called "scooters") and motorcycle parking. Each parking space is no wider than 4 feet and oriented for the vehicles to park perpendicular to the curb face. Meters allow

between 4 and 12 hours of parking, depending on the zone, at a lower per hour rate than adjacent automobile parking zones—50¢ per hour in premium demand zones and 25¢ in normal demand zones when parked in designated motorcycle spaces. Motorcycles may also park in any legal auto space and pay the prevailing meter rate.

The recently passed Motorized Bicycle Amendment Act of 2012 clarified definitively that motor-driven cycles may not legally park on sidewalks in the Central Business District but may legally park on sidewalks outside of the Central Business District, provided they are not blocking pedestrian passage. DDOT is in the process of finalizing and rolling out a program to provide secure motor-driven cycle parking in the Central Business District as well as in non-metered residential areas.

Metered Parking for Individuals with Disabilities

As of March 2013, the District Department of Motor Vehicles reported that there were over 20,000 temporary and long-term disability placards and nearly 1,400 disability vehicle tags issued to DC residents. Residents may also obtain a one week disability permit without a physician's signature. A temporary (up to 6 months) or a long term (7 years) disability placard and/or disability vehicle tags both require a physician's signature confirming disability.

There are two types of parking meters that provide individuals with disabilities access to curbside space. Blue top parking meters, which are being phased out, denote parking spaces that were specifically designed to be accessible to individuals with disabilities, but are not restricted to them. In 2012, DDOT introduced a red top parking meter program, which would reserve spaces exclusively for people with disabilities. However, the program was put on hold by the District Council based on concerns about whether there was sufficient outreach and communication prior to implementing the program. DDOT is proposing to re-launch the red top meter program in 2014 and to initially reserve 1,200 spaces and ensure a minimum of 4% of all metered curbside spaces are reserved for individuals with disabilities. Under this new program all red top meters will be accessible, reserved for use only by individuals with disabilities and programmed to accept payment for twice the time allotted at an adjacent space, up to a maximum of four hours.

3 "2013 Parking Action Agenda." DDOT. <http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2013%20Parking%20Action%20Agenda.pdf> (accessed March 26, 2013).

4 "Parking Meter Equipment." DDOT. <http://ddot.dc.gov/node/546302> (accessed March 27, 2013).

5 "2013 Parking Action Agenda." DDOT. <http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2013%20Parking%20Action%20Agenda.pdf> (accessed March 26, 2013).

2.2 SPECIAL PURPOSE RESERVED CURBSIDE

Commercial Loading

The District Department of Transportation has established commercial loading zones throughout the city to ensure efficient and safe mobility of commercial vehicles traveling in the District of Columbia, while mitigating community impacts and preserving transportation infrastructure.⁶

The purpose of providing loading zones is to ensure that there is space for trucks delivering goods to businesses. Use of loading zones is restricted to commercial vehicles actively engaged in loading or unloading. Commercial loading is in effect between 7:00 AM and 6:30 PM unless otherwise posted (based on loading zone demands and traffic operation considerations) and is typically in effect Monday through Saturday. Commercial loading zones transition to general public parking outside of the hours of loading reservation.

DDOT is initiating a metered commercial loading program. The program permits the use of loading zones by authorized vehicles; however, commercial vehicle drivers must either pay for each use (similar to traditional commercial metered parking) or buy an annual or daily permit that grants them access to all metered commercial loading zones without additional meter payment, while obeying loading time limits. The prepaid permit allows trucks to park in the loading zones for up to 2 hours, but only while actively loading or unloading. Those trucks that don't pay for a permit pay the hourly rate in the loading zones. The intent of the program is to encourage turnover to increase access to commercial loading spaces. The anticipated benefits include better access and fewer penalties for local distributors.

There are over 500 loading zones located throughout the District.

Taxi Stands

In the District, taxis may be hailed at any location. In addition, taxi stands have been established in multiple locations across the District—typically in high tourist or activity areas. Passengers are not required to access taxis only from these locations. Rather these locations are provided as a convenience to provide taxi drivers a safe place to park or stand while awaiting fares without incommoding any travel lanes or occupying metered parking spots. Taxi stands are established by DDOT in collaboration with the DC Taxicab Commission and are reserved for taxi use only 24-hours a day, seven days a week.

⁶ "Commercial Vehicles" DDOT <http://ddot.dc.gov/node/546032> (accessed April 16, 2013)

Car Share Parking

The District was one of the first cities in the nation to reserve public curbside spaces for car share vehicles operated through private car share providers. DDOT chose to do this to raise the profile of car sharing as an alternative to private vehicle use, to promote their use and to reduce the overall number of cars in the District. The program has demonstrated positive effect in reducing auto ownership and the associated demand for curbside parking.⁷

There are 84 reserved on-street car share parking spots. Spots are located in both residential and commercial areas (replacing spots that would otherwise be RPP or metered parking spaces). These spaces are assigned to one of the car share companies operating in the District. Spaces are reserved for car share vehicles only 24-hours a day, seven days a week. Only the assigned car share vehicle may occupy the designated space; all others are subject to ticketing and towing. Although spaces were allocated without a fee when the program first began in 2006, beginning in 2011 car share operators have been required to pay a public space fee for utilization of these spaces.

In addition to these reserved car share spaces, the District of Columbia also permits "point to point" car sharing. Under this model of car sharing vehicles do not reside at a particular designated location but rather are permitted to occupy any legal curbside space (such as metered spaces and residential zones) in the city. Point to point car sharing vehicles are picked up at one public curbside location and deposited at the curbside near the driver's destination. DDOT has established a special annual citywide permit (colloquially known as "Zone 9") that is displayed in the window of these vehicles. Point to point car share operators must pay an annual fee to the District for the use of the curbside space.

Valet Parking

The Public Space Regulation Administration of DDOT issues permits for the temporary conversion of on street spaces to reserved spaces for valet operations. Separate valet services typically serve patrons of individual commercial establishments. At present there are no public valets in the District.

Spaces permitted for valet operations may be metered parking spaces or commercial loading zones (after the period reserved for loading has concluded). Spaces are reserved for valet operations for specified hours and days, reverting to the underlying curbside designation and management

⁷ Martin, Elliot and Susan Shaheen. "The Impact of Carsharing on Household Vehicle Ownership." *Access Magazine*. Issue 38. Spring 2011. http://www.uctc.net/access/38/access38_carsharing_ownership.shtml (accessed May 22, 2014)

outside of the enumerated hours. Valet zones typically occupy two to four curbside spaces.

There are two types of valet parking permits—annual permits and event permits. Annual valet parking permits are typically issued to serve dining or entertainment venues and are routinely in operation year round. Event valet permits are temporary permits issued for specific events associated with an individual home or venue.

Event valet permits are reviewed and approved by DDOT alone. Annual valet permits are reviewed by DDOT and partner agencies and approved by the Public Space Committee. Valet permits have a fee associated with them equal to the replacement cost of the potentially lost meter revenue and/or rental of unmetered curbside space.

Mobile Roadway Vendor Parking

As the use of public space in the District evolves, there are a variety of emerging issues with the use and regulation of curbside space. Mobile roadway vendors (MRVs), primarily food trucks, have been in the District since 2009 and have created pressure on curbside space. Prior to the emergence of mobile roadway vendors, utilizing the business model of daily vending from different curbside locations, there were only a limited number of stationary roadway vendors permitted to vend from designated curbside locations. Stationary roadway vendors primarily vend from the National Mall, selling souvenirs and pre-packaged food. In response to the emerging mobile roadway vending business model, the District revised its vending regulations in 2013. Working with DDOT to identify curbside locations, the Department of Consumer and Regulatory Affairs set up a lottery in October 2013 for the rights to use one of 95 reserved parking spaces in 9 prime locations, while other MRVs can use legal parking spaces in other parts of the city so long as they obey all appropriate parking regulations.

Slug Lanes

“Slugging,” also known as informal ridesharing, is a form of ridesharing in which solo car commuters pick up other riders in order to use HOV lanes. Slugging has been an unregulated and informal activity for many years in the District and surrounding jurisdictions. Although slugging reduces the number of cars that enter the District each day, slugging activities have not been without their impacts. Drivers picking up riders often stop in a rush hour travel lane impeding the usefulness of the lane for traffic flow. In response, in 2010 DDOT designated sanctioned locations for some of these slug activities. These locations were close to the primary driver corridors but sufficiently off the high volume streets to reduce the negative traffic impacts.

There is no fee associated with slug lane locations (for either rider or driver), DDOT can and has exercised sole authority over slug lane designations.

Electric Vehicle Charging

DDOT was also an early adopter of curbside electric vehicle charging, establishing its first curbside charging space in 2010. At present, there are 6 spaces reserved for electric vehicle charging. These spaces are reserved 24/7 for exclusive use of electric or hybrid electric vehicles, but only while they are actively charging their vehicle (typically up to four hours). Each electric vehicle charging space is equipped with a curbside electric vehicle charger. Vehicles do not pay for the electricity, but they must pay a premium for occupancy of the curbside space (presently \$2 per hour).

DDOT has sole jurisdiction over the designation of curbside electric vehicle charging spaces; however these are typically designated in close coordination with the electric utility (PEPCO) and charging station providers. At this time DDOT has no program for expanding the electric vehicle curbside charging stations in large part because of the underutilization of these existing stations.

Diplomatic Vehicle Parking

DDOT designates curbside space for reserved parking in front of the foreign embassies, chanceries, and legations. Diplomatic missions must file a request for reserved parking with the U.S. State Department, which in turn transmits the request to DDOT. Embassies are allowed to have up to sixty feet of reserved curbside space in front of the building's entrance, with restrictions generally in effect between 7:00 AM and 6:30 PM. At present, there are more than 600 curbside spaces dedicated to parking, or restricted use, by embassies in the District.

Worship Parking

In order to reduce the impact of parking by religious institutions on the availability and accessibility of parking for residents living in the communities where these institutions are located, DDOT has established certain worship parking designations in some District neighborhoods. Under these worship parking designations, parking is allowed in curbside or median-side lanes (which would otherwise serve as travel lanes) during specified hours. In addition, DDOT has designated certain curbside areas as areas where angled parking rather than parallel parking is required during specified hours. These techniques temporarily increase the curbside parking supply, but have the negative side effect of reducing travel lanes.

2.3 RESIDENTIAL AND VISITOR PARKING

Residential Permit Parking (RPP)

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 residents within designated ANCs 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 and to as late as midnight and/or applied seven days a week in some neighborhoods. The RPP program has evolved significantly from its inception in 1974 with new legislation and regulations altering the eligibility, implementation, and enforcement of the program over the forty years of its existence (see the Appendices). For example, in 2010 the Residential Parking Protection Pilot Act allowed Ward 1 Advisory Neighborhood Commissions (ANCs) to reserve half of all parking spaces per block for RPP permit holders in that ward.

Today, to implement the RPP program on a block:

- DDOT may establish, modify, or remove RPP restrictions as a result of significant land use development or curbside management initiatives that would adversely impact residential parking; or
- Residents must submit a petition that has been signed by an adult representing each of at least 51% of the households on their block to DDOT for its review; and
- DDOT conducts an assessment on the block to determine whether resident petitions:
 - Are geographically:
 - abutting residential, mixed use residential, recreational, or parkland properties;
 - within five (5) blocks of a major traffic generator;
 - within a performance parking zone; or
 - encircled by adjacent RPP blocks;
 - Do not adversely impact local and metropolitan air quality plans;

- Have the potential to reduce in the District:
 - congestion;
 - vehicle miles traveled (VMT);
 - illegal parking;
 - health hazards; and
 - safety hazards;
- Consider and balance non-residential (religious, health, business, or education purposes) parking needs in excess of two hours; and
- Represent a residential block with parking occupancy of seventy percent (70%) and occupancy by non-residents comprising ten percent (10%).

Figure 7 shows the current RPP blocks in the District.

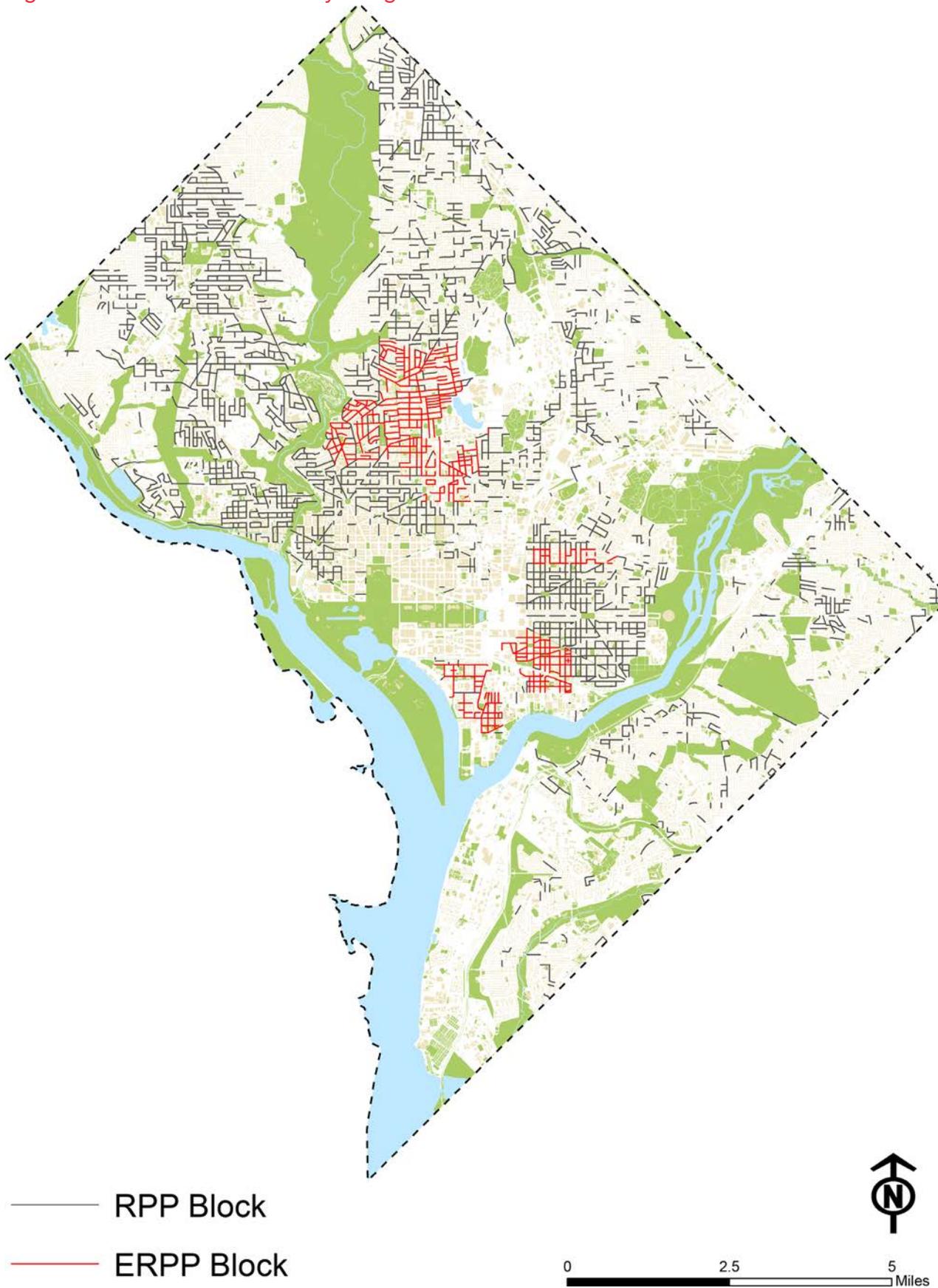
The annual fee is \$35 for each permit, with a discounted rate of \$25 offered to residents who are 65 or older. There is no limit on the number of permits individual households can obtain. DDOT retains authority to set rates for RPP; but without Council approval rates cannot exceed the cost of administering the program. The permits themselves are issued in conjunction with a vehicle’s registration sticker by the Department of Motor Vehicles.

Resident Only Parking

Legislatively mandated in 2010, and implemented in 2012, the Ward 1 Enhanced Residential Permit Parking (ERPP) program), adopted by 3 of the 4 Advisory Neighborhood Commissions in Ward 1, includes a provision to reserve curbside parking for neighborhood residents, by designating 50% of available parking on each block as resident-only parking as well as eliminating the two-hour parking available to non-permit-holders on those spaces. All households in these 3 ANCs are issued residential and visitor parking permits irrespective of whether they live on an RPP block.

In addition to Ward 1, Resident-only parking restriction is in effect in a limited number of neighborhoods including the vicinity of the Washington Convention Center, Nationals Park in Southeast, the H Street NE entertainment corridor, and in areas of Ward 2.

Figure 6 RPP and Resident Only Designated Blocks



Resident Parking and Out-of-State Vehicles

New residents with cars must register their vehicles in the District of Columbia within 30 days. Under the Registration of Out-of-State Automobiles (ROSA) program out of state vehicles that have been observed parked overnight on the curbside more than once within a 30 day period parked are required to prove that they are not DC residents by presenting their driver's license and other identifying documents in person at any DMV service location. They are then granted a six month amnesty from registering their vehicles in the District.

The District also offers reciprocity permits for out-of-state drivers staying in the city for longer periods of time. One-year, renewable permits are available for part-time residents, members of Congress and their families and staff, presidential appointees, military personnel on active duty, and diplomats, as well as District residents with take home company vehicles. Students attending colleges or universities in the District can also apply for one-year renewable permits, except for those living near American University, George Washington University, and Georgetown University. Finally, temporary residents are allowed to receive a permit good for up to six months, though it is not renewable.

All permit applicants must provide proof of identification, such as an out-of-state driver's license, as well as their vehicle registration and some proof of residence in the District, such as a utility bill or home title.

Visitor Parking

The Visitor Parking Permit program (VPP) is designed to extend resident parking privileges to drivers who are visiting residents of RPP zones. The Chief of Police may issue temporary visitor permits valid for periods up to fifteen (15) days to visitors at an address on a residential permit parking block. DDOT provides an annual Visitor Parking Pass to all eligible RPP households in select parts of the city, including wards 1, 3, 4, 5, and parts of 6 in addition to all households in ANC's 1A, 1B, and 1C. In 2012, DDOT extended the eligibility for visitor parking passes to all eligible households on RPP blocks in the District.

Residential Contractor Parking

The temporary visitor permits and annual visitor parking passes are authorized for use on contractor vehicles engaged in construction or maintenance work at a specific residential address on an RPP block. In 2013, the District Council created a daily neighborhood contractor daytime parking permit for \$10, providing temporary RPP privileges across RPP zones for residential contractors. The contractor pass program has not yet been implemented.

Residential Home Health Care Worker Parking

The temporary visitor permits and annual visitor parking passes are authorized to be used by home health care workers providing service at a specific residential address on an RPP block. Additionally, the Department of Motor Vehicles issues a 60 day home health care worker permit that can be requested by residents for their home health care worker.⁸

Residential Reserved Parking for Persons with Disabilities

District residents with certain mobility-related disabilities designated by a licensed physician, may apply for a reserved parking space in front of their residence. To qualify, residents must have a permanent and severe mobility impairment, valid disability placard, vehicle registered in the District, reside in a single-family house, and have no access to accessible off-street parking in the form of a driveway, garage, parking pad, or adjacent private parking space. Applications for reserved disability parking spaces are reviewed by DDOT. If approved, applicants are issued a unique permit number and DDOT installs signs at the curbside marking the reserved space and designating the permit number associated with the space. Only the designated and permitted vehicle may park in the reserved location. Residents must prove their continued eligibility for a reserved parking space every two years.

2.4 NON-AUTO CURBSIDE USE

The District is a national leader in dedicating curbside space to accommodate travel options that reduce the need for private auto use; these options in turn reduce the demand for curb space as a whole.

DDOT establishes or permits the reservation of curbside space for bus stops, bus parking, and bicycle parking.

Bus Stops

Bus services are an essential component of the District's transportation network. Buses can provide person throughput and access more than 50 times greater than private vehicle travel and parking. As part of its effort to enhance bus travel and access, DDOT designates bus stop locations for public transit (generally WMATA and Circulator) buses, intercity buses, and tour buses.

There are thousands of public transit bus stops throughout the District (Figure 7). Parking is not permitted on any day at any time in a designated public transit bus zone. Bus stops

⁸ "Obtain Health Care Provider Temporary Parking Permit" DC Department of Motor Vehicles <http://dmv.dc.gov/service/obtain-health-care-provider-temporary-parking-permit> (accessed July 3, 2014)

Figure 7 Bus Stop and Metro Stop Boarding Activity



are occasionally shared by multiple regional public transit operators (often referred to as “commuter buses”).

In addition to public transit buses, as a major tourist destination, the District hosts over 100,000 tour buses every year, an average of almost 300 per day. These too are a vital element of our local economy but also create a parking and transportation burden. There are 110 pick-up and drop-off locations for privately operated tour bus services. New rules on the permitting of sightseeing and charter bus stops were enacted in February 2014, with implementation scheduled for late summer 2014.

Moreover, DDOT was one of the first major cities to establish a policy for intercity bus stops at the public curb. In recent years, however, DDOT has incentivized most operators to locate in Union Station. DDOT approves all bus stop locations for both public and private operators. Private operators are required to have a public space permit to use the public curb space as a bus stop and the operator must renew the permit annually.

Bus Parking

There are 199 designated tour bus parking spaces located throughout the city. While most spaces are in publicly-owned off-street lots, several buses are accommodated on public streets near the monumental core. Some streets are under National Park Service jurisdiction (e.g. Ohio Avenue) and others are under DDOT control (e.g. Maine Avenue). DDOT oversees designation of bus parking on streets under its jurisdiction. Generally these spaces are occupied on a first-come, first-served basis and are not metered.

Bicycle Parking

DDOT reserves curbside space in some locations for bicycles, including both private bicycle parking and public bike sharing stations. Accommodating bicycles with on-street parking is an efficient use of the curbside space, especially in areas where the available sidewalk is constrained, and can also increase access and parking capacity overall. Approximately 10 bicycles can park in the same physical space as one automobile. In many cases, due to their lower profile and open frame structure, bicycles can be parked in a restricted sight triangle without displacing any vehicle parking.

Capital Bikeshare is the region’s bike sharing network. As of 2013, 13 of over 300 Capital Bikeshare stations were located in on-street locations accommodating 250 shared bikes.

On-street bicycle parking is typically provided in bike corrals—a series of hoops accommodating several bicycles in one location. At present there are 11 on-street bike corrals.

2.5 PARKING PROHIBITIONS

Standing, stopping and parking is prohibited on several blocks of curbside in the District either permanently or temporally during certain times and days.

Rush Hour Restricted

As the center of the metropolitan region, another competing need and priority for the District is to efficiently accommodate vehicular movement, particularly during “rush hour” - the heaviest traffic volume hours of the day. On many streets in the downtown, and occasionally elsewhere around the city, parking, standing and stopping at the curbside is prohibited (except for bus loading and unloading) during these peak hours and the curbside is reserved for vehicular travel. To accommodate enhanced traffic flow and help relieve congestion during rush-hour periods, the curb parking lanes along several streets within the District are converted to travel lanes. There are four time period restrictions: AM only (7:00 AM to 9:30 AM), PM only (4:00 PM to 6:30 PM), both AM and PM, and weekday all-day (7:00 AM to 6:30 PM). Rush hour parking restrictions are mainly limited to major arterials and commercial corridors. Designated rush hour streets are shown in Figure 8.

Emergency and Evacuation Routes

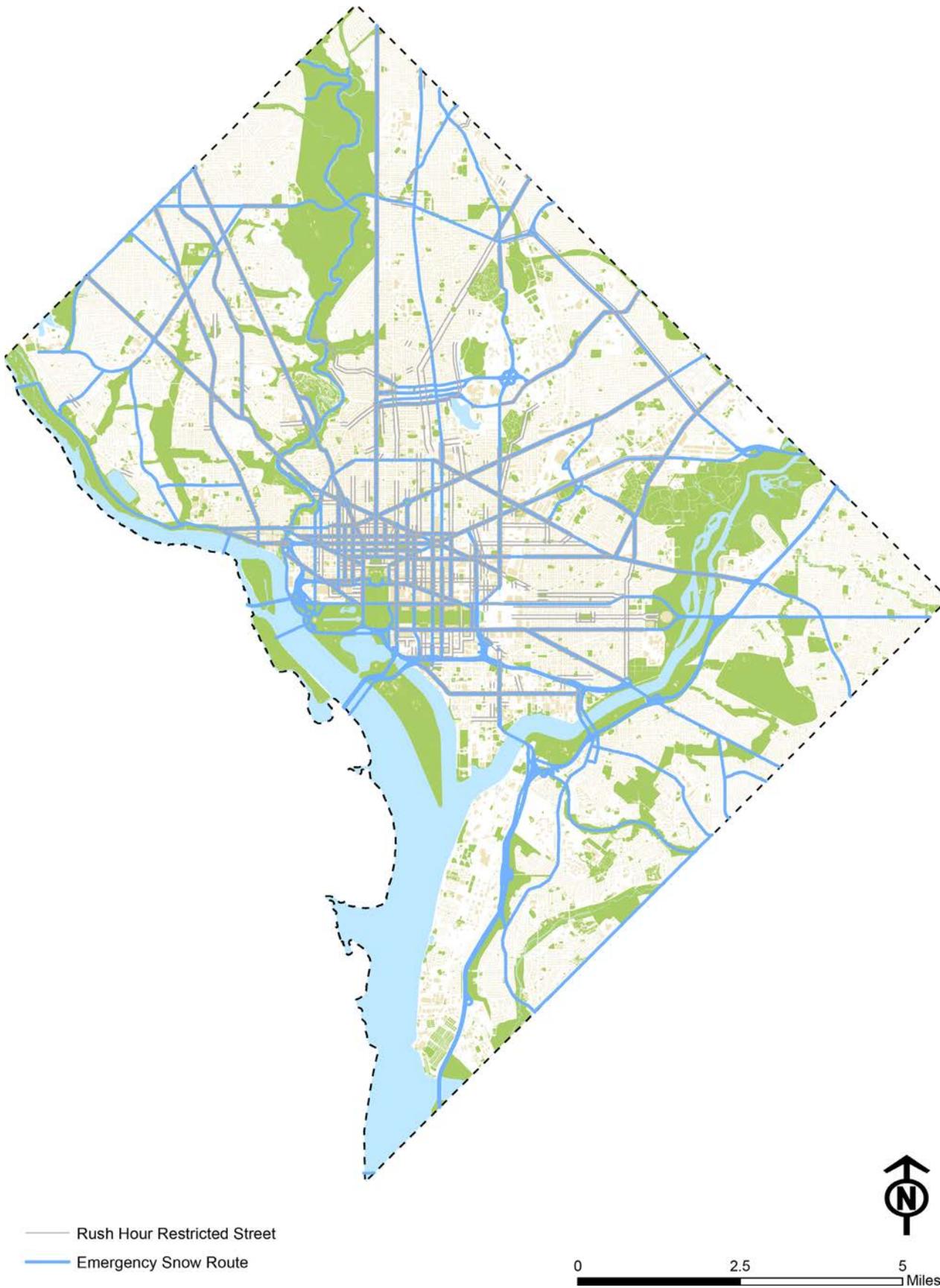
Major corridors in the District are designated as emergency and/or evacuation routes. DDOT through its curbside management policies plays a key role in helping the District and its residents respond to emergencies including events or threats that might require the evacuation of the city. Working together, DDOT and its regional partners have identified nineteen (19) corridors radiating from downtown Washington as emergency event/evacuation routes. In the event of a declared evacuation there would be no parking on these designated routes enabling full volume traffic flows on these major arterials and vital corridors. Each of the routes extends to the Capital Beltway (I-495) and beyond and is marked with blue “Evacuation Route” signs.

In addition, when an emergency is declared by the mayor, such as a heavy snow fall, a hurricane, or other severe weather emergency, parking is prohibited on designated emergency routes. This allows full clearing of snow or debris, and rapid return to regular traffic operations. These routes are frequently, though not always, streets also ordinarily designated as rush-hour restricted (see Figure 8).

Street Cleaning

The District Department of Public Works is responsible for street cleaning on designated streets included in the street cleaning program. Parking. Typically parking is prohibited

Figure 8 Emergency Snow Routes & Existing On-Street Rush Hour Restrictions



on alternative block faces for two and a half hours one day a week between March 1 and October 31 for residential streets and all year on commercial streets November 1 to permit DPW to complete street cleaning activities. No vehicles may park at the curbside during these designated days and times. Those that do are subject to tickets, towing and associated fines.

Bus and Bicycle Lanes

On select streets, primarily in or near the downtown, DDOT has set aside curbside space for mass modes of travel—specifically buses and/or bicycles. On a small number of streets, this has resulted in the full conversion of curbside parking and loading to travel lanes for the designated mode. At present, this is the case on portions of Pennsylvania Avenue NW, L and M Streets NW, 15th Street NW, and 1st Street NE where protected bicycle lanes have been established. Bus only use is contemplated for a three to four block section of Georgia Avenue NW as well as other select locations.

Generally when the curb lane is converted to a designated and protected travel lane, parking, stopping and standing is prohibited for all hours of the day. However, the dedication may be established for only peak hours, similar to rush hour restricted provisions.

Although at present relatively few curbsides are designated for modal travel lanes, more are anticipated in the future as the District builds out a robust planned system of surface transit and protected bicycle networks.

Entrance Zones

Entrance zones are areas where parking is prohibited near the entrances of buildings that have many occupants or visitors. They allow clear sightlines to building entrances and also allow visitors arriving by car to get picked up or dropped off at the front door, which is especially significant for those with limited mobility. DDOT is authorized to place entrance zones in front of several categories of buildings, including government or public buildings, theatres, hospitals, hotels, churches, and embassies. Some buildings only are eligible for entrance zones when they are over a certain size, such as apartment buildings with at least 25 units, office buildings with 10 or more offices and restaurants with a capacity of 250 or more.

3 Stakeholder Priorities

3 Stakeholder Priorities

How best to approach curbside management in the District has been discussed and analyzed for the past ten years through various forums and processes including the 2003 Mayor’s Parking Task Force, the Downtown Congestion Task Force, the 2006 major update to the city’s Comprehensive Plan, and Parking Think Tanks held with stakeholders in 2012.. Throughout these studies, plans and efforts, many similar, and sometimes conflicting, themes have repeated.

3.1 USE-SPECIFIC PRIORITIES

Metered Parking

Stakeholders have noted that parking utilized by commercial patrons (and others) is underpriced relative to demand for the space. This has resulted in limited parking turnover and congestion caused by drivers circling in search of parking. Private, off-street parking spaces compete with underpriced metered spaces. Stakeholders would like to prioritize customer parking in commercial areas to promote and facilitate commerce. This, at times, means discouraging all-day occupancy of curbside space, including occupancy by establishment employees.

Specific strategies recommended include: introducing demand-based pricing strategies; improving tracking of localized parking demand and utilizing performance measures to manage on-street parking and set rates and metering span; and utilizing modern and new technologies for curbside management and monitoring.

Parking for Persons with Disabilities

Access for all is a high priority DDOT, and endorsed by stakeholders. Stakeholders raised accessibility issues with the existing parking meters which could be resolved by designated, reserved metered and un-metered spaces around the District. They wanted to see expanded forms of payment and enhanced administration of disability placards and vehicle tags for the purpose of combating fraud and abuse of the program.

Special Purpose Reserved Curbside

Commercial Loading

The priority for management of commercial loading is to ensure access to available curbside space for goods delivery activities when it is needed, but also to make this space available to other curbside uses during less active loading and delivery periods. Curbside demands and competition for curbside space has intensified as local commercial areas

grow and revive. Reliably providing for commercial loading has become a greater challenge and priority.

Approaches contemplated by past studies or stakeholders to address this priority include metering or otherwise pricing loading zones, expanding the size and increasing the number of loading zones, extending loading time periods, simplifying and standardizing truck parking rules, and encouraging nighttime or off-peak goods delivery.

Residential and Visitor Parking

Residential Permit Parking

Residents have noted in various studies and efforts that the Residential Permit Parking program is in need of restructuring. Between residents, their visitors, and those providing service to their home or family needing parking on residential streets and pressures from other community, entertainment, and retail uses and a diversifying, growing population demographic imposing and infringing upon residential curbside, the current broad application of the RPP system is ineffective and inefficient. In dense and densifying residential areas where parking demand by residents alone may exceed curbside supply, a concurrent priority is to reasonably and fairly manage residential parking demand.

Past studies and input of stakeholders has recommended consideration of different strategies to achieve these priorities including introducing enhanced RPP restrictions to better respond to varying demand contexts (such as “Resident-Only” parking), revisiting zone sizes and boundaries, and exploring more demand-responsive fee structures and permit reforms, such as escalating costs for multiple vehicles.

Visitor Parking Permits

With various residential permit parking restrictions imposed on residential streets, visitors and contractors are hampered in visiting residents without a visitor parking permit or pass. Stakeholders are supportive of the intent of the temporary permits and annual passes, but suggest building upon them.

Stakeholders would like to have more readily available access to temporary visitor permits and passes via on-line and community facility outlets, even for a fee. Furthermore, a simplification of the types of visitor passes is desired, consolidating temporary visitor permits, contractor parking permits, healthcare provider permits, and others to a resident-based and managed visitor permit as well as a user-based and managed visitor permit.

3.2 USER-PREFERENCE RESEARCH

To gain insight into the preferences among and reactions to these approaches and the need to balance priorities, stakeholder research was conducted, with two dominant stakeholder groups—residents and businesses together with the delivery operators who supply them.

Resident Preferences

The resident survey sought to gauge, in a statistically significant way, the priorities and willing trade-offs of the average Washingtonian. A professional market research firm was retained to design, test, administer and analyze the curbside consumer preference survey. Over 800 adult residents

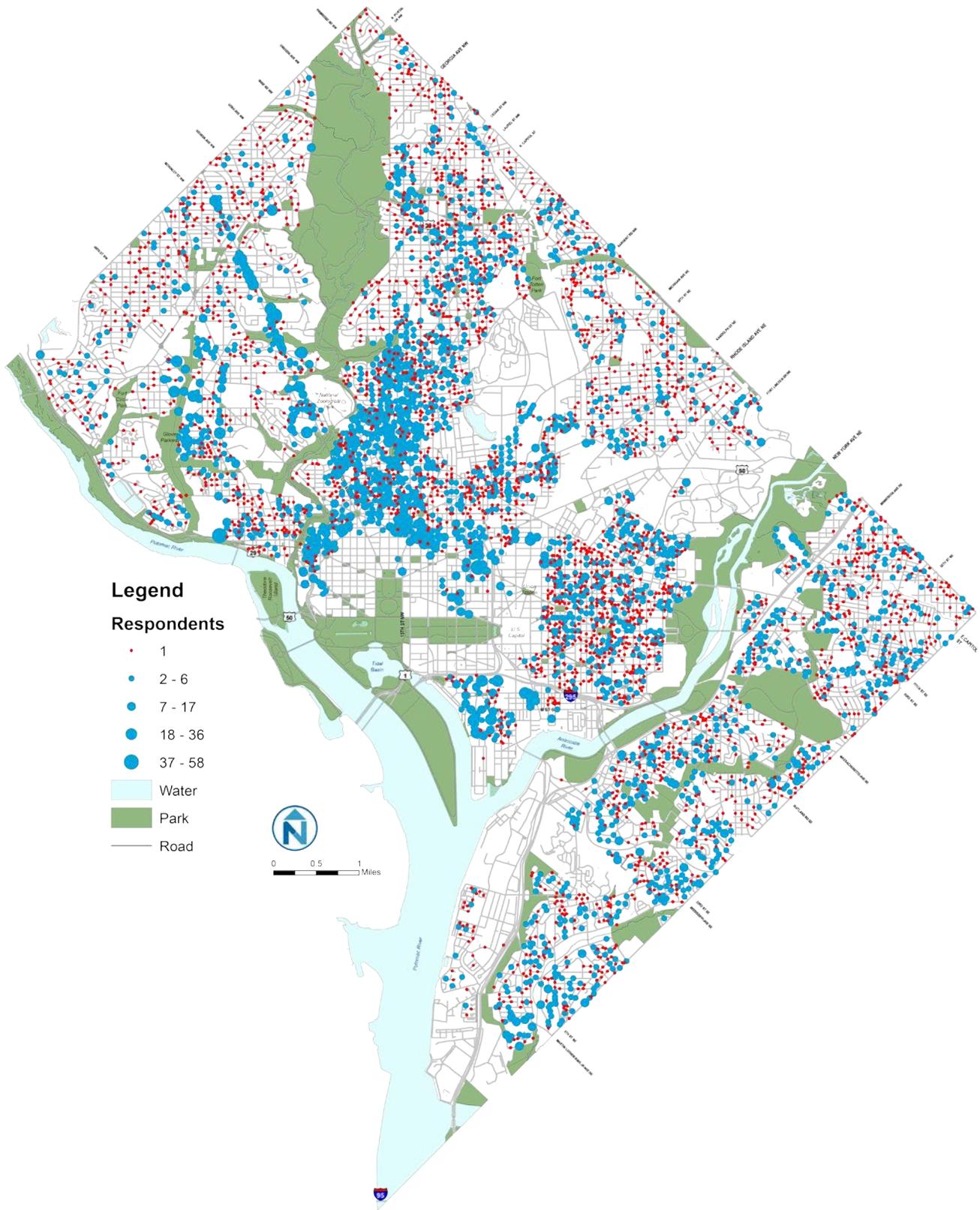
representing a wide cross-section of the District across all eight wards responded to the survey (Figure 10, on the next page). The result of the survey provides a representative picture of resident priorities for curbside management. A full summary of respondent characteristics and survey responses is provided in the Appendices.

Survey participants were asked to weigh various opposing priorities for curbside management and indicate which statement they agreed with. Key findings are summarized in Figure 9 below.

Figure 9 Resident Comparative Priorities for Curbside Use

	Choices	Key Findings
1	<p>Statement A: Only immediate-neighborhood residents or their guests should be permitted to park on local residential streets.</p> <p>Statement B: Curb spaces throughout the District are a public resource which all residents and guests should be permitted to use, regardless of where they live.</p>	<p>Residents were split between protecting local curbsides primarily for local residents versus making them available to all District users.</p> <p>Higher density wards (1, 2, and 6) and Ward 8 preferred to protect the local curbside for local residents (≥60%). Fewer than half the residents of lower density Wards 3, 4, 5, and 7 strongly preferred local neighborhood protection (Statement A) over broader access (Statement B).</p>
2	<p>Statement A: All District residents should be able to park near places such as parks, libraries, schools, and houses of worship.</p> <p>Statement B: Citywide access to amenities should not come at the cost of local resident parking access.</p>	<p>Statement A was preferred across all wards of the District and most strongly in Wards 3 (64%), 4 (63%) and 5 (66%) and least strongly in Wards 2 (46%), 6 (50%) and 8 (48%).</p> <p>Overall, more than half (57%) of all respondents favor an “equal access” approach to curbside management.</p>
3	<p>Statement A: I would pay more for a parking permit if that ensured me a parking space on my street without having to hunt for a space.</p> <p>Statement B: I would be willing to search for a parking space, or walk farther from my destination, so long as parking costs are low</p>	<p>There was very strong support (63%) for demand-driven pricing approaches represented by Statement A compared to just 23% who prefer to hunt for a space in order to keep prices low. However a number (14%) of respondents held no preference.</p> <p>Statement A was preferred by at least 50% of respondents across all wards and all income brackets—including those earning less than \$50,000 per year.</p>
4	<p>Statement A: Parking should cost the same for everyone in all areas of the District.</p> <p>Statement B: Parking costs should be priced according to demand—the more people want them, the higher prices should be.</p>	<p>61% of residents thought parking costs should be the same across all areas of the District compared to just 32% who felt price should reflect demand.</p> <p>Although a majority of residents in all wards favored uniform pricing over variable rates, the preference was most pronounced in Ward 7 and 8 where over 80% of residents agreed with Statement A.</p> <p>Over 70% of residents in households earning less than \$100,000 per year preferred uniform parking fees. A smaller majority (53%) of more affluent residents preferred uniform over demand-responsive parking rates.</p>
5	<p>Statement A: Neighborhood parking should be just for residents of my neighborhood.</p> <p>Statement B: Accommodating non-resident parking is important to support neighborhood shops, restaurants, and services.</p>	<p>Citywide, many more residents favored Statement B (52%) over Statement A (37%), however a significant number of residents were undecided (11%).</p> <p>Wards 3 (61%), 4 (68%), and 5 (64%) strongly agreed that curbside access is vital to support local businesses. Only Ward 8 definitively (56%) preferred to protect curbsides for local residents only.</p>
6	<p>Statement A: Vehicle parking should take priority over all other uses of the curb space.</p> <p>Statement B: Curb space should be prioritized for uses that serve many people such as transit, car share, and bike parking.</p>	<p>There was not a majority opinion between the two statements; however more residents (48%) would prioritize the public curbside for vehicles versus the 39% who would prioritize for other modes of access. A significant number (13%) of respondents did not prioritize one over the other.</p> <p>The preference to prioritize for vehicle parking declined as incomes rose.</p> <p>Less than a third of Ward 5, 7 and 8 residents would prioritize curbside space for non-auto uses where the majority (53%) of Ward 1 residents would.</p>

Figure 10 Map of Consumer Survey Respondents Generalized to Block Face



Residents generally preferred an approach to curbside management that would improve availability of the curbside space and provide adequate access to support local businesses and public facilities to strengthen the city overall and the vitality of their neighborhood amenities in particular. Having said that, residents still placed a high value on residential curbside space and desired its protection as a residential resource after meeting other needs for the public good. Residents favored management strategies that would improve the availability of curbside space, primarily for automobile parking, and preferred consistent citywide policies over locally unique or tailored strategies.

Although on the surface, the preferences indicated in pairs 3 and 4 appear to contradict one another, it can be concluded that, all things being equal, residents would like the city to find a universal parking rate that would concurrently ensure availability of the curbside in all neighborhoods.

Residents were also asked how strongly they agreed or disagreed with several statements indicating usage of the public curbside space (Figure 11). Absent any trade-offs or consequences, residents “want it all.” Residents felt most strongly that curbside management should help to grow and/or maintain local amenities, but concurrently want to protect parking for residents to the maximum extent possible. Residents indicated they would pay more for better curbside availability, but don’t necessarily think they should have to.

Geography played a significant role in District residents’ opinions. Not surprisingly, wards with many employment and retail destinations closely mixed with or adjacent to residential areas where curbside demand is high and competition fierce (Wards 1, 2, and 6) leaned more heavily toward restricting curbside management in favor of residential protection. Wards with fewer commercial nodes and more segregated land uses (3, 4, 5, and 7) tended to favor more “equal access” type approaches, but also wanted curbside availability. This is logical in that these residents presently must regularly travel (often driving) to get quality goods and services and therefore want access. Since they are already incurring higher transportation expenses because of this higher need to travel, they are reluctant to pay more. Ward 8 was a deviation from the pattern in that the ward has relatively limited commercial offerings and low curbside demand but also strongly favored residential protection over equal access or managed availability.

Overall, District residents seek convenient parking that’s available most of the time, but are open to new ways of managing curbside parking, both in residential neighborhoods and on commercial corridors.

Business Preferences

Businesses and their delivery service providers have unique needs and curbside management preferences and therefore these interests were separately surveyed for their input on

Figure 11 Resident Independent Priorities for Curbside Use

	Question	Percent Agree/ Strongly Agree
RESIDENT PRIORITY		
C1	As a local neighborhood resident, I should have first access to curbside parking near my home.	89%
C2	Commuters, retail customers or outside visitors take up too many parking spaces in my neighborhood.	39%
C4	Too many vehicles are allowed to park in my neighborhood for the amount of curb space that is available.	40%
LOCAL AMENITY SUPPORT		
C11	I want to be able to walk to more retail and amenities in my own neighborhood.	86%
C3	Commercial streets do not provide enough curb spaces to support and sustain local businesses.	64%
C10	The curb space should primarily be used to support neighborhood shops, restaurants and services.	40%
EQUAL ACCESS		
C6	D.C. residents who register their vehicle in the District should be able to park on any non-metered street in the District.	76%
C12	On major commercial streets, I would prefer that the curb space be used for parking rather than bus stops or lanes, bicycle parking or lanes, and commercial loading.	46%
MANAGED AVAILABILITY		
C8	I would be willing to pay more to park if it meant a spot would be available.	62%
C9	If I want to park in popular areas, where the demand for parking is high I should pay more	48%
C7	When it comes to metered parking, no one should be limited in how long they can park in an area, as long as they pay for the time they are there.	56%

curbside management strategy. 148 retail business owners, representing 177 businesses, were surveyed online to learn about their customer profiles, parking uses, deliveries, and busiest times. A full summary of business outreach and findings can be found in the Appendices.

As previously noted, nearly all commercial areas in the District of Columbia rely on a customer base far larger than what their local neighborhood alone can support. Customers from outside the immediate neighborhood, indeed from outside the District itself, must be accommodated in some way in order for the quality and variety of commercial offerings to be maintained in a significant number of District neighborhoods. This of course does not automatically mean that patrons must drive and park at the curbside; however for a large number of patrons, driving and curbside parking is the prevailing method of accessing these businesses.

Loading, moreover, is predominantly done from the public curbside. If delivery vehicles are unable to access a curbside space or are repeatedly financially penalized when making such deliveries, suppliers and distributors may either interrupt deliveries or pass these additional delivery costs on to the local (often small) business that, in turn, passes costs on to the consumer.

Surveyed businesses fell into one of four categories:

- Food and beverage (F&B) establishments - 44% of those surveyed
- General merchandise, apparel, furnishings, and other businesses (GAFO) – 22%
- Neighborhood goods and services (NG&S) – 17%, and
- Non-retail businesses such as professional offices, medical offices, and non-profit agencies - 16%

Loading and distribution vendors received a supplementary survey about deliveries, truck parking, busiest times, loading restrictions, and vehicles used.

Food and beverage (F&B) establishments including sit-down restaurants, cafes, bars, coffee shops, sandwich shops, ice cream shops, “quick-bite” establishments, fast-food restaurants, and similar establishments, attract customers from a larger trade area. In fact, 40% of F&B customers originate from outside of the neighborhood in which the establishment is located. Nonetheless, more patrons arrive on foot (41%) than by car (33%) with the balance arriving via transit, bicycle or other modes of access. Food and beverage establishments account for majority (63%) of the retail work force, and employ an average of 37 people per establishment. A large share (72%) of employees use public transit, bike or walk to work every day, however approximately one-fifth (20 %) occupy on-street parking spaces.

F&B establishments need convenient and reliably available access to loading and delivery areas that will be used daily, often several times a day. F&B establishments receive up to 50 deliveries per week.

The GAFO (general merchandise, apparel, furnishings, and other) category includes establishments such as clothing stores, furniture stores, bookstores, jewelry stores, gift boutiques, pet stores, sporting goods stores, home good stores, craft stores, antique shops, electronics stores, auto parts stores, and similar. GAFO retailers face a tremendous amount of competition, both in stores and online, for a relatively small percentage of household expenditures. Successful GAFO stores attract customers from long distances, with 45% living outside of the neighborhood. However, these stores also rely on the exposure and foot traffic generated by an anchor that draws people with the same customer profile. GAFO customers primarily arrive by car (44%) with a significant number coming on foot (37%). GAFO establishments, on average, employ the fewest people per retail category—4 full-time and 7 part-time—due to their typically smaller store sizes and more manageable inventory scales. A high percentage of GAFO employees bike to work daily (18%) compared to other retail categories, in part because their hours of operation generally do not extend late into the night.

The GAFO retail category has the lowest level of needs for curbside space. Although these stores rely on a customer base that will travel longer distances, its patrons often have higher tolerance for parking inconvenience (distance, availability, and cost). Retailers with large merchandise, such as furniture stores, and bulk/discount stores are the most likely to provide off-street parking options for customers—and employees—and have the lowest levels of demand for curbside use. GAFO establishments generally receive deliveries less frequently than other types of commercial retailers.

Neighborhood goods and services (NG&S) retailers rely on spending from nearby residents, students, and employees, generally located within a ½ mile radius.¹ Retail respondents reported an even distribution of patrons arriving to NG&S establishments by car (40%) and by foot (38%). Their employees mostly arrive by public transit (39%) or car (33%). The majority (59%) of employees who arrive by car park on street in the area near the retailer. Regarding access to loading and delivery areas, NG&S establishments typically receive deliveries daily (32%), or several times a day (32%).

Figure 12 shows a general comparison of the customer parking and delivery needs of the various categories of retailers and their associated priorities for curbside use.

¹ Over 72% of NG&S customers denoted that they live or work in the neighborhood.

Regardless of the composition of tenants, most retailers agree that their commercial districts and the establishments in them struggle with the disconnect between their needs and the current curbside restrictions. Effective curbside solutions for commercial districts will “right-size” the number of customer parking spaces needed and the length of loading zones necessary based on the composition of the retail mix to reduce impediments to business operations, costs, and success.

Figure 12 Comparison of Retailer Customer Parking and Delivery Loading Needs

Approach	Customer Curbside Demand	Duration of parking need	Loading Zone Size	Loading Zone Time	Representative Neighborhoods
NG&S	Lower	Shorter time periods	Larger zones needed	Wider window for reserved loading period needed	Petworth Foggy Bottom Van Ness
F&B	High	Longer time periods	Existing zones generally adequate	Wider window for reserved loading period needed	8 th Street/Barracks Row 14 th and U Street Adams Morgan
GAFO	Lower	Longer time periods	Existing zones generally adequate	Existing loading time periods generally adequate	Dupont Circle Metro Center Friendship Heights Georgetown

4 Gap Analysis

4 Gap Analysis

Curbside management in the District of Columbia, like many other high demand cities, is a complex and dynamic process to allocate a limited resource to satisfy, in the best way possible, highly variable demand.

The District has a generally successful curbside management program as evidenced by the vibrant and thriving retail districts, strong and stable residential communities, and rich array of multimodal travel and access opportunities. However, as is often the case, success is readily overshadowed by unaddressed challenges.

4.1 WHAT THE DISTRICT DOES WELL

Before addressing the visible areas of deficiency, it is important to first note the many ways in which the District Department of Transportation is a leader in curbside management, modeling some of the best practices and approaches in optimizing the use of the curbside to support the larger vision and objectives for the District of Columbia.

The District has been an early adopter and innovator in curbside management, introducing new parking technologies like multispace meters, smart meters, and pay-by-phone; implementing performance parking; creating metered curbside loading zones (which is in the final stages of implementation); and providing visitor parking through permits and passes. The city has dealt effectively with unique challenges including reservation of curbside space for embassy use and managing federal agency security requirements.

This section highlights what the District does well with regard to curbside management as this serves as the solid foundation on which to construct improvements and strategies for addressing the outstanding challenges.

Governance

Within the District Department of Transportation, curbside management is seen as an enabling function. Rather than being managed primarily for revenue generation, as it is in some locales, the curbsides are primarily managed to achieve policy objectives and transportation mobility. Policy objectives may include residential neighborhood preservation, business support, support for transit, or access to public amenities or institutions. Serving transportation mobility means that, when demanded, revenue producing curbside spaces are sacrificed for travel lanes, bicycle parking, wider pedestrian spaces, or bus or truck loading. Because it is imbedded within a multimodal transportation department, parking management is integrated and

balanced with city objectives to encourage non-auto modes of travel, reduce environmental impacts, and improve overall system operations.

This integration has been a significant factor leading to creative curbside uses such as car and bike sharing, streetscape improvements, bus bulbs and streetcar stations, and intercity bus regulations.

Policies

Metered Parking and Commercial Loading

DDOT's process for identifying and deploying *metered parking zones* is highly effective and responsive. Generally speaking, parking meters are only necessary where demand begins to exceed curbside supply. Meters are generally unnecessary in areas still struggling to gain commercial patronage and can potentially be a detriment to them. In evaluating the District's commercial areas, we find that nearly all areas with modest to high demand have established meter zones while few areas of relatively low demand are metered. Areas that have emerged as popular retail destinations in recent years have been rapidly outfitted with meter technology.

DDOT was an early adopter of *performance parking*, recognizing that price is one of the most reliable tools to gauge the value of the curbside space and effectively manage demand. While the performance parking program certainly experienced some limitations, the District embraced the strategy and is striving to further implement the program with available data and technological capabilities.

Special Purpose Reserved Parking

Likewise, the District was among the first to pilot *metered loading zones* and now has taken the pilot citywide. The District worked closely with the distribution and delivery industry to design a program appropriate to their needs. While still in its infancy, this program shows great promise as a leading national practice.

As previously noted, the District was one of the first cities to establish designated public *curbside car share parking* locations. Car share companies readily acknowledge that the high visibility of the service provided by these on-street spaces contributed significantly to the rapid expansion and adoption of car sharing throughout the District.

The District was one of the first large cities to regulate valet parking. The city's *valet parking* regulations and permit process have worked well since their launch just a few short

years ago. Valet operations make efficient use of limited curbside space allowing the exchange of scores of patrons in a space that might otherwise serve just a handful of potential customers. Restaurateurs, entertainment venues, and other establishments have welcomed the valet program as a service and amenity vital to their success.

Despite concerns that government intervention would result in significant negative impacts, the District's 2013 launch of its **mobile vending program** has largely been a success and balanced the needs and concerns of food truck operators and brick and mortar businesses alike, while serving the interests of daytime workers, residents, and visitors. The program has demonstrated its ability to provide fair access to some of the most coveted vending locations in the city while preventing flooding downtown parking spaces with vending vehicles.

In some dense residential neighborhoods in the District, there is tension between residents and religious institutions regarding the impact of **parking for religious services** on parking and access by residents. Documented as far back as 1957¹, religious institutions and residents have repeatedly sought ways to share the available parking supply for their divergent parking needs. DDOT has taken active steps to address this issue by identifying shared parking opportunities on District or privately operated parking facilities and by implementing worship parking approaches such as allowing diagonal parking on blocks adjacent to religious institutions and converting travel lanes (generally median lanes) to parking lanes during specified hours and days.

Other cities have looked to the District as an example of how to effectively move and manage such activities.

Residential and Visitor Parking

In the vast majority of residential neighborhoods, **residential permit parking (RPP)** works exactly as it should; providing adequate space for residents while permitting other users—like daytime workers or visitors—adequate access to and use of the curbside space and deterring the extended use of residential curbside space by non-residential vehicles.

DDOT should also be credited with establishing a number of **visitor parking pass pilots** as these programs gave valuable insight into the needs of and strategies for accommodating visitor parking.

The residential **reserved parking for individuals with disabilities** has been valuable to many by providing convenient access to their homes for residents with disabilities.

Non-Auto Curbside Use

DC was one of the first cities in the nation to successfully manage **intercity curbside bus stops**. The adopted regulations have been effective at locating intercity bus operations where they can easily access and serve their patrons and have minimized (and in many locations eliminated) the negative effects of intercity bus loading on busy and crowded public sidewalks and roadways.

Capital Bikeshare has been a well-documented success. While the majority of bike share stations are behind the curb, several critical stations in high traffic locations with narrow sidewalks have been located within the curbside. These **in street bicycle stations** have been successful at safely and effectively meeting bike share user needs and comforts.

Similarly, **on-street bicycle corrals** have been well received by bicyclists. The bike corrals accommodate a large number of travelers with very minimal consumption of the public curbside space. Where they have been located, bike corrals have been very well used.

Technology

DDOT has invested millions to upgrade the city's meter technology. Today the city can and should be credited with having an extensive network of **smart meters**. These meters provide the opportunity to efficiently adjust rates, accept multiple forms of payment, and report on payments. **Pay-by-phone** has been a convenient service eagerly adopted by many regular parkers in the District. The District was an early adopter of the payment technology, and now operates one of the most comprehensive pay-by-phone programs in the country. Not only does the service permit quick and easy payment for parking, but also enables drivers to extend parking time without needing to return to the vehicle. One sign of the market's response to these investments is that approximately 40% of meter transactions are now conducted through a pay-by-phone payment service.²

¹ "Northwest Urban Renewal Area Church Survey" National Capital Planning Commission <http://comp.ddot.dc.gov/Documents/Northwest%20Urban%20Renewal%20Area%20Church%20Survey.pdf> (Accessed March 2014)

² "2013 Parking Action Agenda." DDOT. <http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2013%20Parking%20Action%20Agenda.pdf> (accessed May 28, 2013).

4.2 WHAT NEEDS IMPROVEMENT

DDOT recognizes that for all the good policies and processes that have been put in place and the innovations that have been adopted, significant challenges remain. It is important to note, though, that not all issues will have solutions that work for everyone. When it comes to parking and curbside access there will never be one magic solution that makes everyone happy.

Governance

The existing curbside management governance structure requires the cooperation of a number of different agencies and divisions within them.

The existing governance structure is complicated, requiring coordination among multiple different players with sometimes different priorities and demands, and can result in barriers to data. In addition, the structure can be confusing to those trying to access services or understand functions.

Although we believe the current governance structure is an appropriate division of parking-related responsibilities, improvements could be made to inter-agency coordination and data-sharing, and the division of parking-related responsibilities could be made clearer to the public.

Policies

Commercial Parking and Loading

In conversations with commercial stakeholders there was wide consensus that there was a need for **greater availability** of on-street parking spaces in commercial areas indicating a likely need for **more appropriate meter rates**.

Demand exceeding available supply is often a sign that the cost of parking is less than what drivers are willing to pay for the convenience of driving to these commercial locations. In addition, parking demand is not consistent over the course of a day or through all days of the week. However the District does not at present vary rates according to temporal demand or different lengths of time. Furthermore on-street parking is almost always cheaper than parking in off street garages, further increasing demand on these spaces.

Despite the general agreement that there are times and locations where parking rates and time limits should be changed, **parking meter rates are not easily adjusted**. This is due to a variety of issues including capabilities of existing technology, political sensitivities, restricted authority, and agency capacity. There is general reluctance to raise meter rates high enough to keep peak demand slightly below supply, particularly in very successful areas where this would result in significantly elevated rates. Meter rates are, in many instances, kept artificially low via a process that requires

political approval for meaningful changes to parking rates. The resulting political reluctance to raise meter rates and to limit days and times of meter operation has resulted in chronically constrained curbside access in high-demand commercial centers.

Setting and adjusting meter rates is made more challenging by a general **lack of detailed utilization data**. It is extremely difficult to achieve performance-based parking or demand-responsive pricing without reliably knowing the existing demand or the achieved performance. DDOT needs data to assess metrics for identifying and implementing performance parking zones and transparently adjusting pricing to respond to real time parking demand.

In conversations with merchant groups, many reported that in addition to insufficient availability there was, overall, **inadequate commercial parking supply** to meet customer demands and ensure adequate access by commercial patrons necessary to sustain the local businesses. At the same time, they observed that curbside space near primary commercial corridors went unused for much of the day.

Parking for Individuals with Disabilities

Many stakeholders identified a need to better address **parking for individuals with disabilities**. This came from both fronts—individuals with disabilities expressed a need for better access, especially in high demand commercial areas while others (with or without disabilities) expressed suspicion of widespread abuse of disability permit use. The common objective, however, is to ensure there is adequate curbside access available to those who really need it. A recent study of parking for individuals with disabilities³ found that the existing practice does not provide reliable access, is difficult to enforce, does not encourage turn over and invites fraud and abuse.

Special Purpose Reserved Parking

Commercial loading is difficult. For commercial operators, the chief concern is not cost, but convenient access to pickup and delivery locations. Although the recently launched loading zone initiative will address a number of issues, at present merchants and distributors report that loading zones are too small or inconvenient. Non-commercial vehicles or commercial vehicles not in an active state of loading or unloading will often occupy loading zones. Some loading zones are improperly timed. Additionally, consensus around the “best practice” for effectively managing curbside loading (metering, off peak delivery requirements, expanded loading zones, etc.) has yet to emerge.

³ Red Top Meter Program Final Report - District Department of Transportation (June 2012)

There is ***limited coordination among valet operators*** resulting in substantial amounts of the public curbside space being occupied by separate valet operators within a very compact area. In addition, while the regulations clearly state that all valet vehicles must park in a private parking facility, there are still frequent reports of valet companies parking vehicles in public curbside spaces.

Residential and Visitor Parking

DDOT's Residential Permit Parking (RPP) program has ***shortcomings in addressing spillover demand*** in residential parking areas, including:

- Intra-zone travel where zone permit holders travel from their **neighborhood in one** portion of the zone to park as a commercial consumer in another portion of the zone using resident privileges;
- Growing demand from retail and services destinations within or abutting residential areas as demand for mixed-used neighborhoods grows and small neighborhood businesses flourish; and
- Reciprocal parking permits issued to temporary residents.

The program has ***limited strategies to manage demand*** and ***limited data on use or demand***. There are areas in the District where the number of permitted vehicles belonging to local area residents substantially exceeds curbside supply. Increasing residential densities created by new development plus demand for urban-neighborhood living has further aggravated this condition while DDOT has few tools available to respond. This has too often resulted in disputes between longstanding residents and new arrivals to the community.

The current system of block-by-block implementation has created a ***spotty network and uneven regulation of implementation***. Because the program is based on political boundaries, zone lines must be moved with every decennial census adjustment.

The free, two-hour grace period available in most RPP areas can ***attract short term parkers*** who are not guests or providing services to residents in the residential zone and wish to avoid costs associated with commercial parking metered spaces.

5 District Priorities

5 District Priorities

5.1 DESIRED OUTCOMES

Overall, most planners and stakeholders agree that successful curbside management should result in:

- Smoothly operating travelways generally free from congestion caused by unmanaged curbside demand.
- Affordable and reliable access, through a diversity of modes, to commercial offerings, cultural institutions, and public amenities.
- Thriving local businesses and development areas.
- Residential communities that maintain parking availability for residents and guests and are relatively insulated from inappropriate intrusions by outside demands.
- Safety for all modes and users of the transportation system.
- Efficient goods delivery.

Where many plans and stakeholders differ, however, is in how to equitably achieve all of these desired outcomes and which desired outcome takes priority where needs conflict.

5.2 THEMATIC APPROACHES

As noted by stakeholders and highlighted by gaps in existing curbside management practice, the District has many priorities for the use of the curbside—some of them in competition with one another. The District wants to support and strengthen retail, commercial and entertainment districts. The District wants residential areas to be secure, protected, and available to residents and their guests, and goods to get to market. The District needs safe and efficient travel choices to meet constituent moods, needs and abilities. All residents of the District—indeed the region—want to be able to access, partake in, and patronize the quality commercial and cultural resources the city offers.

While curbside management should support all of this, there are also times and places where these priorities are in competition with one another.

Four thematic approaches were developed as a means to think through these mutually desirable—and occasionally mutually exclusive—priorities. Approaches orient around a dominant user or desired outcome and are intended to stand in contrast to one another to highlight tradeoffs and challenges.

1. Local Amenity Support (a.k.a. Walkable Neighborhoods)

The first approach begins from the idealized objective that all District residents should be able to meet their typical daily needs—school, shopping, entertainment, recreation, and reliable transportation connections to employment—within an easy walk of home. This “access by proximity” reduces the need for access by driving and, theoretically, the demand for private auto ownership and associated parking demands.

Local businesses and destinations are the priority in this approach. All commercial areas rely not only on patronage from their nearby residential base but also on substantial patronage from people outside the neighborhood from elsewhere in the city and region.

Maintaining or achieving the strength of these neighborhood amenities, therefore, ironically relies on accommodating a certain amount of the parking and curbside demands of non-neighborhood patrons. While access by transit and alternate modes is always encouraged, a certain number of patrons will only be able or willing to access the amenities by driving, and car accessibility is considered important to the commercial viability and competitiveness of local businesses.

The curbside priorities for achieving walkable neighborhoods, under this approach, are:

1. **Loading and Deliveries:** Reliable accessible commercial goods delivery to reduce the cost of doing business in the District.
2. **High-Capacity Access:** Shared use and mass transit passenger vehicles, together with bicycles and motorbikes, so that more people can access neighborhood businesses.
3. **Commercial Customer Parking:** Access and parking for non-local patrons to sustain business quality and diversity.
4. **Residential Parking:** Protected parking for residents and their visitors in areas farther from commercial nodes.

2. Equitable Access

The District as a whole has many excellent commercial, educational, and other amenities; however these are not equally distributed throughout the city. Some areas have an

abundance of high quality offerings and destinations while other neighborhoods have few, if any.

The “Equitable Access” approach presumes that all residents of the District and the region should be able to readily and affordably access all amenities of the city. Although it is recognized that curbside availability may be a challenge, the cost or price to access should not be an obstacle.

Under this approach the following curbside uses would be prioritized to achieve the objective:

1. **Unrestricted Residential Parking:** Residents would not be constrained to particular zones or neighborhoods, but rather would have access to the city as a whole.
2. **Commercial Customer Parking:** Patrons from across the region would be accommodated through affordable commercial parking opportunities.
3. **Loading and Deliveries:** Accommodation of goods delivery to ensure businesses have goods and services to provide to the residents of the city and region.
4. **Workers and Visitors:** Where space permits, after meeting the needs of residents and patrons, curbside space should be managed for workers and visitors.

3. Resident Priority and Protection

The District relies on its residential base. Most people don’t stray too far from home and generally consider their neighborhood to be the area they can cover in about a 20-minute walk. For most residents, neighborhoods are intimate places where they want to feel safe and secure. That generally means that there should be limited “outsiders” occupying neighborhood streets and the curbside is prioritized to the needs of local residents and those they invite into their community.

In many older neighborhoods, residents do not have access to private off street parking as homes were built prior to the “auto age” of the last half-century. To maintain the livability for residents who require or demand auto ownership, therefore, curbsides are prioritized for their use.

Resident-priority also has a temporal aspect to it. Neighborhoods and neighborhood connections are developed over time. Long-time and more permanent residents—generally those residing in single family and/or owner-occupied housing—are prioritized as a stabilizing force in the neighborhood. Priorities therefore are:

1. **Residential Parking for Existing Residents/Residences:** Residents of older or existing homes would be prioritized. Newer construction required to

provide off-street parking accommodation for their residents.

2. **Visitor Parking for Established Residents and Residences:** Visitor parking for residents mimics the accommodation for the residents themselves as above.
3. **Commercial Loading:** Commercial loading is appropriately located to minimize any negative impacts or intrusions on residential areas.
4. **Commercial Customer Parking:** Parking in commercial areas is made available for short-term commercial patrons where not needed to meet residential demands.

4. Managed Availability

The “Managed Availability” approach does not prioritize any particular user or set of users at all, but rather manages the curbside space in a way that ensures that a limited amount of curbside is available regardless of which user requires it. In many ways, “Managed Availability” is similar to “Equitable Access” in that it does not distinguish between users. The key difference is that where “Equitable Access” permits everyone to freely occupy the space—often resulting in no curbside space being available to arriving users—“Managed Availability” employs pricing strategies to ensure that a limited amount of curbside space is available when the next user arrives.

Priorities therefore are:

1. **Managed Availability:** Manage supply according to demand to ensure adequate availability for any user who may need to use the curbside
2. **High Capacity Access:** Mass transit access and other high-efficiency curbside uses are provided, generally outside of any pricing mechanism.

Figure 13 Comparison of Different Approaches

Approach	Goal / Intent	Priority Users/Uses	Trade-offs
District Existing Program	<p>Provide access to commercial areas to support businesses.</p> <p>Protect residential neighborhoods from outside intrusions and pressures.</p>	<ul style="list-style-type: none"> Users prioritized based on land use context <ul style="list-style-type: none"> - Commercial patrons and loading in commercial areas - Residents in residential areas - Open availability near public institutions such as schools and parks 	<p>Some commercial areas lack adequate access for patrons</p> <p>Some residential areas have more residential demand than supply</p> <p>Spill over parking effects between the two</p>
Local Amenity Support	Support and enable strong amenities within walking distance of residents of all neighborhoods throughout the District.	<ul style="list-style-type: none"> Commercial loading and delivery High capacity access (transit, bikes, and shared vehicles) Commercial patrons Residents and visitors 	<p>Little preserved parking for residences near commercial</p> <p>Assumes all neighborhoods have market to support local amenities</p>
Equitable Access	Provide all District residents equal access to the goods, services and opportunities of the city, without the barrier of excessive cost.	<ul style="list-style-type: none"> District residents citywide/commercial patrons Regional residents/commercial patrons Commercial loading and deliveries Workers and visitors 	<p>Demand likely to exceed supply resulting in no curbside availability</p> <p>Circling may lead to congestion</p> <p>Unreliable access to curb may degrade retail and quality of life</p>
Resident Priority	Protect and preserve residential neighborhoods primarily for local, long term residents.	<ul style="list-style-type: none"> Existing residents/residences Visitors of existing residents/residences Commercial loading and delivery Commercial patrons 	<p>Little support for local businesses</p> <p>Unequal treatment of "new" versus "existing" residents and properties</p>
Managed Availability	Roughly balance demand to supply across all user groups to ensure a space is available when needed.	<ul style="list-style-type: none"> High-capacity access (transit, bikes and shared vehicles) All other users 	Higher parking rates and permit fees

6 Bridging the Gaps: Case Studies

6 Bridging the Gaps: Case Studies

Many other jurisdictions offer approaches for how the District may bridge the gap from where it is now and where it wants to be. These jurisdictional case studies offer examples of different programs, approaches and structures that address the priorities while mitigating the deficiencies of existing practice. A full range of case studies from national peers and well as adjacent jurisdictions is provided in the Appendices.

6.1 POLICIES

6.1.1 Commercial Parking

Metered Parking

Priority:	Access for customers; reduced circling and congestion.
Identified gap(s):	Demand exceeds supply in many areas Limited data on curbside occupancy
Potential tools:	Performance-based (a.k.a. demand responsive) pricing Reliable occupancy tracking, publicly available data Extended metering hours and days (based on periods of demand) Allow metered commercial parking in certain residential areas

Case Study: Seattle Metered Pricing Criteria

In late 2010, the Seattle City Council adopted a new policy that focused on measurement and technical criteria for setting parking rates. The ordinance directed the Seattle Department of Transportation (SDOT) to collect on-street parking conditions data and determine whether changes should be made to parking rates and hours of operation to maintain target occupancy of 75% to 88%, or 6 to 7 spaces out of 8.

The adopted ordinance sets hourly rates between \$1 and \$4, and provides the SDOT director with the authority to adjust rates within this range, and to vary rates by location, time of day, and other considerations. According to Seattle Municipal Code (11.16.121) rates are set based on technical analysis to maintain one or two open spaces on each block face throughout the day to:¹

- Support neighborhood business districts by making on-street parking available and by encouraging economic development;
- Maintain adequate turnover of on-street parking spaces and reduce incidents of meter feeding in commercial districts;
- Encourage an adequate amount of on-street parking availability for a variety of parking users, efficient use of off-street parking facilities, and enhanced use of transit and other transportation alternatives; and
- Reduce congestion in travel lanes caused by drivers seeking on-street parking.

Since implementation, SDOT has regularly documented on-street parking utilization and made considerable changes to rates and hours of operation based on the previous year's parking data. The changes have varied depending on neighborhood conditions and include rate increases, rate decreases, maximum time limit increases, and evening hour extensions. Some areas were split into smaller districts with different rates or time limits. New parking districts were added as well, including Cherry Hill.²

Results from the 2011 rate adjustments found that in four districts where rates were increased, occupancy subsequently dropped to target occupancy of 1 to 2 available spaces per block (or roughly 80-90 percent occupancy). In seven districts, where rates remained the same, occupancy sometimes went up and sometimes went down. In the eleven districts where rates were decreased, there was no consistent change in parking demand. The city found that in areas where parking occupancy has traditionally been low, rate reductions did not attract new parkers.³

1 "11.16.121 Director of Transportation—Rate setting for parking payment devices," Seattle Municipal Code, (accessed April 2013).

2 "Contemporary Approaches to Parking Pricing: A Primer", USDOT-FHWA, 2012: http://ops.fhwa.dot.gov/publications/fhwahop12026/sec_7.htm

3 "Parking Sounding Board Meeting Presentation Overview." SDOT. www.seattle.gov/transportation/parking/docs/9%2015%20SB%20mtg%20ppt.pdf (accessed May 7, 2013).

Case Study: SFpark, San Francisco

SFpark, the pilot commercial metered parking program for the city of San Francisco, is generally considered to be the most effective performance-based pricing program in North America. In simple terms, the project combines variable parking rates with real-time occupancy information. The rates vary by location, day of week, and time of day and occupancy information is dynamic, initially tracked via in-street sensors. Information is distributed to the public through a user-friendly web-based interface.

Meters are networked to a central system and can be programmed remotely to provide appropriate rates for unique locations—sometimes varying prices even on adjacent blocks (for instance the main street block face at a higher rate than an adjacent side street block face).

The city uses an in-house database tool to retrieve and assemble utilization data from its various parking assets and make rate adjustments—see Figure 14. Parking rates are adjusted to maintain occupancy goals of no more than 85%. Rates range between \$0.25 and \$6 per hour varying both geographically and by time of day.

The principle elements and benefits of SFpark include:²

- Demand-responsive pricing adjusted no more often than every thirty days.
- Time of day pricing appropriate to varying periods of demand.
- Easier payment methods. New parking meters accept coin, credit card, parking smart card, and cell phone payments.
- Longer (or no) time limits. Customers are allowed to stay as long as they need or want, but must pay for all time occupied.
- Fewer parking tickets. By making it easy to pay and extending parking time limits, it is easy for drivers to avoid parking tickets.
- Better information. Easy access to information helps drivers find spaces with a combination of real-time and static information. An open data feed enables others to display and augment the data as well.
- More availability leading to: less circling, reduced congestion, improved traffic flow, better air quality, higher performing commercial areas.

Figure 14 Map of Illustrative Rate Adjustments in Downtown



Image Source: San Francisco Municipal Transportation Agency via sfpark.org

1. *Contemporary Approaches to Parking Pricing: A Primer*. Federal Highway Administration. May 2012.
2. San Francisco Municipal Transportation Agency via sfpark.org.

Parking for Persons with Disabilities

Priorities:	Access for all Reliable curbside availability for persons with disabilities.
Identified gap(s):	Often no available curbside space Not all designated spaces meet accessibility standards Current program is difficult to enforce and provides incentives to seek placards, even if fraudulent
Potential tools:	“All May Park, All Must Pay” Meter modernization/accessible meters Pay by Phone

Case Study: Arlington County, VA Parking for Disabled Persons

In 1998, in cooperation with the Individuals with Disabilities community, Arlington pursued an “all may park, all must pay” policy in relation to parking for individuals with disabilities, by requiring all drivers to pay, regardless of ability. The county recognized that the lure of free parking was attracting opportunists with dubious claims of disability to seek out disability parking passes and use them for free parking, and therefore blocking spaces intended for those with legitimate disability accessibility needs. Under the “all may park, all must pay” approach, the county rejected the notion that drivers with disabilities, by virtue of their disability, needed the financial assistance of free on-street metered parking.

As part of this program, the county has established accessible spaces close to curb ramps and with accessible meter heads which also accept credit cards and allow double the standard time interval. The county also uses the iPark system, which allows a user to pre-pay into an account and a dash mounted device to complete the parking transaction without the need to use the meter.

Results from fifteen years of this policy indicate significantly lower levels of placard abuse than jurisdictions that offer free parking to anyone with a disability placard.

6.2.2 Reserved Curbside - Commercial Loading

Priorities:	Reliable access for deliveries Reducing congestion associated with double parked delivery vehicles
Identified gap(s):	Loading zones occupied by non-commercial or non-active vehicles Too few, undersized, poorly located or improperly timed loading zones
Potential tools:	Metering loading zones Resizing and relocating loading zones Off-peak goods delivery Targeted enforcement campaigns

Case Study: New York City Commercial Congestion Parking Program

In 2000, NYCDOT initiated a pilot program called the NYC Commercial Congestion Parking Program. This program replaced unpaid commercial parking with hourly metered rates for all commercial loading zones and used an escalating pricing scale — \$2 for the first hour, \$3 for the second, and \$4 for the third hour — to encourage operators to turnover spaces as soon as their loading activity was complete.¹

By 2009, the program had expanded to include about 8,000 curbside parking spaces, including commercial parking spaces in Chinatown and midtown Manhattan between 60th Street and 14th Street. Muni-meters used for this pricing strategy accept coins, credit cards, and pre-paid parking cards. Since implementation, NYCDOT has found that curb occupancy has dropped from 140% (double parking) to 95% (fully utilized). The typical time of occupancy has fallen from 160 minutes to 45. Just 25% of commercial vehicles stay for more than 60 minutes.² Mobility improvements have also been significant, particularly along minor cross-town streets, which had tended to quickly become choked with commercial vehicles loading from travel lanes.³

1 *Contemporary Approaches to Parking Pricing: A Primer*, USDOT-FHWA, 2012

2 "Urban Freight Case Studies: New York," U.S. Department of Transportation, Federal Highway Administration Office of Freight Management and Operations, 2009. <http://ops.fhwa.dot.gov/publications/fhwahop10019/fhwahop10019.pdf>

3 *Contemporary Approaches to Parking Pricing: A Primer*, USDOT-FHWA, 2012

Case Study: Seattle Commercial Vehicle Loading Zone

The City of Seattle established a Commercial Vehicle Loading Zone (CVLZ) program to help provide a structure and location for delivery vehicles to load and unload when regular truck loading zones are inadequate. Each commercial vehicle loading zone is defined by yellow paint on the curb, signage and a yellow parking meter. Companies that operate a fleet of ten or more commercial vehicles are eligible to purchase one transferable permit for every ten non-transferable permits purchased. Smaller companies must purchase a permit for each vehicle it intends to use in CVLZ locations.

The City charges \$195 for each permit, which is valid for one calendar year. Meters were also installed in CVLZs to allow non-permitted trucks or service vans licensed as trucks that have their company name affixed to both sides of the vehicle to use these zones. These vehicles must pay the meter when using a CVLZ, while vehicles with a CVLZ permit are exempt from meter rates. All vehicles using a CVLZ location are limited to 30 minutes.¹

To evaluate how the project works, the City conducted interviewed companies that own multiple CVLZ permit and found that:

- Most permit holders admitted to parking beyond the time limit in certain cases.
- Parking availability is most challenging between morning and mid-afternoon.
- Unpredictable availability of zones is difficult for delivery drivers, who follow a set delivery route and schedule.

As a result, in 2014, the City initiated a Commercial Vehicle Pricing Pilot that will install parking sensors to detect and broadcast parking availability, as well as recognize the type of vehicles.²

1 "Load Zones." Seattle DOT. www.seattle.gov/transportation/parking/parkingload.htm (accessed April 23, 2013).

2 Ibid.

Case Study: New York City Off Peak Scheduling

In 2009, New York City added a new pilot focused on encouraging off-peak loading to complement its successful commercial congestion parking program. With over 110,000 daily, curbside deliveries executed in Manhattan each day, even a modest shift of some of these deliveries to an off-peak schedule can have a meaningful impact on daytime congestion.¹ To test the potential impact of such a shift, NYCDOT provided cash incentives for delivery companies and their customers to agree to shift delivery hours during the pilot. Eight delivery companies and 25 of their client businesses voluntarily participated in the pilot.²

The goal of the pilot was to reduce congestion, double-parking, and other forms of illegal parking by vehicles engaged in commercial loading. Several co-benefits of the program, however, quickly emerged. The average amount of time spent unloading and loading trucks was reduced from about 100 to 30 minutes. Travel speeds to first stops improved by 75%, while second-stop speeds increased by 50%. Carriers were able to save on fuel costs and time by making more total deliveries in off-hours. And, businesses, while incurring the additional expense of staffing for off-peak deliveries, benefited by being able to focus daytime staff time on customer service rather than on awaiting and processing deliveries.²

1 Cassidy, W. B. (2010). New York to Expand Off-peak Truck Program. The Journal of Commerce.

Retrieved from www.joc.com/trucking/new-york-expand-peak-truck-program

2 New York City DOT July 1, 2010 press release, via: http://www.nyc.gov/html/dot/html/pr2010/pr10_028.shtml

Case Study: Los Angeles Targeted Loading Zone Enforcement

The Los Angeles Department of Transportation uses a targeted enforcement program, Tiger Teams Curbside Management Program, to reduce traffic congestions and improve delivery efficiency on key corridors and areas. Previously, on-street parking regulations were not strictly enforced and citations failed to deter repeat offenders, some receiving more than 100 tickets per year. LADOT set up interviews with these parking violators and received input that helped establish designated loading zones where they were most needed. After addressing the issue of inadequate loading space, LADOT conducted a marketing campaign to inform shippers and the general public about the new enforcement program. Afterwards, the Tiger Teams Curbside Management Program began deploying 15 traffic control officers and 10 tow trucks during the peak travel period, resulting in a decrease in parking violations and obstacles to efficient goods movement.¹ LA Metro found that Metro Rapid buses on Ventura Boulevard improved speeds by 5% on average following the Tiger Team enforcement program.²

1 http://www.bettermarketstreetsf.org/docs/BMS_P2-4_BestPractices_12072011.pdf

2 Sorensen, Paul, Martin Wachs, Endy Y. Min, Aaron Kofner, Liisa Ecola, Mark Hanson, Allison Yoh, Thomas Light, and James Griffin. 2008. Moving Los Angeles Short-Term Policy Options for Improving Transportation. Santa Monica, CA; Arlington, VA; Pittsburgh, PA: RAND Corporation.

Residential and Visitor Parking

Residential Reserved Parking

Priorities:	Preserving parking for residents Minimizing intrusions by those unassociated with residents Reasonably and fairly manage residential parking demand in high demand areas
Identified gap(s):	Spillover demand from adjacent trip generators (commercial areas and institutions); free grace period may attract non-resident-related parkers Demand can exceed supply (no way to manage presently) Limited data on occupancy Regulations can vary from block to block (result of “opt-in”) Boundaries may move every 10 years with political boundary adjustment
Potential tools:	Flexible RPP regulations that vary by land use context Elimination of free grace periods, implementation of pay to park for non-residents Adjusted zone sizes and boundaries Demand-responsive pricing Limited quantity of permit (in zone or per household)

Case Study: Arlington County, VA Residential Permit Parking Program

Arlington County was the national pioneer for residential permit parking establishing their program in 1973. Every residential vehicle regularly parked in Arlington County—whether on street or in an off-street garage—must have an Arlington County decal. This decal certifies that the owner has paid the County vehicle tax. An additional permit is necessary to park a vehicle in designated RPP zones.

The RPP program has two types of permits to meet resident’s various parking needs:

- **Flex Pass** – The Flex Pass is a floating RPP permit that is issued to each specific household. The dashboard placard may be used on any vehicle owned by the household, shared vehicles (such as ZipCar), rental cars or visitor vehicles. The pass is free, but must be especially requested. Lost Flex Passes are not replaced.
- **Vehicle Specific Permits** – These permits are tied to a specific vehicle and displayed as a rear bumper sticker matched to the license plate of the vehicle. Residents are permitted to purchase up to three vehicle-specific permits. The first two have an annual cost of twenty dollars each while the third is fifty dollars.

There are currently twenty-three RPP zones in Arlington County. Most are adjacent to commercial or business districts and fairly small in size. Multifamily properties, including duplexes and town homes, built before adoption of the current zoning code may participate in the RPP program only if they do not meet zoning standards, existing on-site parking is maximized, and on-site parking costs less than the on-street permit. Multifamily properties constructed after adoption of current zoning are not eligible for the RPP permits.¹

According to Sarah Stott, Arlington’s former parking manager, three of the RPP zones are too large, leading to a pattern of intra-zone commuting. The County is looking to adjust the size of these zones, but procedures to do so are challenging, combined with public pressure from residents of these zones to maintain the status quo.

¹ <http://transportation.arlingtonva.us/parking/residential-permit-parking/>

**Case Study:
Toronto
Residential Permit Parking Program**

The City of Toronto initiated Residential Permit Parking (RPP) in the 1960s to preserve on-street parking spaces for residents in areas with minimal off-street parking and areas where commercial and visitor parking demand threatens to spill over into surrounding neighborhoods. The program is tailored to neighborhood conditions resulting in over 60 unique combinations of permit parking operating hours. Permit parking may be established for specific streets or on an area basis.

Permits are allocated by priority to residents on a 6-month or 12-month basis using a graduated fee structure based on parking availability:¹

- First vehicle for residents with no access to on-site parking: \$13.70 per month
- Second and subsequent vehicles for residents with no access to on-site parking: \$34.27 per month
- All vehicles for residents with access to on-site parking: \$47.98 per month
- Temporary on-street parking permits may be purchased by residents and their guests at a cost of \$19.66 per week, \$8.39 per 24 hours or \$12.59 per 48 hours.

In each RPP district or street, the total number of permits issued is limited to the actual number of legal on-street spaces. When no spaces are available, no permits are issued and a waitlist is established for the remaining qualified permit applicants. Residents with multiple permits may be forced to surrender a permit to those on the wait list with none, beginning with the person holding the highest number of permits. Though revocation of multiple permits is rare, it is an added incentive for households to limit the number of permits they purchase in areas with high demand for on-street parking.²

¹ "Transportation Services - Permit Parking." City of Toronto. <http://www.toronto.ca/transportation/onstreet/index.htm#type> (accessed April 2, 2013).
² Residential Parking Best Practices, SFpark, 2009.

Residential Visitor Parking

Priority:	Enable and accommodate visitors of local area residents Accommodate household services such as contractors, care givers, or health aids
Gap:	Visitor parking adds to residential curbside demand, exacerbating competition for space in areas where demand already exceeds supply Visitor program does not meet need for accommodating multiple visitors at one time) Existing permits are subject to abuse No tracking or management of visitor parking demands
Potential tools:	Fee-based visitor permits Limited quantity visitor permits Pay-by-Phone at residential curbside (in lieu of grace period) Print at home, one-per-use permit Visitor registration online or by phone or text

Case Study: Arlington County, VA Visitor Passes and Booklets

To park on protected residential streets, visitors must display a valid permit. Two types of permits are available for residents in RPP zones to accommodate visitors at the curbside:

- **FlexPass** – As described in the earlier section, the free FlexPass is available to residents of RPP zones upon request and may be used for residential or visitor vehicles. The City has found people selling their Flexpasses online, in which case the seller is denied future permits.¹
- **Short term visitor pass** – Visitor passes are valid for up to 3 consecutive days and allows guests to park within an RPP zone. Residents are provided a booklet of 20 free passes per year and may purchase up to four more booklets for a total of 100 visitor passes per year. Passes come in books of 20. Each book costs \$5.00. Passes may be purchased in-person or on the web. There have been problems with fraud, with people writing the date on clear stickers so that they can reuse a pass.²

¹ Residential Parking Zone Policy Review Project, Appendix B; Best Practices, Seattle DOT, 2008.

² Ibid.

Case Study: Boston Designated Visitor Parking Spaces

The City of Boston does not provide visitor passes to park in its Resident Permit Parking (RPP) areas, but designates some parking spaces open to, but not reserved for visitors, based on community input and needs. These spaces typically allow up to two-hours of visitor parking, though permitted residents are allowed to occupy these spaces for longer periods. There is no specific policy or threshold for creating visitor parking spaces, except that the Boston Transportation Department (BTD) attempts to address community concerns.¹

¹ "Access Boston 2000-2010 Transportation Plan." City of Boston. <http://www.cityofboston.gov/transportation/accessboston/> (accessed May 13, 2013).

Case Study: City of Alexandria, VA Guest, Visitor, and Contractor Parking

The City of Alexandria differentiates between a "guest" and a "visitor" and a business contractor. Guests are those staying less than 24 hours whereas visitors may stay for as long as 30 days.

Guest parking passes are valid for up to 24 hours and provide the guest vehicle the same accommodations permitted to residential vehicle. Guest parking passes are available free of charge and may be acquired and printed at home through an online issuance system (MyAlex) or from any city library branch or at City Hall. Only valid residents of Alexandria may use the online system. Residents must register for the pass on behalf of their guests.

Free standard visitor parking passes are issued for up to 7 consecutive enforcement days. Visitor permits, unlike guest permits, must be obtained in person at City Hall. Visitor permits may be valid for a maximum of 30 days, however any pass for more than 7 enforceable days is subject to a \$5 fee (7 days and less is free). The permit is not renewable, meaning that two (or more) consecutive permits may not be issued for the same vehicle. No more than two visitor permits may be issued to the same residence at the same time.

Business permits are available for vehicles of contractors doing business at the home of an RPP zone resident. A maximum of three business permits are allowed for any given residence at any given time. Business permits must be registered, but are available free of charge. While only three concurrent permits are permitted, at present there is no identified limit on the number of consecutive permits.

Case Study: Aspen, CO Designated Visitor Parking Spaces

The City of Aspen established Residential Permit Parking zones to prevent overflow parking from the city's downtown. Residents are provided with parking permits and visitors are allowed to park for free for up to 2 hours in an 8-hour period.

To optimize curbside utilization toward 85%, the city sells 1-day visitor passes to park for more than 2 hours in RPP zones. Any visitor may purchase day passes without involvement of a resident. Passes are \$7 and may be purchased at a local grocery store, via pay-by-phone, or at 15 neighborhood pay stations. Businesses in RPP zones are allowed to purchase additional business vehicle permits for delivery use, which are non-transferable (e.g. assigned to a specific vehicle) and cost \$1,200 per year. Lodges within RPP zones can purchase parking permits for *guest* use, with the same limitations as residential permits, for up to seven days per pass. There is no limit on the number of guest permits that lodges may purchase. The city has a "two strikes" program that bans lodges from purchasing permits if employees are caught twice abusing the program. Parking availability in residential neighborhoods is regularly monitored by the city and rates are increased when average occupancy in the neighborhood exceeds 85% over a 1-year period.

RPP zones are enforced using license plate recognition (LPR) technology. Enforcement vehicles identify cars that park in RPP zones for more than 2 hours in an 8-hour period without purchasing a day pass or permit. Physical passes are unnecessary as enforcement vehicles access a database with information on all residential pass holders.¹

¹ *Contemporary Approaches to Parking Pricing: A Primer*, USDOT-FHWA, 2012.

7 Curbside Management Blueprint for the Future

7 Curbside Management Blueprint for the Future

7.1 CURBSIDE VISION

The vision for curbside management in the District of Columbia is to manage the curbside resources in such a way as to provide reliable access to homes, places of work and worship, commercial establishments and public facilities and amenities. This simple statement implies within it that:

- Goods can reliably get to market and curbsides accommodate sufficient patron demand to ensure strong and diverse commercial areas within the District;
- Residents who procure a permit will have reasonable certainty of finding curbside parking within walking distance of home; and
- A diversity of access modes (transit, bicycle, strolling and parking) are comfortable, efficient and attractive and the mobility system as a whole flows smoothly.

7.2 CONTEXT TYPOLOGY

Different parts of the District have radically different land use and community contexts yet almost all current programs are managed the same across the District. This improves the “legibility” of the system for users, but limits the effectiveness of programs that are unable to respond to context. This means that achieving the above vision will not always require the same application of policies in all areas. Curbside management should respond to the native context, demands and needs of the District’s diverse neighborhoods.

Although every neighborhood is unique, most fall into one of four broad context types. The example neighborhoods listed with each context are illustrative.

- **Downtown core.** Generally confined to the central downtown, such areas have a fine grained and complete street grid. Limited driveways maximize the availability of curbside space. They have mixed and generally higher intensity land uses with a variety of jobs, housing, shopping and education near one another. Land values are high enough to support structured off-street parking accommodation; however with the highest concentration of travel options including bus, Metrorail, bike share and taxis, driving and parking is an option but generally not a need. Although parking demands are high, because people have an abundance of other access options, curbsides are commonly used for travel, passenger loading (e.g. bus stops, valets and taxi stands) and delivery needs. Representative neighborhoods of this type include Penn Quarter, Foggy Bottom/West End, Dupont Circle, and City Center.

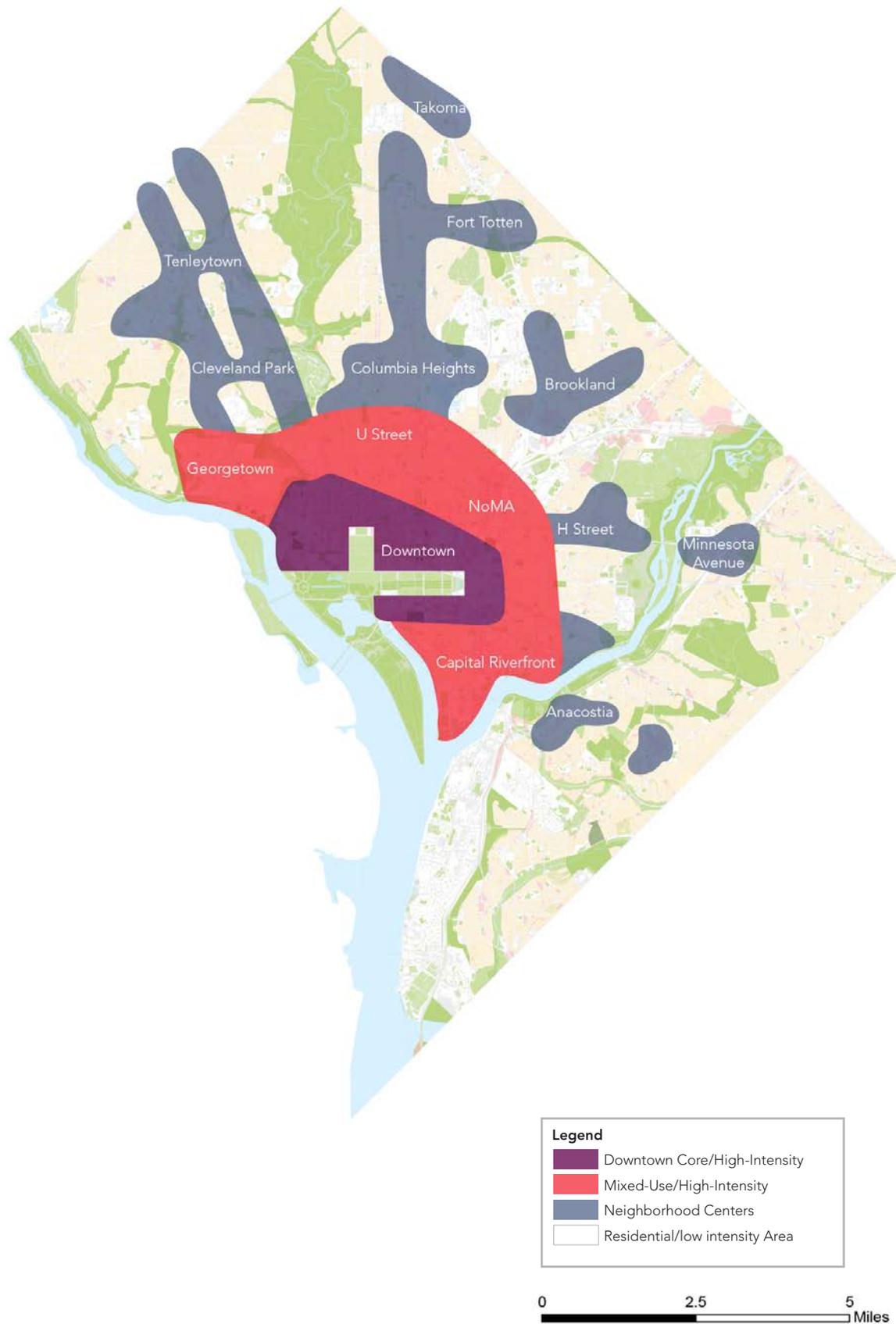
- **Higher intensity districts.** These types of areas may exhibit a fairly wide range of land use intensities but are generally characterized as destination districts outside of the central core. They have lower employment densities than the central core (although still some office-based employment or major institutions), a rich mix of commercial uses and housing types. Development intensities and land values are not quite as high as in the central core and therefore there are fewer structured off-street parking resources. These areas are generally located along major corridors or crossroads but **some** lack the many different transit options **and** connections of the downtown. Representative neighborhoods of this type of area include Adams Morgan, Capitol Hill, NoMa, Lower 14th Street, Southwest Waterfront, Friendship Heights, Capitol Riverfront, and Georgetown.

- **Neighborhood centers.** These are smaller commercial areas that have a good mix of commercial offerings to meet a diversity of neighborhood needs and may attract a modest to significant amount of outside patronage as well. These areas are generally more vertically mixed than horizontal meaning that commercial is typically adjacent to residential with only modest housing above. Both commercial and residential, however are in a compact area. These areas generally lack off street structured parking and rely heavily on curbside resources for parking, passenger access, and loading. In addition, these areas generally have limited mass transit options. Representative areas include many of our traditional commercial main streets and their immediately adjacent residential areas such as H Street NE, Bloomingdale, Brookland, Mount Pleasant, Cleveland Park, Shaw, Takoma, Glover Park, Hill East and the emerging centers east of the Anacostia River.

- **Lower-intensity districts.** These areas may have small pockets of commercial but are dominated by residential uses. These are neighborhoods such as 16th Street Heights, Petworth (save for the Georgia Avenue corridor), Woodridge, Benning Heights, Palisades, and Kingman Park. These neighborhoods tend to have driveways, reducing the availability of street parking.

The map of these areas resembles a central and first ring of neighborhoods with an outer ring alternating between corridors of neighborhood centers and wedges of residential (Figure 15).

Figure 15 District of Columbia Neighborhood Typology for Curbside Management



There is a continuum in this typology with areas changing—sometimes rapidly—from a neighborhood center to a high intensity district (as was the case for Lower 14th Street) or high intensity district to central core (as NoMa and Capitol Riverfront continue to develop, for example). As neighborhoods progress from one type to another, the applicable curbside management techniques and approaches should likewise progress.

7.3 CONTEXT AND CURBSIDE APPROACH

There is some correlation between neighborhood context and the curbside approach that most resonates with residents and commercial stakeholders.

Downtown Core – Managed Availability

The downtown core struggles with issues of congestion and higher intensity modes of access such as Metrorail and a rich array of bus service, travel lanes, and loading and delivery. For this reason, these areas tend to gravitate strongly to managed availability—less for its ability to increase turnover and private vehicle access to the curbside and more to manage availability to avoid double parking or blocking travel lanes in order to move more people through the same constrained downtown streets. In the pockets of residential areas that do exist in the downtown, competition is fierce with demand dwarfing available curbside parking supply. In these areas price is an appropriate valuing mechanism for multiple curbside demands that could sort demands and achieve the primary objective which is congestion relief, safe and smooth mobility, and some degree of protection for residential neighborhoods.

Tools to Explore:

- **Loading and delivery:** elongated, expanded and/or relocated loading zones, extended loading hours, metered and/or permit loading, off-peak loading.

- **Mass access:** Elongated bus zones, valet parking (public or private), travel lanes (parking prohibited), bicycle corrals or stations, motorcycle parking, taxi stands.
- **Metered parking:** performance/demand-responsive pricing (including time of day pricing), extended hours and days, effective monitoring of occupancy, smart meters.
- **Residential parking:** limited if any RPP areas, demand-responsive pricing for permits, shorter time period options (e.g. options for monthly permits as opposed to yearly), limited quantity permits, newer building exclusions, smaller zones, neighborhood boundaries.
- **Visitor parking:** per-use permits, paid visitor permits and/or limited quantity, online/phone/text visitor registration, License Plate Reader (LPR) enforcement, limited eligibility.

Higher Intensity Districts – Managed Availability

Although traffic congestion often is an issue in the peak hour(s) in higher intensity districts, this usually is not the concern that drives the parking conversation. Instead, these communities are generally concerned about curbside availability for each user group—patrons, residents and deliveries. Curbside competition is very high resulting in conflict and congestion from vehicles circling looking for a place to park. The primary objective is managed, predictable, and reliable curbside access. Many commercial enterprises in these areas feel that there is a significant threat to their business if curbside space is not available for a reasonable fee for both their suppliers and their customers. Many of the techniques used in the downtown core are applicable to the higher-intensity districts. However residential is a co-equal priority and therefore, more techniques to protect and manage residential use are needed.

Figure 16 Progression Among Neighborhood Types



Tools to Explore:

- **Metered parking:** performance/demand-responsive pricing (including time of day pricing), extended hours and days, effective monitoring of occupancy, smart meters.
- **Loading and delivery:** elongated, expanded and/or relocated loading zones, extended loading hours, metered and/or permit loading, off-peak loading.
- **Mass access:** Elongated bus zones, valet parking (public or private), travel lanes (parking prohibited), bicycle corrals or stations, motorcycle parking, taxi stands.
- **Residential parking:** demand-responsive permit pricing, escalating prices for multi-permit households, limited quantity of permits, resident only (no grace period), newer building exclusions, smaller zones, neighborhood-based boundaries.
- **Visitor parking:** per-use permits, paid visitor permits and/or limited quantity, online/phone/text visitor registration, license plate reader enforcement

Neighborhood Centers (Established) – Local Amenity Support/Managed Availability

Established neighborhood centers have strong support for local commercial establishments, but are known enough that they attract a significant patronage from outside of the neighborhood (though not rising to the intensity of higher intensity districts).

These areas can attract a significant amount of outside the District patronage, and many are comprised of small local businesses that are strongly reliant on maintaining this accessibility. These areas generally lack abundant alternatives to on-street parking so they may look to optimize resources elsewhere in the area, but often have rich options for non-auto access. Appropriate strategies in these areas include local amenity support and managed availability to balance the needs of residential parking with that of commercial activity through either pricing or regulation.

Tools to Explore:

- **Metered parking:** performance/demand-responsive pricing (including time of day pricing), extended hours, effective monitoring of occupancy, smart meters.
- **Loading and delivery:** elongated, expanded and/or relocated loading zones, effective enforcement.
- **Residential parking:** demand-responsive pricing, (potentially) escalating prices for multi-permit households, non-resident pay to park on residential streets (rather than grace period), newer building exclusions, smaller zones, non-political boundaries.

- **Visitor parking:** per-use permits, limited quantity free (additional for fee) visitor permits, online/phone/text visitor registration.

Neighborhood Centers (Emerging) – Local Amenity Support/Equitable Access

Emerging neighborhood centers need a higher level of parking support to bolster local commercial establishments and provide residents with the opportunity for access through proximity. These are somewhat fortunate in that curbside demand is typically far less fierce than in established neighborhood centers. Patrons often come to these areas from other areas that have even fewer commercial destinations. Appropriate strategies in these areas are an equitable access approach or a local amenity support approach that prioritizes neighborhood access, while still facilitating visitors from farther afield.

Tools to Explore:

- **Metered parking:** smart meters, effective monitoring of occupancy, elimination of time limits (control through pricing), potential parking fee reductions (depending on demand). Loading and delivery: enforcement for loading zones to protect availability.
- **Residential parking:** confirmation of need for residential parking protection, monitor availability, allow non-residents to use residential curbsides (for a fee in lieu of grace period if parking is tight, free 2 hour grace period if parking is not a problem, maintain very low (to no) cost for residential parking permits (cost recovery) if modest demand, demand responsive if high.
- **Visitor parking:** free limited number allocation to residents (print at home, register and LPR, or booklet), Flex-pass type permit.

Residential Areas (High-Demand) – Resident Protection/Managed Availability

In high-demand residential areas, competition among residents vying for curbside space rather than commercial spillover is often the primary cause of residential curbside competition. This type of situation is common in areas of the city that are of medium- to higher-density (for example Capitol Hill, Cleveland Park and lower Columbia Heights/middle 14th Street). In these places there are often influences that attract people to park on neighborhood streets (for instance, quality schools, Metro stations, or the like). Appropriate strategies are to protect the area for residents or to manage availability through pricing mechanisms. Strategies in these areas are largely focused on residential and visitor parking

since commercial demand is light, as these areas lack major commercial presence.

Tools to Explore:

- **Residential parking:** assessment and monitoring of curbside utilization, demand responsive pricing for permits, escalating rates for permits (based on vehicles owned), maximum permits per household, small zone size, and elimination of grace period.
- **Visitor parking:** low cost limited number allocation to residents (print at home, register and license plate reader, or booklet), tracking on per use basis per household, Flex-pass type permit, limited to resident visitors and guests only.

Residential Areas (Low-Demand) – Resident Protection/Equitable Access

In low-demand residential areas demand is so low as to generally make management unnecessary. These neighborhoods generally do not meet the standards for RPP

parking. Low demand residential areas tend to have a lower number of quality amenities in them, which creates need for residents to drive to access services. In these areas, appropriate strategies are to protect residents, if there are some generators of demand, like schools, or to provide equitable access to curbsides.

Tools to Explore:

- **Residential parking:** confirmation of need for residential parking protection, if not needed—remove curbside regulations; if warranted, low permit cost (cost recovery only).
- **Visitor parking:** free per day permits (print at home, register and LPR, or booklet), Flex-pass type permit.

Figure 17 Matrix of Parking Approaches

Zones	Managed Availability	Resident Protection	Equitable Access	Local Amenity Support
Downtown Core	X			
High-Intensity	X			
Neighborhood Commercial (established)	X			X
Neighborhood Commercial (emerging)			X	X
Residential Low-Intensity (high-demand)	X	X		
Residential Low-Intensity (low-demand)		X	X	

8 Next Steps

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Curbside management in the District is an intricate, complex endeavor. Consisting of historical depth and diverse user breadth, the District to date has managed to adapt the supply and use of the curb to meet evolving demand. This study documented the historical context, present framework, stakeholder desires, and opportunities for improvement in curbside management. Additionally, this study highlighted best practices from peer jurisdictions that would assist in addressing curbside management improvement opportunities. Based on the findings of this study, key curbside management goals should include:

- Goods can reliably get to market and curbsides accommodate sufficient patron demand to ensure strong and diverse commercial areas within the District;
- Residents will have reasonable certainty of finding curbside parking within walking distance of home; and
- A diversity of access modes (transit, bicycle, strolling and parking) are comfortable, efficient and attractive and the mobility system as a whole flows smoothly.

To achieve these goals, there are action items identified in this chapter. Action items are tied to a specific time period in which such item could be reasonably initiated.

8.1 NEAR TERM (2-12 MONTHS) – QUICK FIXES

In the immediate future, DDOT should focus on utilizing existing or available technologies to improve parking management and services, looking at where existing residential and commercial parking programs are established and confirming conformance with program guidelines; and continuing the roll out of policies and programs under development and planning.

- **Visitor Parking Pass** – Develop a system to issue visitor parking passes to residents from an online system in lieu of the existing DDOT mail out system. Perhaps this system could be modeled on the successful TOPS permitting system which has placed kiosks in police stations so residents could obtain visitor passes as and when needed. This would enable: better monitoring of the system and use; better information gathering for future program enhancements; permit a reasonable extension of the program District-wide; and provide a better service and convenience to residents. DDOT should work closely with the Department of Public Works to ensure that any system developed works within existing enforcement capabilities.
- **Temporary Visitor Parking Permits** – Evaluate the current system of Metropolitan Police Department precinct issued permits for potential replacement with the online system or distribution of limited use permits.
- **Performance Parking Zones Expansion** – Launch the Chinatown pilot project which will provide dynamic multimodal curbside parking potentially using sensors and “asset lite” solutions to curbside management. Expand Performance Parking Zones but concurrently leverage all existing data sources for decision-making and monitoring. DDOT currently lacks curbside occupancy sensors or other automated monitoring technology. The experience of other cities suggests that more research and field testing is required to develop optimal and affordable technologies for real time, dynamic curbside occupancy. Despite this limitation, however, DDOT can assemble existing available data and collaborate with software developers and researchers to assist the agency in improving proxy data about occupancy in different areas of the city, different hours of the day and days of the week. Such data primarily consists of payment data at multispace meters and electronic payment transactions at single-head meters. Additional data sources may include DPW license-plate reading monitoring and enforcement information.
- **Performance Parking Algorithm** – Using the above data sources, DDOT should develop a test algorithm to predict when parking rates in the existing performance parking districts should be adjusted and a set schedule to monitor and evaluate changes in these data inputs after such a change is implemented. The algorithm should be run on a monthly basis and verified against field observations or violations reports.
- **Review geographic areas** – Utilizing the mapping and data sets gathered as a component of this study, DDOT should review areas where the RPP program has been applied and identify areas that are policy oddities or potentially inconsistent with program objectives. These would be areas that do not, or likely would not, meet the designated criteria for the existing RPP system. With regard to metered parking, DDOT should also review areas that presently lack metered parking in emerging or established commercial districts and confirm sufficient curbside availability exists such that metered parking is not required in these areas. DDOT should also identify potential pilot locations for smaller, neighborhood-based parking zones in order to evaluate the positives and negatives of this approach.

- **Governance coordination** – Regarding the organization of the curbside management program, DDOT should work closely with the Department of Motor Vehicles and Department of Public Works to ensure there are coordinated technology advances to ensure ease of data access and sharing. Monthly coordination meetings similar to the on-going enforcement coordination meetings should be considered for other management functions such as technology and communication initiatives.
- **Continued implementation** – DDOT has been developing a number of enhancements to the existing curbside management program. These policies and programs should continue to advance in the near term. In addition to performance parking and visitor parking as outlined above, these programs include:
 - Metered loading zones and loading zone enhancement
 - Accessible metered parking program (a.k.a. Red Top Meters)

8.2 MID TERM (12-24 MONTHS)

In the midterm, DDOT should develop a process to apply the curbside management approaches (defined in Chapter 7) to the diverse areas of the District.

- **Local application of approaches** – With neighborhood stakeholders, DDOT must look at local contexts in greater detail, confirming with area stakeholders local priorities for curbside management outcomes, and determining which approach most closely correlates with these desired outcomes. This may include exploring, with the community, new or different zone sizes and boundaries and how to most effectively and satisfactorily transition the program over time (for instance, through grandfathering existing permit holders, setting a phased implementation timeline, or other). A District-wide task force may be necessary to deliver some definitive policy recommendations for Council action.
- **New tool development and authority** – Concurrent with this data review and public discussion, DDOT should prioritize among the new tools and strategies

discussed in the above approaches and if there are barriers to implementation outline the regulatory needs and processes necessary for their implementation.

8.3 LONG TERM (>24 MONTHS)

The long term program will entail actual application of the curbside management approaches described in Chapter 7. This includes gaining regulatory authority and operational latitude to implement the new tools and approaches, acquiring and establishing technology and systems for curbside and program monitoring and analysis, which will allow for the expansion, on a data driven basis, of Performance Parking, and collaboration with local neighborhoods for program adoption appropriate to their context and needs.

- **Ongoing evaluation and monitoring:** DDOT should evaluate programs on a biennial basis and provide public data, analysis and recommendations to the Council and stakeholders.