CLEVELAND PARK

TRANSPORTATION STUDY

FINAL REPORT

DECEMBER 2013

ONE CITY

District Department of Transportation

CLEVELAND PARK

TRANSPORTATION STUDY

CLEVELAND PARK TRANSPORTATION STUDY FINAL REPORT

PREPARED FOR

DISTRICT DEPARTMENT OF TRANSPORTATION

POLICY, PLANNING AND SUSTAINABILITY ADMINISTRATION

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1.0 INTRODUCTION

1.1 Project History

In August 2009 the Council of the District of Columbia appropriated $1.5 million to a Cleveland Park Streetscape Improvement and Pedestrian Safety Project. The funding was designated specifically for Connecticut Avenue NW from Porter Street NW to Macomb Street NW. The funds were obligated by the District Department of Transportation (DDOT).

DDOT Targeted Hazardous Road Segment Improvements

Several road segments require immediate investments to reduce unacceptably high pedestrian crashes and other conditions that make pedestrians feel threatened. The Draft Pedestrian Master Plan and other DDOT plans have cited specific improvements for a number of these but these improvements remain largely unfunded.

Recommended treatments include widening sidewalks and curb extensions; installing innovative pedestrian crossing signals; constructing or relocating curb ramps; striping new or relocating crosswalks/building raised crossings; relocating and enhancing bus stops; installing speed humps; adding traffic signals, pedestrian countdowns and stop signs; constructing or widening median islands; restricting right turn on red, adding red light and speed cameras; and doing road surface treatments.

The Committee recommends that $4.5 million be used to take immediate action of five high hazard roadway segments during FY10. These are portions of corridors that have been identified by DDOT and residents as having poor pedestrian safety.

These segments included the Cleveland Park Streetscape and four other segments:

1. *Connecticut Avenue NW from Porter Street to Macomb Street (Cleveland Park Streetscape),*
2. *16th Street NW from Colorado Avenue to Columbia Road,*
3. *Maryland Avenue NE from Constitution Avenue NE to 11th Street NE,*
4. *East Capitol Street from Benning Road to 50th Street NE, and*
5. *Three-way intersection of South Dakota Avenue NE, 22nd Street NE, and Newton Street NE.*

$1.5 million of the total $4.5 million shall be allocated to the Cleveland Park Streetscape project – Connecticut Avenue NW from Porter Street to Macomb Street. $3 million shall be used among the remaining three segments.

-DC Council legislation

In January 2010, DDOT met with community stakeholders, who organized into a group called the Connecticut Avenue Coalition Committee (CCC). This committee consisted of representatives from the Cleveland Park Citizens Association (CPCA), the Cleveland Park Business Association (CPBA), the Cleveland Park Historical Society (CPHS), then-members of ANC 3C, and concerned citizens. CCC representatives queried their respective constituents for several weeks regarding pedestrian use, accessibility, safety, and enjoyment along the corridor. The CCC submitted a compilation of this public feedback to DDOT in March 2010.

In April 2010, DDOT presented initial treatments and ideas to address the community's concerns at a community meeting. Participants worked in groups to review DDOT's proposals. Community members denoted each of DDOT's proposed suggestions as "accepted as presented," "rejected," or "accepted with conditions" and reported back their determinations orally and in writing at the meeting.

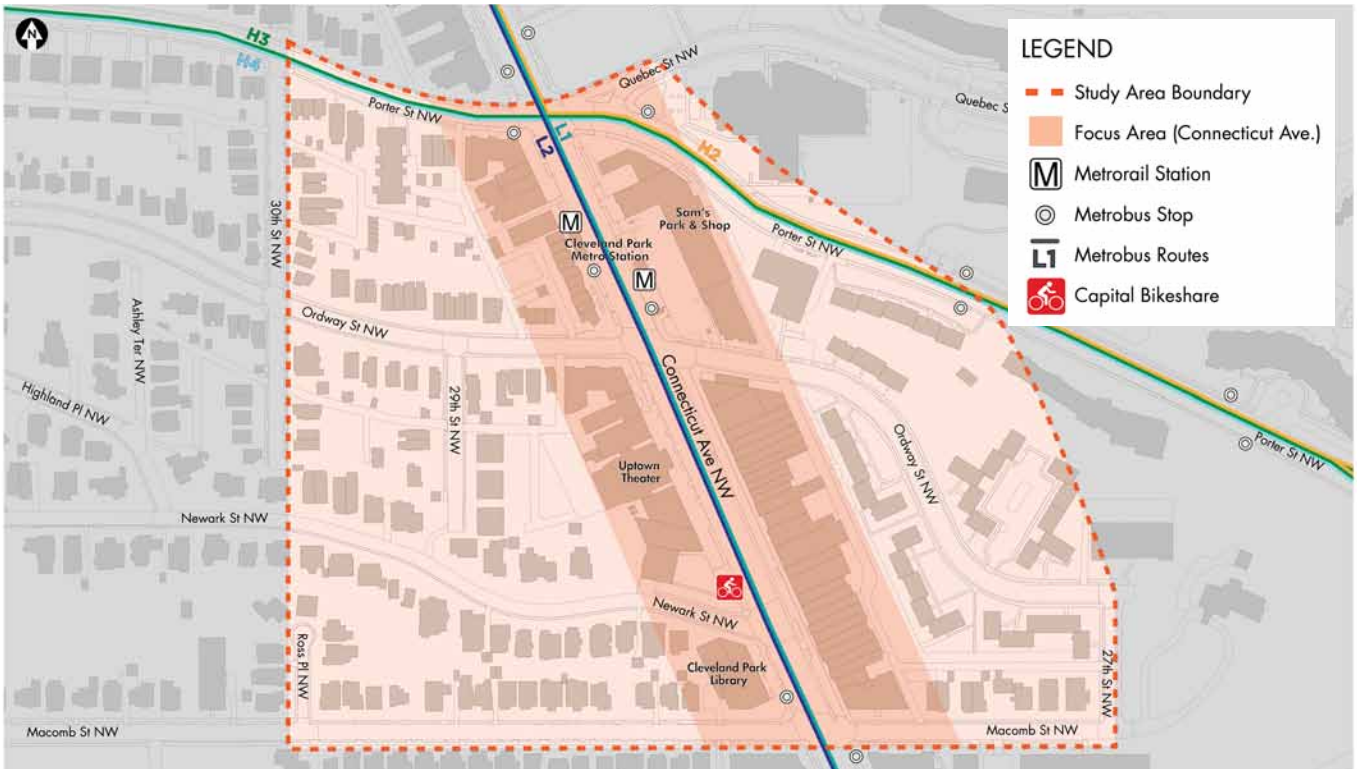


Figure 1.1: Study Area

The Cleveland Park community's combined input and responses to DDOT were compiled into a 2010 *Community Purpose and Need* statement (see Appendix D), which prioritized how the $1.5 million project budget should be spent—from streetscape improvements to the funding allocated for this transportation study.

In April 2010, ANC 3C submitted an ANC resolution (#2010-008) to DDOT in support of the Cleveland Park Pedestrian Safety and Streetscape Improvement Project.

From 2010 to 2013, DDOT designed and implemented the following streetscape and safety improvements:

- Installed new, historic "Washington Globe" streetlights along the Cleveland Park corridor
- Installed HAWK pedestrian signal and mid-block crosswalk
- Traffic signals upgraded at Connecticut Avenue/ Ordway Street intersection
- Adjustments to signal timing
- Standardized tree box sizes (west side of Connecticut Avenue)

1.2 Study Process

The Cleveland Park Transportation Study was initiated by DDOT in June 2013 and was completed in December 2013 (Figure 1.2). The 6-month study included data collection, analysis, and preliminary design concepts, as well as public input through a variety of methods including three public meetings and a project website. Final recommendations are included in this report. The study area is shown in Figure 1.1.

Public Outreach

Community and stakeholder engagement was an integral part of the study process. Three public meetings were held in July, September, and November 2013 to present existing conditions, share draft design concepts, and collect public feedback on the ideas presented throughout the course of the study.

Community input was gathered at each meeting through comment sheets, feedback posted on presentation boards, and notes recorded during a group break-out session. Following each meeting, this feedback was compiled and used to assess support for or concern with the ideas presented. Public input informed the development of design concepts and recommendations at each stage of the study process.

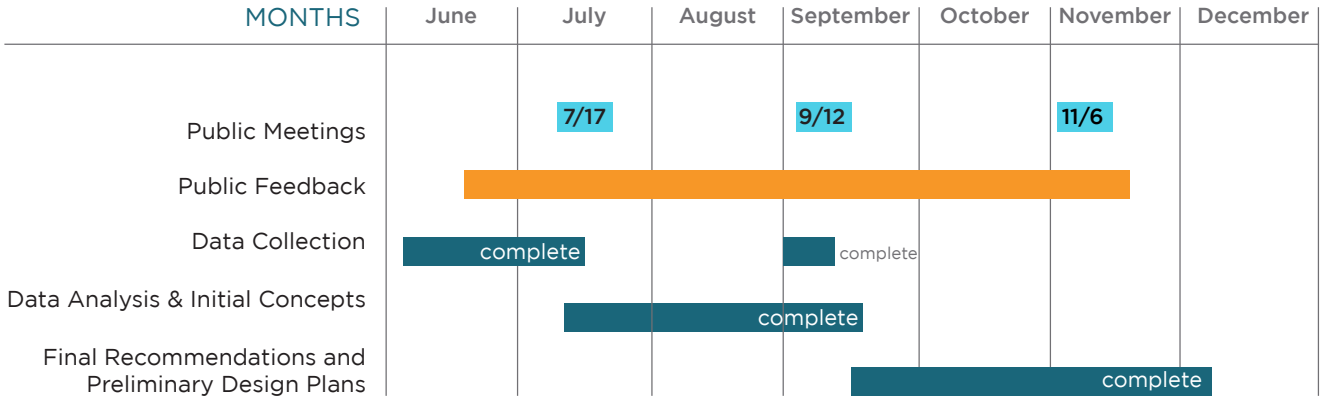


Figure 1.2: Project Schedule

Meeting #1

Format and Attendance

The first public meeting was held at the Metropolitan Police Department Second District Station on July 17, 2013. It served to introduce the transportation study to the community and present the project team's observations of existing conditions and opportunities for pedestrian safety and streetscape improvements. Forty-three people attended this event.

Content

The presentation described the background of the project, outlined the project schedule, and covered the history of the area, existing conditions and issues, and ideas for improvements. Project boards included a history of Cleveland Park and the service lane, data collected on pedestrian patterns and safety, challenging intersections and resulting safety issues, parking data, observed streetscape issues, challenges presented by the service lane and key statistics, as well as a mapping of existing conditions.

Meeting #2

Format and Attendance

The second public meeting took place at the Cleveland Park Public Library on September 12, 2013. The primary intent of this meeting was to present and receive feedback on draft design concepts for the service lane, the Porter Street-Quebec Street intersection, parking supply, and streetscape improvements. Sixty-seven people were in attendance.

Content

The presentation and boards included proposed alternatives for the service lane and Porter Street-Quebec Street intersection, and detailed how the streetscape could be improved. The team proposed four alternatives for the service lane. A matrix comparing the service lane options detailed how each alternative would support or impact a variety of issues related to safety, neighborhood mobility, and placemaking opportunities. They are displayed in section 6.3.

Meeting #3

Meeting Format and Attendance

The third public meeting took place at the Cleveland Park Public Library on November 6, 2013. The purpose of this final meeting was to share the draft recommendations developed by the project team and collect feedback from the public. The third public meeting was a longer open house format allowing attendees to drop in as schedules permitted, review the draft recommendations. Two hundred seventy-four people attended.

Content

Draft recommendations were presented for the study area, including an illustrative site plan. Draft recommendations were categorized as safety, parking management, or public realm issues, and indicated how each responded to the *Community Purpose and Need* statement, addressed community-identified concerns, and/or were driven by data collected during the study. Each recommendation was classified as a short-term (0-2 years), mid-term (2-5 years), or long-term (5-10 years) improvement.

Additional Public Outreach Efforts

Project Website

A project website (CPtransportationstudy.com) was created in June 2013 to share project updates, provide meeting notices, and post the project boards presented at each public meeting. The project website and email address also served as a feedback tool for the community to share their ideas and opinions directly with the project team. Over 800 emails were submitted to the project website throughout the course of the study. Binders containing the emails and letters received during the public feedback period can be accessed and reviewed at the DDOT Library.

Public meeting notices and project information were also communicated through DDOT's listserv, social media tools, as well as through community listservs.

Library Outreach

Project boards and feedback opportunities were made available at the Cleveland Park Public Library during August and September 2013 (Figure 1.3).

Stakeholder Group Meetings

Team members met with community organizations including the Cleveland Park Business Association (CPBA) and the Connecticut Avenue Coalition Committee (CCC) during the course of the study for listening meetings, to address specific stakeholder issues and receive feedback.

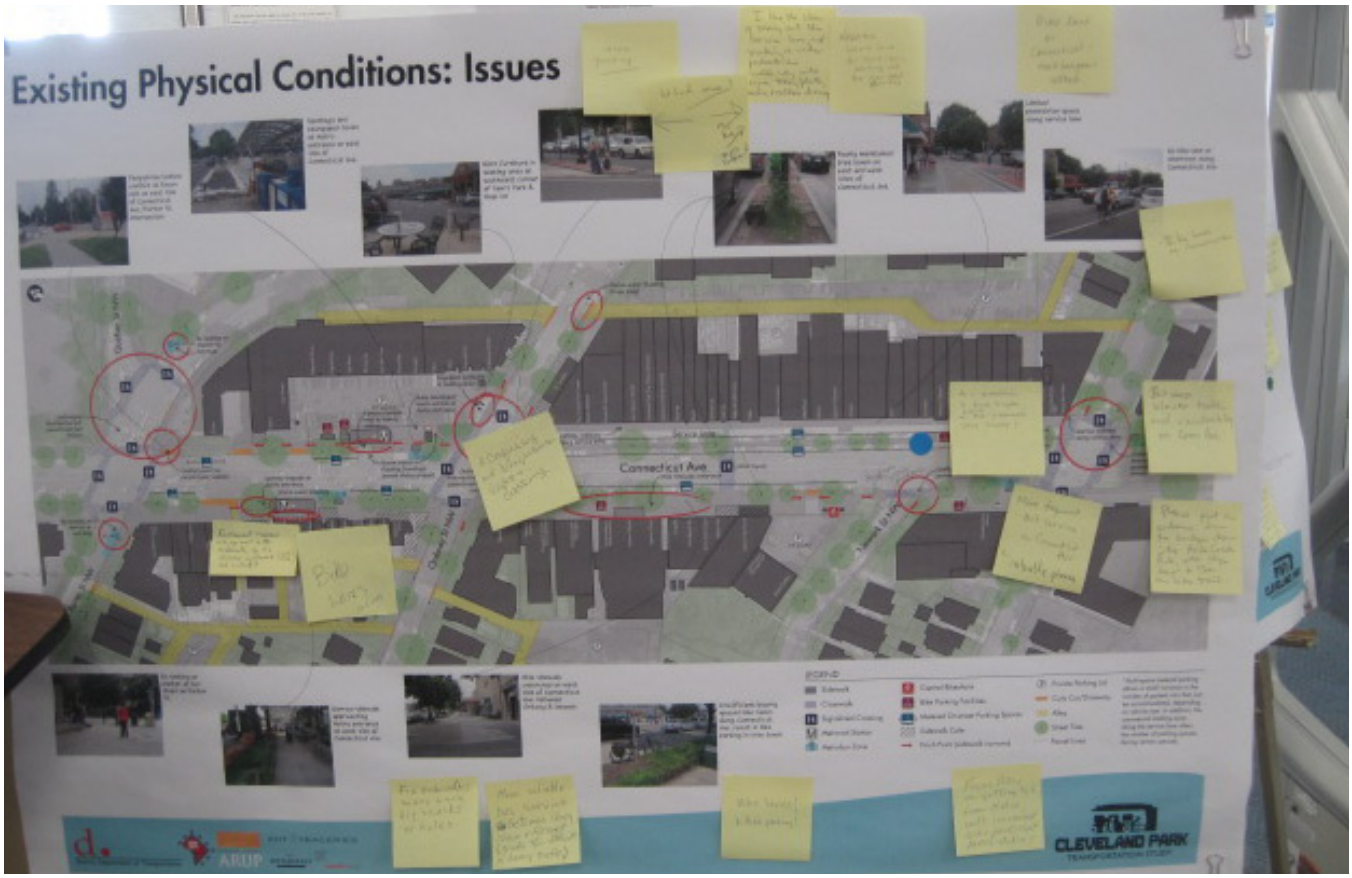


Figure 1.3: Existing Conditions Board displayed at the Cleveland Park Library

2.0 LOCATION & STUDY AREA

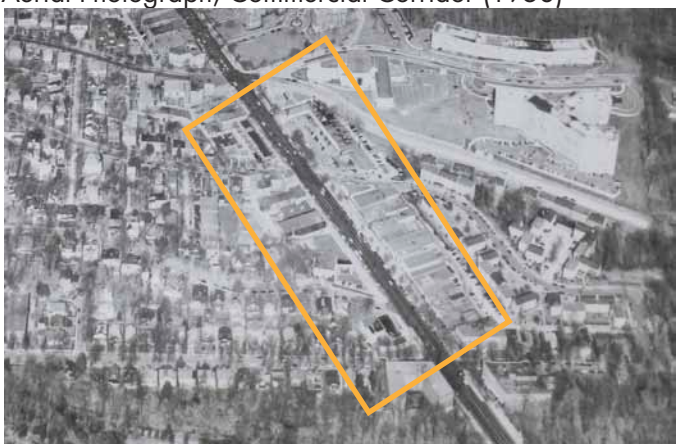
2.1 Context

Connecticut Avenue serves as a regional roadway, a major public transit route for both Metrobus and Metrorail, and serves local commercial uses within a neighborhood-scale environment in Cleveland Park. Classified as a principal arterial by the Federal Highway Administration (FHWA), Connecticut Avenue is a high-volume traffic corridor accommodating drivers travelling into, out of, and within the District. As the surrounding city has grown, Connecticut Avenue has undergone piecemeal adjustments to accommodate increased traffic, public transportation demands, more pedestrians, and a growing number of cyclists, including those who use the Capital Bikeshare program. Reversible lanes expedite rush-hour traffic to and from downtown DC, and mass transit users can connect to bus and rail systems at local stops and stations. With a variety of small, locally-owned businesses that include retail, dining, and recreational establishments, Cleveland Park experiences a large amount of foot traffic from residents and visitors alike.

While Connecticut Avenue is an essential vehicular corridor for both regional commuters and local drivers, the convergence of high-speed traffic, challenging road geometries, and pedestrians in Cleveland Park, has resulted in situations that can be difficult, and at times, unsafe for all users. Addressing these challenges presents an opportunity to not only create a safer environment for pedestrians, drivers, and cyclists, but also to activate and improve the historic village feel, vibrant retail, and lively sidewalks in Cleveland Park, improving the quality of life for all users.

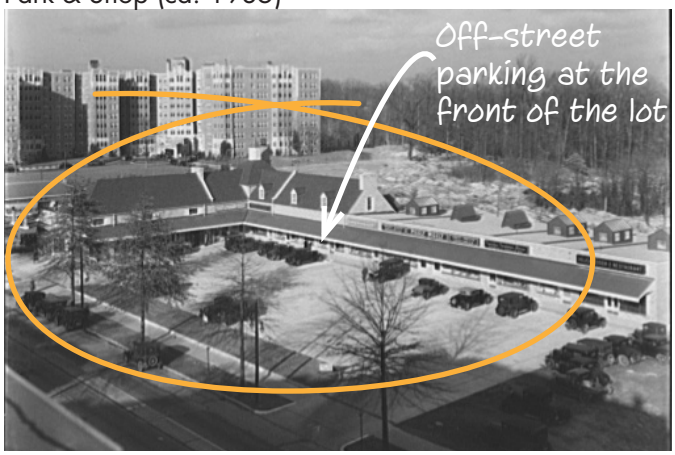
Figure 2.1: Photo of Northern End of Study Area

Aerial Photograph, Commercial Corridor (1953)



East Side of Commercial Corridor (1949)

Park & Shop (ca. 1935)



Connecticut Avenue (ca. 1992)

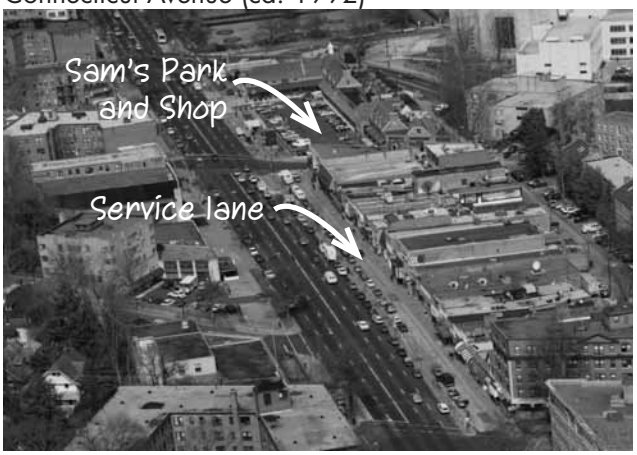


Figure 2.2: Historic Photographs of Cleveland Park (Sources: Historical Society of Washington (Top); Library of Congress (Bottom))

2.2 History

Originally composed of rural farmland and country estates, a number of independent subdivisions were developed in Cleveland Park at the turn of the twentieth century in response to DC's growing population. Transportation capabilities were brought on by the construction of Connecticut Avenue and a citywide streetcar system. When the District's 1920 Zoning Ordinance identified a mixed-use commercial area along Connecticut Avenue between Macomb and Porter Streets—enabling grocery stores, gas stations, other retail establishments to be developed—Cleveland Park was no longer dependent on downtown DC for basic needs and services.

When the Park & Shop (located at Ordway Street and Connecticut Avenue) was built in 1930, the developers responded to increasing automobile use and deviated from the conventional street-front shopping configuration to accommodate a large parking lot between the street and its stores. Concurrently, streetcar lines throughout the District were being replaced by more flexible bus systems.

In 1960, the 30-foot wide sidewalk on the east side of Connecticut Avenue between Macomb Street and Ordway Street was altered to create an 18-foot roadway and parking strip (now termed the "service lane") for shoppers, adding 25-27 new parking spaces to the corridor.

The Cleveland Park Metro Station was completed in 1981, and opened in conjunction with nearby Red Line Stations at Van Ness and Woodley Park. By increasing transportation options to and from Cleveland Park, the station further enhanced the desirability of the area as a place to live and to visit.

See Appendix B for an expanded transportation history of Cleveland Park.

2.3 Zoning & Land Use

Zoning

Cleveland Park's low-density development and village-like environment are owed in part to the zoning regulations in place under the Cleveland Park Neighborhood Commercial Overlay district, which covers the entirety of the Cleveland Park Transportation Study focus area. DC zoning code stipulates that within the city's Neighborhood Commercial Overlay districts, no more than 25% of linear street frontage may be occupied by restaurants, delis, or other eating/drinking establishments. Additionally, the area is subject to the particular regulations outlined under the Cleveland Park Neighborhood Commercial Overlay district. These include a maximum building height of 40 feet and a floor area ratio (FAR) of 2.0, of which not more than 1.0 may be occupied by non-residential uses. These limits on building size and use help to protect the village feel of the neighborhood while encouraging diversity among the retail and service establishments along Connecticut Avenue. Unlike the more dense neighborhoods adjacent to the study area and along Metro's Red Line, Cleveland Park is currently limited to smaller-scale and balanced-use development. See Appendix C for a detailed summary of study area zone districts and zoning regulations for the Cleveland Park Neighborhood Commercial Overlay district.

The focus area and a portion of the study area west of Connecticut Avenue fall within the Cleveland Park Historic District (Figure 2.3). As such, the DC Historic Preservation Review Board ensures that new construction and any other physical alterations are compatible with the character of the neighborhood and will not detract from Cleveland Park's historical integrity.

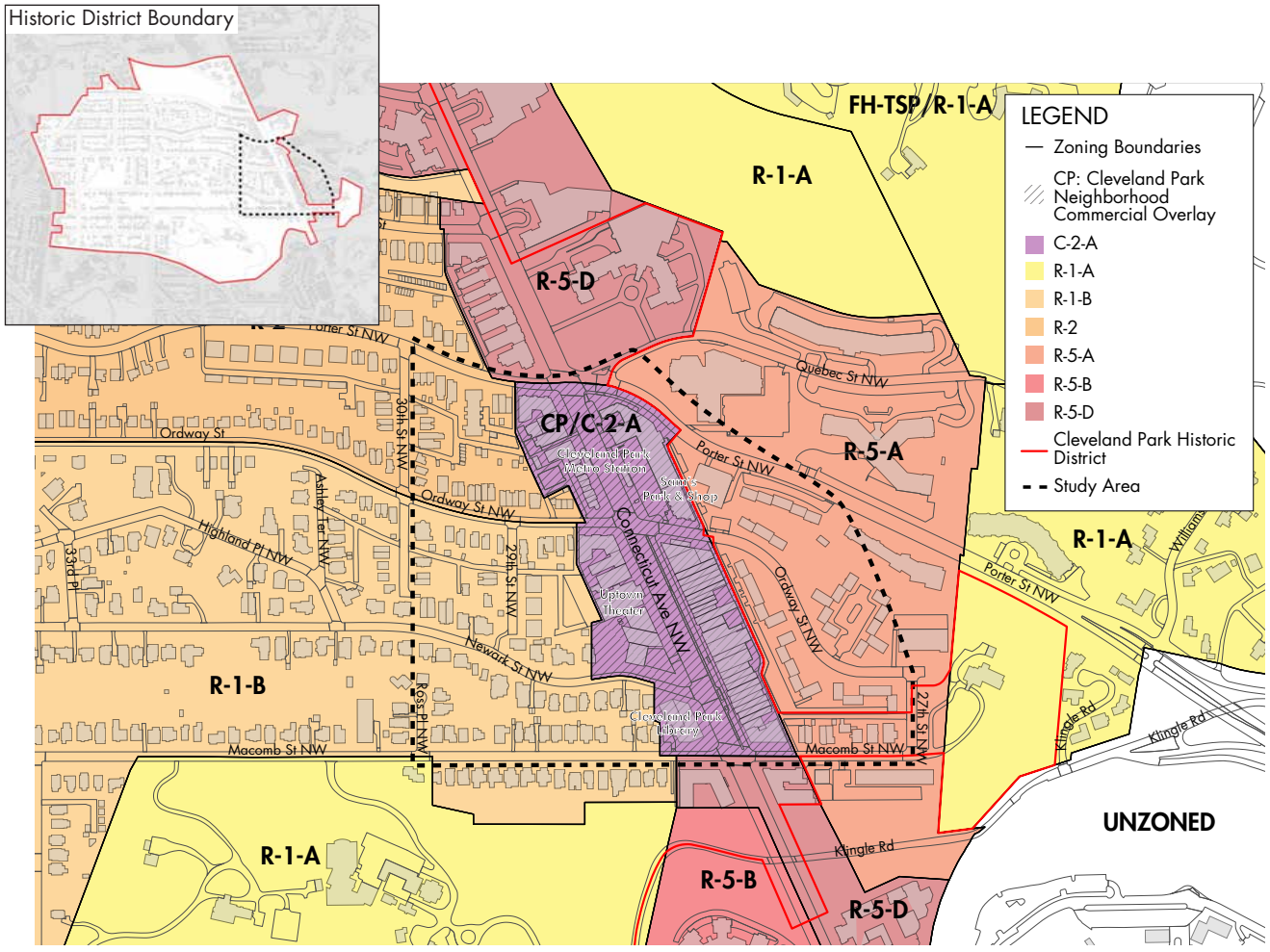


Figure 2.3: Zoning and Overlay Districts in Cleveland Park (Source: Rhodeside & Harwell/DC GIS)

Land Use

Cleveland Park's zoning regulations designate commercial activity in the main Connecticut Avenue corridor and allow a range of residential densities in the surrounding area. Within the study area, the east side of Connecticut Avenue is composed almost entirely of commercial-use establishments, with medium to high density residences along Porter Street. Land use is more varied on the west side of Connecticut. This area is comprised of commercial and low-medium to high density residential uses, in addition to local public and institutional functions including DCFD Engine Co. No. 28, the Cleveland Park Post Office, and the library. West of Connecticut Avenue, the study area consists primarily of single-family residences (Figure 2.4).

Land use surrounding the study area has a significant impact on Cleveland Park in terms of the people who visit the neighborhood and road connectivity beyond Connecticut Avenue. Cleveland Park lies to the west of Rock Creek and is bordered by Rock Creek Park (under the jurisdiction of the National Park Service) on its north, east, and south edges. The parkland offers a verdant retreat within the urban environment and provides many recreational opportunities to area residents and visitors. However, as few roads cross though the park, the street network terminates almost entirely east of Connecticut Avenue and connectivity between Cleveland Park and neighborhoods to the east is limited.

The National Zoo, part of the Smithsonian Institution, is located just south of Cleveland Park and is a key destination in Northwest DC. Less than half a mile from the main entrance to the zoo on Connecticut Avenue, the Cleveland Park Metro Station provides a transit option for zoo visitors.

Additionally, high density residential buildings north and south of the study area along Connecticut Avenue are home to many residents who regularly visit Cleveland Park's retail corridor to shop, dine, and access public transportation.

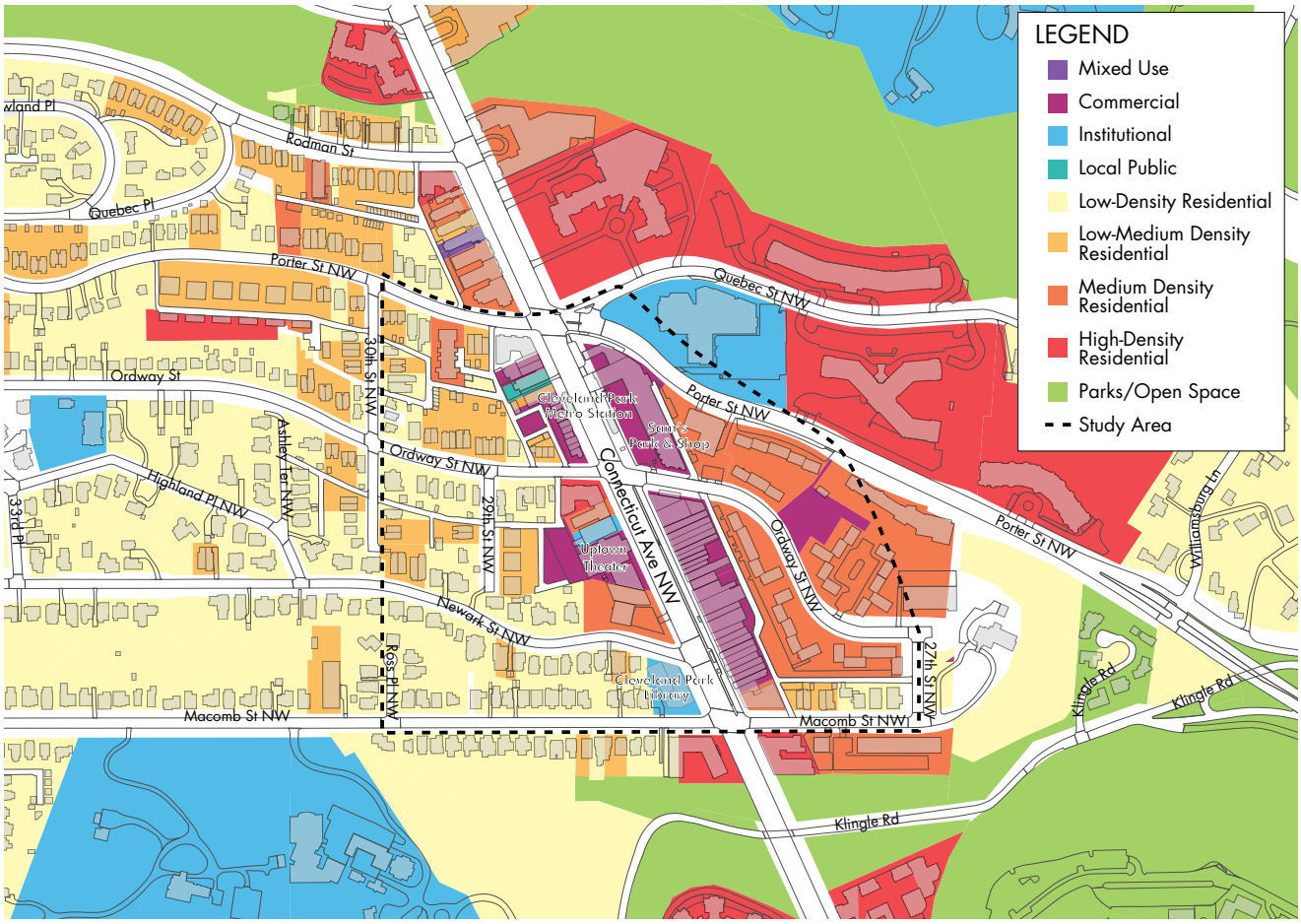


Figure 2.4: Land Use in and Around the Cleveland Park Study Area (Source: Rhodeside & Harwell/DC GIS)

2.4 Demographics

Connecticut Avenue acts as the boundary between the two primary census tracts in the Cleveland Park study area: Tract 6 to the west and Tract 13.02 to the east (Figure 2.5). In general, Census Tract 6 is largely a single family neighborhood and has more home owners, fewer carless or single car households and more 2-3 car households, larger average household size, more family households, more children under 18, relatively higher income households, and a higher percentage of aging seniors in contrast with Census Tract 13.02.

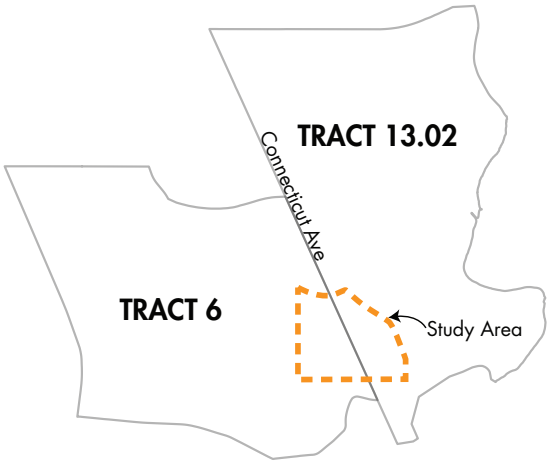


Figure 2.5: Census Tracts (Source: U.S. Census Bureau)

Looking at changes in these census tracts from 2000 to 2010, household incomes and average household size both increased. Family households increased by just over 3%, non-family households decreased by slightly more than 3%, and households with children increased in Tract 6 and decreased in Tract 13.02, with a combined increase of 0.5%. Three-car households decreased by 3%, two-car households increased by 2%, carless households increased by 2.5%, and single-car households remained the dominant percentage but decreased by approximately 1.5%. In terms of housing tenure, owner-occupied households increased by nearly 2% while renter-occupied households decreased correspondingly.

Household transportation patterns in Cleveland Park show shifts in choice of mode to work between 2000 and 2010. On average, driving alone decreased by 10% and carpooling by 5%. Use of public transportation increased by nearly 7%, walking by 3%, and other modes of transportation by close to 2%. Telecommuting or working at home increased significantly in Tract 6 and decreased slightly in Tract 13.02, with an overall increase of 4%.

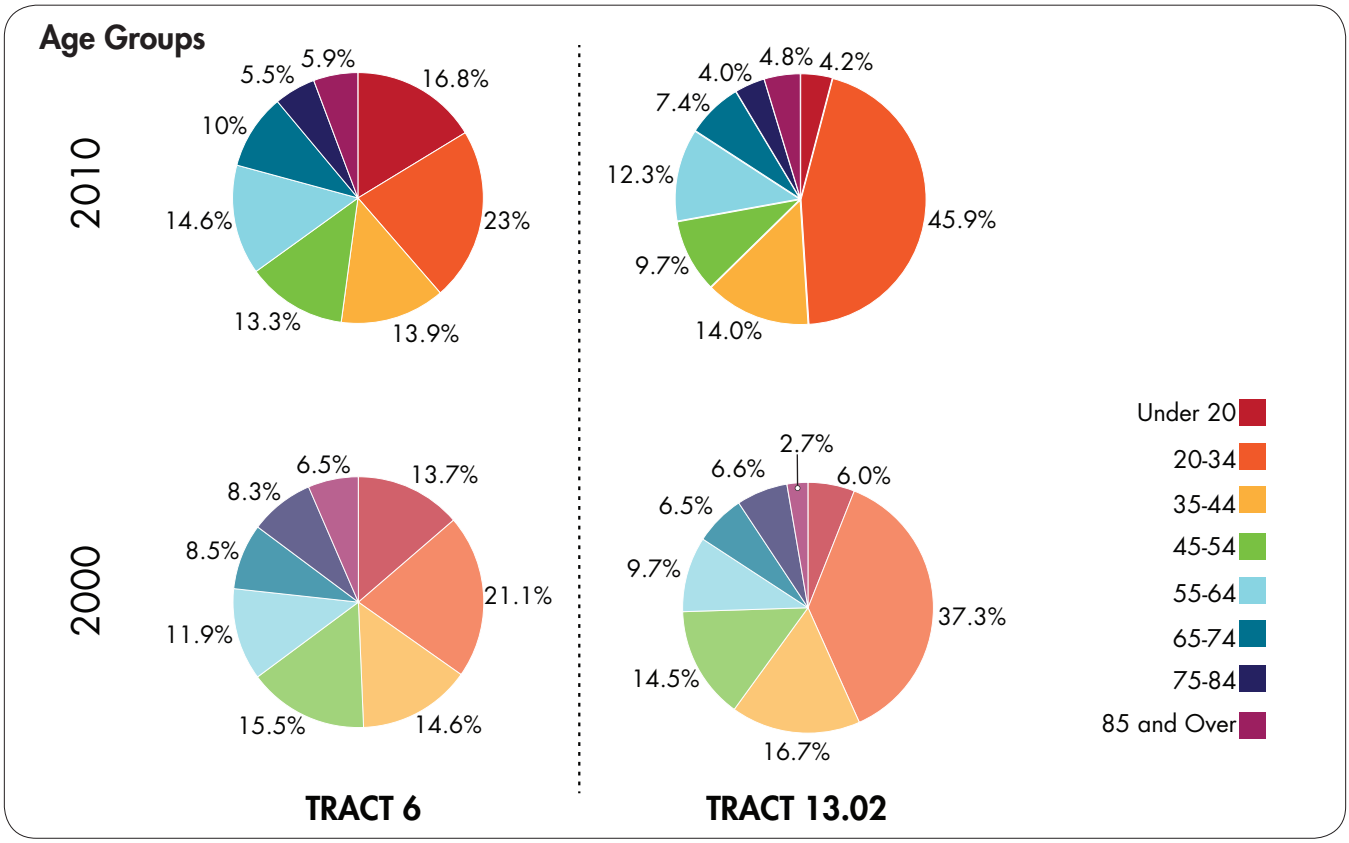


Figure 2.6: Age Groups (Source: U.S. Census Bureau)

As defined by the U.S. Census Bureau, a household consists of all people occupying a housing unit regardless of relationship. A family consists of two or more people related by birth, marriage, or adoption residing in the same housing unit.

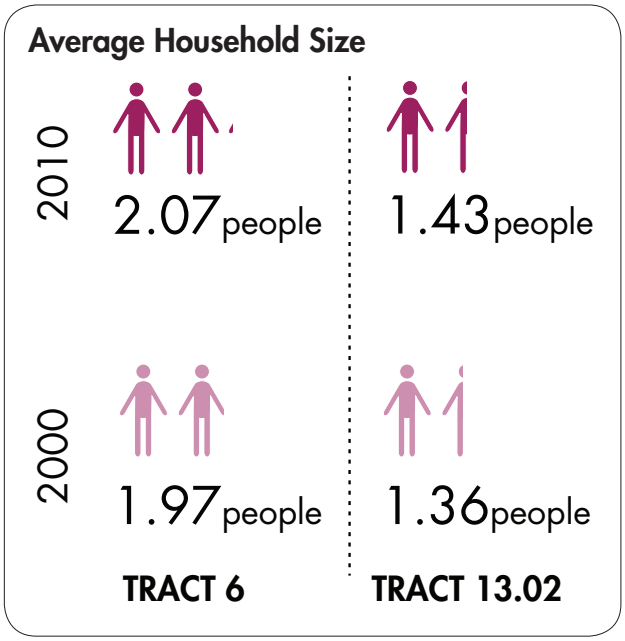


Figure 2.7: Average Household Size (Source: U.S. Census Bureau)

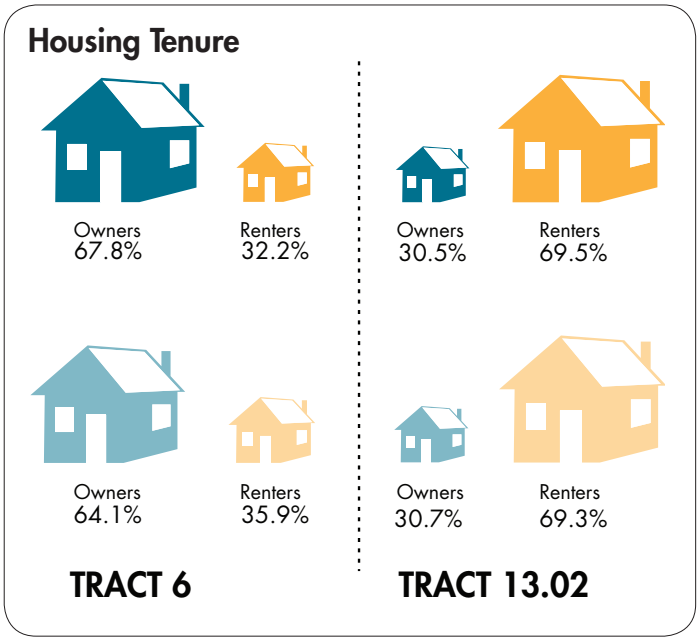


Figure 2.8: Housing Tenure (Source: U.S. Census Bureau)

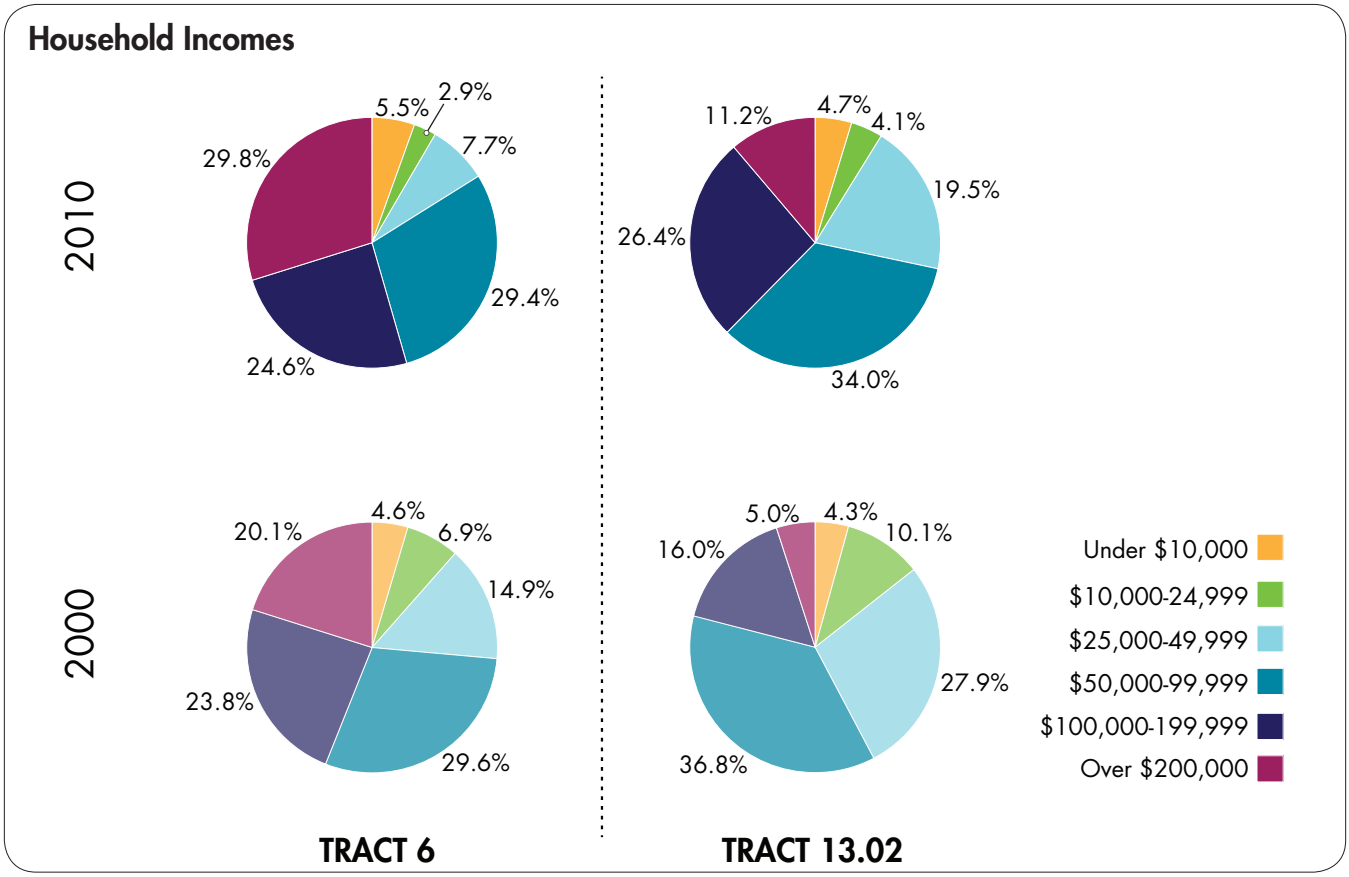


Figure 2.9: Household Income (Source: U.S. Census Bureau)

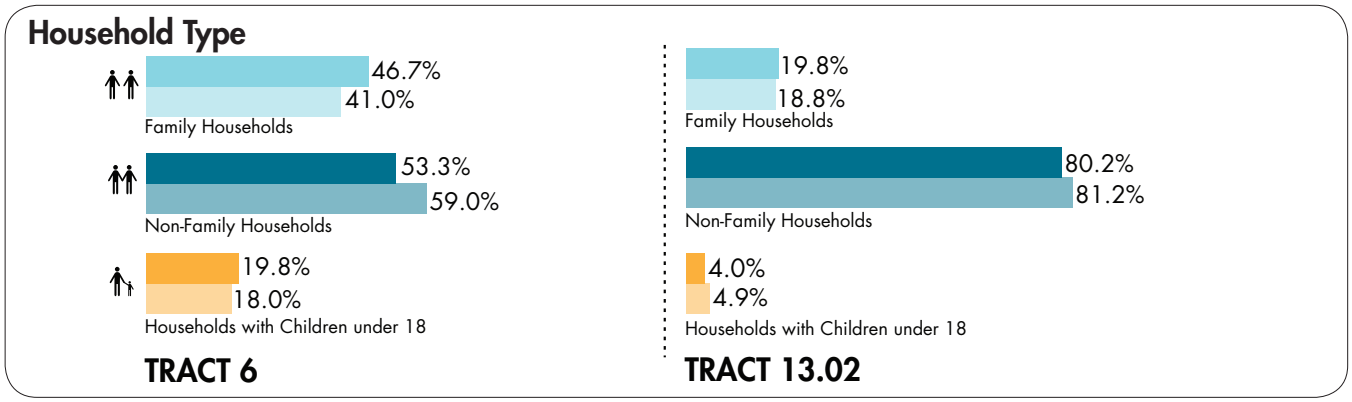


Figure 2.10: Household Type (Source: U.S. Census Bureau)

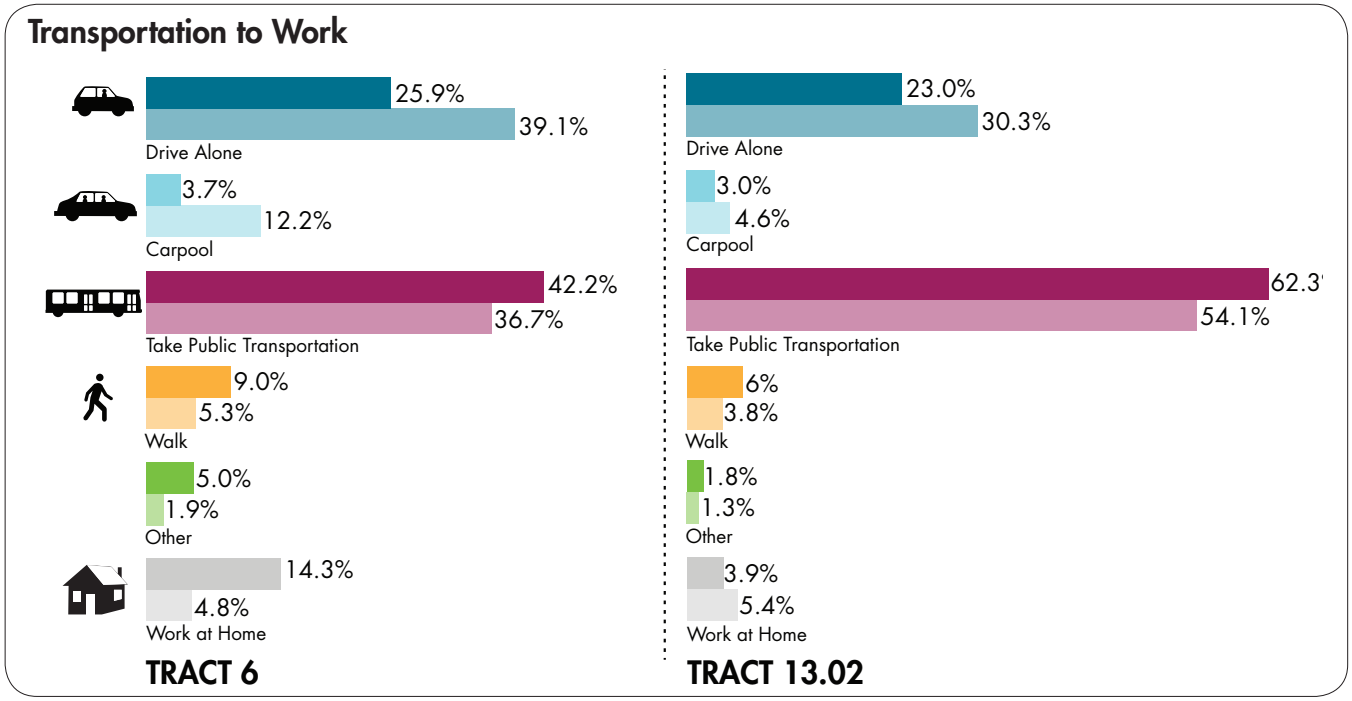


Figure 2.11: Transportation to Work (Source: U.S. Census Bureau)

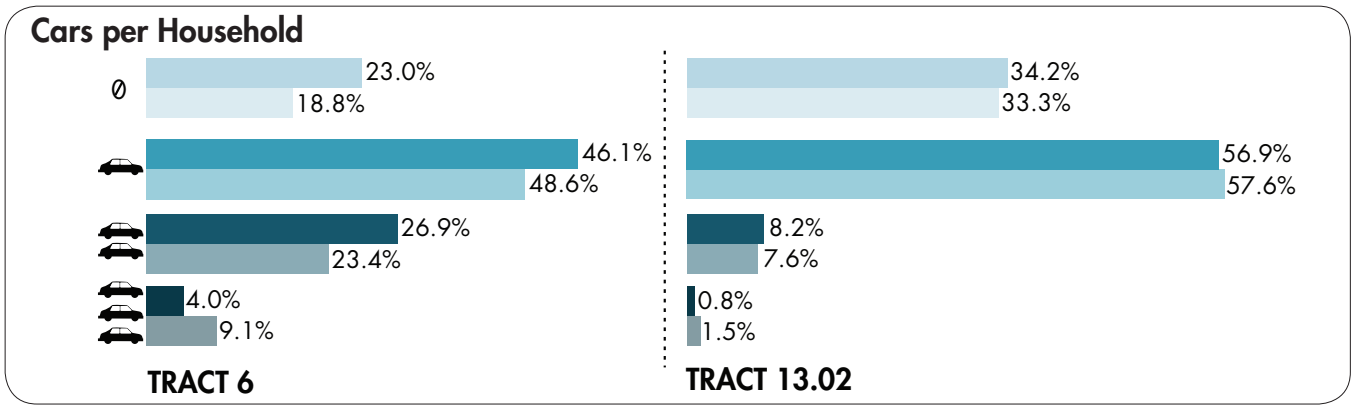


Figure 2.12: Cars Per Household (Source: U.S. Census Bureau)

2000 data is indicated by a lighter tint and shown below 2010 data.

All data was obtained from U.S. Census Bureau 2000 Demographic Profile Data, 2010 Demographic Profile Data, and 2006-2010 American Community Survey 5-Year Estimates.

3.0 COMMUNITY-IDENTIFIED ISSUES

3.1 Community-Authored Purpose & Need Statement

Following the allocation of funding for the Cleveland Park Streetscape Improvement and Pedestrian Safety Project in August 2009, members of the Connecticut Avenue Coalition Committee (CCC) surveyed their constituents on pedestrian use, accessibility, safety and enjoyment along the Cleveland Park corridor, and presented the results to DDOT. DDOT representatives then presented potential solutions to the issues identified in the CCC survey. Community members considered these suggestions and collectively chose to accept as presented, accept conditionally, or reject each. Subsequently, the CCC submitted a *Community Purpose and Need* statement to DDOT outlining the traffic and streetscape issues along the Cleveland Park segment of Connecticut Avenue along with community-sanctioned solutions. The *Community Purpose and Need* document can be found in Appendix D.

Several recommendations have already been funded and implemented through DDOT's Cleveland Park Streetscape Improvement Project. These include the addition of a HAWK (High-intensity Activated crossWalK) signal and mid-block crosswalk on Connecticut between Macomb Street and Ordway Street, installation of historically appropriate globe street lighting, expansion of tree boxes, and signal timing adjustments.

The project team recognized the value of the *Community Purpose and Need* statement and has taken the identified issues and recommendations into account during the analysis of existing conditions and the development of recommendations for the Cleveland Park Transportation Study.

4.0 EXISTING TRANSPORTATION CONDITIONS

4.1 Summary of Study Area Transportation Network

The street network in the Cleveland Park study area includes tree-lined, curvilinear, residential streets bisected by Connecticut Avenue, a principal arterial that serves high vehicular, pedestrian and transit demands. The streets in the study area that connect with Connecticut Avenue include one minor arterial that supports through movement to a lesser degree, augmenting the principal arterial system; one collector street that provides circulation within residential neighborhoods and connectivity to arterial streets; and four local streets that offer access between individual residential or other destinations and the larger street system (Figure 4.1). Table 4.1 provides a detailed description of the Federal Highway Administration's functional classification of the urban street system.

The streets west of Connecticut Avenue form a more typical, large-block grid that connects to the citywide road network and north-south arterials including Wisconsin Avenue. East of Connecticut Avenue, the street network does not connect to the City's street grid, ending just west of Rock Creek Park. Alleys behind the commercial corridor and buildings on Connecticut Avenue provide access to some residential and commercial parking, but are generally cul-de-sac streets that do not connect to the larger street grid. Only Porter Street extends east past Rock Creek Park, connecting to the Columbia Heights neighborhood. This configuration leads to quieter residential streets with lower traffic volumes, but also creates less-direct pedestrian routes for residents to access the Metro station, retail, bus stops, and other major activity generators along

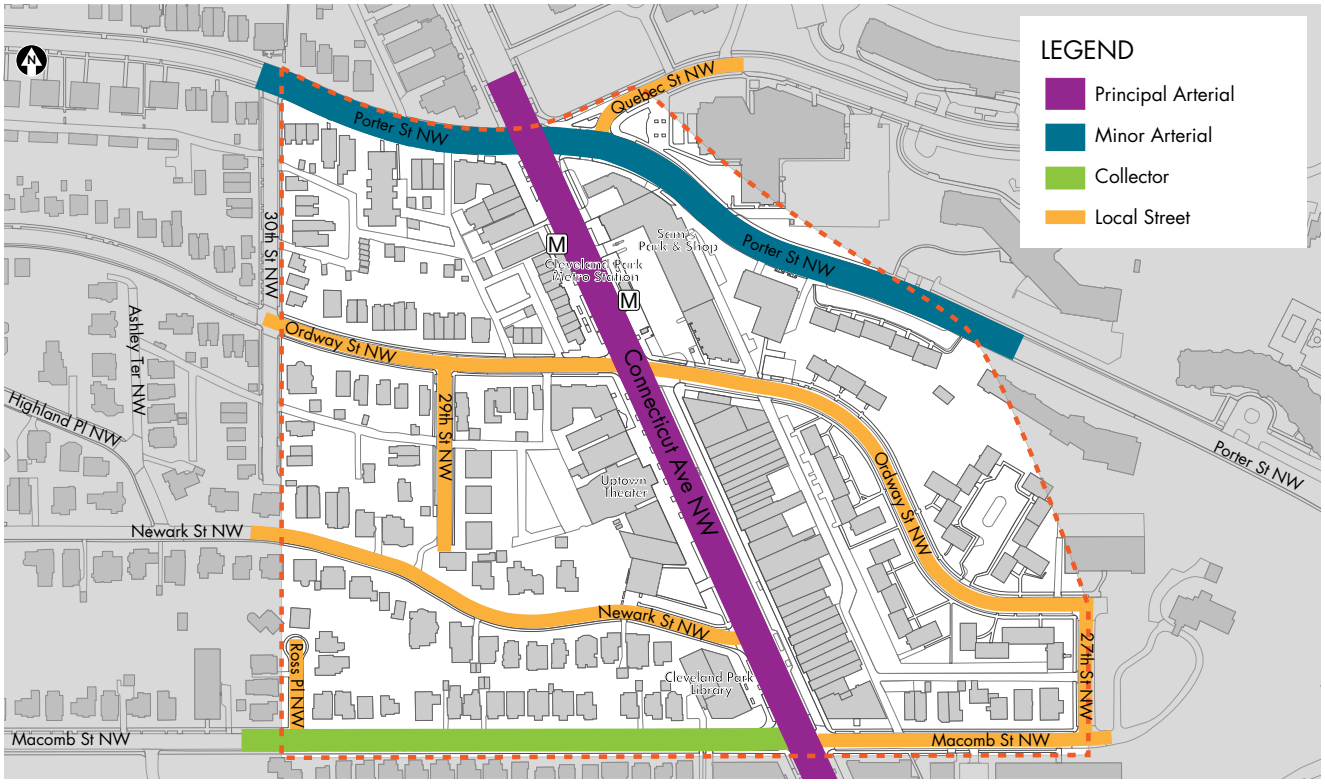


Figure 4.1: Functional Classification of Study Area Streets

Functional System	Services Provided
Principal Arterial	The urban principal arterial system should serve the major centers of activity of a metropolitan area, the highest traffic volume corridors, and the longest trip desires, and should carry a high proportion of the total urban area travel on a minimum of mileage. The principal arterial system should carry the major portion of trips entering and leaving the urban area, as well as the majority of through movements desiring to bypass the central city.
Minor Arterial	The minor arterial street system should interconnect with and augment the urban principal arterial system and provide service to trips of moderate length at a somewhat lower level of travel mobility than principal arterials. This system also distributes travel to geographic areas smaller than those identified with the higher system.
Collector	The collector street system provides both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system.
Local	The local street system comprises all facilities not on one of the higher systems. It serves primarily to provide direct access to abutting land and access to the higher order systems. It offers the lowest level of mobility and usually contains no bus routes. Service to through traffic movement usually is deliberately discouraged.

Table 4.1: Functional Classifications of Streets (Source: Federal Highway Administration)

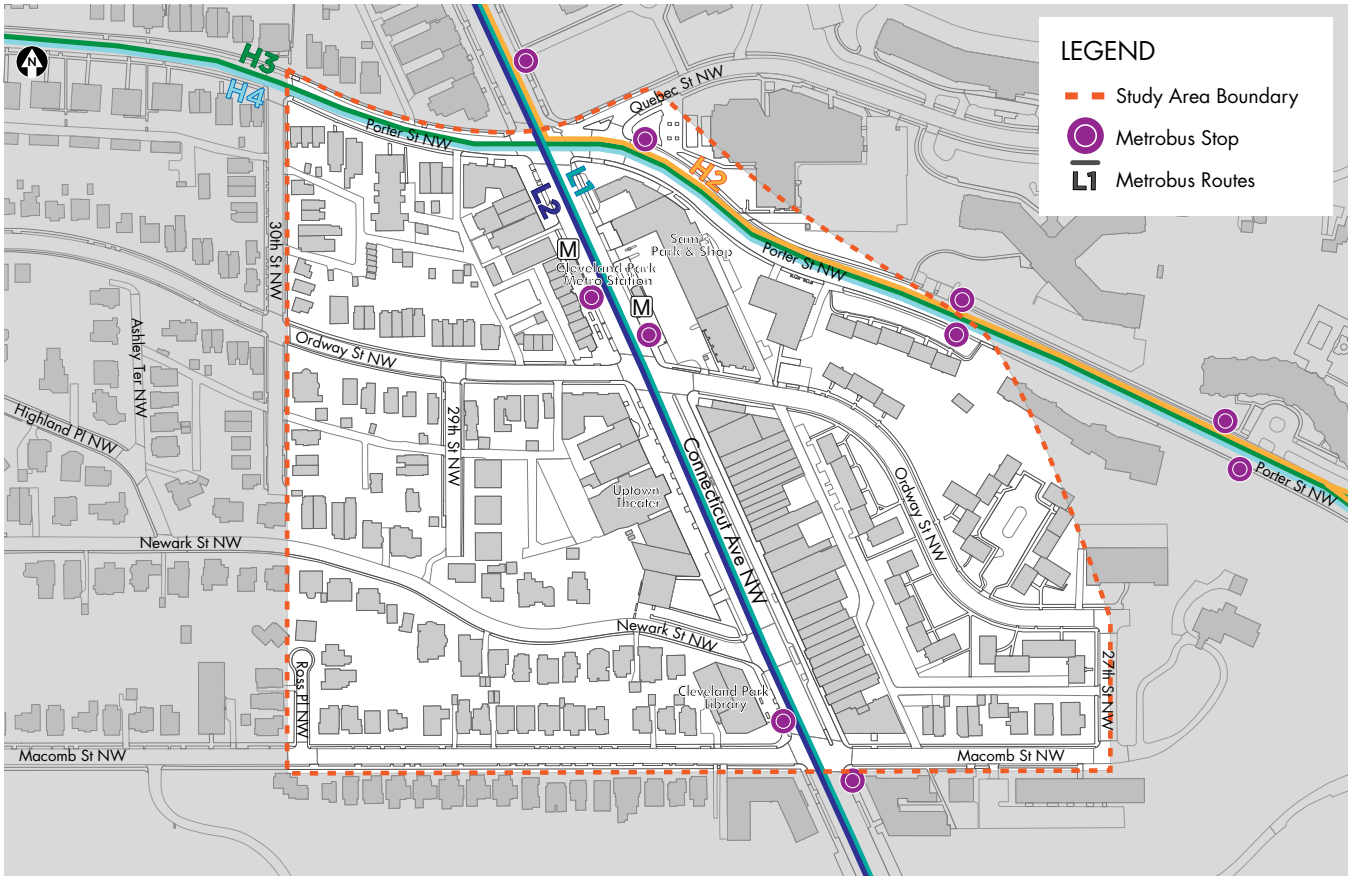


Figure 4.2: Metrobus Lines and Stops (Source: Rhodeside & Harwell/DCGIS)

Connecticut Avenue. As such, pedestrians sometimes seek creative ways to shorten their walking distances—for example by cutting through the Exxon station on the southeast corner of Connecticut Avenue and Porter Street or crossing mid-block where no crosswalk is present—that create significant potential for vehicle-pedestrian conflicts.

Safety along the corridor is a critical concern. Prompted by input from community, the Council of the District of Columbia allocated funding to the Cleveland Park Streetscape Improvement and Pedestrian Safety Project specifically to address conditions that were deemed to offer an insufficient level of safety for pedestrians. The intersection of curvilinear residential streets with the diagonal-running Connecticut Avenue creates non-standard intersections with challenging geometries that cause confusion and a lack of predictability for all users. The service lane running along the east side of Connecticut Avenue adds additional vehicle turning movements to these intersections at Macomb and Ordway Streets. The reversible lane configuration along this segment of Connecticut Avenue changes traffic operations during peak rush hours in the AM and PM, and has been observed to cause confusion and accidents among drivers.

Parking is a key concern for residents and retailers, as low turnover rates and high occupancy limit the number of visitors who are able to find parking and the number of retail patrons who can visit by car.

The following sections describe in greater detail the current transportation and public realm conditions for each major street in the study area, creating an inventory of transportation infrastructure for pedestrians, cyclists, transit and motorists, with an emphasis on Connecticut Avenue.

4.2 Connecticut Avenue

Character & Conditions of the Corridor

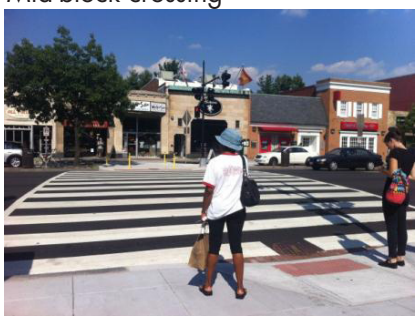
Transportation and Mobility Conditions

Connecticut Avenue is a high-volume, multi-modal, principal arterial that runs north-south through the northwestern quadrant of Washington, DC to Montgomery County, Maryland.

The Connecticut Avenue corridor in Cleveland Park between Porter Street and Macomb Street is a six-lane roadway with an approximate curb-to-curb width of 60 feet and a total right of way of approximately 130 feet. It is characterized by a strong presence of mixed-use retail with residences behind, and is served by the Cleveland

Pedestrian pinch point

Mid-block crossing



Pedestrians cutting through the gas station

Entrance to service lane at Macomb St

Lack of bicycle infrastructure

Striping for reversible lanes

Figure 4.3: Current Conditions along Connecticut Avenue (Source: Arup)

Park Metro Station and Connecticut Avenue L Metrobus lines. While retail and dining establishments hold a majority of the street edge, Sam's Park & Shop between Porter Street and Ordway Street is set back behind a surface parking lot accessible by an entrance on Connecticut Avenue.

A survey of 110 groups traveling to the shops in the service lane segment of Connecticut Avenue between 11:30 AM and 1:30 PM on a weekday showed that walking is the predominant mode of transportation used by residents to make retail trips (68%), followed by biking and driving (12% each). Visitors from outside the Cleveland Park neighborhood tend to either drive (46%) or take the Metro (33%), with a lower percentage walking (13%). Almost all residents surveyed (98%) patronize shops along the service lane at least once a week, compared to 43% of visitors, with 25% of visitors surveyed shopping in the area only once a year or less.

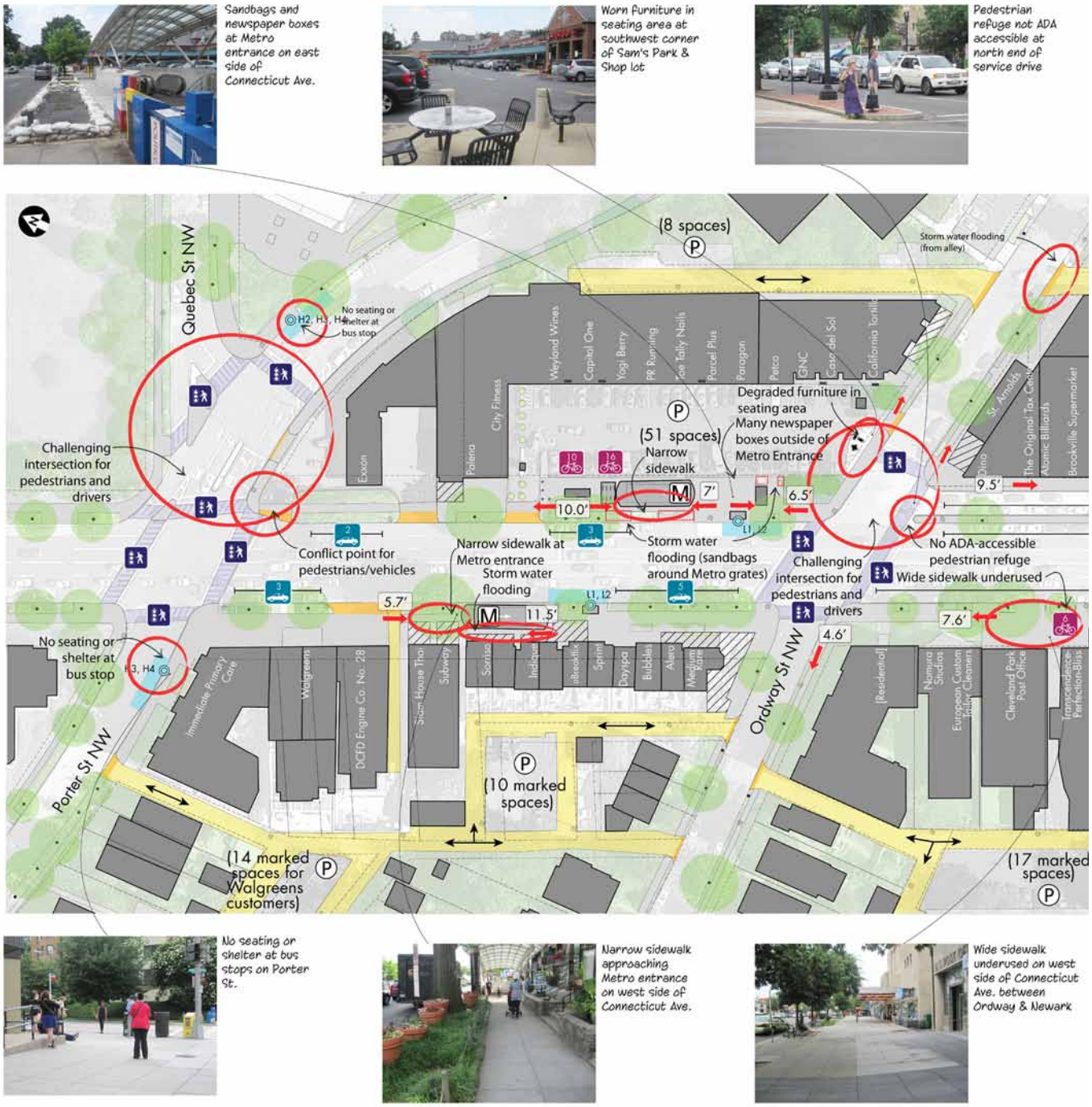


Figure 4.4: Existing Conditions Plan (Source: Rhodeside & Harwell/DCGIS)

The survey also indicated a desire for improvements to the pedestrian experience. While 17% of residents would like greater parking availability, 45% are in favor of improving pedestrian facilities and an additional 17% are interested in creating more gathering spaces along the corridor.

Though physical conditions and visibility for both motorists and pedestrians vary at each intersection, none of the streets that intersect with Connecticut Avenue bisect it at a right angle. Rather, the intersections at Porter Street, Ordway Street, Newark Street and Macomb Street are at off-set or diagonal angles (Figure 4.5), reducing visibility and creating longer crossing distances for pedestrians. Additionally, the crosswalks at Ordway Street use low-visibility parallel line striping that is difficult to see, as opposed to the high-visibility "Zebra" striping at Connecticut Avenue's other cross streets. Compounded with confusion resulting from reversible lanes during peak traffic hours, the

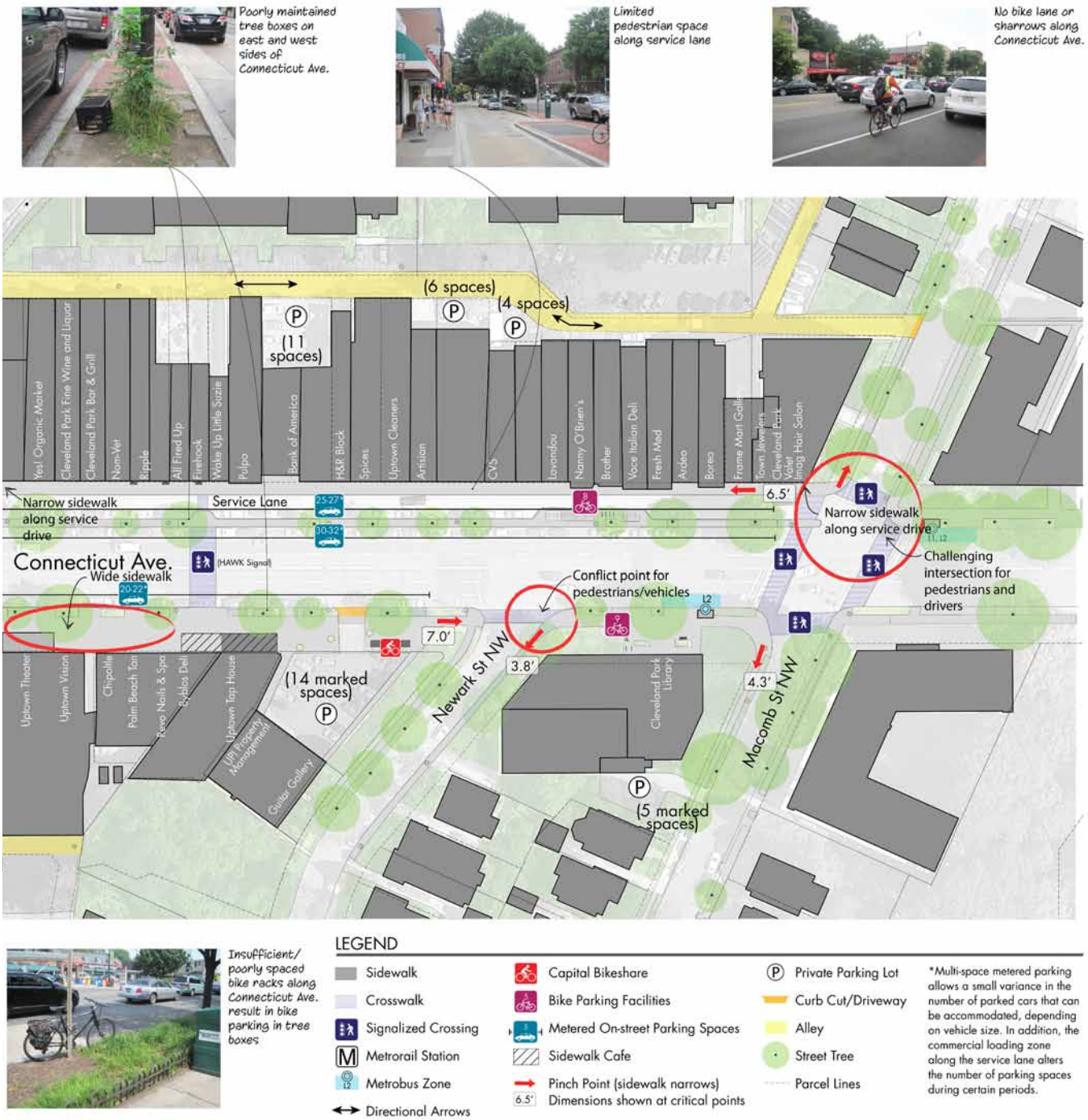


Figure 4.5: Irregular Intersections along Connecticut Avenue (service lane highlighted) (Source: Bing Maps)

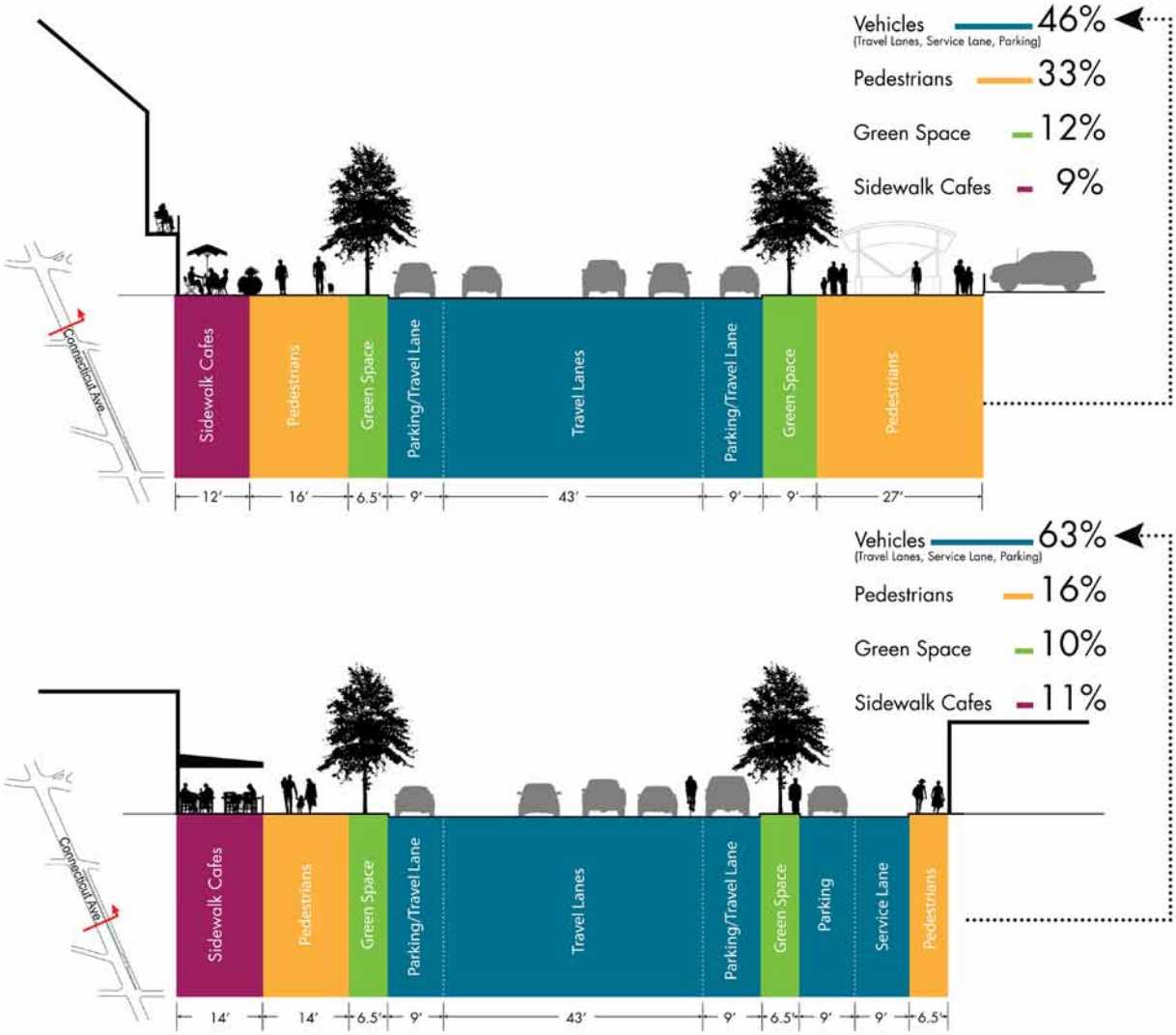


Figure 4.6: Street Cross Sections - How is Public Space Allocated? (Source: Rhodeside & Harwell)

environment creates both pedestrian safety and vehicle accident issues.

Sidewalks on Connecticut Avenue are notably different between the east and west sides of the street. The west side of Connecticut Avenue features the original wide sidewalks that maintain enough room for sidewalk cafes and greater pedestrian traffic. On the east side, a significant amount of the original sidewalk space was removed in 1960 to install a separated service lane which accommodates access and parking for the adjacent retailers and customers. While parking is highly valued by these businesses, the service lane has been noted by some members of the community for creating significant problems for both pedestrians and drivers, including reduced intersection visibility,

complex intersections and extended crossing distances across Connecticut Avenue.

The pedestrian environment is greatly impacted by the service lane on the east side of the street, where the sidewalk is far narrower in comparison with the western side. Figure 4.6 depicts how space is allocated on Connecticut Avenue. In the block between Macomb Street and Ordway Street—where the service lane is located—the pedestrian walk zone occupies 16% of the total right of way, while 63% is dedicated to vehicles (drive lanes and parking zones), 10% to green space (tree boxes) and 11% to sidewalk cafes (which only occur on the west side of the street). A block north of this, where no service lane exists, 33% of the total right of way is dedicated to pedestrian walk zones (which includes the area around the Metro entrance), while only 46% is dedicated to vehicles (drive lanes and parking zones), 12% to green space (tree boxes) and 9% to sidewalk cafes (again only on the west side of the street due to the fact that no street edge retail occurs on the east side along Sam's Park & Shop). On both sides of the street, several "pinch points" limit pedestrian clearance and access. These pinch points occur at the Metrorail station entrances, at some curb cuts, and at the service lane where the sidewalks range from approximately 6.5-9.5' wide. Pedestrian pinch points are identified on the Existing Conditions Plan (Figure 4.4).

Crossing Connecticut Avenue can be challenging, especially during peak periods when pedestrians must cross six lanes of traffic during a cross time shared with right-turning vehicles. There is one mid-block HAWK (High-Intensity Activated crossWalK) crossing between Ordway Street and Macomb Street which facilitates safe mid-block crossings and improves pedestrian access to both sides of Connecticut Avenue.

Public Realm Conditions

Public realm components include street trees, wheelchair accessibility, street furnishings, gathering places, signage, and LID treatments.

Red oaks (*Quercus rubra*) are the predominant street tree along Connecticut Avenue (Figure 4.7). While trees are fairly regularly spaced, there is not a consistent canopy and many of the trees—especially those in the service lane median—exhibit signs of stress including limited growth and poor canopies. This stress can be caused by insufficient root space and lack of water due to impervious paving, and may be mitigated given larger and better root zones and increased permeable surface areas. The trees along the west side of Connecticut Avenue are for the most part larger, more mature, and healthier than the trees along the east side. There is also a more consistent canopy along the west side as compared to the east side. Many tree boxes are unkempt and edging along the tree boxes is not consistent on the corridor.

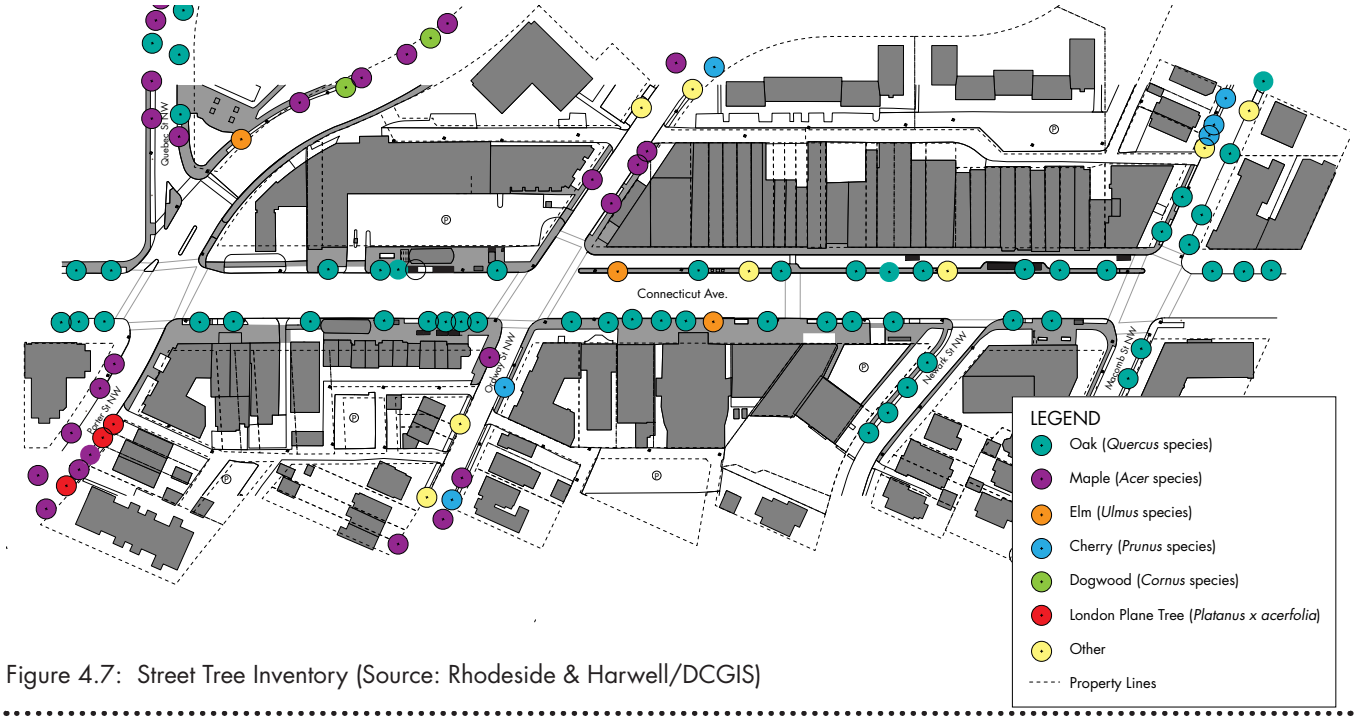


Figure 4.7: Street Tree Inventory (Source: Rhodeside & Harwell/DCGIS)

* Accessible curb ramps are in compliance with current American Disability Act (ADA) standards.

** Limited-Accessibility curb ramps comply with ADA requirements for altered pre-ADA sidewalks (built prior to January 1992) with space limitations, but do not meet standards for newly constructed curb ramps.

Figure 4.8: ADA Accessibility at Street Crossings (Source: Rhodeside & Harwell)

Of the thirty-seven necessary wheelchair accessible curb ramp locations along Connecticut Avenue, there is one crossing without a curb ramp (Figure 4.8). Another five provide accessibility to the extent currently feasible in these locations, but would not comply with ADA (American Disability Act) standards for newly constructed curb ramps. These alternative curb ramps are in compliance with ADA requirements for altered pre-ADA conditions (those originally built prior to January 1992), however space limitations prevent these from offering ideal conditions for accessibility.

Although several sidewalk cafes have seating and tables for customers, there are few public furnishings along the corridor and most of these are associated with bus stops. Excluding the parts of the right of way commandeered by the restaurants for outdoor dining, the project team observed two primary public gathering spaces. Gathering spaces are places with streetscape amenities that have sufficient room to congregate and are located adjacent to a community asset. One is located at the entrance to the Metro station on the east side of Connecticut Avenue, and the other is outside the Cleveland Park Library on the west side of the street. The area around the Metro station entrance accommodates covered bike racks, bike lockers, newspaper boxes and trash receptacles. The area outside the library includes benches, bike racks, trash receptacles and newspaper boxes. Both provide basic public realm amenities, however worn fixtures and piecemeal site planning over the years mean that these spaces are not as successful as they could be. In addition, the large number of newspaper boxes at the Metro station entrance creates visual clutter and exacerbates the pedestrian "pinch-point" issue at this location. Adding to the clutter are the sandbags placed around the Metro grate as a stop-gap solution to localized storm water flooding. A small gathering space consisting of three table and chair sets exists on the southwest corner of Sam's Park & Shop, however this too appears worn and without the benefit of shade or a buffer from the street, it is not an appealing community gathering space.

Street Function and Operations

As a regional arterial road, Connecticut Avenue carries approximately 35,000 vehicles per day through Cleveland Park and supports high levels of vehicular, transit and pedestrian activity. It high weekday peak hour traffic volumes in the southbound direction towards downtown Washington DC during the AM peak period (7:00-9:30 AM), and high northbound traffic volumes during the PM peak period (4:00-6:30 PM), shown in Figure 4.9.

Pedestrian volumes are also high along the corridor.

During the AM peak hour, over 800 pedestrians cross Porter Street, predominantly heading southbound on Connecticut Avenue. Similarly high weekend volumes are found crossing Macomb Street, in close proximity to the Cleveland Park Library (Figure 4.10).

Vehicle traffic patterns on Connecticut Avenue, from just south of Chevy Chase Circle, through Cleveland Park, to 24th Street NW south of Woodley Park, change throughout the day to accommodate peak hour commuter traffic flows. The six lanes of vehicular traffic are known as reversible or intermittent lanes. During weekday morning peak hours (7:00-9:30 AM) southbound traffic has full use of four lanes, and northbound traffic uses the remaining two lanes. This arrangement reverses for the weekday evening peak hours (4:00-6:30 PM). During off-peak weekday hours and weekends, traffic patterns resume as two lanes in either direction with parking permitted on each side. The traffic controls and information for the reversible lanes are mounted alongside other traffic signals on posts located on the corners of intersections. As such they are perceived to be difficult to see by some drivers.

On Connecticut Avenue between Porter Street and Macomb Street there is one Metrorail stop—the Cleveland Park Metro Station—and four Metrobus stops: one stop at Ordway Street, one just south of the west-side Metro station entrance, and two diagonally opposite one another at the corner of Connecticut Avenue and Macomb Street (Figure 4.2). The L1 and L2 Connecticut Avenue Metrobus lines run from Chevy Chase Circle near the border of Maryland, to Potomac Park, passing through Cleveland Park, Dupont Circle, Farragut North and Foggy Bottom. In terms of ridership, the L line ranked 25th out of 60 lines in the DC Metrobus system in 2012. Northbound service headway is 10-22 minutes during the weekday morning peak (7:00-9:30 AM) and 15-26 minutes in the evening peak (4:00-7:00 PM). Southbound lines run every 12-20 minutes in the morning and every 13-25 minutes in the evening. The east-west H crosstown Metrobus line intersects Connecticut along Porter Street, with stops just east and west of Connecticut Avenue. Further information about the H line may be found in section 4.3.

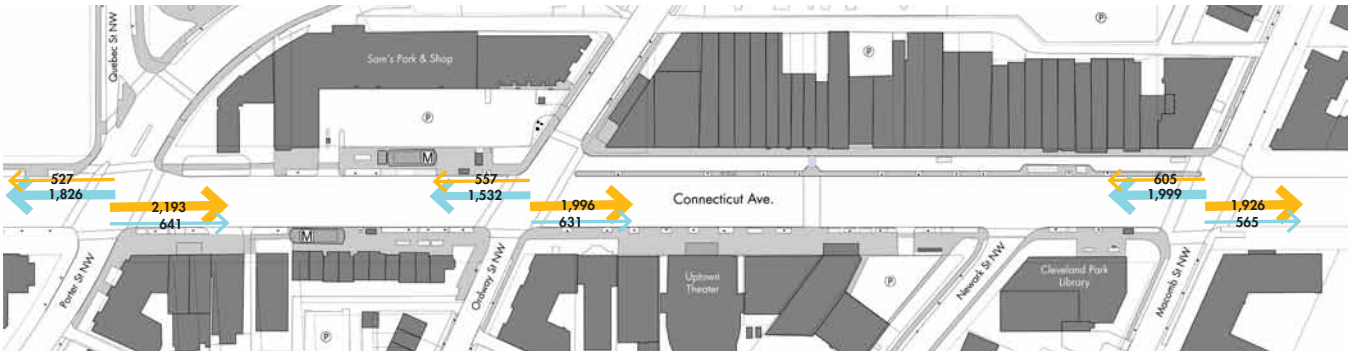


Figure 4.9: Vehicle Volumes on Connecticut Avenue (June 2013)

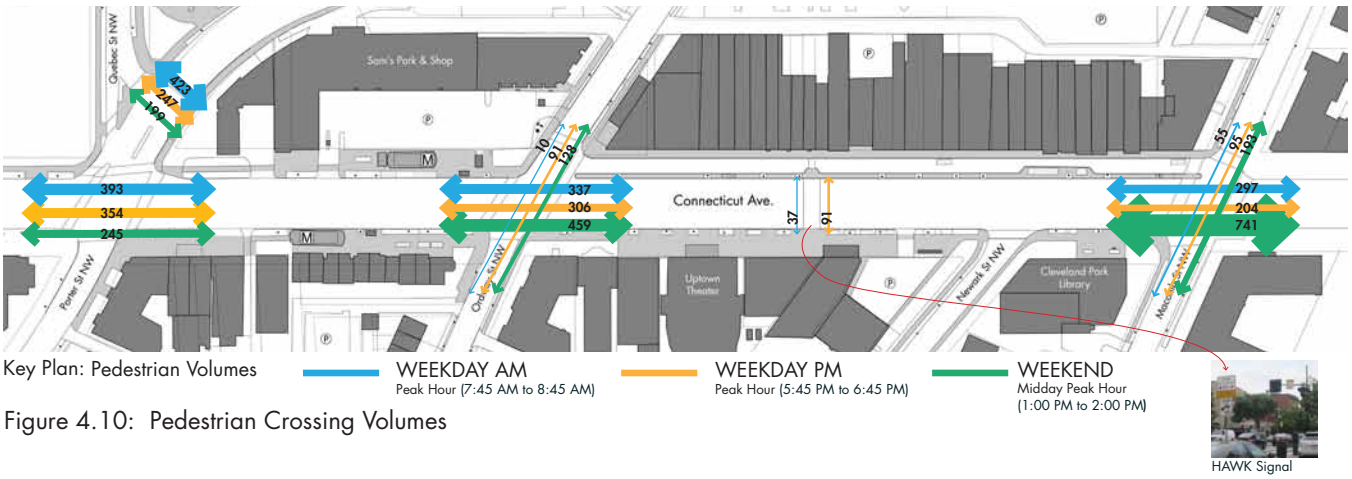


Figure 4.10: Pedestrian Crossing Volumes

		Porter Street	Ordway Street	Newark Street	Macomb Street
AM Peak	Northbound	4	2	10	14
	Southbound	37	1	44	18
	Total	**41**	**3**	**54**	**32**
PM Peak	Northbound	17	6	39	28
	Southbound	19	2	13	1
	Total	**36**	**8**	**52**	**29**

Table 4.2: Bicycle Counts along Connecticut Avenue (June 2013)

Along Connecticut Avenue, bike parking facilities at four separate locations can accommodate a total of thirty-nine bikes, and ten rentable storage lockers are located outside the east entrance to the Metro station. On the East side of Connecticut Avenue between Porter and Ordway Streets adjacent to Metro entrance, there are eight covered U racks in good condition that can accommodate sixteen bicycles, along with ten rentable bike lockers in fair condition. Between Ordway Street and Newark Street on the west side of Connecticut Avenue, three U racks in good condition are available with a capacity of six bikes. On the east side of Connecticut Avenue between Ordway Street and Macomb Street, four rail-mounted U racks in fair condition offer parking for eight bikes. In front of the library on the west side of Connecticut Avenue between Newark Street and Macomb Street, two U racks and one grid rack, all in fair condition, have a total capacity of nine bikes.

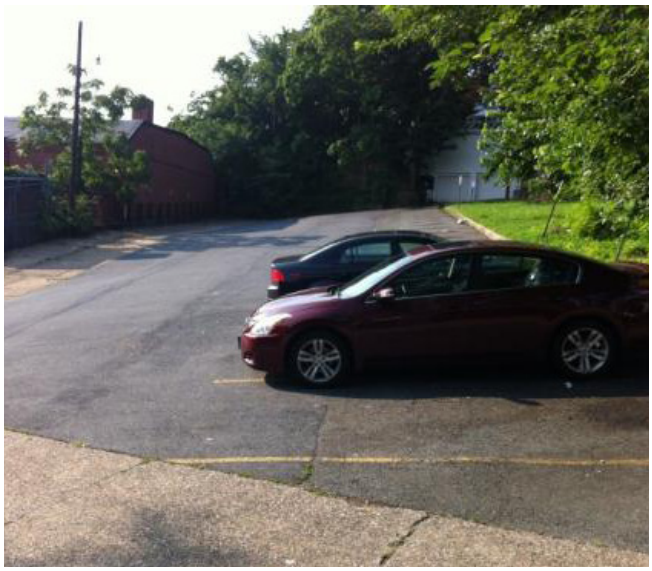


Figure 4.11: Post Office Parking (Source: Arup)

There is currently one Capital Bikeshare station on the west side just north of Newark Street with eleven bicycle docks, and a station on the south-west corner of Connecticut Avenue and Porter Street is under consideration. There are no bicycle lanes or other facilities for cycling in the corridor. As such, bicycle volumes are low when compared with all other modes, as shown in Table 4.2.

Accident Data

As previously noted, pedestrian safety along the Connecticut Avenue corridor has been identified as a key issue by both the community and the Council of the District of Columbia. A 3 1/2-year summary of accident data (January 2010 to September 2013) from the DC Department of Transportation (DDOT) shows that the intersection of Ordway Street and Connecticut Avenue has had the highest number of accidents in the study area, closely followed by the intersection of Connecticut Avenue and Porter Street. The most frequently occurring accidents were side swipes (33%) and rear-ends (23%), and more than 25% of all accidents at each location occurred during the 2 1/2-hour evening peak period (4:00-6:30 PM), when the reversible lanes were in effect. A previous DDOT study analyzing accident data from 2001 to 2007 also found that the reversible lanes were one of the main contributing factors to accidents at Connecticut Avenue and Ordway Street, as they cause confusion among drivers. Table 4.3 shows the types of accident that most frequently occur along the corridor. Only one accident at Macomb Street and two at Porter Street involved pedestrians, and there were no fatalities at any intersection. More details on traffic accidents can be found in the Accident Summary Reports in Appendix E.

	Porter Street	Ordway Street	Macomb Street	Total
Total accidents at intersection	**55**	**56**	**40**	**151**
Side Swiped	22 (40%)	18 (32%)	8 (20%)	**48**
Rear End	15 (27%)	10 (18%)	9 (23%)	**34**
Left Turn	0	9 (16%)	12 (30%)	**21**
Parked car	1 (2%)	8 (14%)	3 (8%)	**12**

Table 4.3: Traffic Accidents on Connecticut Avenue by Top Four Accident Types

Parking and Deliveries

Multi-space metered parking (generally with 2-hour time limits) allows a small variance in the number of parked cars that can be accommodated on the street, depending on vehicle size. Connecticut Avenue supports approximately 63-67 double-headed and multi-space metered spaces between Porter Street and Macomb Street. Two of the spaces along the outside of the service lane are reserved as a loading zone on weekday mornings. On-street parking is not permitted during peak hours on each side when reversible lanes are in effect. The service lane accommodates an additional 27-29 multi-space metered spaces, with two of these spaces reserved for valet parking on weekday and weekend evenings.

Commercial loading zones are located on either side of Connecticut Avenue just south of Ordway Street, while alleys provide plentiful loading space for commercial deliveries behind the retail on the east side of Connecticut Avenue, stretching from Macomb Street to Porter Street. Loading space is also available in the alleys behind the west side of Connecticut Avenue between Porter Street and Ordway Street and behind the north half of the block from Ordway Street to Newark Street. The peak hour for truck and delivery activity is 9:00-10:00 AM with stark differences between the alley and Connecticut Avenue (including the service lane) in the duration of stay for trucks. The average duration for trucks parked in the alley was less than 10 minutes whereas trucks remained on the service lane for nearly 40 minutes and nearly 30 minutes on Connecticut Avenue. All of the trucks parked in the service lane occupied existing parking spaces, while the alley was observed to be unoccupied for 60% of the time during the 3 1/2 hour observation period (6:30-10:00 AM).

Parking spaces along the corridor experience high occupancy (77%-100%) and low turnover during the week, with nearly 100% weekend parking occupancy (Saturday 11:00 AM-2:00 PM). For non-residents visiting the neighborhood there is limited parking off Connecticut Avenue. Average weekday evening and weekend parking turnover on Connecticut Avenue is about 100 minutes.

Unlike the parking along the corridor which has fairly high occupancy rates at most times of day, additional parking lots behind the retail on Connecticut Avenue were observed to be underused, including the parking lot behind the post office on the west side of the corridor, south of Porter Street.

4.3 Porter Street

Character & Conditions of the Corridor

West of Connecticut Avenue, Porter Street runs through primarily low-medium to medium residential areas. It has two travel lanes (one lane in each direction), one parking lane on the north side of the street, and narrow, tree-lined sidewalks on both sides of the street. Porter Street continues west to connect to 30th Street NW and Wisconsin Avenue.

East of Connecticut Avenue, Porter Street is a two-way street with one lane in each direction and parking lanes on both sides of the street. Land uses on the east side of Connecticut Avenue include a large temple, retail closer to Connecticut Avenue, and high-density residential apartment buildings.

Porter Street is the only street in the study area that connects across Rock Creek Park and serves as an important crosstown connection for drivers, transit routes and cyclists. As one of twelve streets in the

	Quebec Street
Total accidents at intersection	**18**
Side Swiped	7 (39%)
Rear End	5 (28%)
Parked car	2 (11%)

Table 4.4: Traffic Accidents for Porter Street

Figure 4.12: Porter St east of Connecticut Ave (Source: Arup)

entirely of Northwest DC that crosses the expansive Rock Creek Park, Porter Street offers valuable east-west access for all users.

Street Function and Operation

While Porter Street is a minor arterial, carrying through traffic as part of the larger transportation network at a lower level of service as compared to Connecticut Avenue, many of the blocks west of Connecticut Avenue serve residents and single family homes. The intersection of Connecticut Avenue at Porter Street and Quebec Street is the most complex of the intersections in the study area, as it consists of two closely-space signalized intersections (Connecticut Avenue / Porter Street and Porter Street / Quebec Street / Exxon gas station driveway). There are two westbound travel lanes (a through lane and a right turn lane) as well as two receiving lanes. In addition, a channelized right turn from Quebec Street onto Porter Street, and then from Porter Street onto Connecticut Avenue, creates a long, disjointed pedestrian crossing and prioritizes vehicle movement. Turning movement counts show low vehicle volumes at the expense of pedestrian mobility. Some eastbound vehicles observed turning onto Porter Street from Connecticut Avenue were stopped at the Porter Street and Quebec Street intersection, often creating a backup onto Connecticut Avenue. High pedestrian volumes were observed crossing Porter Street at both intersections, where the irregular geometry creates challenging and indirect pedestrian conditions. The location of a bus stop on the north side of Porter Street at Quebec Street further encourages non-compliant pedestrian crossings. Of pedestrians observed crossing Porter Street to or from the north side at Quebec Street, 93.1% cut through the gas station. Additionally, 87.6% of pedestrians travelling between the south side of Porter Street east of Quebec Street and Connecticut Avenue were observed using the gas station as a cut-through.

There are two bus stops on Porter Street in the study area, one east and one west of Connecticut Avenue (Figure 4.2). The westbound stop on the north side of Porter Street just east of Quebec Street serves the crosstown H2, H3 and H4 bus lines, while the eastbound stop West of Connecticut Avenue serves the H3 and H4 only. The H line—ranked 11th in ridership within the DC Metrobus network—runs between the Tenleytown-AU Metrorail station to the west and the Brookland-CUA station to the east, passing through Cleveland Park, Mount Pleasant, and Columbia Heights. Westbound lines run every 15-29 minutes during the morning peak (7:00-9:30 AM) and every 17-41 minutes during the evening peak (4:00-7:00 PM). Service headway for eastbound lines is 16-30 minutes in the morning peak and 12-32 minutes in the evening peak. A mentioned previously, the east-side stop leads to high pedestrian volumes crossing Porter Street and passing through the gas station to get to the Metro Station and other destinations along Connecticut Avenue. On average, 12-13 passengers were observed boarding or departing each bus at this stop during the AM and PM observation periods (7:00-9:30 AM and 4:00-7:00 PM). Bus frequency during this time ranges from about 3-10 minutes, making this a fairly active and well-used stop.

Accident Data

The DDOT Accident Summary Report (January 2010 to September 2013) shows a total of 18 accidents at the intersection of Porter Street and Quebec Street (in

addition to the 55 accidents at Porter Street and Connecticut Avenue). The most frequently occurring accidents were rear-ends and side swipes. More details on traffic accidents can be found in the Accident Summary Reports in Appendix E.

Parking

A short segment of metered parking is available on Porter Street within the study area, on the south side of Porter Street just east of Connecticut Avenue. Outside of the study area, the supply of on-street parking continues toward Rock Creek Park. Parking is not permitted on the blocks of Porter Street immediately adjacent to the Connecticut Avenue intersection. Further east and west of the intersection, residential permit and metered parking is available. There are 12 residential permit parking spaces to the west of Connecticut Avenue, and 41 spaces to the east, with 17 of these metered and 24 residential spaces. Average weekday evening and weekend parking turnover on Porter Street is 102 minutes and over 2 hours (126 minutes), respectively. It should be noted that turnover time is about 10 minutes lower on average for residential permit versus metered parking spaces.

Midday weekend parking occupancy on Porter Street was observed to be 100% for both metered and residential permit parking. During weekday observation periods, metered parking occupancy was 76%-82% and residential parking permit occupancy was 83%-100%. In the midday weekend period, both metered and residential parking permit occupancy were observed to be 100%.

Porter Street west of Connecticut Avenue provides access to multiple alleys and three private parking lots, including a lot for Walgreens customers.

Details on parking, traffic volumes and other survey data can be found in the full Data Collection Summary in Appendix A.

4.4 Quebec Street

Character & Conditions of the Corridor

Quebec Street is a residential two-way, cul-de-sac with sidewalks on both sides of the street, one vehicle travel lane in each direction, and parking on the north side of the street. It supports several high-density, residential buildings. Quebec Street terminates at Porter Street, but includes a channelized right turn that extends into the intersection of Porter Street with Connecticut Avenue. Pedestrians traveling along the north side of Porter Street must cross both Quebec Street and the median-separated channelized turn, extending their crossing distance. There is a signalized crosswalk where Quebec Street terminates at Porter Street, and another signalized crosswalk to cross Porter Street from the northeast corner of Quebec Street and Porter Street.

Street Function and Operations

The major function of this local street is to provide access to Porter Street and Connecticut Avenue for the residents of the large apartment complexes along it, as no through movement to the east is possible. Large pedestrian volumes were observed crossing Porter Street from Quebec Street during the morning commute (423 during the peak hour), as shown previously in Figure 4.8. There is one bus stop at the intersection of Porter Street and Quebec Street serving the H2, H3 and H4 crosstown Metrobus lines as described in the previous section.

Figure 4.13: Quebec Street (Source: Google Maps)

4.5 Ordway Street

Character & Conditions of the Corridor

Ordway Street is a two-way road with one lane in each direction and parking on both sides of the street. It intersects with Connecticut Avenue at the center of the study area. Like Porter Street, Ordway Street connects with the street grid west of the corridor. To the east it provides access to the alley behind the Connecticut Avenue retail strip, driveway access to the Park & Shop, and then winds south to terminate at 27th Street NW. While primarily supporting low to medium density residential uses, some of the mixed-use, retail uses on Connecticut Avenue have entrances on Ordway Street.

Street Function and Operations

A local street, Ordway Street provides access to residences and some retail as described above, with limited through movement. As previously noted, the service lane along Connecticut Avenue terminates at Ordway Street, creating an irregular intersection. Vehicles exiting the service lane at this point have a dedicated signal phase, which was observed to cause some delays in traffic on Connecticut Avenue during peak hours.

Alleys on both the east and west side of Connecticut are accessible from Ordway Street. These alleys serve as loading areas for retail uses as well as access to private parking for both retail, such as the Bank of America and U.S. Post Office parking lots, and residential building parking.

Figure 4.14: Pedestrians crossing Ordway Street conflict with vehicles turning from the service lane (Source: Arup)

Within the study area, Ordway Street provides 119 public parking spaces, with 70 on the east side of Connecticut Avenue and 49 on the west side. The majority of these spaces require a residential permit to park, with about 6 spaces for car-share parking and 6 metered spaces. Average weekday evening parking turnover is over 90 minutes, and is almost 2 1/2 hours on the weekend. On the south side of Ordway Street east of Connecticut Avenue, weekday turnover for the metered spaces is about 30 minutes faster (72 minutes) than for the residential parking (102 minutes).

Residential parking occupancy on Ordway Street was observed to be 93%-100% during the midday weekend observation period and 69-100% during the midday weekday period, and 100% during the weekday evening. Metered parking occupancy was 100% during all observational periods.

4.6 Newark Street

Character & Conditions of the Corridor

Newark is a narrow street (26') with a parking lane on the south side of the street and one travel lane in each direction. It is a residential, tree-lined street with sidewalks on both sides, primarily servicing single family homes.

Street Function and Operations

Newark Street is classified as a local street, largely providing access to residences with some through movement west of Connecticut Avenue. Residents have voiced concerns regarding the angle of the intersection of Newark Street and Connecticut Avenue that encourages higher vehicle speeds turning onto Connecticut Avenue, and reduces visibility of oncoming vehicles for pedestrians crossing Newark Street heading north from the library.

Within the study area, Newark Street only allows parking on the southern side of the street which includes approximately 23 spaces for residential permit parking and 4 metered spaces. Residential permit parking occupancy on Newark Street was observed to be 91% during midday weekday and midday weekend periods, and 100% during the evening weekday observation period. Metered parking occupancy was 100% during all observation periods.

4.7 Macomb Street

Character & Conditions of the Corridor

Macomb Street supports one travel lane in each direction, and parking on both sides of the street. East of Connecticut Avenue Macomb Street supports low- to medium density housing. On the west side of Connecticut Avenue Macomb Street primarily supports single family homes.

Similarly to Ordway Street, Macomb Street connects to the larger street network west of Connecticut Avenue. On the east side of the corridor, Macomb Street winds north to connect with 27th Street NW, making a closed loop with Ordway Street.

Street Function and Operations

Macomb Street acts as a collector west of Connecticut Avenue, serving traffic moving from local roads to the principal arterial. It is classified a local street east of Connecticut Avenue, terminating at 27th Street NW. Entry into the service lane on Connecticut Avenue is accommodated at the intersection with Macomb Street. This adds a level of complexity to the intersection, as vehicles attempt to cross multiple lanes to reach the service lane entrance, and vehicles turning right from Macomb Street can either turn into the service lane or onto Connecticut Avenue. It was observed that drivers heading south on Connecticut Avenue will make a U-turn to access the service lane. Pedestrians on the sidewalk in the service lane must be especially careful not to step into the service lane at this point as vehicles enter at fairly high speeds and from multiple directions.

Macomb Street provides access into the alley serving retail on the east side of Connecticut Avenue.

Within the study area Macomb Street provides 108 parking spaces, 50 on the east side of Connecticut Avenue and 68 on the west side. While a majority of these spaces require a residential permit to park, there is one handicapped visitor parking space on the west side of Connecticut Avenue. Parking occupancy is lower on Macomb Street than others in the study area during the weekday midday and evening peak hours, ranging from 74-76%. Parking occupancy was 100% during the weekend observation period.

5.0 SUMMARY OF KEY ISSUES & OPPORTUNITIES

5.1 Overall Transportation & Activity Assessment

The Connecticut Avenue corridor in the study area has several high activity generators, including the Metro station, numerous retail establishments, and public services including the post office and library. Several high-density residential apartment buildings on Quebec Street and Porter Street create heavy pedestrian demand for these destinations. As such, heavy use of the crossings on Porter Street and through the gas station provide direct access to Connecticut Avenue, but also create potentials for modal conflicts. In addition, a bus stop located on the north side of the Porter Street and Quebec Street intersection brings further pedestrian demand to the northern end of the site.

At the southern end of the site there is high pedestrian demand and a noted desire for improved public space and pedestrian amenities. There is, however, high vehicular demand, specifically on the service lane, which provides convenient parking for patrons, especially the elderly and residents who may have difficulty walking.

As a principal arterial, Connecticut Avenue also brings heavy traffic volumes passing through during peak commuting hours that conflicts with local traffic needs. A demand for cycling is visible from site observation, but the corridor lacks the infrastructure to support large levels of cycling.

The following sections describe the key issues and opportunities in the study area for each transportation mode.

5.2 Pedestrians and Cyclists

Issues

- Each intersection along Connecticut Avenue has an irregular feature, whether it is the service lane entrance and exit at Macomb Street and Ordway Street, or the additional turning movements at the Quebec Street and Porter Street intersection. This irregularity can create confusion, unpredictable user behaviors, and safety issues for all modes, particularly pedestrians.
- High vehicle volumes and confusion over reversible lane operations during peak hours limit safe pedestrian crossings.
- Pedestrians crossing Porter Street/Quebec Street along the east side of Connecticut Avenue experience long wait times and often get stuck waiting for the traffic signal to change in the narrow median crossing the Quebec Street slip lane.
- Pinch points along Connecticut Avenue sidewalks create an environment that discourages lingering and strolling along the commercial corridor.
- Storm water management problems at the Metro station entrances and resultant sandbags are unsightly and impede pedestrian movement.
- The narrow width of the sidewalk adjacent to the service lane between Macomb Street and Ordway Street does not allow for free pedestrian movement and often results in pedestrians having to step into the service lane. This sidewalk is difficult for wheelchair access and for those with limited mobility. In many locations, due to vending machines and other projections into public space, the service lane sidewalk does not provide the DDOT standard of 10' width for clear pedestrian passage in a commercial corridor outside of downtown.

- Turning movements at some intersections conflict with pedestrian crossing phases.
- The bus stop location on Porter Street east of Connecticut Avenue results in heavy pedestrian flows that occasionally conflict with traffic along Porter Street, and which lead to many pedestrians cutting through the gas station driveway.
- A lack of dedicated space for cycling requires that cyclists travel in vehicle lanes, and often end up riding on the sidewalk.

Opportunities

- The Cleveland Park Metro station is a high pedestrian generator, attracting large volumes of pedestrians throughout the day, and large pedestrian volumes on the weekend for visitors accessing the National Zoo via Cleveland Park. There is an opportunity to create a corridor that encourages these visitors and residents to stroll, linger and enjoy the corridor rather than rush through.
- Removing the slip lane from Quebec Street to Connecticut Avenue could reduce the crossing distance and wait times for pedestrians, and improve safety for all users.
- Relocating the bus stop on the north side of Porter Street could reduce the number of pedestrians making dangerous crossing movements.
- Curb extensions on Macomb Street, Ordway Street, Newark Street and Porter Street can shorten pedestrian crossing distances, increase pedestrian space, improve pedestrian visibility, and may provide space for landscaping and green storm water infrastructure.
- Opportunities to widen the service lane sidewalk would improve pedestrian mobility for all ages and abilities, and could provide additional pedestrian amenities
- There is one Capital Bikeshare station and four bicycle parking areas along Connecticut Avenue. Increasing public space along the corridor and in the service lane could allow for dedicated space for cyclists to safely access these facilities, and to separate bicycle movement from vehicles and pedestrian travel paths.
- Closing the slip lane at Quebec Street and extending the sidewalk to create a public plaza could provide space for bicycle parking or a Capital Bikeshare station, which, in tandem with a relocated transit stop could serve as both a transit hub and also as a neighborhood gateway, and opportunity for placemaking.
- All curb ramps should comply with ADA standards.

5.3 Transit

Issues

- Pedestrian access to the Metro station entrance is challenging. Pinch points for pedestrians, including the subway grates, sidewalk narrowing in certain locations and additional infrastructure on the sidewalks on both sides of Connecticut Avenue restrict pedestrian movement, especially during the morning and evening peak commuting hours when there are high volumes of pedestrians.
- The location of the bus stop on the north side of Porter Street encourages non-compliant pedestrian crossings.
- Buses on Connecticut Avenue travel in mixed traffic, which can cause delays depending on traffic volumes.

Opportunities

- Consider areas where sidewalks can be widened or infrastructure relocated to increase pedestrian space.
- Relocating the bus stop on Porter Street and Quebec Street to Porter Street and Connecticut Avenue would encourage safer and more direct pedestrian crossings, provide a larger waiting area for pedestrians and passengers, and create a consolidated area for transit connections or transfers.
- Improve signage to promote more predictable and clear vehicular movement and lane assignments when rush hour restrictions are in effect.

5.4 Vehicles

Issues

- The reversible lanes on Connecticut Avenue prioritize commuters and through traffic over local, residential circulation during AM and PM peak periods.

- Slightly higher accident rates occur when the reversible lanes are in effect, due to a combination of poor signage visibility and confusion over traffic lane operations. Rear ends and side-swipes are particularly frequent, which can in part be attributed to confusion during reversible lane operations.
- Parking in the study area is almost fully occupied during the peak weekend parking hours, and turnover is very low, limiting the number of visitors to retail establishments who are able to park.
- The reversible lane configuration eliminates parking on Connecticut Avenue during peak commute periods.

Opportunities

- Managing the maximum parking times could significantly improve parking turnover.
- Performance-based parking using variable parking meter rates could also increase turnover and ensure that parking is more readily available, and that existing parking spaces are used more efficiently.
- Curb extensions at all intersections along Connecticut Avenue could help reduce accidents involving parked cars by providing a buffer between parked cars and through traffic, especially on Ordway Street and Macomb Street
- There is the potential for shared, additional parking opportunities in the alleys and underused private parking lots behind Connecticut Avenue.
- Performance parking funds raised in the area could fund improvements for the neighborhood.

5.5 Public Realm

Issues

- There are few community gathering spaces. The spaces that exist at the Metro entrance and outside the library are piecemeal and the furnishings worn.
- Tree boxes are often unkempt and edging is not consistent through the corridor.
- Street trees are not as healthy as they could be if they had larger and better root zones and more permeable surfaces around them.
- The wide sidewalk on the western side of Connecticut Avenue between Newark Street and Ordway Street is less actively used as other sidewalks, with the exception of two sidewalk cafes.
- Storm water management problems at the Metro station entrances and resultant sandbags are unsightly and impede pedestrian movement.
- Some of the alleys are not designed to manage storm water effectively and add to wider storm water management problems in adjacent streets.
- As mentioned previously, the sidewalk adjacent to the service lane is very narrow often causing pedestrians to walk in the street.

Opportunities

- The opportunity exists to re-envision community gathering spaces along the corridor. Focus areas might include the area outside library, Metro (east side) entrance, outside of the Uptown Theater and the area around the service lane.
- Additional opportunities for community gathering spaces could exist in portions of reclaimed or re-envisioned right of way.
- An approved palette of acceptable public realm components such as benches, trash receptacles, lighting, wayfinding signage, paving materials, tree box edging and bike racks would provide long-term streetscape direction and ultimately create a coordinated, unified, and strong Cleveland Park aesthetic.
- Implementing improved storm water management techniques would contribute to managing some of the neighborhood's storm water overflow.
- Storm water management techniques such as rain gardens and permeable surfaces should be explored throughout the corridor.
- Tree boxes should be improved to promote healthy growth of existing trees.

6.0 METHODOLOGY & DRAFT CONCEPTS

6.1 Data Collection Methodology

Data collection for the Cleveland Park Transportation Study was conducted in June 2013 and again in mid-September 2013. All of the data collected during this study can be reviewed in the Data Collection Summary in Appendix A.

Counts and observations were conducted on weekdays during peak periods in the AM (7:00-10:00 AM) and PM (4:00-7:00 AM), and on Saturday midday (11:00am-2:00 AM) and evening periods (5:00-8:00 AM). Turning movement counts were conducted at seven intersections within the study area, noting passenger vehicles, heavy vehicles, pedestrians and cyclists. Pedestrian counts were conducted during the same time periods, and included the mid-block crosswalk.

On-street parking supply, occupancy, and turnover surveys were conducted along both the commercial and residential streets within the study area. Observational data was collected to document delivery truck and commercial loading practices, layover times, and compliance with parking regulations. Bus stop utilization data was collected during peak periods, illuminating boarding and alighting levels. Mode-split surveys were conducted on-site to determine the origin and transportation characteristics of Cleveland Park patrons within the study area.

6.2 Traffic Analysis Methodology

Traffic analyses of current traffic operations were conducted at the four major intersections in the study area:

- Connecticut Avenue and Porter Street
- Porter Street and Quebec Street
- Connecticut Avenue and Ordway Street
- Connecticut Avenue and Macomb Street

Each intersection was analyzed using Synchro, a traffic modeling software, to estimate the traffic congestion, or level of service (LOS), determined primarily by the average amount of time that vehicles are delayed at the intersection. Both the morning peak hour (7:30-8:30 AM) and afternoon peak hour (5:15-6:15 PM) were analyzed. Traffic delay can be affected by high vehicle volumes, traffic signal timing and cycle length, and pedestrian volumes, among other things. LOS was calculated for each approach to the four intersections along Connecticut Avenue, as well as for each intersection overall. Table 6.1 describes the LOS rating system. In general, intersections with a rating of LOS E or better are acceptable for active, dense urban areas such as Cleveland Park.

The results show that all intersections currently operate at an acceptable LOS D or better during the peak hours. While none of the approaches to the intersections have an LOS of F, there are a few approaches that operate at LOS E due to the high traffic volumes during the peak commute hours along Connecticut Avenue. The northbound traffic on Connecticut Avenue at Porter Street is the only approach that operates at LOS E during both the morning and evening peak hours.

This is likely the result of the high volume of pedestrians crossing Porter Street conflicting with northbound

LOS	Description	Delay (Seconds)
A	Little or no delay at the intersection	0 – 10 seconds
B	Minimal delay due to traffic signal control, largely unimpeded traffic flow	> 10 – 20 seconds
C	Stable operation- Some restriction in the ability to maneuver and change lanes, and slightly lower speeds than LOS B. Longer cycle lengths.	> 20 – 35 seconds
D	Long cycle lengths, higher traffic volumes, increased delay and decreased travel speeds. Typical of active urban environments.	> 35 – 55 seconds
E	Significant delay and potential issues with traffic signal timing. Low travel speeds.	> 55 – 80 seconds
F	Traffic flow at extremely low speeds, high delay and extensive vehicle queues. Unacceptable to most drivers.	> 80 seconds

Table 6.1: Level of Service Definitions (Source: 2010 Highway Capacity Manual)

vehicles turning right onto Porter Street, as well as the reduced green time for northbound vehicles to allow for southbound vehicles to turn left onto Porter Street.

Please refer to Appendix F for a detailed description of the traffic modeling methodology and results.

6.3 Draft Design Concepts

The 2010 community-authored *Community Purpose and Need* statement identified three intersections with challenging geometries that posed safety issues for all users:

- Connecticut Avenue, Porter Street, Quebec Street
- Connecticut Avenue, Ordway Street and the Service Lane
- Connecticut Avenue and Macomb Street

The draft concepts presented sought to both address the community-identified needs as well as incorporate public feedback (Figures 6.1, 6.2, and 6.3). The specific issues related to these intersections outlined in the *Community Purpose and Need* statement are as follows:

Connecticut Avenue, Porter Street and Quebec Street

 # 4: *"The community recommends that the intersections of Porter, Quebec and Connecticut be studied to resolve the significant pedestrian safety issues. Such resolutions might include but not be limited to changes in curb cuts and street alignment, extending the existing island, retiming the pedestrian count downs, realigning the traffic and pedestrian signals, allowing a left turn onto Porter for northbound Connecticut Avenue traffic, and adding a traffic signal at Porter and Connecticut to direct traffic exiting the gas station. It is also recommended that DDOT work with the gas station owner on the southeast corner to see if there can be any immediate corrections to the dangerous situation caused by the multiple driveways accessing the station. Further it is recommended that DDOT work with appropriate agencies to minimize conflict with pedestrians at bus stop locations on Porter Street."*

Connecticut Avenue, Ordway Street, Service Lane

#5: *"The community supports the creation of a comprehensive plan to study the project area including but not limited to parking considerations, changes to the service lane, re-engineering of all three intersections, and creating a uniform aesthetic."*

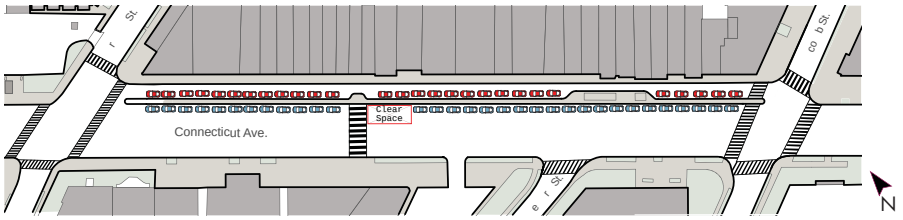
Connecticut Avenue and Macomb Street

#7: "*The community recommends the intersection be studied to correct the timing and alignment of the traffic and pedestrian signals. It further recommends new signs indication pedestrian presence."*

Service Lane Possibilities

"Purpose and Need #8: The community supports the creation of a comprehensive plan to study the project area including but not limited to parking considerations, changes to the service lane, re-engineering of all three intersections, and creating a uniform aesthetic."

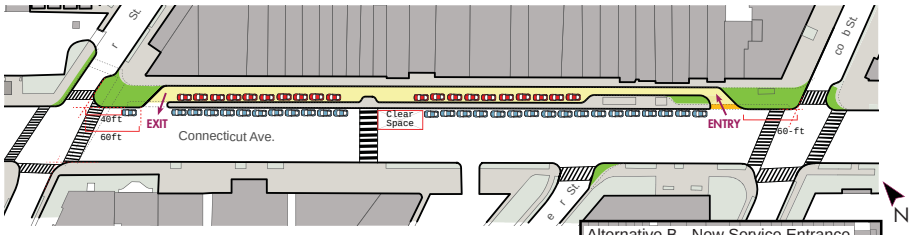
1. Service Lane Remains



Full-time Parking Spaces

Part-time Parking Spaces

2. Flex Space



New Pedestrian Space

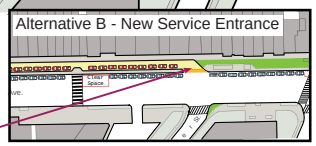
Flexible, multi-functional space for cars and pedestrians

Pedestrian-only (no parking)

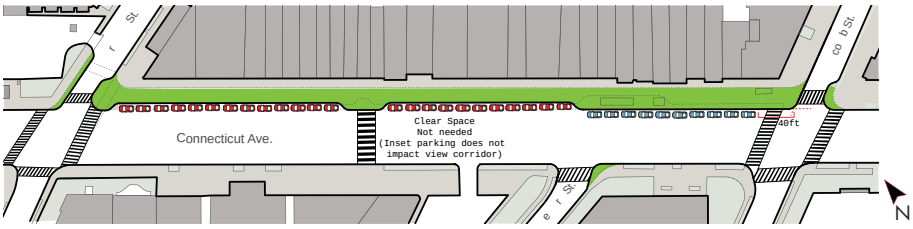
Full-time Parking Spaces

Part-time Parking Spaces

NEW SHARED SPACE ENTRANCE ACROSS NEWARK STREET



3. Partial Sidewalk Extension

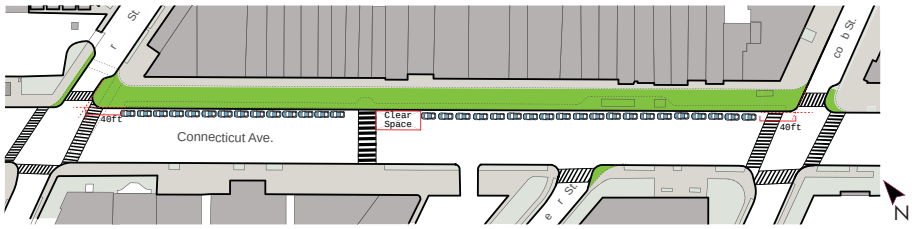


New Pedestrian Space

Full-time Parking Spaces

Part-time Parking Spaces

4. Restore Historic Sidewalk



New Pedestrian Space

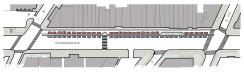
Part-time Parking Spaces

Figure 6.1: Service Lane Possibilities

Comparison of Service Lane Options

Significantly supports
Slightly supports
Slightly impacts
Significantly impacts

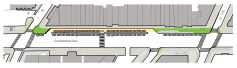
1. Service Lane Remains



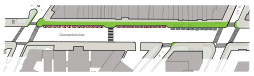
2. Flex Space

a.

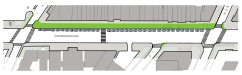
b.



3. Partial Sidewalk Extension



4. Restore Historic Sidewalk



Safety

	1. Service Lane Remains	2. Flex Space	3. Partial Sidewalk Extension	4. Restore Historic Sidewalk
Pedestrians	- Multi-leg crossings at service lane entrance / exit - Right-turning vehicles conflict with pedestrian movement - Narrow service lane sidewalk causes pedestrians to enter vehicle space	+ Reduces crossing distances at all intersections + Reduces service lane entry/exit conflicts + Reduced vehicle speeds in service lane +Provides opportunity to manage vehicle access and prioritize pedestrian mobility	+ Reduces crossing distances at all intersections + Eliminates service lane entry/exit conflicts + No vehicles in service lane	+ Reduces crossing distances at all intersections + Eliminates service lane entry/exit conflicts + No vehicles in service lane
Vehicles	High accident intersections along Connecticut Side-swipes, rear-ends, left-turn and parked car conflicts	+ Eliminates service lane signal phase at Ordway + Improved intersection treatment at Newark - Still some weaving to/from service lane	+ Eliminates service lane signal phase at Ordway + Improved intersection treatment at Newark + Eliminate weaving to/from service lane	+ Eliminates service lane signal phase at Ordway + Improved intersection treatment at Newark + Eliminate weaving to/from service lane
Cyclists	No existing bicycle lane infrastructure	+ Slower vehicles in service lane may create safer cycling environment	+ Wider sidewalk provides space for visitors to walk/park bikes	+ Wider sidewalk provides space for visitors to walk/park bikes
Transit Users	-High transit demand supported by narrow service lane sidewalk on east side	+ Shorter crossing distances along path to Metro station	+ Shorter crossing distances along path to Metro station + Reduce vehicle conflicts on path to Metro	+ Shorter crossing distances along path to Metro station + Reduce vehicle conflicts on path to Metro

Neighborhood Mobility

	1. Service Lane Remains	2. Flex Space	3. Partial Sidewalk Extension	4. Restore Historic Sidewalk
Space for pedestrian/ cyclist movement	Service lane sidewalk width: **5-9 feet**	Shared space in service lane: **18+ feet**	Service lane sidewalk width: **24-33 feet**	Service lane sidewalk width: **33 feet**
Pedestrian crossing	- Service lane extends crossing distance to sidewalk and creates irregular crosswalks	+ Curb extensions reduce distance crossing Ordway, Macomb, Newark + New service lane entrances reduce distance crossing Connecticut Ave, improves visibility	+ Curb extensions reduce distance crossing Ordway, Macomb, Newark + Removing service lane reduces distance crossing Connecticut Ave	+ Curb extensions reduce distance crossing Ordway, Macomb, Newark + Removing service lane reduces distance crossing Connecticut Ave
Improve parking utilization	-Service vehicles use spaces - Low turnover + Maximizes parking spaces Full-time spaces (service lane): **25-27** Part-time (on Connecticut Ave): **30-32**	+ Parking management opportunity - Moderate loss of parking **Net Gain/Loss - Option A:** Full-time (service lane): **-7** Part-time (on Connecticut Ave): -3 **Net Gain/Loss - Option B:** Full-time (service lane): **-7** Part-time (on Connecticut Ave): **-2**	+ Parking management opportunity - Loss of parking spaces **Net Gain/Loss:** Full-time (on Connecticut Ave): **-3** Part-time(on Connecticut Ave): **-22**	+ Parking management opportunity - Loss of parking spaces **Net Gain/Loss:** Full-time (on Connecticut Ave): **-27** Part-time (on Connecticut Ave): **+3**
Vehicle mobility	+Service lane provides vehicle access to retail -Service lane requires additional traffic phases that impact intersection service levels	+ Improved intersection efficiency by removing service lane exit at Ordway	+ Improved intersection efficiency by removing service lane exit at Ordway	+ Improved intersection efficiency by removing service lane exit at Ordway -Loss of parking
Delivery management	+ Service lane provides access for retail stores	-Service lane entrance will restrict truck access and will require trucks to load on Connecticut Avenue or in the alley.	-Service lane removal will require trucks to load on Connecticut Avenue or in the alley.	-Service lane removal will require truck to load on Connecticut Avenue and alleys

Placemaking Opportunities

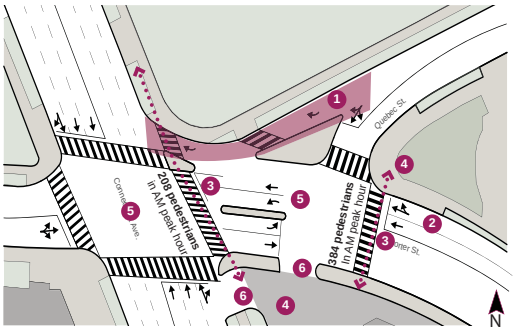
	1. Service Lane Remains	2. Flex Space	3. Partial Sidewalk Extension	4. Restore Historic Sidewalk
Gathering spaces / landscaping	-Service lane limits space available for gathering, socializing or browsing retail stores and services	+ Shared space allows for more flexible use of the service lane to include seating, movable tables, umbrellas, etc. + Potential for temporary closures for events + Opportunity to alternate planters with parking along service lane	+ Expanded sidewalk allows more space for passing through as well as stopping and lingering along the block + Opportunity for landscape strips along widened sidewalk	+ Maximum opportunity to create space for passing through, stopping and lingering along the block, and provisions for street furniture and other amenities + Opportunity for landscape strips along widened sidewalk
Neighborhood gateways	-No clearly defined gateway at either Porter Street or Macomb Street to identify entry into Cleveland Park	+ Closing entry/exit to service lane and adding curb extensions create possibilities for public art or other iconic gateway treatment	+ Closing entry/exit to service lane and adding curb extensions create possibilities for public art or other iconic gateway treatment	+ Closing entry/exit to service lane and adding curb extensions create possibilities for public art or other iconic gateway treatment

Figure 6.2: Comparison of Service Lane Options

Porter/Quebec/Connecticut Ave Intersection

"Purpose & Need #4: The community recommends that the intersection of Porter, Quebec and Connecticut be studied to resolve significant pedestrian safety issues."

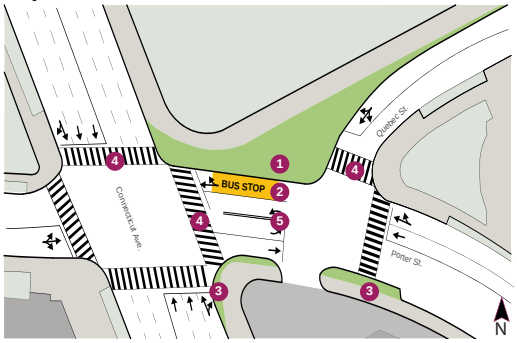
Existing Conditions



Current Conditions

1. Channelized right turn limits pedestrian mobility but is underused by vehicles
2. Bus stop location causes high pedestrian crossing volumes at a location with limited sidewalk space and poor visibility. This forces pedestrians to pass through gas station
3. High pedestrian volumes during peak hours heading to the Metro station
4. 90% of pedestrians cross through gas station
5. High accident locations (43 @ Porter/Connecticut, 15 @ Quebec and Porter)
6. 3 gas station entrances (2 on Connecticut Avenue)

Option 1 - Pedestrian and Transit Gateway



Description

1. Close the turn lane from Quebec Street to create a pedestrian plaza and potential bikeshare location
2. Shift bus stop to Porter Street / Connecticut Avenue intersection to leverage new plaza. Bus will stop in travel lane.
3. Close one of the 2 gas station entrances closest to the intersection on Connecticut Avenue and create curb extensions on the south side of Porter Street.
4. New crosswalk striping to align with curb configurations.
5. Remove median to accommodate new plaza and curb extensions

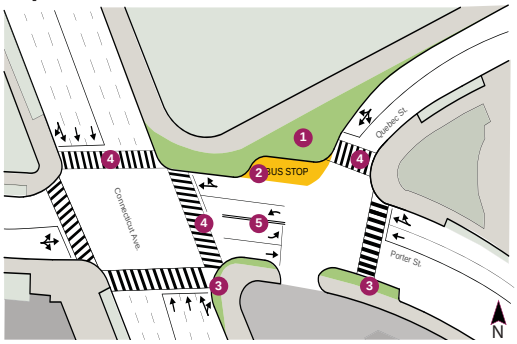
Benefits by Mode

Pedestrian
+ Shorter crossing distances, fewer lanes of traffic to cross
+ More gathering space
+ Maximizes public art and landscaping opportunity
+ Fewer pedestrians passing through gas station

Bus
+ Transit plaza provides space for waiting, loading/ unloading passengers
+ Safer crossing after boarding / departing bus
+ Bus stop in lane reduces stopping delay

Auto
+Curb extension on Porter Street could help prevent accidents with parked cars
+ Simplified intersection reduces confusing and weaving
- Westbound vehicles on Porter Street may experience some delay with bus stop in travel lane

Option 2 - Multimodal Intersection



Description

1. Close the turn lane from Quebec Street to create a slightly smaller pedestrian plaza that accommodates a bus bay
2. Shift bus stop to new bus bay at Porter Street / Connecticut Avenue intersection to leverage new plaza.
3. Close one of the 2 gas station entrances closest to the intersection on Connecticut Avenue and create curb extensions on the south side of Porter Street.
4. New crosswalk striping to align with curb configurations.
5. Remove median to accommodate new plaza and curb extensions

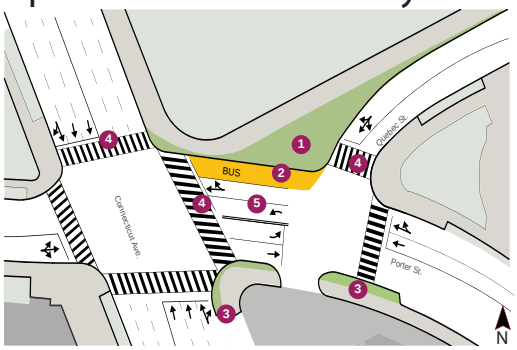
Benefits by Mode

Pedestrian
+ Shorter crossing distances , fewer lanes of traffic to cross
+ More gathering space (less than option 1)
+ Some public art and landscaping opportunity
+ Fewer pedestrians passing through gas station

Bus
+ Transit plaza provides space for waiting, loading/unloading passengers
+ Safer crossing after boarding / departing bus
- Potential bus delays when merging back into traffic from bus bay

Auto
+ Curb extension on Porter Street could help prevent accidents with parked cars
+ Simplified intersection reduces confusing and weaving
+ Bus bay eliminates vehicle delay from buses stopping in travel lane

Option 3 - Transit Priority



Description

1. Close the turn lane from Quebec Street to create a smaller pedestrian plaza that accommodates a new dedicated bus stop lane
2. Shift bus stop to new bus lane at Porter Street / Connecticut Avenue intersection.
3. Gas station entrance stays open but shifts slightly south to create smaller curb extensions on the south side of Porter Street.
4. New crosswalk striping to align with curb configurations.
5. Remove median to accommodate new plaza and curb extensions

Benefits by Mode

Pedestrian
+ Fewer lanes of traffic to cross, slightly shorter distances
+ More gathering space (less than option 1 and 2)
+ Some public art and landscaping opportunity
+ Fewer pedestrians passing through gas station
- Two gas station entrances remain on Connecticut Ave.

Bus
+ Transit plaza provides space for waiting, loading/unloading
+ Safer crossing after boarding / departing bus
+ Dedicated lane for bus movement with possibility of Transit Signal Priority

Auto
+ Curb extension on Porter Street could help prevent accidents with parked cars
+ Simplified intersection reduces confusing and weaving
+ Bus lane eliminates vehicle delay from buses stopping in travel lane

Figure 6.3: Porter/Quebec/Connecticut Avenue Intersection Options

7.0 RECOMMENDATIONS

7.1 Summary of Study Area Recommendations

The following recommendations for physical improvements are conceptual in nature and are intended to prioritize and identify potential treatments that have gone through a community engagement process. Final design and construction will be subject to a more detailed design process that may result in improvements that look different from the concepts depicted here.

Safety

The safety recommendations are described in section 7.2 and broadly include the following:

- Roadway configuration improvements such as curb extensions that will create shorter pedestrian crossing distances, pedestrian refuge opportunities and bio-retention opportunities throughout the study area, with a focus on the complex intersections of Porter Street, Quebec Street and Connecticut Avenue
- Signal timing improvements along the Connecticut Avenue corridor
- Access and visibility improvements for pedestrians, including high-visibility crosswalks and curb ramp upgrades for ADA access and compliance

Public Realm

Public realm recommendations focus on creating a more attractive, pedestrian-oriented streetscape environment that also integrates low impact development practices. They are described in section 7.3 and broadly include the following improvements:

- General public realm improvements including upgrading street furnishings, creating gathering spaces, removing streetscape clutter, and adding historical district signage
- Green infrastructure improvements such as maintenance of the existing tree canopy, new trees, additional streetscape plantings, bio-retention planters to capture storm runoff, and permeable paving in select locations

Parking Management

The community has expressed that parking is a key issue in Cleveland Park, and the project team identified several opportunities to improve parking management practices which are described in section 7.4. Broad recommendations include:

- Considering performance parking for the study area to improve parking availability through management of existing public parking resources
- Enforcing delivery vehicle parking in designated commercial loading areas
- Implementing a commercial loading campaign to remind delivery drivers to use designated loading zones and alleys

Service Lane

During the course of this study process and public participation, DDOT received feedback on the service lane from a diverse spectrum of stakeholders. Four concepts, developed in response to community concerns and feedback, were presented for the service lane area. All four concepts retain some level of parking, but all options that modify the service lane would reduce the number of parking spaces.

The recommendations for the service lane are outlined in detail in section 7.5, and broadly include:

- No Build Recommendation for Cleveland Park service lane. Based on public feedback collected during the study process, the largest sentiment

expressed by community members, stakeholders, and ANC 3C, is a desire to retain the service lane as it exists today.

- Potential for future pilot project in the service lane, with community support and involvement, to test various configurations for a short period of time and to understand the real time effects of transitions in the use of right of way

For all safety, public realm, parking management, and service lane recommendations, those which stem from community feedback suggestions, meet needs in the Community Purpose and Need statement, or are driven by data collection results are identified as shown in the key below. Each recommendation is also categorized according the time frame of potential implementation.

- C Community Feedback Suggestion
- P&N Meets Goals in Purpose & Need
- DD Data-driven Recommendation
- S Short-term (0-2 years)
- M Mid-term (2-5 years)
- L Long-term (5-10 years)

Illustrative Site Plan Legend:

- Concrete Sidewalk: Thoroughfare Zone
- Concrete Sidewalk: Amenity Zone
- Permeable Paving
- Tree Box
- New Plantings
- Existing Tree
- New Tree
- Metrorail Station
- Metrobus Stop
- Gathering Area
- New Bench Location
- New Bike Rack Location
- Bioretention Area

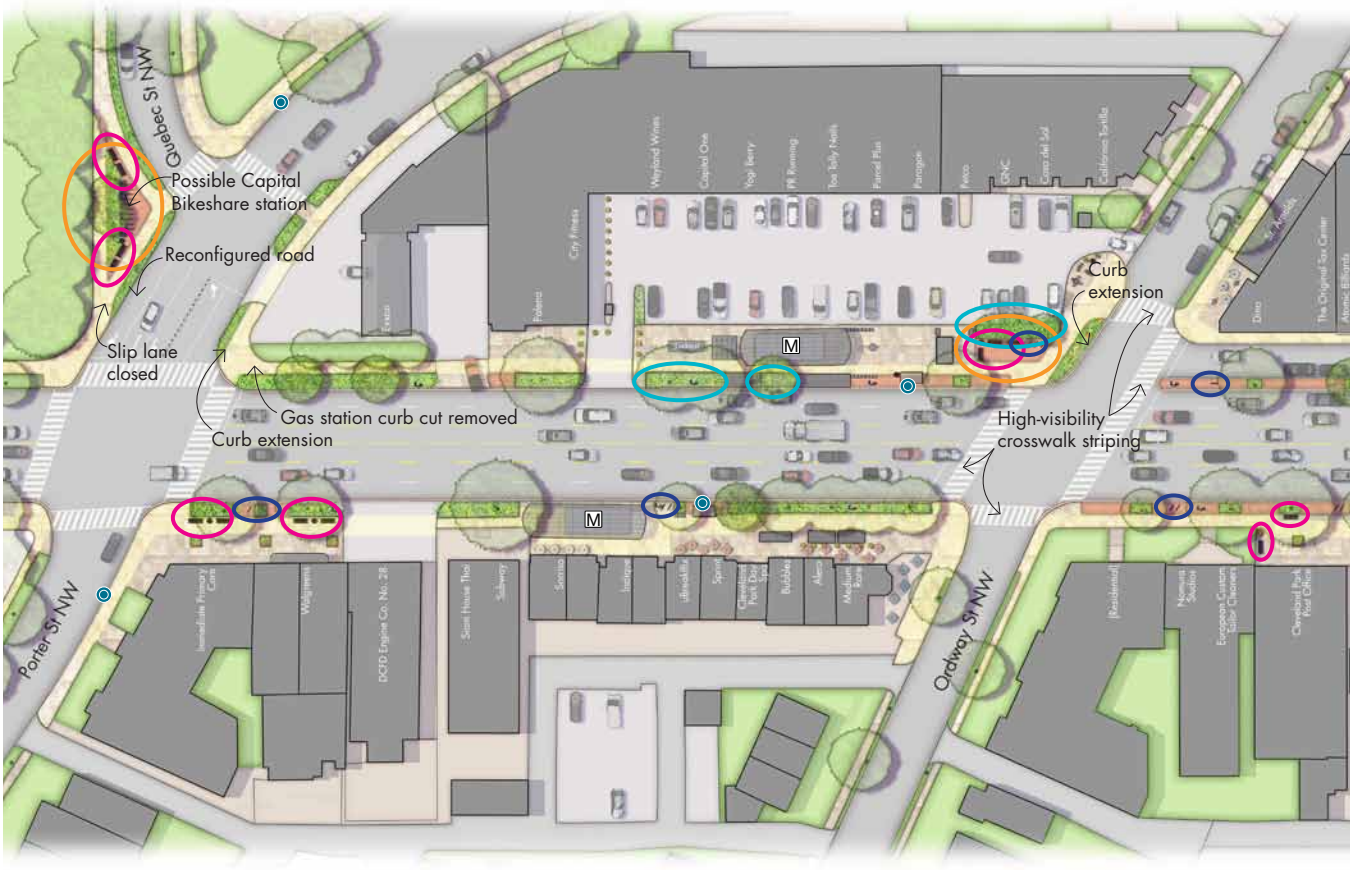


Figure 7.1: Illustrative Site Plan (Source: Rhodeside & Harwell)

7.2 Safety Recommendations

Road Configuration

Quebec Street Slip Lane

> 1 *Close underutilized Quebec Street slip lane to improve pedestrian safety and reallocate right of way for a new public gathering space* **P&N** **DD** **L**

The current configuration of the Connecticut Avenue and Porter Street intersection (Figure 7.2), poses challenges for drivers and pedestrians. It is also a high accident intersection, with 55 accidents at Porter Street and Connecticut Avenue between January 2010 to September 2013, and 18 at Porter Street and Quebec Street during the same period.

As stated in the *Community Purpose and Need* statement:

"The intersection of Connecticut Avenue, Porter Street and Quebec Street has confusing and insufficient traffic signaling, unclear pedestrian paths, too many and confusing signs, ill-advised bus stop placement, and street curb angles that encourage unsafe driver behavior."

In order to improve pedestrian safety by shortening crossing distances and improving visibility, it is recommended that the existing slip lane be closed from Quebec Street onto Porter Street, and replaced with a wide pedestrian plaza. As shown in Figure 7.3, when the slip lane is removed vehicles are still able to turn right from Quebec Street onto Porter Street, and will have a right turn lane from Porter Street onto Connecticut Avenue northbound. Because of the low volume of vehicles utilizing the slip lane—even during peak hours—this public right of way is highly underutilized. The removal of the slip lane to repurpose the space does not impact overall vehicle level of service (see Appendix F) at either Connecticut Avenue and Porter Street or Porter Street and Quebec Street. There is a 15 second increase in vehicle delay for vehicles approaching Porter Street from Quebec Street.

There are significant pedestrian safety benefits with the closure of the slip lane. Pedestrians were observed crossing against the light across the slip lane and waiting on a small median until they are able to fully cross

Illustrative Site Plan, continued

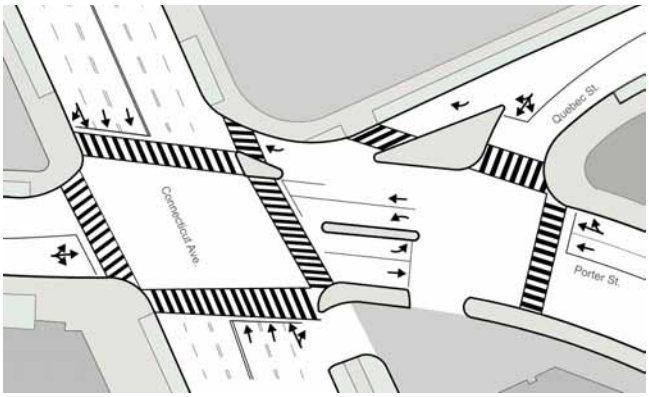


Figure 7.2: Existing Connecticut Avenue and Porter Street Intersection (Source: Arup)

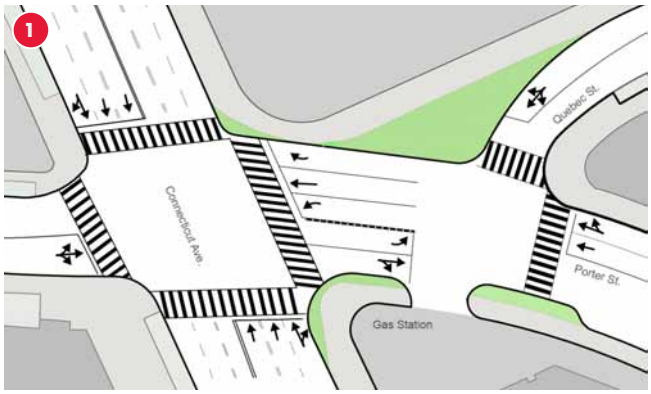


Figure 7.3: Proposed Slip Lane Removal on Quebec Street and Porter Street (Source: Arup)

Porter Street. Removing the slip lane will reduce potential pedestrian and vehicle conflicts, and shorten the total crossing distance from 85 feet to 76 feet, a 9-foot reduction. Pedestrians will continue to have 61 seconds to cross the street, but will not have to travel as far. Pedestrians crossing Quebec Street at Porter Street will experience a 50-foot reduction in the distance they must cross, and will be more visible to drivers.

In addition, removal of the slip lane benefits pedestrians crossing Connecticut Avenue who will be able to cross directly from one side of Connecticut Avenue to the other, significantly reducing wait times and reducing the length of the crosswalk by 10 feet.

In order to maintain standard lane width for the three travel lanes on Porter Street, it is recommended that the existing median between the eastbound and westbound lanes be removed.

Exxon Gas Station Vehicle Curb Cut Closure

2 *Review feasibility of Exxon station vehicle curb cut closure that conflicts with pedestrian crosswalk at Connecticut Ave/Porter St* **P&N** (M)

There are currently three curb cuts to access the Exxon gas station on the southeast corner of Connecticut Avenue and Porter Street, two of which are shown in Figure 7.2. These multiple vehicle entrances conflict with heavy pedestrian volumes on Connecticut Avenue and reduce the pedestrian waiting area, especially at the corner of the intersection where pedestrians wait to cross both Connecticut Avenue and Porter Street. The northern curb cut on Connecticut Avenue currently intersects with a pedestrian crosswalk, as well as the sidewalk, creating an unsafe environment for pedestrians.

It is recommended that initial discussions begin with the owner of the gas station to inquire about site access issues and discuss the potential for a curb cut closure nearest to the intersection which would improve pedestrian safety and mitigate conflicts between pedestrians and drivers.

Field observations showed that the northernmost curb cut is difficult for vehicles to access during peak hours, as vehicles are queued at the intersection, blocking the entrance. Closure of the curb cut may serve to improve traffic flow by reducing the complexity of the intersection. Closing the curb cut also creates the potential for a curb extension that shortens the pedestrian crossing distance across Porter Street.

Curb Extensions

3 *Construct planned curb extension on southern corner of Newark St to improve pedestrian visibility, crossing distance, and intersection geometry* **P&N** (M)

4 *Add curb extension at northeast corner of Ordway St and Connecticut Ave to reduce pedestrian crossing distance and improve pedestrian access to Metro* **DD** (M)

5 *Add curb extension at gas station to provide larger pedestrian waiting area and shorter crossing distance across Porter St* **P&N** (M)

6 *Evaluate curb extensions on northeast and northwest corners of Macomb St to improve pedestrian visibility in conjunction with future library renovation plans* (M)

Pedestrian safety at each of the intersections along Connecticut Avenue in the study area is a concern for the community. Curb extensions extend the sidewalk at intersection corners to narrow the roadway and provide additional pedestrian space. The benefits of creating a tighter turn radius for vehicles should be balanced against the needs of large vehicles to navigate turns.

Benefits include:

- Increased pedestrian visibility at intersections
- Decreased pedestrian/vehicle conflict by shortening the pedestrian crossing distance
- Reduced vehicle speeds by physically (and visually) narrowing the roadway
- Increased pedestrian waiting space, including space for street furniture, landscaping and other amenities
- Reduced illegal parking at corners and crosswalks
- Space to provide two curb ramps per corner (one for each crosswalk)

The Connecticut Avenue corridor was analyzed to identify possible locations for curb extension implementation based on pedestrian and vehicle volumes and the configuration of the roadway. As a result, the following locations are recommended.

1. **The north side of Ordway Street, east of the intersection with Connecticut Avenue.** This is an important crossing, as many pedestrians heading to and from the Cleveland Park Metro Station north of this intersection must cross Ordway Street at this location. Expanding the curb will shorten the crossing distance and provide space for landscaping. There is also the potential to provide a more direct pedestrian path to the station by flaring the crosswalk from the south side of Ordway Street, adjacent to the service lane, to the new curb extension.

2. **The south side of Newark Street, west of the intersection with Connecticut Avenue.** This curb extension will work to create a normal, 90-degree intersection and encourage vehicles turning onto Connecticut Avenue from Newark Street to stop, rather than yield, at the intersection. It will also shorten the crossing distance and improve pedestrian visibility for those traveling to and from the Cleveland Park Library.

3. **The south side of Porter Street, east of the intersection with Connecticut Avenue.** This extension helps reduce the crossing distance at both of the crosswalks on Porter Street (at Connecticut Avenue and at Quebec Street), both of which have high pedestrian crossing volumes, and allows for ADA-compliant curb ramps to be installed at these locations. It also protects cars parked along the south side of Porter Street, which are susceptible to being side swiped by eastbound traffic due to the current lane configuration and curvature of the roadway.

4. **The north side of Macomb Street, east and west of the intersection with Connecticut Avenue.** These extensions will reduce the crossing distances at both of the crosswalks on Macomb Street and allow for an ADA-compliant curb ramp to be constructed on the east side of Connecticut Avenue.

Signals

Pedestrian Signal Timing

7 *Review and add time to pedestrian signal timing across Connecticut Ave at Macomb St* C S

8 *Review and extend pedestrian crossing time at crosswalk between Quebec St and gas station during non-peak periods* C P&N DD S

During the public meetings, and in the *Community Purpose and Need* statement, signal timing improvements were requested. Issues included:

- Pedestrian signal crossing time improvements for pedestrians traversing Porter Street at Quebec Street
- Desire for a dedicated green arrow phase for northbound vehicles turning left from Connecticut Avenue onto Porter Street
- Pedestrian crossing time improvements at Macomb Street and Connecticut Avenue

At Porter Street and Quebec Street, the pedestrian signal timing is restricted by the high volume of eastbound vehicles on Porter Street during the morning and evening peak hours. Due to the close proximity of the intersections of Porter Street with Quebec Street and Connecticut Avenue, eastbound vehicles need sufficient green time at Quebec Street so that they do not back up into the Connecticut Avenue intersection.

As such, the amount of time for pedestrian crossing may not be able to be adjusted during peak periods. However, during the off-peak hours it is recommended that the signal timing be reviewed to add more crossing time for pedestrians when vehicle volumes are lower.

In response to community requests, a dedicated green phase for left turning vehicles from Connecticut Avenue northbound to Porter Street westbound was tested in the traffic model, and it was found to have minimal impact on the intersection level of service for vehicular traffic. A 12-second left turn green arrow from Connecticut Avenue northbound could be added, concurrent with the existing left turn arrow phase for southbound vehicles on Connecticut Avenue. Left turns could then be permitted during the rest of the existing Connecticut Avenue green phase. Pedestrians currently have 61 seconds to cross Porter Street, however this crossing time would be reduced by a 12-second dedicated turning phase for vehicles. Further analysis and review by DDOT Traffic Operations Administration and DDOT's Pedestrian Program is required to make a final determination.

Access and Visibility

Improved Crosswalk Striping

9 *Add high-visibility "Zebra" crosswalk striping to enhance pedestrian safety and crosswalk visibility* S

10 *Add flared, high-visibility crosswalk at northeast corner of Ordway St and Connecticut Ave to improve pedestrian access to Metro* DD S

While many crosswalks in the corridor have been upgraded as part of the Pedestrian Safety and Streetscape Improvement Project, the crosswalks at Ordway Street and Newark Street currently use standard parallel striping that is difficult to see for both vehicles and pedestrians.

It is recommended that all legs of the crosswalk at Connecticut Avenue and Ordway Street as well as the crosswalk at Newark Street be restriped with high-visibility crosswalk markings (also known as "Zebra" crosswalks) to ensure a visible crossing environment at each of the study area's intersections (Figure 7.4).

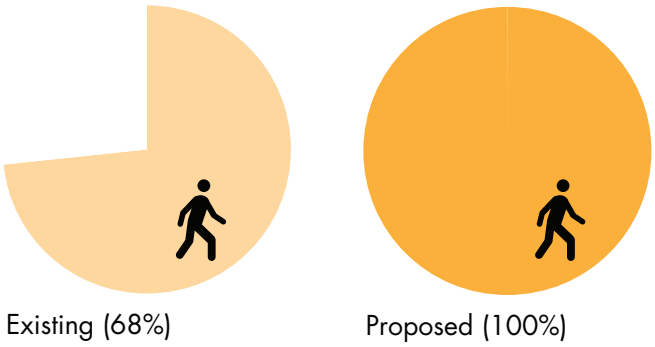


Figure 7.4: Recommended Improvements - Percent of High-Visibility Crosswalks

Additionally, the sidewalk on the east side of Connecticut Avenue is set back to make space for the service lane south of Ordway Street. As such, the crosswalk across Ordway Street does not create a direct connection between the north and south corners of the intersection. There is a high volume of pedestrians (174 and 209 pedestrians during the AM and PM peak hours, respectively) using this crosswalk to access the Cleveland Park Metro who may be tempted to jaywalk to take the most direct path when crossing Ordway Street. By replacing the existing crosswalk with a flared crosswalk that widens when approaching the north side of the intersection, pedestrians who want to cross quickly can do so more safely, without jaywalking. Others who may need more time to cross the intersection can continue to use the shorter side of the crosswalk.

MPH Signs

11 *Post 'miles per hour' (MPH) signs throughout the commercial corridor* C S

Emphasize the 30 MPH speed limit though the corridor by adding additional 'miles per hour' signs.

Curb Ramps

12 *Upgrade curb ramp to ADA standards at northeast corner of Macomb St and Connecticut Ave* M

13 *Upgrade curb ramps to ADA standards at east corners of Porter St and Connecticut Ave and at south side of Porter St crossing at Quebec Street* M

In some locations, curb ramps are missing or do not meet ADA standards. On the northeast corner of

Macomb Street and Connecticut Avenue, the curb ramp serving the Macomb Street crosswalk occupies the entire sidewalk width, leaving no space for passing pedestrians (or those in wheelchairs or pushing strollers). In addition, a curb ramp is missing on the northeast side of Connecticut Avenue and Porter Street, in the refuge island where the crosswalk on the north side of Connecticut Avenue begins. The southeast corner of Connecticut Avenue and Porter Street and the south side of the Porter Street crossing at Quebec Street also lack adequate space for ADA-compliant landings at the top of each curb ramp.

It is recommended that the curb ramp at the northeast corner of Macomb Street be studied to determine whether a curb extension could be added to provide sufficient space for an ADA-compliant curb ramp. At the northeast corner of Porter Street, the refuge island may be removed as a result of the recommended improvements at Porter Street and Quebec Street, and all upgrades will meet ADA requirements. On the southeast side of Porter Street, the proposed curb extension at the gas station provides sufficient space for complete curb ramps and landings to be constructed.

7.3 Public Realm Recommendations

General Public Realm

Many elements of Cleveland Park's public realm are currently worn, inconsistent, or absent. The public realm improvements and recommendations were developed in collaboration with community feedback throughout the study process and are detailed below.

Street Furnishings Recommendations

14 *Add benches to sidewalk along tree boxes consistent with historic furnishings palette* **P&N** **S**

15 *Install additional bike racks at community-sourced locations along corridor* **P&N** **S**

16 *Install new black trash cans to coordinate with historic furnishings palette throughout corridor* **P&N** **S**

17 *Install tree box fencing consistent with historic palette at all tree boxes throughout corridor* **P&N** **S**

A uniform palette of public realm components (Figure 7.7) including benches, trash receptacles, bike racks, tree box fencing will create a coordinated, unified, and strong Cleveland Park aesthetic.

Benches

Benches selected from an approved palette of furnishings (Figure 7.7a) should be placed throughout the study area corridor at the edge of the pedestrian thoroughfare. Benches should face towards the sidewalk to encourage use and be placed under shade trees when possible to create a refuge from the sun. Other street furnishings such as trash receptacles and bike racks should be located in proximity to benches to provide easy access for users. Twenty-three new benches are recommended along the corridor, increasing the total number of benches in the study area from 4 (supplied by retailers or the library) to 27 (Figure 7.5).

Bike Racks

Additional bike racks consistent with the overall furnishings palette (Figure 7.7b) should be installed between tree boxes and at gathering areas as indicated in Figure 7.1 to offer more consistently-spaced bike parking options along the study area corridor. U-style racks are recommended as they may be installed as singles or in groups, offering greater flexibility in sometimes limited spaces. The provision of additional bike racks will discourage cyclists from locking bikes to trees and sign posts and support bicycle activity by offering more convenient access to shops and restaurants along corridor. Twenty-two new U racks are recommended, increasing total bike capacity in the study area from 39 to 83 (Figure 7.6).

Trash Receptacles

New trash cans (Figure 7.7c) should be selected as part of a coordinated palette of furnishings. Ten new receptacles are recommended to replace existing trash cans and to be placed in additional locations as appropriate, particularly near benches and gathering areas.

Tree Box Fencing

A consistent tree box edging material in coordination with street furnishings (Figure 7.7d-e) should be used along the corridor to provide aesthetic continuity,

Existing Benches (4)

Proposed Benches (27)

Figure 7.5: Recommended Improvements - Benches
(Includes benches in front of private retail establishments)

protect plantings from foot traffic, and reduce soil compaction. Tree box edging may also be installed around bio-retention planters where a sharp grade change or drop could create a trip hazard. Edging around all tree boxes and planters should be placed so as not to impede drivers from moving between the sidewalk and vehicles parked along the road edge.

Existing Bike Capacity (39)

Proposed Bike Capacity (83)

Figure 7.6: Recommended Improvements - Bike Capacity

a. Bench (Source: Landscapeforms)

b. Inverted U Bike Rack
(Source: Belson)

c. Trash Receptacle
(Source: Victor Stanley)

d. Tree Box Edging


e. Tree Box Edging: Bio-retention Planter

Figure 7.7: Sample Street Furnishings Palette

Gathering Area Recommendations

18 *Create a public gathering area in front of Uptown Theater* M

19 *Create gathering area at northeast corner of Ordway St and Connecticut Ave* M

20 *Create gathering area in proposed pedestrian space at Porter Street and Quebec Street, where slip lane is to be removed* L

An opportunity exists to re-envision community gathering spaces along the corridor. Gathering areas are typically located in areas close to a community asset that see a high volume of foot traffic and have sufficient space for people to congregate. They can be enhanced by adding seating, trash receptacles, public art, shade trees, and other plantings. While there are currently two locations the project team has identified as existing gathering areas—the space outside of the east-side Metro station entrance and the area in front of the Cleveland Park Library—both lack adequate amenities. New gathering areas can themselves become assets to the community, providing a comfortable space for lingering or meeting with others and overall creating a more welcoming streetscape environment.

Uptown Theater

The Uptown Theater is already a highly-trafficked destination in Cleveland Park. However, the wide sidewalk in front of the theater offers few public amenities. A gathering area outside of the theater is recommended to offer a place for moviegoers or passers-by to stop before moving on to other destinations along the corridor. This area should include benches, bike racks, and trash receptacles. The inclusion of a public art piece should be considered to increase public draw and create a more vibrant, engaging streetscape on the west side of Connecticut Avenue.

Northeast Corner of Ordway Street and Connecticut Avenue

While there is currently a large open space outside of the east-side Metro station entrance, it is devoid of seating, shade, and plantings. The large planting bed at the northeast corner of Ordway Street and Connecticut Avenue could be divided to accommodate both plantings and a public gathering space with benches, bike racks, and trash receptacles. Due to its proximity to a principle intersection, the Metro station, a Metrobus stop, and various shopping destinations along the east side of Connecticut Ave, this location could serve as a gathering area for a variety of users.

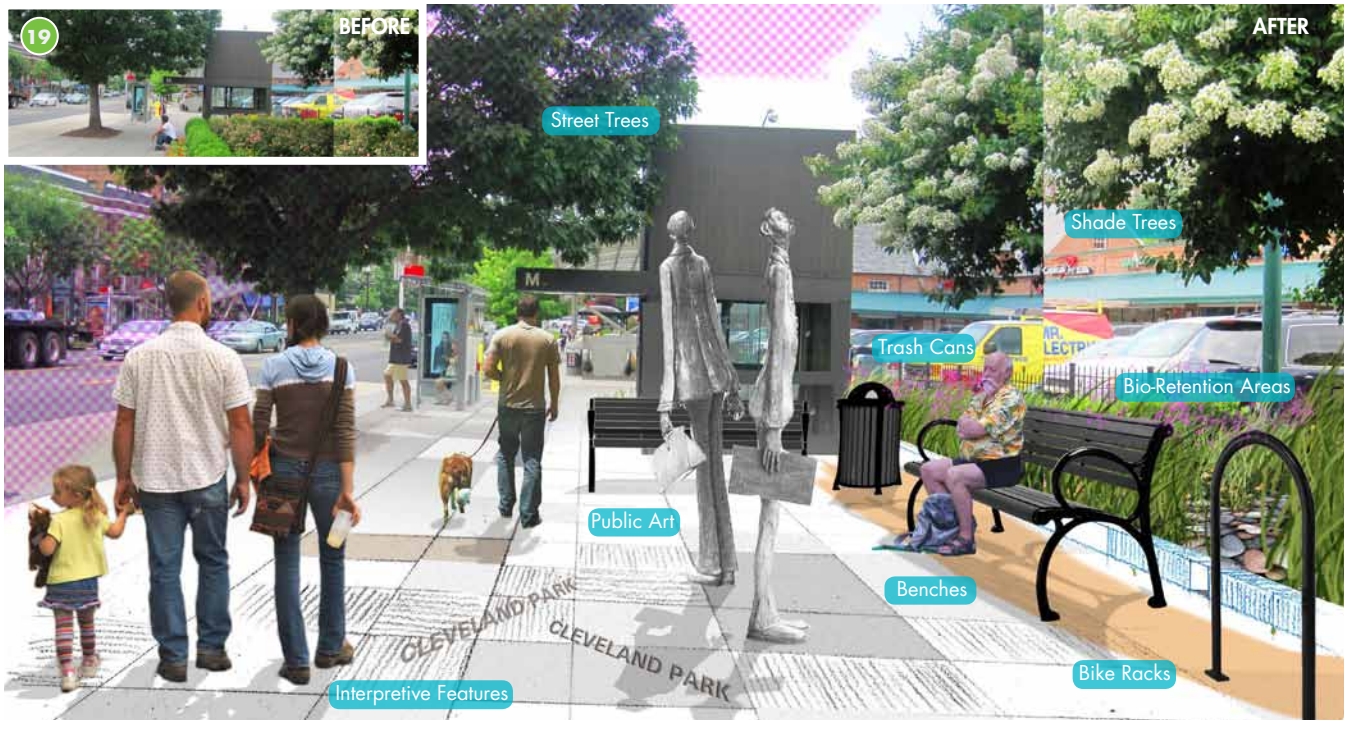


Figure 7.8: Gathering Area Example (Source: Rhodeside and Harwell)

Connecticut Avenue, Porter Street and Quebec Street

Upon reconfiguration of the Porter-Quebec intersection, the large pedestrian space created when the slip lane is removed should be activated as a public gathering area and a gateway into Cleveland Park. This area could accommodate a second Capital Bikeshare station, along with benches, trash receptacles, a shade tree, and new plantings. A successful gathering area in this location would also need to be buffered from the roadway with a planting strip between the sidewalk and road edge.

Additional Streetscape Improvement Recommendations

21 *Remove faded or unnecessary signage to reduce sign clutter throughout corridor* C M

22 *Consolidate and manage newspaper boxes*

Signage Inventory

It is recommended that an inventory of signage along the study area corridor be carried out to identify worn or redundant signage that may be cluttering the streetscape environment. Signs should be replaced or removed as appropriate.

Newspaper Boxes

The streetscape is cluttered by a large number of newspaper boxes located outside of the east-side Metro station entrance and the Post Office. In addition to being an eyesore, these boxes impede pedestrian access and should be both consolidated and better managed (Figure 7.10). This recommendation is beyond DDOT's purview and would require a third party to manage and perform the task.

Historical Signage

23 *Install historic district signage along the corridor* P&N M

DC Historic District signage for Cleveland Park will be installed to celebrate the area's historic designation and inform visitors of the neighborhood's history (Figure 7.9)

Figure 7.9: Examples of Historic District and Information Signage in DC Neighborhoods
(Sources: StationStart.com and Park View, DC)

Figure 7.10: Example of Standardized Newspaper Boxes
(Source: Michael Petrelis)

Figure 7.11: Example of Landing Area
(Source: American Society of Landscape Architects)

Landing Area between Curb and Tree boxes

24 *Establish permeable landing strips between curb and tree boxes to improve accessibility and help manage storm water* M

In many locations along the study area corridor, tree boxes obstruct access between the sidewalk and cars parked along the street edge. A minimum 12" landing area, constructed with permeable pavers, should be maintained or installed between the outer curb and tree box edges to allow movement from parked cars to the sidewalk (Figure 7.11). Other benefits include providing an area for storm water runoff to permeate into the ground and creating a uniform aesthetic along the curb edge.

New Bikeshare Station

25 *Identify location for planned Capital Bikeshare Station* S

A second Capital Bikeshare Station is planned for Cleveland Park and will be considered for installation in a future round of Bikeshare expansion.

Green Infrastructure

In the urban context, green infrastructure comprises a network of street trees, planted areas, and low impact development facilities that use vegetation, soil, and impervious materials to manage storm water. Recommendations for Cleveland Park's green infrastructure aim to create a more attractive, verdant streetscape environment that supports functional use while taking steps to mitigate storm water runoff produced by large areas of impervious surfaces.

Existing Tree Canopy

26 *Inventory existing underperforming shade trees* M

27 *Underprune shade trees that have low, unattractive or hazardous limbs* S

The urban tree canopy is a critical element of the streetscape, as is provides shade, enhances the aesthetic quality of the corridor, and offers numerous environmental benefits including reducing heat gain and air temperature, providing oxygen, removing pollutants from the air, and reduce runoff by capturing falling rain before it reaches the ground.

Inventory of shade trees

Many of the study area's street trees exhibit signs of stress, in the form of bare or stunted branches and small stature, particularly those located along the service lane median. As street trees form a key part of the streetscape and represent a significant investment in the urban tree canopy, an inventory of all street trees by a qualified arborist should be taken to identify underperforming shade trees. The arborist may recommend removal of some trees.

Underpruning

Several trees in the service lane median and outside the library require maintenance to remove low, unattractive or hazardous limbs. All trees should be reviewed by a qualified arborist and selectively underpruned to improve their overall shape and ensure that pedestrians can safety move beneath them.

New Trees and Plantings

28 *Plant new trees in tree boxes where absent and in new locations where feasible* M

29 *Fill tree boxes with plants consistent with a Cleveland Park planting palette* M

Trees

Nine tree box locations are currently missing trees and are instead occupied by turf or bare earth. Red Oaks *(Quercus rubra)*, the predominant tree species along the corridor, should be planted in these locations. Additionally, three new tree boxes should be considered in the service lane median to fill gaps in the tree canopy, as space allows and where not in conflict with existing utilities. Measures should also be taken to improve the health of trees in the service lane median by increasing the surrounding soil mass and permeability as outlined in Recommendation #32.

These recommended additions would increase the tree canopy in the study area from 43 street trees to 56 (Figure 7.12).

Tree Box Plantings

While some of the study area's tree boxes contain well-maintained, attractive plantings, many are filled with unkempt turf, mulch, or bare earth. Tree boxes should be planted with a vibrant, relatively consistent palette of hardy plantings (including annuals) that will improve the overall quality of streetscape plantings, provide color, and enhance the pedestrian environment.

The suggested Cleveland Park understory plant palette includes:

- *Liriope muscari*
- *Buxus* sp. (boxwood)
- Annuals including coleus, *Lantana* sp., *Ipomea* sp., *Setcreasea* sp., and *Strobilanthes* sp.
- *Euonymus fortunei* (climbing euonymus)
- *Carex* sp.

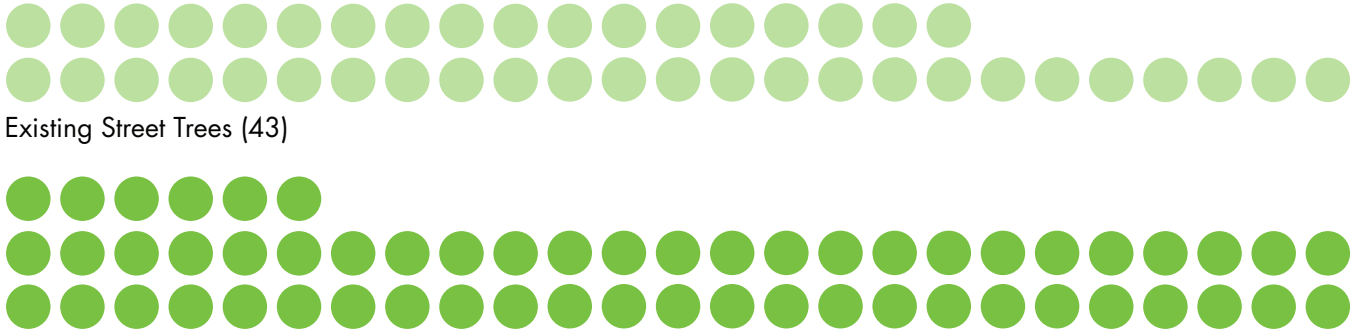


Figure 7.12: Recommended Improvements - Street Trees

a. Hardy perimeter plantings such as boxwoods (Source: Birds & Blooms)

b. Defensive perimeter planting with annuals providing pop of color

c. Hardy groundcover such as liriope

d. Hardy groundcover such as climbing euonymus

Figure 7.13: Sample Planting Palette

Bio-retention Planters

30 *Add a planted bio-retention area at edge of parking lot north of Newark Street in sidewalk on west side of Connecticut Avenue (3400 Connecticut Avenue) to collect runoff from lot and sidewalks* M

31 *Incorporate bio-retention into tree boxes in front of east-side Metro station entrance* M

Bio-retention tree boxes and rain gardens are used to intercept storm water that runs off of impervious surface and would otherwise cause flooding or flow into the sewer system. These low impact development facilities serve both aesthetic and functional purposes, contributing to the appearance of the streetscape environment while also supporting storm water management.

Further design and engineering would be required to assess the benefits of creating these storm water management areas and to determine the extent of the proposed bio-retention areas.

Bio-retention planters: Parking Lot north of Newark Street in sidewalk (3400 Connecticut Avenue)

Bio-retention planters can be particularly effective when installed next to large impervious areas such as parking lots. The large, underused sidewalk area east of the parking lot just north of Newark street offers an opportunity to create a vegetated rain garden to capture storm water runoff from either the parking lot or the sidewalk which will also create an attractive planted area. This area can be further enhanced by adding benches along the sidewalk edge, creating a pleasant spot to stop and sit.

Bio-retention planters: Metro Station Canopy Area (East side of Connecticut Avenue)

Storm water flooding is a significant problem around the east Metro station entrance, where water flows from the sidewalk and Metro canopy into adjacent Metro grates. Incorporating bio-retention into one or more of the existing tree boxes in this area could contribute to mitigating these flooding issues.

Together, the recommended new tree boxes and bio-retention planters would increase the study area's total planted surface from approximately 8,100 square feet to 10,000 square feet (Figure 7.14).

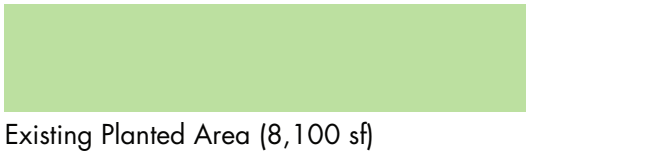


Figure 7.14: Recommended Improvements - Planted Area

Permeable Paving

32 *Replace bricks or concrete with permeable paving in service lane median, between tree boxes, in new gathering areas, in landing strip adjacent to curb and at existing and new Bikeshare stations* M

Permeable paving can benefit local plantings as well as larger hydrological systems. By allowing storm water to filter directly into the ground, runoff into the storm water system is cleansed, slowed, and reduced. Trees adjacent to permeable paving also can be healthier that those surrounded by impervious surfaces as rainfall is allowed to penetrate the ground and reach tree roots.

It is recommended that the brick pavers in the service lane median and concrete paving at the existing Capital Bikeshare station be removed replaced with permeable pavers. Permeable paving should be selected so as not

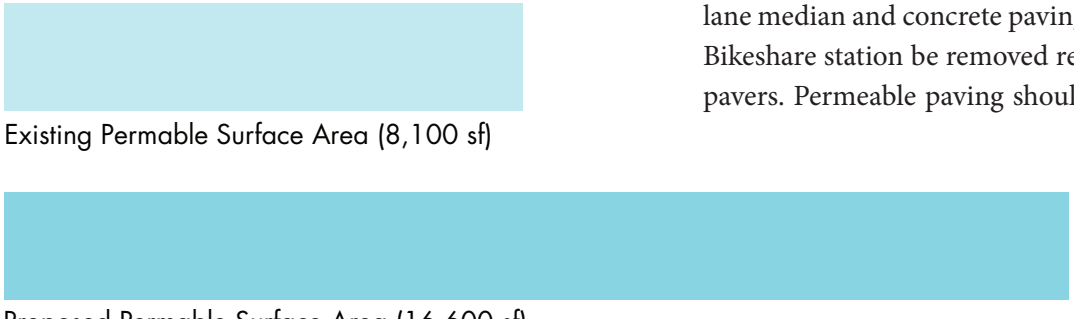


Figure 7.15: Recommended Improvements - Permeable Surface Area (Includes planted areas and permeable paving)

Bio-retention
TREE BOX

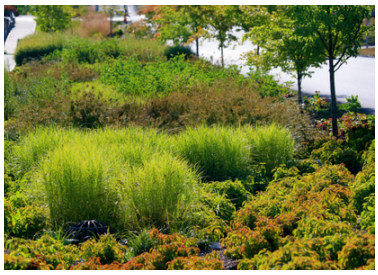
Tree box bio-retention planters along the street edge can capture and infiltrate runoff from the sidewalk and street gutter. They can be built into existing tree box spaces that lack healthy, mature canopy trees (so as not to disturb established tree roots), and should be spaced in a manner that does not obstruct access between the sidewalk and cars parked along the curb.

Bio-retention
CROSSWALK PLANTER/ CURB EXTENSION

Curb extension/crosswalk planters can be used where right of way space is limited. They can be built into the existing street edge at intersections or mid-block crossings where street width allows. In addition to providing the safety benefits of curb extensions, crosswalk planters can collect and infiltrate storm water runoff from the sidewalk and street gutter.

Bio-retention
RAIN GARDEN*

Rain gardens are depressed planted areas that function similarly to tree box bio-retention areas. They are typically less structured areas which capture runoff from adjacent impervious areas including sidewalks and parking lots. Rain gardens can be used in place of planting beds to enhance the aesthetic quality of the streetscape while performing storm water management functions.

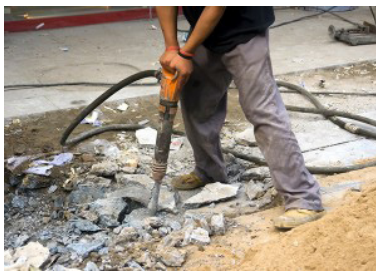


Paving
PERMEABLE PAVERS*

Permeable paving can reduce storm water runoff by allowing it to seep through the pavement and into the ground. Permeable options include porous asphalt or concrete and unit pavers with gaps that allow water infiltration. Permeable unit pavers are best used in lower-traffic areas outside the main pedestrian thoroughfare.

Paving
REMOVE IMPERVIOUS SURFACES*

Permeability can be increased by simply removing unnecessary impervious surfaces. This is most appropriate in sidewalk areas where excess paving may be present and can be removed without inhibiting pedestrian movement. Paved areas can be replaced with vegetation or other permeable materials.



Vegetation
INCREASE VEGETATIVE COVER*

In addition to providing shade and creating an attractive streetscape, the urban tree canopy can reduce runoff by collecting rainwater on leaves and branches. Street trees can be planted in existing tree boxes where they are absent or in new locations within the amenity zone along the sidewalk edge where not in conflict with existing utilities.

*These LID techniques may be used either in the public right of way or on institutional/private property

Figure 7.16: Toolkit of Low Impact Development Options

to create a trip hazard and should be installed outside of the main pedestrian thoroughfare.

Permeable paving should be used as the primary surface material in the proposed gathering areas near the east Metro station entrance and in the proposed pedestrian gathering space at the Porter Street-Quebec Street intersection.

The recommended permeable paving would increase the total permeable surface area in the study area (including planted areas) from approximately 8,100 square feet to 16,600 square feet (Figure 7.15).

Service lane median

East side of Connecticut Ave along Metro station entrance

Parking lot north of Newark St

West side of Connecticut Ave, Ordway St to Newark St

Capital Bikeshare station at Newark St & Connecticut Ave

Crossing at Ordway St & Connecticut Ave

Figure 7.17: Low Impact Development Opportunities in Cleveland Park (Source: Rhodeside and Harwell)

7.4 Parking Management Recommendations

The following parking management strategies can be employed to help the parking supply be used more efficiently and to better serve the needs of those who are driving to Cleveland Park.

Public Parking

Performance Parking

> 33 *Review feasibility of performance parking in order to improve parking management and availability. Further community education and discussion on performance parking, as well as public input, are an integral component of this recommendation.* C M

Performance-based parking uses variable pricing and timing to improve parking availability. DDOT currently has three performance parking zones in the District: Columbia Heights, Nationals Ballpark area, and H Street NE.

Performance based parking involves the management of on-street parking spaces, which in turn can yield multiple benefits including congestion relief, environmental quality, and improved access to commercial districts. Achieving a goal of consistent availability throughout the day requires ongoing and active management of on-street parking in key areas through adjustments to meter rates and regulations. Performance based parking manages the demand for parking to:

- Protect resident parking in residential zones
- Facilitate regular parking turnover in busy commercial areas
- Promote the use of non-auto transportation
- Decrease vehicular congestion from circling for parking

DDOT can use a variety of tools to manage the on-street parking resources in the designated zones:

- Escalating or variable pricing parking meter rates
- Adjusted days and hours of operation for curbside space management
- Adjustable parking fines

Delivery Vehicles

While there are currently designated loading zones along Connecticut Avenue and service alleys behind most commercial buildings in the study area corridor, delivery vehicles were frequently observed parking in the service lane and in non-loading zone parking spaces while loading and unloading. This takes up parking spaces intended for passenger vehicles.

Delivery Vehicle Parking in Service Lane

> 34 *Coordinate with Department of Public Works to increase enforcement of delivery vehicles parked in service lane to maximize parking for customers* C DD S

Delivery vehicles ranging from small trucks to semi-trucks were observed parking in the service lane for an average of 40 minutes, even though it is not a legal commercial loading area. Increased enforcement of delivery vehicles parking in the service lane is recommended to ensure parking spaces in the service lane are available for patrons and Cleveland Park visitors. The Department of Public Works is responsible for the enforcement of parking regulations.

Commercial Loading Campaign

> 35 *Develop a commercial loading campaign to remind delivery vehicles to use alley access or designated loading zones* DD S

A commercial loading campaign is recommended to encourage delivery vehicles drivers to load and unload only within designated loading zones or service alleys. While alley access is limited in some locations, it should be utilized whenever possible.

7.5 Service Lane Recommendations

A Community-initiated Request

In 2010, the Connecticut Avenue Coalition Committee (CCC) submitted a *Community Purpose and Need* statement to DDOT on behalf of the Cleveland Park community, which included the following request:

"The creation of a comprehensive plan to study the project area including but not limited to parking considerations, changes to the service lane, re-engineering of all three intersections, and creating a uniform aesthetic."

Draft Concepts & Parking Considerations

DDOT presented four design concepts for the service lane area to the community in September 2013 (see Figure 6.1). All four concepts presented retain some level of parking, but all options that modify the service lane would reduce the number of parking spaces.

To address this issue, DDOT discussed performance parking with the community as a parking management tool for improving turnover and availability of metered on-street spaces. Feedback from these discussions was positive. The study did explore the establishment of a public parking facility in the neighborhood. The District does not own or operate stand-alone municipal parking facilities, and the experience in most other jurisdictions has been that these facilities require ongoing operating subsidies.

Public Feedback about the Service Lane

During the study process, DDOT received public feedback on the service lane from a diverse spectrum of stakeholders. DDOT received over 1,000 emails, feedback sheets, and letters, expressing a range of opinions about the service lane and visions for the future of Cleveland Park.

Service Lane

36 *No Build Recommendation for Cleveland Park service lane. Based on public feedback collected during the study process, the largest sentiment expressed by community members, stakeholders, and ANC 3C, is a desire to retain the service lane as it exists today.* C

Based on public feedback collected during the study process, the largest sentiment expressed by community members, stakeholders, and ANC 3C was a desire to retain the service lane as it exists today, electing a "No Build" scenario.

Of the four concepts presented, the next most desirable option among community members and stakeholders was Option 3 "Partial Sidewalk Extension."

Potential for Future Pilot Project

There was a close divide in the community between those in support of the service lane remaining as is, and those in support of restoring the original sidewalk on the east side of Connecticut Avenue between Macomb Street and Ordway Street.

DDOT has found pilot projects to be a good way to understand the real time effects, both positive and negative, of transitions in the use of the right of way. Data, observations, and feedback can be collected to understand the impacts and benefits to all users.

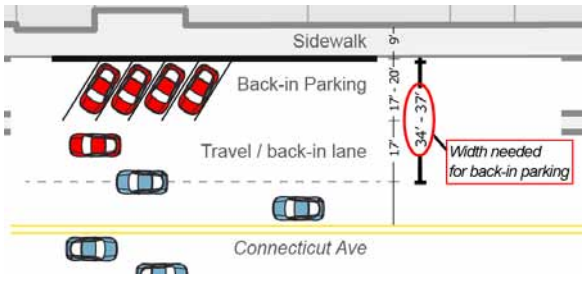
DDOT heard from various stakeholder groups in Cleveland Park during the study process that they are not interested in a pilot project for the service lane. DDOT continues to remain open to the possibility and would be happy to discuss further with the community.

What about diagonal parking?

The project team reviewed this suggestion which arose from community members. DDOT's determination was that this solution is not feasible for the following reasons:

1. According to DDOT design standards for back-in angled parking regulations, there isn't enough roadway width available in the service lane on Connecticut Avenue for the angled parking spaces and an adjacent lane for vehicles to back in. Even without widening the sidewalk, the back-in parking configuration is about 1 - 3 feet short of what is required for angled parking without impacting traffic flow. This option would also not allow for a widened sidewalk.

2. Additionally, it may have an adverse impact on Connecticut Avenue, as vehicles backing into the spaces would be doing so in a through lane during rush hour traffic. Back-in parking generally is more successful on streets with lower traffic volumes and slower speeds than what is observed on Connecticut Avenue.



(Source: Arup)

Figure 7.18: Recommended Improvement Locations - Porter Street to Macomb Street (Source: Rhodeside and Harwell)

C	Community Feedback Suggestion	S	Short-term (0-2 years)
P&N	Meets Goals in Purpose & Need	M	Mid-term (2-5 years)
DD	Data-driven Recommendation	L	Long-term (5-10 years)

SAFETY

ROAD CONFIGURATION

Quebec Street Slip Lane:

1. Close underutilized Quebec Street slip lane to improve pedestrian safety and reallocate right of way for a new public gathering space P&N DD L

Exxon Gas Station Vehicle Curb Cut Closure:

2. Review feasibility of Exxon station vehicle curb cut closure that conflicts with pedestrian crosswalk at Connecticut Ave/Porter St P&N M

Curb Extensions:

3. Construct planned curb extension on southern corner of Newark St to improve pedestrian visibility, crossing distance, and intersection geometry P&N M
4. Add curb extension at northeast corner of Ordway St and Connecticut Ave to reduce pedestrian crossing distance and improve pedestrian access to Metro DD M
5. Add curb extension at gas station to provide larger pedestrian waiting area and shorter crossing distance across Porter St P&N M
6. Evaluate curb extensions on northeast and northwest corners of Macomb St to improve pedestrian visibility in conjunction with future library renovation plans M

SIGNALS

Pedestrian Signal Timing:

7. Review and add time to pedestrian signal timing across Connecticut Ave at Macomb St C S
8. Review and extend pedestrian crossing time at crosswalk between Quebec St and gas station during non-peak periods C P&N DD S

ACCESS AND VISIBILITY

Improved Crosswalk Striping:

9. Add high-visibility "Zebra" crosswalk striping to enhance pedestrian safety and crosswalk visibility S
10. Add flared, high-visibility crosswalk at northeast corner of Ordway St and Connecticut Ave to improve pedestrian access to Metro DD S

MPH Signs:

11. Post 'miles per hour' signs along the commercial corridor C S

Curb Ramps:

12. Upgrade curb ramp to ADA standards at northeast corner of Macomb St and Connecticut Ave M
13. Upgrade curb ramp to ADA standards at east corners of Porter St and Connecticut Ave and at south side of Porter St crossing at Quebec Street M

PUBLIC REALM

GENERAL PUBLIC REALM

Street Furnishings:

14. Add benches to sidewalk along tree boxes consistent with historic furnishings palette P&N S
15. Install additional bike racks at community-sourced locations along corridor P&N S
16. Install new black trash cans to coordinate with historic furnishings palette throughout corridor P&N S
17. Install tree box fencing consistent with historic furnishings palette at all tree boxes P&N S

Table 7.1: Recommended Improvements List: Porter Street to Macomb Street

Corridor-Wide Recommendations: 11 14 15 16 17 21 23 24 26 27 28 29 32 33

PUBLIC REALM, CONTINUED

Gathering Areas:

18. Create a public gathering area in front of Uptown Theater. (M)
19. Create gathering area at northeast corner of Ordway St and Connecticut Ave (M)
20. Create gathering area in proposed pedestrian space at Porter St and Quebec St, where slip lane is to be removed (L)

Additional Streetscape Improvement Recommendations:

21. Remove faded or unnecessary signage to reduce sign clutter throughout corridor (C) (S)
22. Consolidate and manage newspaper boxes*

Historic District Signage:

23. Install historic district signage along the corridor (P&N) (M)

Access between Cars and Sidewalk:

24. Establish permeable landing strips between curb and tree boxes to improve accessibility and help manage storm water (M)

New Bikeshare Station:

25. Identify location for planned Capital Bikeshare Station in Cleveland Park (S)

GREEN INFRASTRUCTURE

Existing Tree Canopy:

26. Inventory existing underperforming shade trees (M)
27. Underprune shade trees that have low, unattractive or hazardous limbs (S)

New Trees and Plantings:

28. Plant new trees in tree boxes where absent and in new locations where feasible (M)
29. Fill tree boxes with plants consistent with a Cleveland Park planting palette (M)

*Beyond DDOT purview. Would require a third party to manage and perform task.

Bio-retention Planters:

30. Add a planted bio-retention area at edge of parking lot north of Newark St in sidewalk on west side of Connecticut Ave (3400 Connecticut Ave) to collect runoff from lot and/or sidewalks (M)
31. Incorporate bio-retention into tree boxes in front of east-side Metro station entrance (M)

Permeable Paving:

32. Replace bricks or concrete with permeable paving in service lane median, between tree boxes, in new gathering areas, in landing strip adjacent to curb and at existing and new Bikeshare stations (M)

PARKING MANAGEMENT

PARKING

Performance Parking:

33. Review feasibility of performance parking in order to improve parking management and availability (C) (M)

DELIVERY VEHICLES

Delivery Vehicle Parking in Service Lane:

34. Coordinate with Department of Public Works to increase enforcement of delivery vehicles parked in service lane to maximize parking for customers (C) (DD) (S)

Commercial Loading Campaign:

35. Develop a commercial loading campaign to remind delivery vehicles to use alley access or designated loading zones (DD) (S)

SERVICE LANE

36. No Build Recommendation for Cleveland Park service lane. Based on public feedback collected during the study process, the largest sentiment expressed by community members, stakeholders, and ANC 3C, is a desire to retain the service lane as it exists today. (C)

8.0 PROJECT COST ESTIMATES

8.1 Project Cost Estimates

Preliminary, planning-level cost estimates for the proposed recommendations are included in this chapter. The estimates help DDOT and the community prioritize the improvements, establish a phasing strategy and identify funding sources. DDOT will undertake a more detailed costing exercise once further design work has been completed.

PRELIMINARY COST ESTIMATES: SAFETY RECOMMENDATIONS

Recommendations	
#1: *Close Quebec Street slip lane, reallocate right of way for a new public gathering space*	
#9: *Add high-visibility "Zebra" crosswalks(at Porter Street/Quebec Street intersection)*	
#13: *Update curb ramps to meet ADA standards (at Porter Street and Connecticut Avenue)*	
Estimated Project Cost	**$547,578**

Recommendations	
#5: *Add a curb extension at gas station (at Porter Street/Connecticut Avenue corner)*	
#9: *Add high-visibility "Zebra" crosswalks (at Porter Street/Connecticut Avenue intersection)*	
#13: *Update curb ramps to ADA standards(on south side of Porter Street and west side of Connecticut Avenue)*	
Estimated Project Cost	**$241,576**

Recommendations	
#2 & #5: *Curb cut closure appraisal for northern most Exxon gas station curb cut on Connecticut Avenue*	
Sub Total	**$20,000**
Costs associated with curb cut closure process	Cost unknown. Will require further determinations.
Estimated Project Cost	**$20,000.00 (plus costs associated with curb cut closure process)**

Recommendations	
#5: *Create a curb extension at gas station on Porter Street(east of existing curb cut)*	
#9: *Add high-visibility "Zebra" crosswalks(at Porter Street)*	
#13: *Update curb ramps to ADA standards(on Porter Street)*	
Estimated Project Cost	**$72,614**

Recommendations	
#4: *Add a curb extension at northeast corner of Ordway Street and Connecticut Avenue*	
Estimated Project Cost	**$25,610**

Recommendations
***#3:** Construct planned curb extension on southwest corner of Newark Street and Connecticut Avenue*
Estimated Project Cost **$24,543**

Recommendations
***#6:** Create a curb extension at northeast side of Macomb Street and Connecticut Avenue*
Estimated Project Cost **$9,003**

Recommendations
***#6:** Create a curb extension at north side of Macomb Street on the west side of Connecticut Avenue*
Estimated Project Cost **$24,385**

ESTIMATED TOTAL FOR SAFETY RECOMMENDATIONS	**TOTAL**	**$965,310**

PRELIMINARY COST ESTIMATES: PUBLIC REALM RECOMMENDATIONS

Recommendations
***#14:** Add benches to sidewalk along tree boxes consistent with historic furnishings palette*
Estimated Project Cost **$36,800**

Recommendations
***#15:** Install additional bike racks at community-sourced locations along corridor*
Estimated Project Cost **$6,600**

Recommendations
***#16:** Install new black trash cans to coordinate with historic furnishing paleete throughout corridor*
Estimated Project Cost **$13,600**

Recommendations
***#17:** Install tree box fencing consistent with historic furnishings palette*
Estimated Project Cost **$180,000**

Recommendations
***#23:** Install historic district signage along the corridor*
Estimated Project Cost **$3,750**

Recommendations
***#25:** Install planned Capital BikeShare station*
Estimated Project Cost **$55,000**

Recommendations
***#27:** Underprune existing shade trees*
Estimated Project Cost **$8,040**

Recommendations ***#28:*** *Plant new trees*
Estimated Project Cost **$8,000**

Recommendations ***#29:*** *Fill tree boxes with plants from Cleveland Park suggested planting palette*
Estimated Project Cost **$60,000**

Recommendations ***#30, #31:*** *Add bio-retention area at edge of parking lot north of Newark Street on west side of Connecticut Avenue and in tree boxes adjacent to Metro station entrance on east side of Connecticut Avenue*
Estimated Project Cost **$114,800**

Recommendations ***#32:*** *Replace bricks or concrete with permeable paving in service lane median between tree boxes, at existing Bikeshare station, at new gathering space near metro station entrance on east side of Connecticut Avenue and at the new gathering space at the Porter Street/Qubec Street intersection*
Estimated Project Cost **$140,000.00**

ESTIMATED TOTAL FOR PUBLIC REALM RECOMMENDATIONS	**$695,515**

TOTAL COST ESTIMATE	**$1,660,825**