## Figure 1.3 Study Area Traffic Volumes






Board of Zoning Adjustment
District of Columbia
CASE NO. 17232
EXHIBIT NO. 37A5

## Traffic Volumes Indicate Peak During Morning and Evening

Daily traffic counts were conducted on Irving and 14th Streets over a two-week period in spring 2003. These counts were taken on 14th Street between Irving Street and Columbia Road and on Irving Street between 14th Street and Hiatt Place. Figures 1.4 through 1.6 show the traffic volumes throughout the day. As would be expected, southbound traffic volumes on 14th Street are highest during the morning peak. Traffic volumes on 14th Street northbound are highest during the evening peak period. Over the course of a typical weekday, approximately 24,500 vehicles use this portion of 14th Street. Irving Street carries approximately 10,300 vehicular trips on an average weekday and traffic volumes are highest during the evening peak period.

### Figure 1.4 14th Street - Southbound Weekday

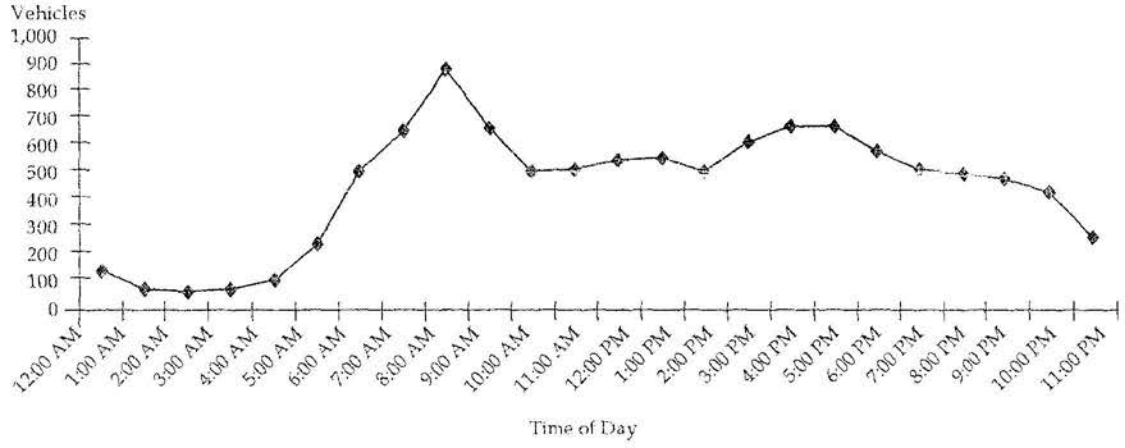


Figure 1.5 14th Street - Northbound Weekday

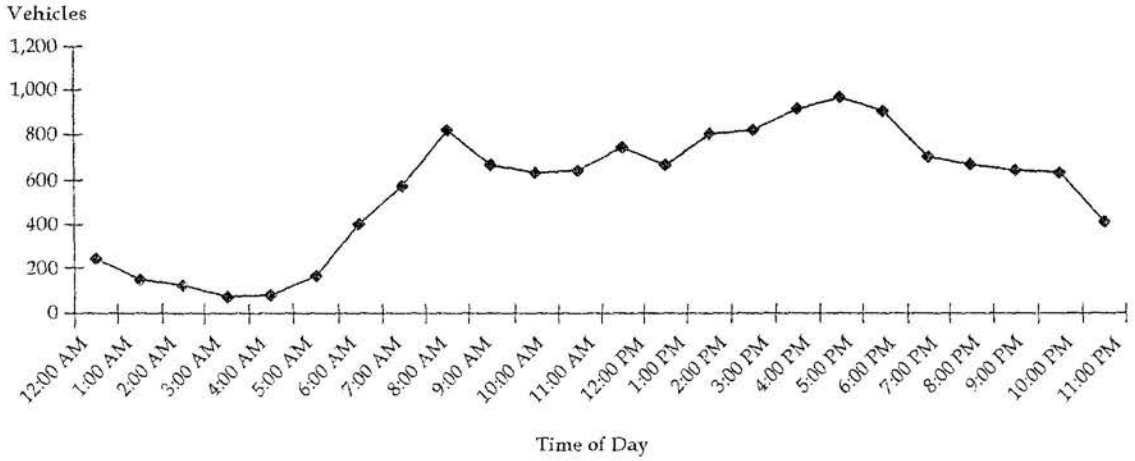
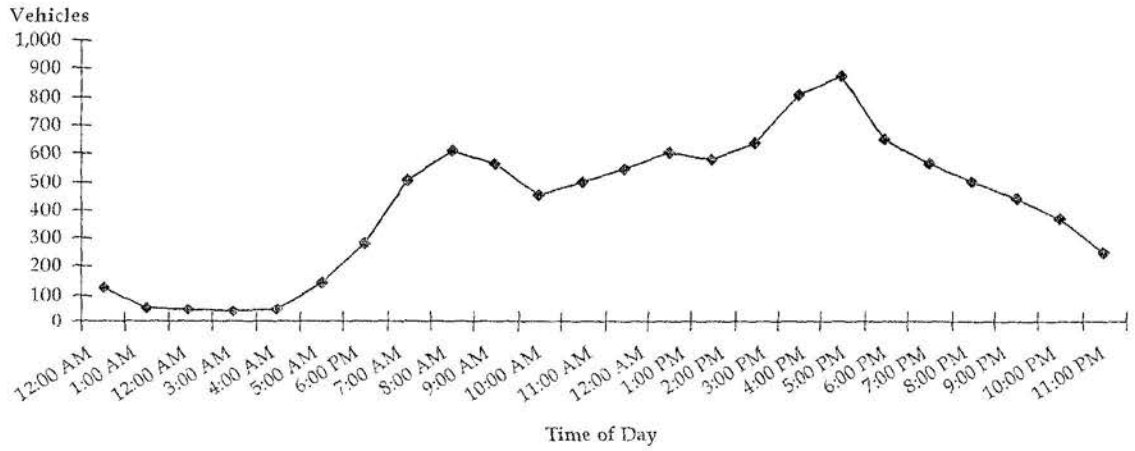



Figure 1.6 Irving Street - Eastbound Weekday




## Significant Commuter Traffic Passes Through the Neighborhood

Columbia Heights and Mount Pleasant are challenged by the large numbers of commuters that travel through the neighborhoods. Although the neighborhoods developed historically around transit and the pedestrian, they are now facing a tremendous influx of vehicles on a daily basis. Much of this commuter traffic is found on 16th Street and Georgia Avenue, but commuters also are using 14th Street, Sherman Avenue, and several of the

east-west roadways, such as Columbia Road and Irving Street, on a regular basis. Commuters will continue to use streets through the neighborhood in large numbers. The challenge is to accommodate these commuters while addressing neighborhood concerns regarding high speeds, pedestrian safety, and heavy traffic volumes.

As a part of this study, a general assessment was made as to the magnitude of commuter traffic during peak hours. License plate information was collected during the morning peak hours for automobiles traveling on potential commuter routes. Plates were classified as Maryland, Virginia, the District Columbia, and "Other" with the assumption that Maryland and Virginia plates likely represent commuters. In addition, a number of the District of Columbia registered vehicles also are likely commuters living in other neighborhoods either adjacent to or some distance from Columbia Heights and Mount Pleasant. Based on these observations, 16th Street and Georgia Avenue appear to carry the highest proportion of commuter traffic. Approximately 58 percent of vehicles headed southbound on 16th Street during the morning peak were registered in Maryland, and approximately 49 percent of the vehicles headed southbound on Georgia Avenue during the morning peak period had Maryland license plates.

## Table 1.3 Origin of Traffic in Study Area

| | State of Registration | | | |
|---|---|---|---|---|
| | D.C. | Maryland | Virginia | Other |
| Irving Street - East of 14th Street | | | | |
| Eastbound | 64.2% | 20.0% | 11.0% | 4.8% |
| Columbia Road - East of 14th Street | | | | |
| Westbound | 58.3 | 26.8 | 11.0 | 3.9 |
| Park Road - East of 14th Street | | | | |
| Westbound | 68.7 | 21.3 | 7.5 | 2.5 |
| Eastbound | 55.7 | 29.5 | 5.7 | 9.1 |
| 16th Street - North of Irving Street | | | | |
| Northbound | 56.5 | 20.3 | 18.4 | 4.8 |
| Southbound | 35.8 | 58.3 | 2.8 | 3.1 |
| 14th Street - North of Irving Street | | | | |
| Northbound | 68.4 | 16.2 | 12.8 | 2.9 |
| Southbound | 56.6 | 36.4 | 4.3 | 2.7 |
| Georgia Avenue - North of Irving Street | | | | |
| Northbound | 52.0 | 33.6 | 10.4 | 4.0 |
| Southbound | 42.0 | 49.0 | 5.9 | 3.1 |

Commuter traffic is not only headed toward downtown. Almost 20 percent of northbound traffic on 16th Street during the morning commute consists of Virginia drivers, indicating that 16th Street also is serving as a route for those traveling from Virginia through the District to locations to the north, such as downtown Silver Spring. Overall, 14th Street appears to carry a smaller proportion of through traffic, although still quite high.

## Most Intersections Operating with an Adequate Level of Service

As a part of this study, 12 intersections were selected in coordination with neighborhood residents for a detailed assessment of traffic conditions. At each of these intersections, vehicle turning movement counts were conducted during two-hour morning and evening peak periods. In addition, turning movement counts were conducted for two hours during the midday on a typical Saturday.

Data collected at each of these 12 intersections was analyzed using the traffic signal software program SYNCHRO to estimate congestion at each intersection, defined by "level of service." Level of service (LOS) for signalized intersections is defined in terms of average vehicle delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. It also is dependent on a number of variables such as the quality of the signal progression, the cycle length, and green time. Level of service was calculated for each approach to the 12 intersections and as an average for all approaches to an intersection.

### Table 1.4 Definition of Level of Service

| Description | | Delay |
|---|---|---|
| A | Little or no delay. | 0-10 seconds |
| B | Good progression and short cycle lengths. | > 10-20 seconds |
| C | Fair progression, longer cycle lengths. | > 20-35 seconds |
| D | The influence of congestion becomes noticeable. Some unfavorable progression and long cycle lengths. | > 35-55 seconds |
| E | Poor progression, long cycle lengths, and cycle failures. | > 55-80 seconds |
| F | Unacceptable to most drivers; arrival-flow rates exceed the capacity of the intersection. | > 80 seconds |

Source: 2000 Highway Capacity Manual.

At present, most of the study area intersections are operating at a level of service of "D" or better during both morning and evening peak periods and on weekends. However, a number of individual approaches to intersections are operating at LOS of "E" or "F."

Figures 1.7 through 1.9 show the LOS for each approach to the 12 intersections. Several of the approaches are operating at a LOS of "F":

- Westbound Park Road at 16th Street (A.M. and P.M. Peak);
- Westbound Columbia Road at 16th Street (A.M. and P.M. Peak);
- Westbound Monroe Street at 14th Street (A.M. Peak);
- Southbound Adams Mill Road at Irving Street (P.M. Peak);
- Southbound 16th Street at Park Road (Weekend Midday); and
- Southbound 14th Street at Park Road (Weekend Midday).

In many cases, delays at these intersections can be addressed by retiming signals to better accommodate traffic. As an example, at the intersection of 16th Street and Park Road, drivers on both northbound and southbound 16th Street are facing few delays, but drivers approaching this intersection on Park Road are facing significant delays. Retiming the signal to provide more green time for those on Park Road would alleviate some of the delay for drivers on Park Road while still providing sufficient green time on 16th Street. Some general conclusions can be drawn from the signal analysis:

- Peak-period cycle lengths, now up to 100 seconds, are too long. Reduced cycle lengths would improve the level of service at intersections and reduce delay for pedestrians. Reduced cycle lengths also would discourage jaywalking.

- Signal timings tend to overemphasize north-south travel during peak periods. Delays are more consistent on the eastbound and westbound approaches to intersections. Adjusting the existing signal timings to better optimize traffic movements on all approaches would benefit both drivers and pedestrians.

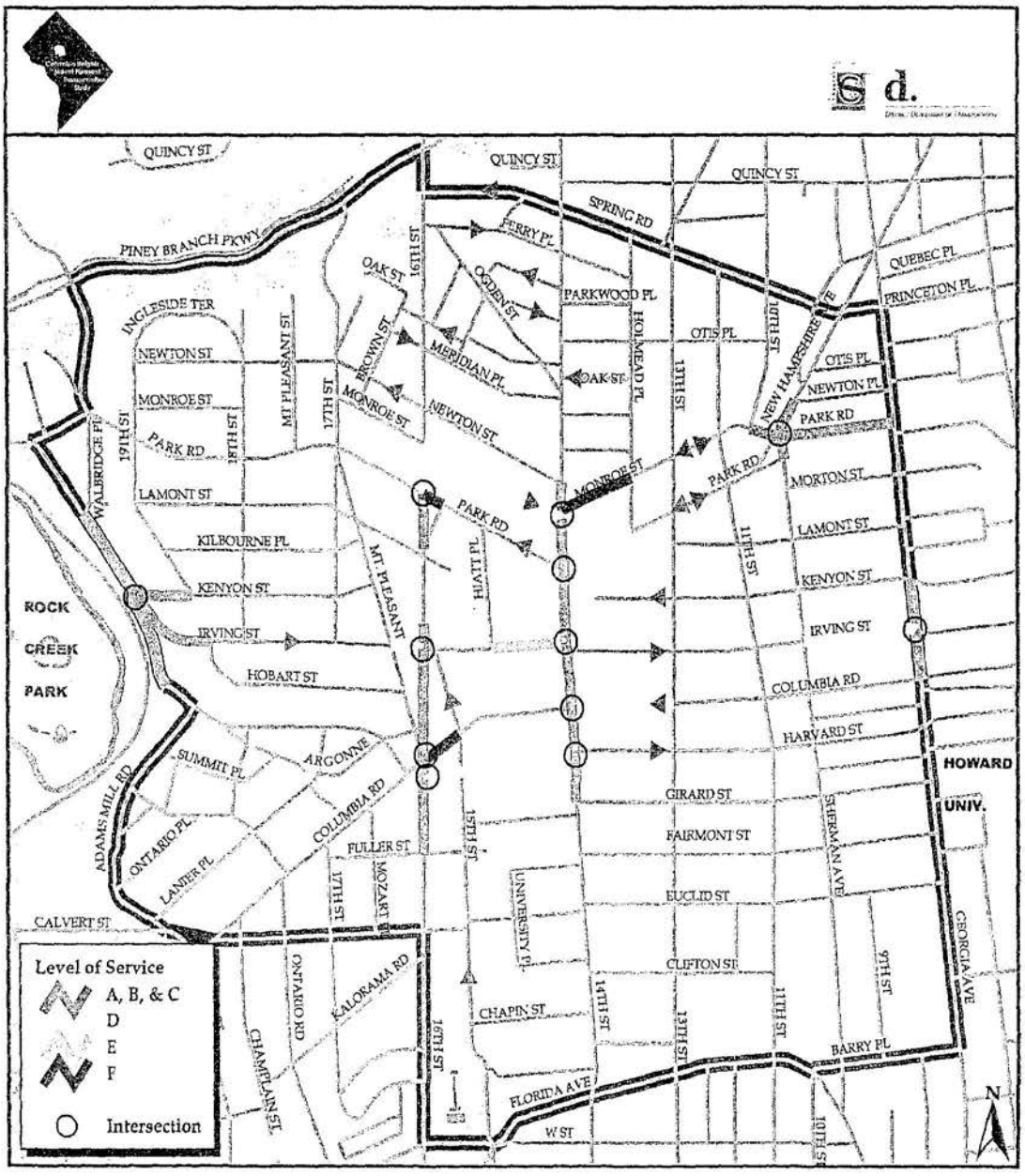
In addition to modeling traffic signal operations at each of these 12 intersections, field visits were conducted across the neighborhood to observe potential traffic operations issues. Some specific intersections and identified issues are discussed below.

**16th Street/Park Road** - This intersection appears to cause consistent vehicle delays, particularly on Park Road. At times, traffic along Park Road backs up to 14th Street. During the morning and evening peak, school drop-offs on Park Road just to the west of 16th Street contribute to congestion at the intersection by reducing, at times, the number of lanes on Park Road to just one.

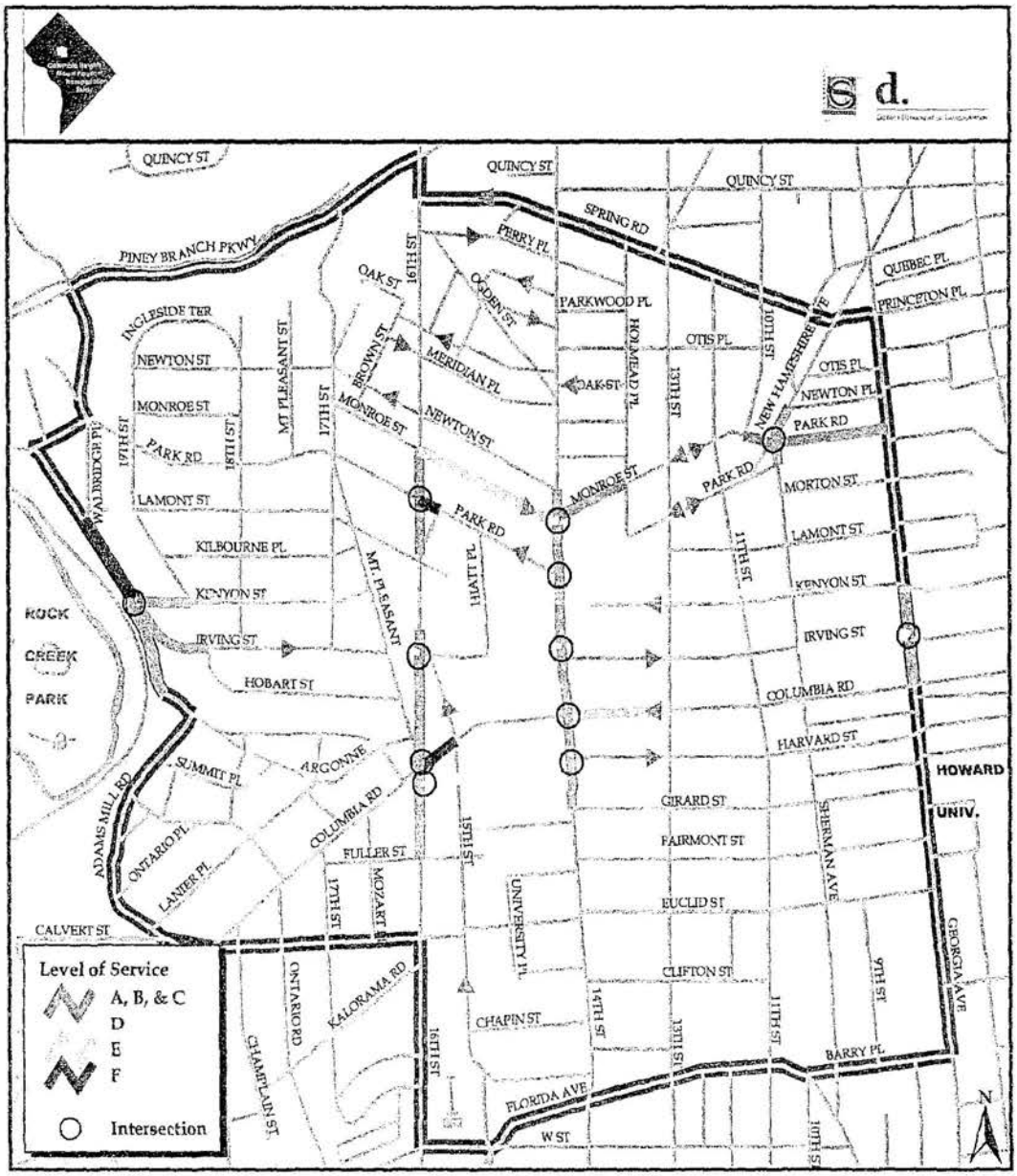
**16th Street Southbound** - On-street parking is causing significant delays during off-peak hours on southbound 16th Street between Irving Street and Spring Street. On-street parking regulations do not appear to be enforced outside of weekday hours.

**14th Street/Monroe Street** - The eastbound and westbound approaches at Monroe Street are offset. Both approaches are given green time, but opposing drivers often find the intersection confusing and cars frequently stop in the middle of the intersection because of a confusing signal setup.

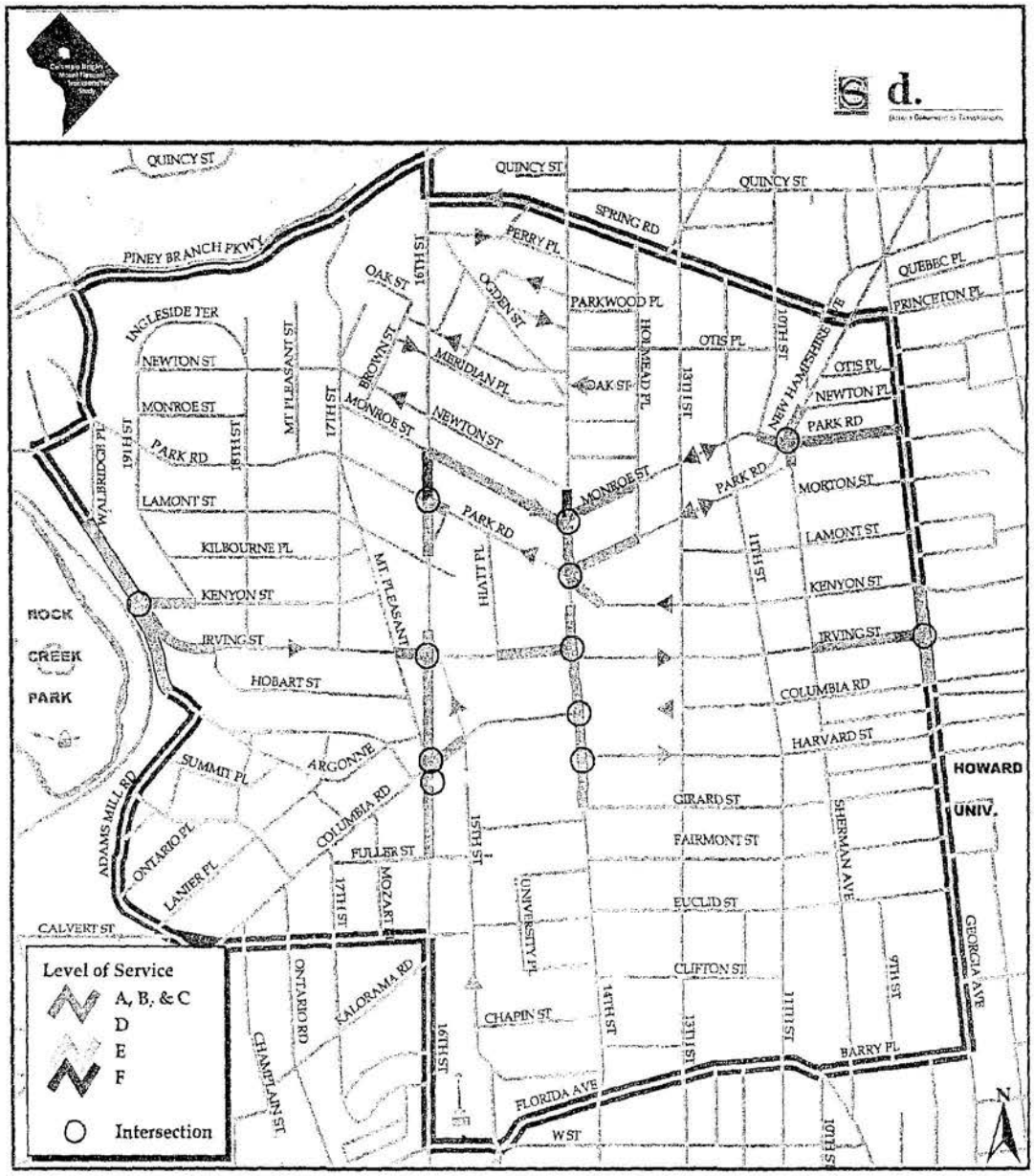
## Figure 1.7 Congestion and Level of Service
*A.M. Peak*



## Figure 1.8 Congestion and Level of Service
*P.M. Peak*



## Figure 1.9 Congestion and Level of Service
*Weekend Midday*



**14th Street/Irving Street** – The southbound 14th Street approach to this intersection has only two lanes, but widens out to provide a pick-up/drop-off zone along the curb for buses. The left-most lane is designated as a left-turn only lane at the intersection, resulting in only one effective southbound through lane. Drivers often find this lane-use configuration confusing and field observations indicate that drivers often merge close to the intersection contributing to vehicle delays.

**16th Street/Irving Street** – Drivers headed southbound on 16th Street are permitted to turn left onto Irving Street. However, the close proximity of the intersection of 15th Street/Irving Street provides space for only a few vehicles to queue. Queued vehicles thus regularly extend back onto 16th Street.

**16th Street/Mount Pleasant Street** – A signal provided at the 16th Street/Mount Pleasant Street intersection is intended to let drivers headed northbound on 16th Street turn left onto Mount Pleasant Street. Drivers are stopped on southbound 16th Street to allow for this left turn, but northbound drivers are provided with a continuous green signal indication. The intersection is thus confusing (and potentially dangerous) to pedestrians and jaywalking is relatively common.

**16th Street/Harvard Street** – Southbound 16th Street drivers are prohibited from making a left turn onto Harvard Street. However, during the field data collection efforts, a number of vehicles were observed turning left onto Harvard Street. Several area residents stopped to tell the data collection staff that this prohibition on left turns limits access for neighborhood residents.

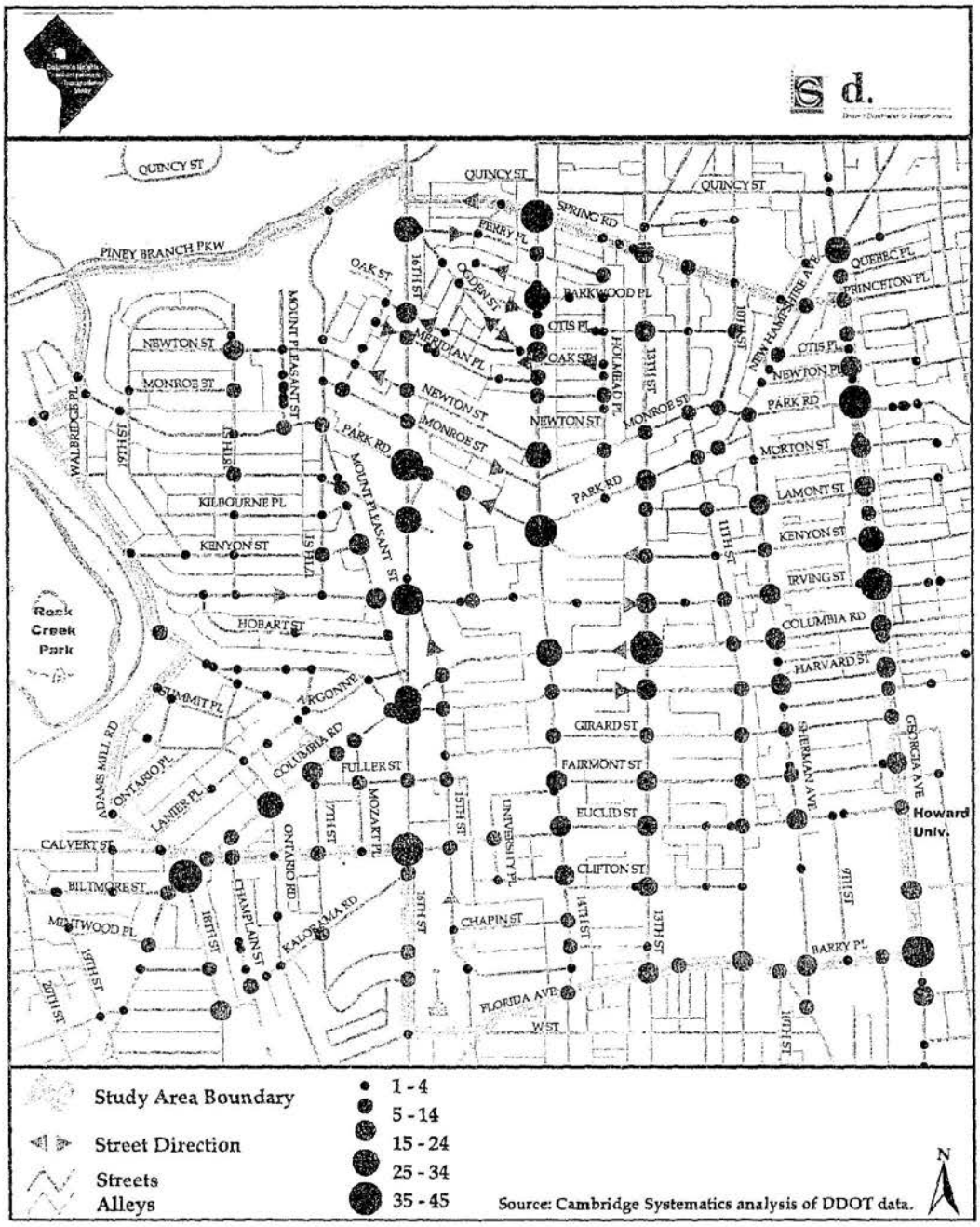
Appendix A includes a memorandum with a detailed assessment of each intersection based on existing traffic counts.

## Crashes Concentrated on High-Volume Routes

Automobile crashes are concentrated on roadways with higher traffic volumes, such as 16th Street, 14th Street, Georgia Avenue, and Columbia Road. Figure 1.10 displays vehicular crashes for each intersection within the study area over a three-year period (1999-2001). Three intersections show a relatively high number of both pedestrian and automobile crashes:

- 16th Street/Irving Street;
- 14th Street/Park Road/Kenyon Street; and
- 13th Street/Columbia Road.

## Figure 1.10 Automobile Crashes
*1999-2001*



## 1.4 Pedestrian/Bicycle Issues

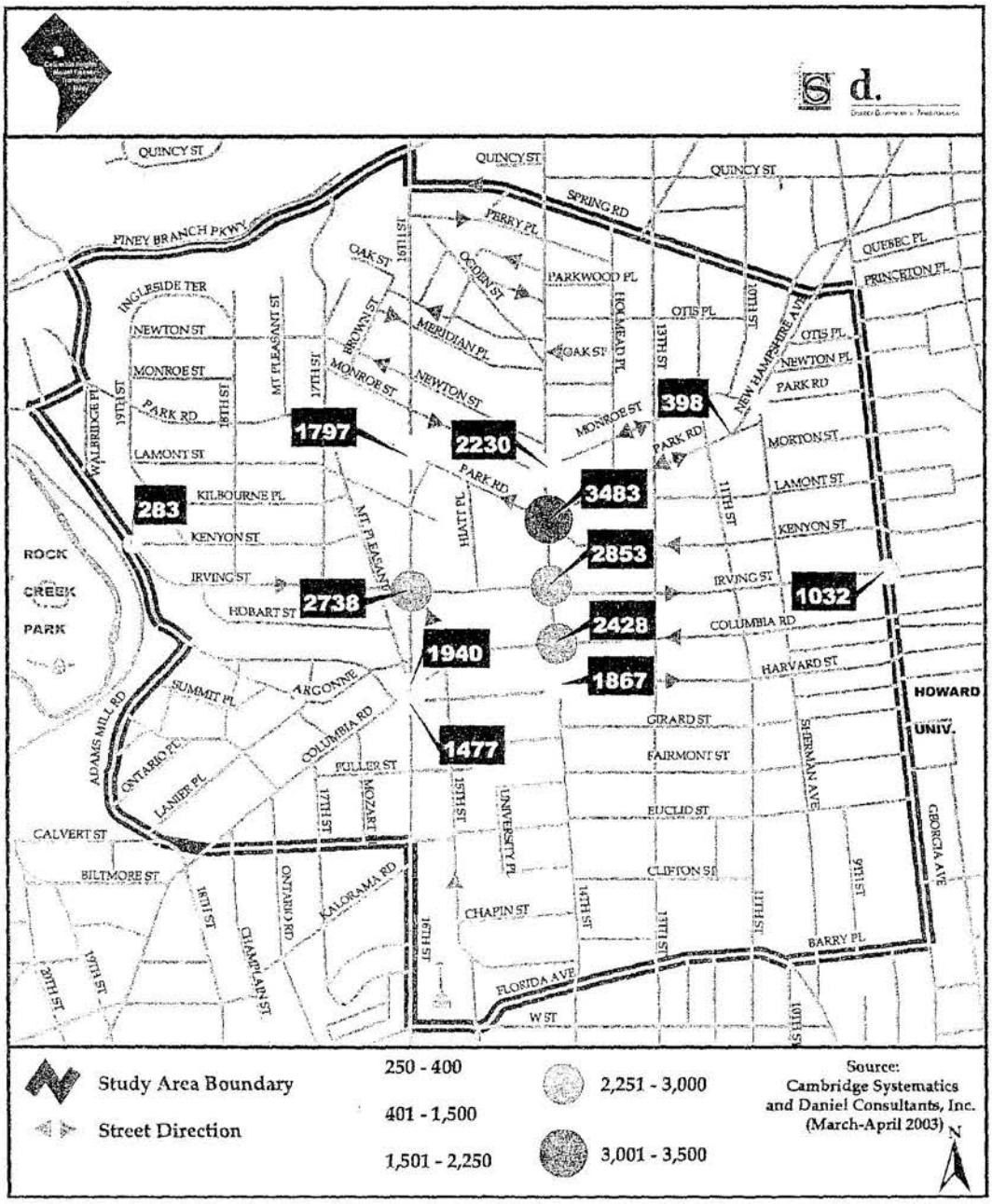
Columbia Heights and Mount Pleasant have developed as pedestrian-oriented neighborhoods. Walking is an important part of the local transportation system, reflected in the significant level of pedestrian activity throughout the neighborhood. Unfortunately, high volumes of traffic, particularly during peak hours, have created pedestrian safety issues at a number of locations. The balance between moving traffic to limit congestion and providing for a safe pedestrian environment proves a challenge in this part of the District. This subsection details the assessment of pedestrian conditions and, in particular, identifies locations where pedestrian safety is of a particular concern.

### A Number of Intersections Have High Levels of Pedestrian Activity

Pedestrian activity is high throughout the study area, particularly in areas with a concentration of commercial development and in the vicinity of major transit service. Figure 1.11 shows the total number of pedestrian street crossings at each of the 12 intersections at which peak-period vehicular and pedestrian counts were taken. This figure displays estimated 24-hour pedestrian counts at each intersection that have been factored based on the observed pedestrian counts taken during the four peak hours of travel. The highest levels of pedestrian activity are found in the areas immediately surrounding the Columbia Heights Metrorail Station. The highest pedestrian volumes were at the following intersections (in order):

- 14th Street/Park Road/Kenyon Street;
- 14th Street/Irving Street;
- 16th Street/Irving Street; and
- 14th Street/Columbia Road.

## Figure 1.11 Pedestrian Street Crossings
*Estimated 24-Hour Counts*



## Intersections with High Pedestrian Accident Rates

Pedestrian safety is a particularly critical issue in neighborhoods such as Columbia Heights and Mount Pleasant where pedestrian activity is so significant. Much of the new development planned in the heart of Columbia Heights is expected to attract patrons that walk or take transit. If these new developments are successful in encouraging transit and pedestrian travel, the pedestrian environment must be comfortable and safe. As a part of this study, historical data on pedestrian accidents were reviewed. Figure 1.12 shows pedestrian accidents, by intersection, for the five-year period of 1997 to 2001. In most locations, the number of pedestrian accidents was relatively low with two or fewer accidents during the five-year period. However, several intersections and, in some cases, a series of intersections in close proximity show higher rates of pedestrian accidents. In some cases, the higher rates of pedestrian accidents may be, in part, the result of high levels of pedestrian activity but, in some cases, intersection design or operational issues may be contributing factors. Some locations of particular concern include:

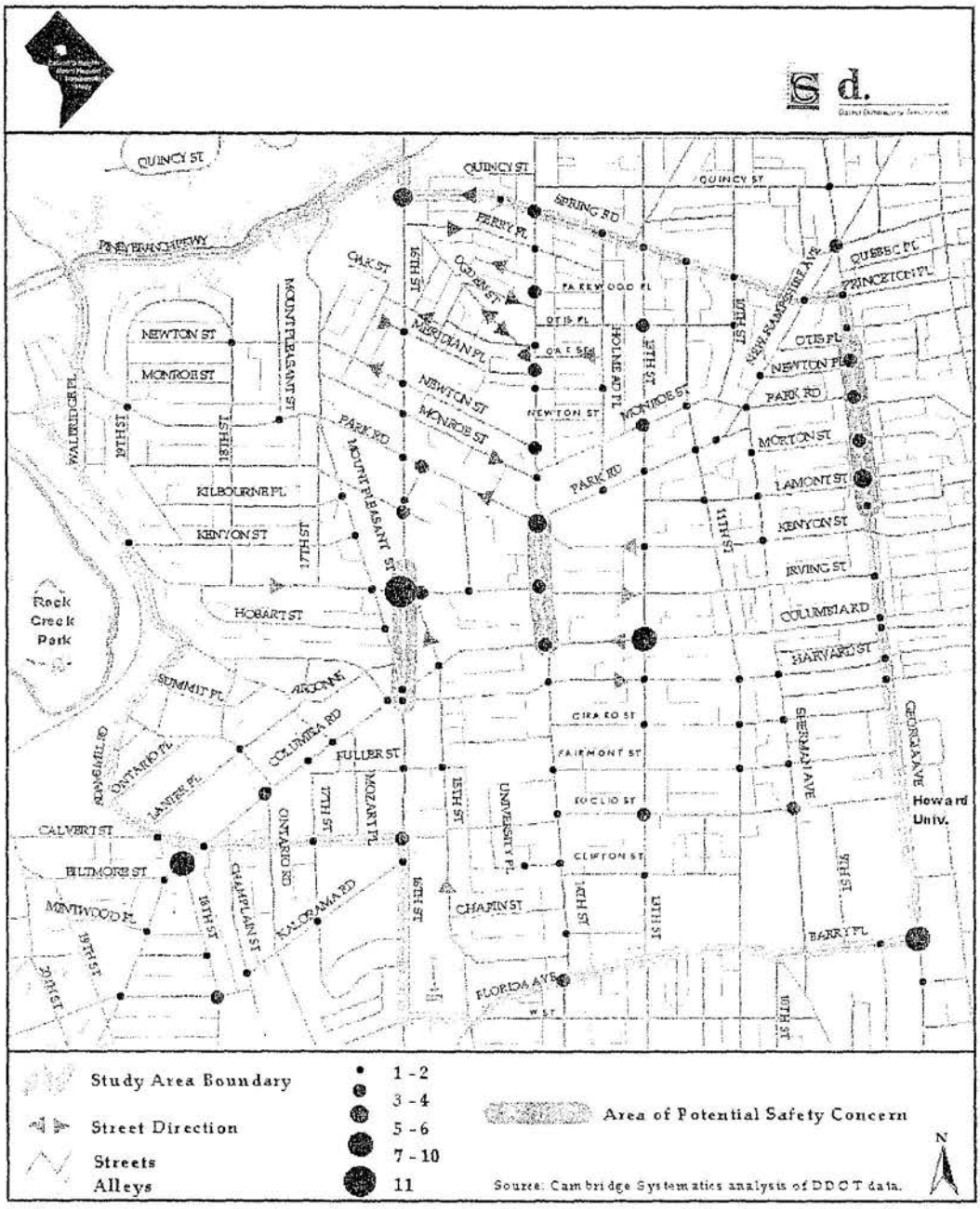
- 16th Street/Irving Street;
- 14th Street/Park Road;
- 14th Street/Irving Street;
- 14th Street/Columbia Road;
- 13th Street/Columbia Road (recent improvements have been made to pedestrian striping);
- Georgia Avenue (between Newton Street and Lamont Street); and
- 14th Street (between Monroe Street and Spring Street).

The intersection of 16th Street and Irving Street had the highest number of pedestrian crashes during this period. This intersection is likely to experience an increase in pedestrian activity as residents of the Adams Morgan and Mount Pleasant neighborhoods cross 16th Street to access the new retail development and the Columbia Heights Metrorail Station. Pedestrian activity also is likely to increase at the intersections of 14th Street/Park Road, 14th Street/Irving Street, and 14th Street/Columbia Road. Improving pedestrian safety should be a high priority at all of these locations.

## Inadequate Pedestrian Crosswalks and Signals

In general, pedestrian markings are not clearly visible in many locations. In some cases, the striping has faded or is not visible to automobiles. In others, such as along Georgia Avenue, pedestrian crosswalks are marked at unsignalized intersections, but are not clearly visible to drivers. These crosswalks provide a false sense of safety to pedestrians and may explain higher accident rates.

## Figure 1.12 Pedestrian Crashes and Potential Safety Issue Areas
*1997-2001*



## Incomplete Pedestrian Networks

In several locations within the study area, pedestrian networks are interrupted to favor automobile traffic. In particular, pedestrian movements are not allowed across some legs of these intersections to facilitate the movement of automobile traffic such as:

**16th Street/Irving Street** - Pedestrians walking northbound on the east side of 16th Street are not permitted to cross Irving Street. They are directed to cross 15th Street, then cross Irving Street, and walk back to 16th Street. Although pedestrian markings clearly indicate that pedestrians should not cross Irving Street at 16th Street and the traffic signals do not provide for a safe crossing, pedestrians continue to make this movement on a regular basis.

**16th Street/Pine Street** - Vehicles headed westbound on Park Road from northbound 16th Street are required to make a right onto Pine Street and then a left on Park Road. Pine Street is designed to allow a relatively high-speed right turn off of 16th Street. Barriers have been erected along the east side of 16th Street to prevent pedestrians from crossing Pine Street. However, pedestrians continue to make this movement just beyond the end of the barriers at a point of limited visibility for drivers approaching this location on northbound 16th Street.

**16th Street/Mount Pleasant Street** - A signal is provided at 16th Street/Mount Pleasant Street to allow automobiles to make left turns from northbound 16th Street onto Mount Pleasant Street. However, pedestrians are not permitted to cross 16th Street at this location. Northbound drivers on 16th Street are provided with a continuous green light and are not required to stop. However, when southbound traffic stops, pedestrians routinely cross 16th Street at this location. The intersection appears to be confusing to pedestrians.

## Bicycle Lanes Limited

Within the study area, the only officially designated bicycle lanes are found on 14th Street north of Newton Street and along Irving Street between Adams Mill Road and Mount Pleasant Street. DDOT is currently evaluating the potential location of additional bicycle routes in the neighborhood as an element of the larger District Bicycle Plan. The study area does not currently have a connected network of bicycle facilities. However, bicycle parking is provided at the Metrorail Station. Bicyclists also are permitted to ride on sidewalks in the neighborhood.

Bicycle counts at 12 intersections in the neighborhood indicate bicycle activity is highest along 16th Street, with as many as 60 bicycles during peak hours (the intersection of 16th Street and Columbia Road). Although bicycle lanes are marked along 14th Street, bicycle volumes are lower than along 16th Street, with the highest peak-hour count of 24 bicycles (at 14th Street/Harvard Street). Increased retail development along 14th Street will likely increase bicycle activity.

# 1.5 Transit

The Columbia Heights Metrorail Station began service on September 18, 1999, as a part of an extension of the Metrorail Green Line. This line is now open from Branch Avenue in Prince George's County, Maryland, to Greenbelt in Prince George's County, Maryland, and connects to a number of other major Metrorail lines.

## Ridership at Columbia Heights Metrorail Station Continues to Increase

The Columbia Heights Metrorail Station serves residents in the Columbia Heights and Mount Pleasant neighborhoods. Weekday ridership in January 2003 at the Station averaged 5,500 passengers entering and 5,100 passengers exiting the Station. Overall, the Station has experienced a 35 percent growth in average weekday ridership between 2000 and 2002.

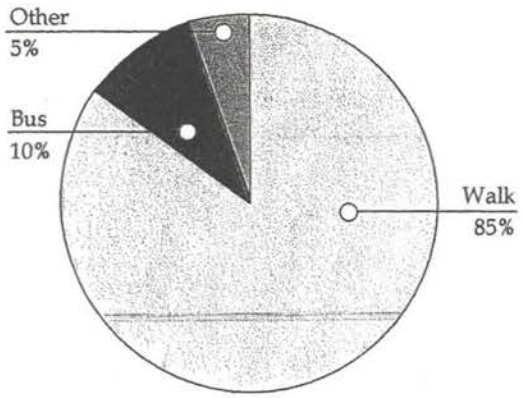
### Table 1.5 Columbia Heights Metrorail Station Ridership

| 2000 Average Weekday Ridership | 2001 Average Weekday Ridership | 2002 Average Weekday Ridership | Percent Change 2000-2002 |
|---|---|---|---|
| 3,960 | 4,770 | 5,350 | 35% |

## Most Metrorail Riders Arrive on Foot

Most riders at this Metrorail Station are arriving on foot. As shown in Figure 1.13, 85 percent of all passengers walk to the Station. Another 10 percent take the bus to the Station and just five percent use another mode, such as a bicycle, getting a ride, or driving and parking in the neighborhood. The high level of pedestrian access to this Station emphasizes the need to focus on pedestrian improvements as a part of this transportation study.

**Figure 1.13 Mode of Access to Columbia Heights Metrorail Station**




## High Levels of Bus Service Provided in Study Area

The study area is served by a network of 19 WMATA bus routes. A total 11 routes directly serve the Columbia Heights Metrorail Station with other routes (S1, S2, S4, 66, 68, 70, and 71) serving the north-south corridors along 16th Street, 11th Street, Sherman Avenue, and Georgia Avenue. Route 42 originates in and serves the Mount Pleasant area. High levels of service are provided on a number of routes with headways as short as four minutes during peak hours of travel. Service is much less frequent on the weekends.

Several changes were made to area bus service upon the opening of the Metrorail Station in Columbia Heights. In September 1999, three routes originally serving the Columbia Heights area (Routes 60, 62, and 64) were shortened to become feeders to the Georgia Avenue-Petworth Metrorail Station. Two new routes, 66 and 68 along 11th Street and Sherman Avenue, were created to replace Routes 60, 62, and 64. Routes H5, H7, H1, and S1 only operate during peak hours on the weekdays.

## Table 1.6 WMATA Metrobus Route and Service Frequency

| Route(s) | Description | Service Frequency (Minutes) Weekday Peak | Weekday Off-Peak | Average Weekend (Sat./Sun.) |
|---|---|---|---|---|
| 42 | Mount Pleasant Line | 4 | 10 | 13 |
| 52, 53, 54 | 14th Street Line | 5 | 8 | 13 |
| 66, 68(a) | Petworth-11th Street | 4 | 14 | 25 |
| 70, 71 | Brightwood-Petworth, Georgia Avenue-7th Street Line | 8 | 10 | 12 |
| H1 | Brookland-Potomac Park Line | 14 | - | - |
| H2, H3, H4(b) | Crosstown Line | 5 | 18 | 23 |
| H5, H7 | Columbia Heights-Pleasant Line (Urban Circulator) | 17 | - | - |
| H8, H9 | Park Road-Brookland Line | 12 | 26 | 25 |
| S1 | 16th Street Potomac-Park Line | 6 | - | - |
| S2, S4 | 16th Street Line | 4 | 8 | 10 |

Source: WMATA Regional Bus Study.

## Bus Ridership Relatively Stable

Since 1995, overall ridership on bus routes that serve the study area has declined by about five percent. However, most of this change is because of service changes and ridership on individual routes has continued to increase despite the opening of the Columbia Heights Metrorail Station.

## Table 1.7 WMATA Metrobus Ridership

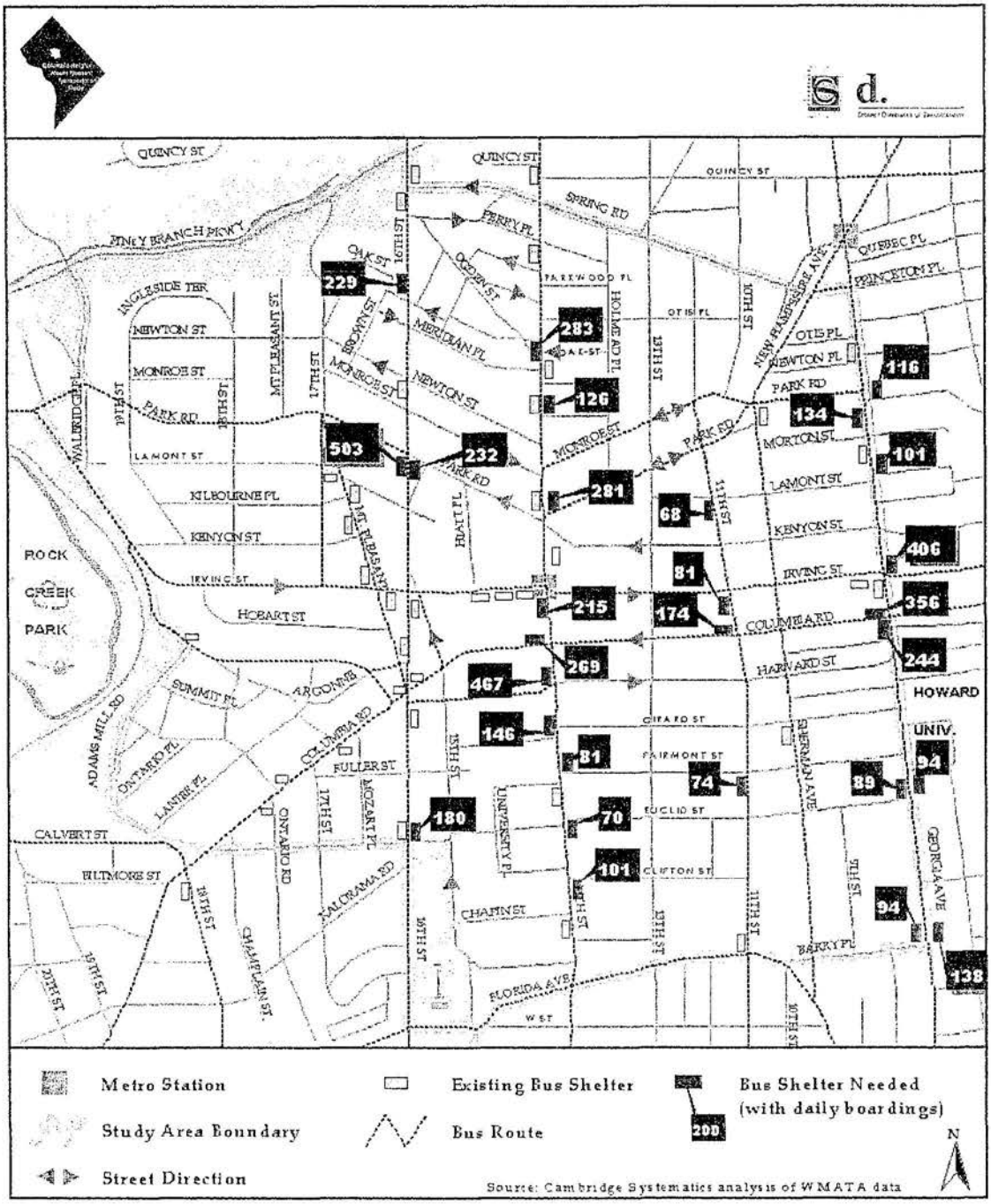
| Route(s) | Spring 1995 | Spring 1999 | Spring 2002 |
|---|---|---|---|
| 42 | 11,103 | 9,846 | 10,821 |
| 52, 53, 54 | 14,655 | 16,054 | 16,461 |
| 66, 68 | N/A | N/A | 3,608 |
| 60, 62, 64 | 12,601 | 10,975 | N/A |
| 70, 71 | 18,162 | 18,871 | 20,161 |
| H1 | N/A | N/A | 551 |
| H2, H3, H4 | 10,355 | 8,347 | 7,602 |
| H5, H7 | N/A | N/A | 342 |
| H8, H9 | 2,516 | 2,666 | 3,847 |
| S1 | 1,413 | 1,389 | 1,892 |
| S2, S4 | 14,859 | 15,537 | 16,395 |
| **Totals** | **85,664** | **83,685** | **81,680** |

Source: WMATA

## Bus Shelters Lacking

As indicated by the high levels of observed bus ridership in the neighborhood, bus service continues to play a critical role in the neighborhood transportation system. Many area residents have suggested that there is a need to add and improve bus shelters throughout the neighborhood. WMATA determines the location of bus shelters based on criteria developed by the Transit Cooperative Research Program (TCRP), with a general threshold of 50 boarding passengers per day justifying the installation of a passenger waiting shelter. Figure 1.14 shows the location of existing bus shelters and as well as those bus stops throughout the neighborhood that warrant a shelter based on boarding data. According to WMATA, the focus is on providing shelters for those boarding buses headed in the southbound direction, towards downtown. Within the Columbia Heights and Mount Pleasant neighborhoods, a number of bus stops with a significant number of boardings also are found on routes headed in the northbound direction. In some instances, individual bus stops with observed boarding volumes in excess of 400 passengers per day do not have shelters provided.

## Figure 1.14 Bus Shelter Needs Assessment



# 1.6 Parking

This subsection details the approach and evaluation of the District's management of existing on-street parking within one-quarter mile of the Columbia Heights Metrorail Station (also known as the "core area") based on the following actions:

- Performance and analysis of a comprehensive series of parking activity surveys;
- Feedback from neighborhood residents obtained in community meetings; and
- General observations of both on- and off-street parking conditions.

This analysis consisted of an inventory of all blocks within the core area to determine the number of potential parking spaces and to survey existing on-street parking regulations. In addition, site visits were conducted to assess the overall level of use within the neighborhood. Parking activity surveys were conducted on all 60 of the block faces within the core area between May 29 and June 28, 2003. Surveys were conducted during the midday starting between 10:30 a.m. and 11:30 a.m., and during the evening after 6:30 p.m. or later when rush-hour parking restrictions are no longer in place. Surveys were conducted during the following periods:

- Weekday midday;
- Weekday evening;
- Saturday midday; and
- Saturday evening.

The surveys provided information on the following parking indicators for each type of curb regulation (except for street cleaning and rush-hour regulations):

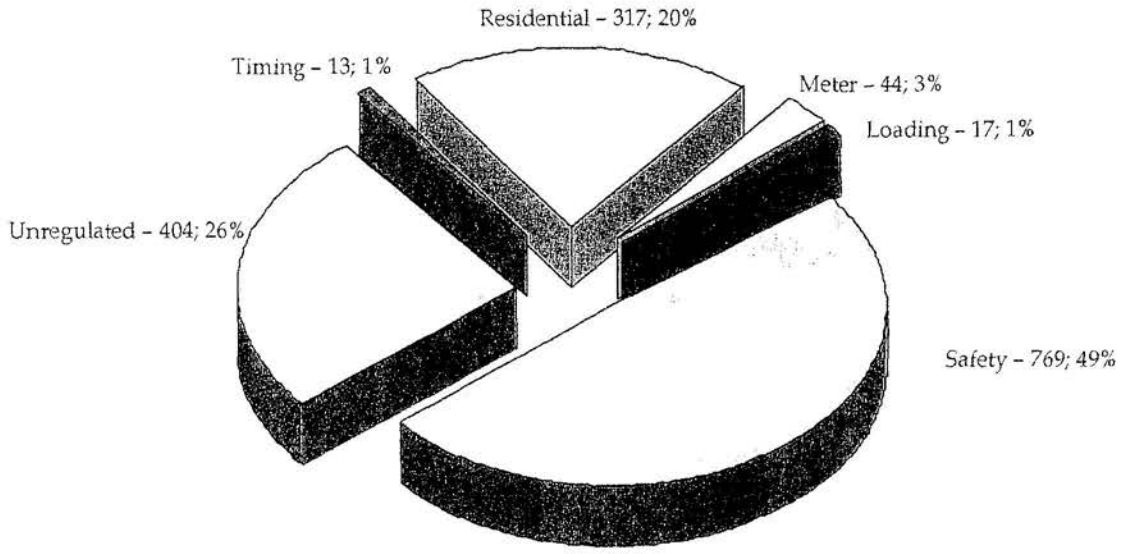
- Parking occupancy and vacancy rates;
- Parking violation rates; and
- Space turnover and average parking durations for meter, timing, and residential parking regulations.

## On-Street Parking is Primarily "No Parking," "Residential Permit Parking," and Unregulated

The core area has a total inventory of 1,564 potential on-street parking spaces, 20 percent of which are governed by Residential Permit Parking (RPP) restrictions during primary daytime hours (7:00 a.m. through 8:00 p.m.). As shown in the following chart, parking safety regulations (including bus zones, crosswalk curb-cuts, hydrants, driveways, no stopping, and no parking regulations) comprise the largest use of on-street space, at approximately one-half of the available curb space. Unregulated spaces and residential

parking spaces represent the next two largest uses of curb space, at 26 percent and 20 percent, respectively, while meters account for only three percent of the total. Miscellaneous spaces such as time-limited parking and loading zones account for two out of every 100 spaces.

## Figure 1.15 Core Area Parking Regulations




The following tables detail the location and time periods for meters, residential parking permit, timed parking, and bus zones. Detailed information regarding the location of residential and timed parking, as well as bus zones (based on the number of standard car lengths) are provided below.

# 2.0 Recommended Transportation Improvements

Columbia Heights/Mount Pleasant Transportation Study

# 2.0 Recommended Transportation Improvements

This section outlines a number of short- and long-term transportation improvement recommendations developed for the Mount Pleasant and Columbia Heights neighborhoods. Recommendations outlined in this section are based on extensive field observations, data collection, analysis of existing conditions, and outreach to neighborhood residents.

The evaluation of potential improvements is based on key objectives developed in the first phase of the study.

- Promote safe and convenient mobility for all forms of transportation - pedestrian/bicycle/vehicular/transit;
- Provide a framework for addressing future transportation needs through transit-oriented development principles;
- Provide a forum for community input on future transportation system elements;
- Develop creative approach to right-size parking for urban residential, commercial, and employment needs; and
- Improve aesthetic of neighborhood streets.

Figures 2.1, 2.14, 2.16, and 2.20 show the location of these improvements, grouped by traffic, transit, pedestrian, and bicycle recommendations. The transportation recommendations below should be considered at a first-stage, planning-level recommendation. In some cases, recommendations will require additional design and analysis prior to implementation.

# 2.1 Traffic

In general, congestion within the study area is limited to only a few intersections. Peak-period parking restrictions increase capacity through the neighborhood and most intersections operate at an acceptable level of service during peak periods. By contrast, weekend parking, in particular on Sundays, contributes to excessive delays in a few locations within the study area. Recommendations within this subsection address isolated areas of congestion as well as pedestrian safety issues created by excessive signal timing lengths. In addition, some geometric changes are recommended to promote pedestrian safety and accommodate increased traffic expected with several large-scale developments along 14th Street. Figure 2.1 illustrates the traffic recommendations.

## Signal Timing Changes

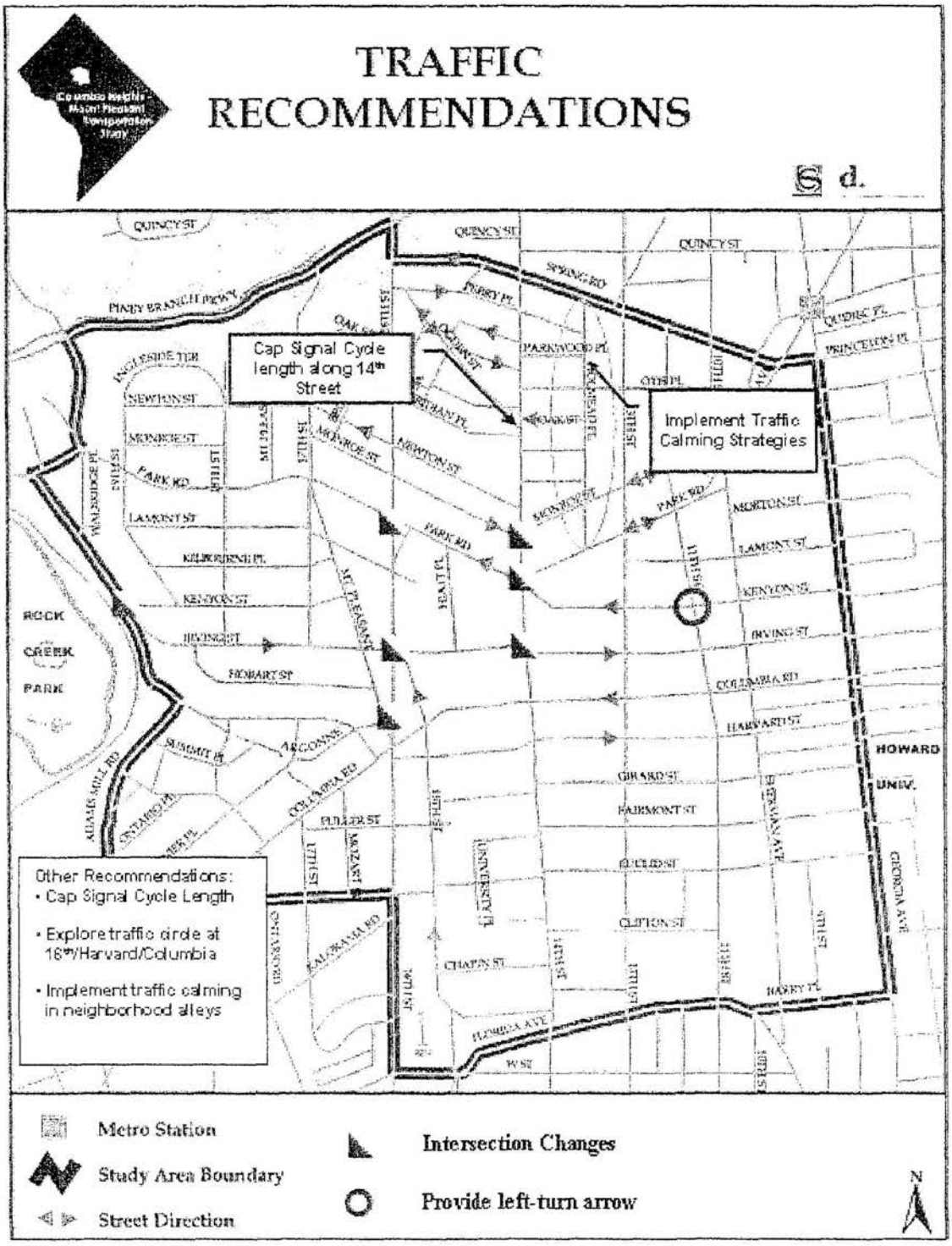
**1. Cap signal cycle length at 90 seconds at all intersections (except along 16th Street and Georgia Avenue). Where possible, further reduce cycle lengths, particularly during off-peak periods. High priority for 14th Street. (Long term/Short term)**

Extended signal timing phases result in delays and contribute to a hostile environment for pedestrians. The current signal timing phases throughout the study area are excessive given the high level of pedestrian activity in the neighborhood. Because of extended wait times, pedestrians often cross without a protected signal. Existing signal timing phases during peak periods extend to as long as 100 seconds, with much of the green time provided to north-south travel. As a result, pedestrians attempting to cross north-south streets are required to wait an extended period of time.

Given the high levels of pedestrian activity throughout the study area, the recommendation is to shorten traffic signal cycle lengths to no more than 90 seconds during both peak and off-peak periods. Further reductions in signal cycle length should be implemented where possible. Shorter cycle lengths will encourage pedestrians to wait for the walk signal, reduce jaywalking, and help eliminate the "barrier effect" of north-south roadways in the neighborhood. Although this recommendation does not include intersections along 16th Street and Georgia Avenue because of the high level of commuter traffic, the District should attempt to reduce cycle lengths to 90 seconds on these streets if at all possible. The reduction in cycle lengths will have the added benefit of reducing vehicular delays on east-west streets in the study area. Retimings should first focus on the 14th Street corridor.

*Estimated Cost: Per signal retiming - $15,000.*

## Figure 2.1 Traffic Recommendations



**2. Retime signals at 16th/Park, 16th/Harvard/Columbia. Reevaluate overemphasis on north-south green time. (Short term)**

In general, intersections within the study area are operating with acceptable levels of service. Delays are most common on eastbound and westbound approaches to intersections. Signal timings along major north-south streets, such as 16th Street, 14th Street, and Georgia Avenue, tend to provide ample green time for north-south travel. By contrast, lower levels of service are found on east-west streets through the study area because of more limited green time and excessive cycle lengths. In particular, as seen in Figure 2.2, delays at the intersections of 16th/Park and 16th/Columbia/Harvard can be addressed by retiming the signals.

*Estimated Cost: $15,000 (per signal).*

## Figure 2.2 Delays at 16th/Park



**3. Add left turn signal at Sherman/Kenyon. (Short term)**

During the public outreach effort, a resident of the neighborhood noted that a signal timing error at the intersection of Sherman and Kenyon is creating a safety hazard. At this intersection, the signal for southbound Sherman turns red several seconds before northbound Sherman. The lack of a left-turn signal at this location creates this confusion. The additional green time provided for northbound Sherman is intended to facilitate the movement onto westbound Kenyon. Kenyon is one-way westbound at this intersection.

*Estimated Cost: $5,000.*

**4. Improve the intersection of 14th Street/Monroe Street to reduce driver confusion and improve pedestrian safety.**

The intersection of 14th Street and Monroe creates confusion for both pedestrians and drivers. Currently, vehicles approaching this intersection on eastbound and westbound Monroe are provided access to 14th Street simultaneously. As shown in Figure 2.3, the approaches on Monroe are offset and drivers are often confused by traffic signals for 14th Street. As a result, drivers headed from westbound Monroe Street onto southbound 14th Street often stop in the middle of the intersection. This prevents cars traveling eastbound on Monroe from continuing eastbound.

## Figure 2.3 Cars Blocking the "Box" at 14th/Monroe

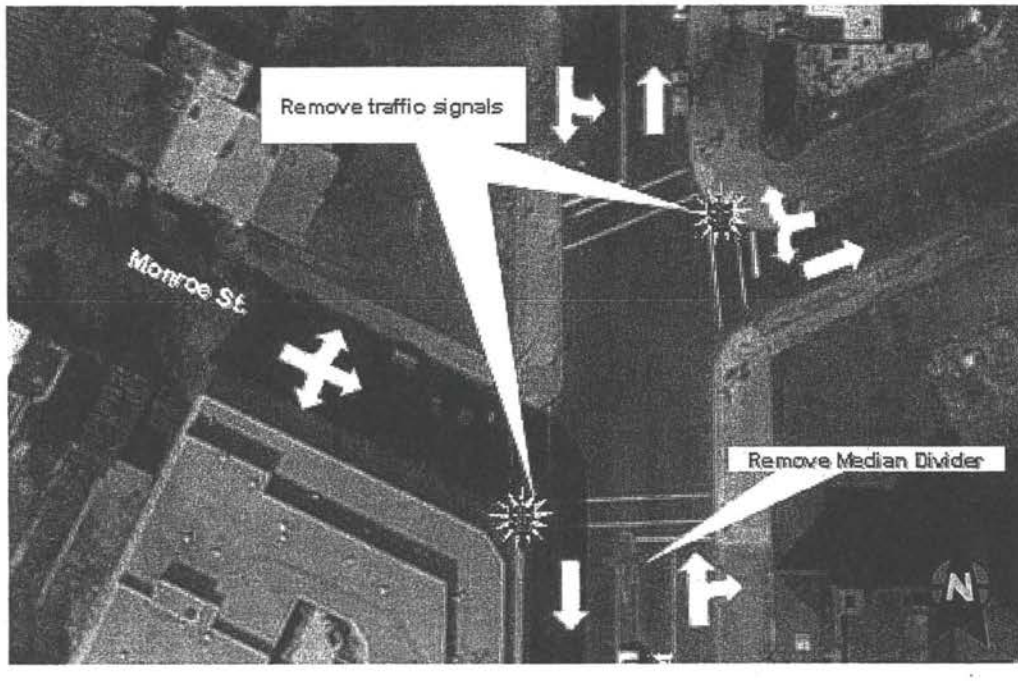


**Alternative 1: Establish separate signal phasing for eastbound and westbound Monroe at 14th Street and relocate traffic signals. (Short term)**

Under the first alternative, the traffic signal at this location should be retimed to provide separate signal phasing for the eastbound and westbound approaches. In addition, signals for the southbound 14th Street approach should be removed from the south side of Monroe Street (signal heads are located on both the south and north sides of the intersection). This will prevent confusion for those turning from westbound Monroe Street to southbound 14th Street. Similarly, the signal head for the northbound approach should be removed from the north side of the intersection (a signal also exists on the south side of the intersection). This recommendation is shown in Figure 2.4.

*Estimated Cost: Signal relocation and separate signal phasing - $34,000.*

## Figure 2.4 Recommendation - 14th/Monroe *(Alternative 1)*

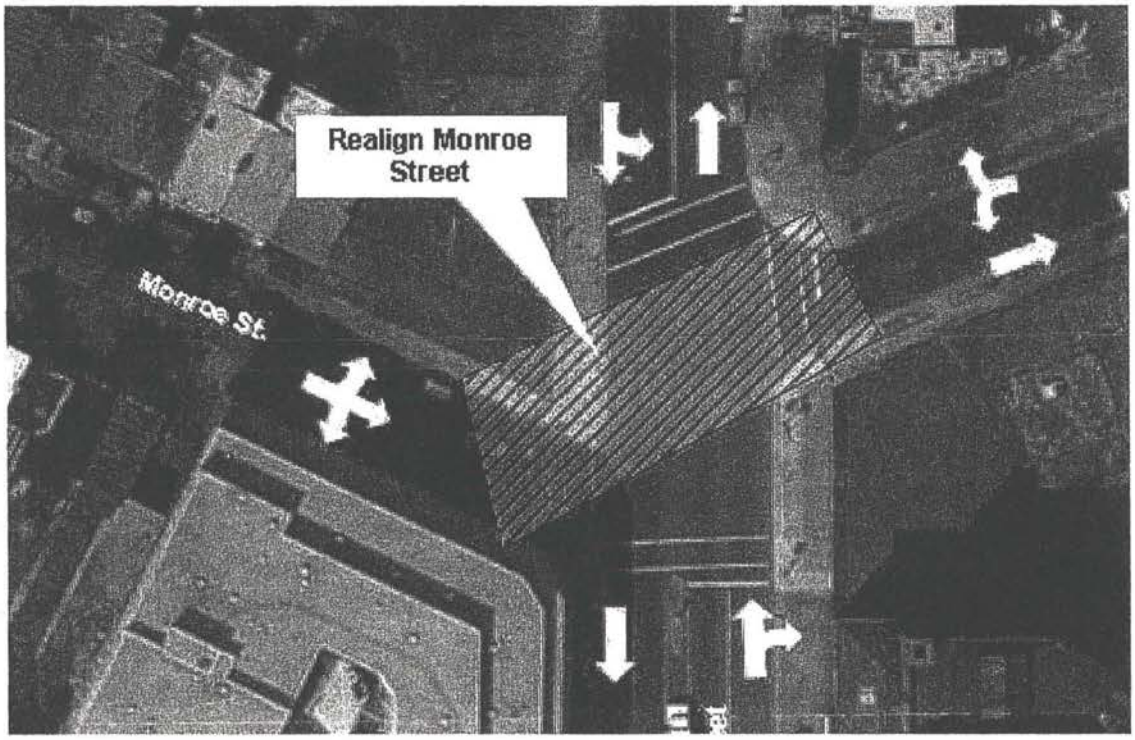



**Alternative 2: Realign Monroe Street west of 14th Street.**

A second option, as shown in Figure 2.5, is to realign Monroe Street slightly to the west of 14th Street. The lot on the northwest side of this intersection is currently vacant and could allow for a realignment that would also address pedestrian safety issues at this intersection. This recommendation was not included in the initial list of recommendations presented to neighborhood residents because of concerns that a realignment would further encourage through traffic on Monroe Street. However, a number of area residents have expressed an interest in this improvement. The advantage is an enhancement in safety for pedestrians and better operations. It may also reduce the number of vehicles speeding by creating a slight change in the street alignment near the vicinity of 14th Street.

*Estimated Cost: $185,000 (excludes right-of-way acquisition costs).*

## Figure 2.5 Recommendation – 14th/Monroe (*Alternative 2*)




### Geometric Changes

5. **Provide intersection improvements to address significant pedestrian safety issues at 14th/Park/Kenyon. (Long term – coordinate with construction of adjacent development)**

   - **Restrict Park Road to right-in, right-out (east of 14th) – remove signal access to 14th Street;**
   - **Reduce width of northbound 14th Street to two lanes (left only onto Park Road, and shared through and right turn); and**
   - **Remove left-turn only lane on Kenyon Street.**

The intersection of 14th/Park/Kenyon is hostile to pedestrians. The current signal timings provide limited time for 14th Street pedestrian crossings. Pedestrians are required to press a button to receive a walk signal across 14th Street, the only location in the study area for which this is required. In addition, pedestrian crossings are not provided for all legs of the intersections. The five-legged intersection requires separate green time for the Kenyon Street and Park Road approaches although green time for the Park Road approach is only 15 seconds because of low volumes. The multiple phases of the cycle result in limited 14th

Street crossing times for pedestrians. The geometric design of the intersection, including a left-turn only lane on Kenyon Street, encourages high speeds. Given the expected increase in pedestrian traffic as a result of new development adjacent to this intersection, improvements are critical to ensure adequate safety.

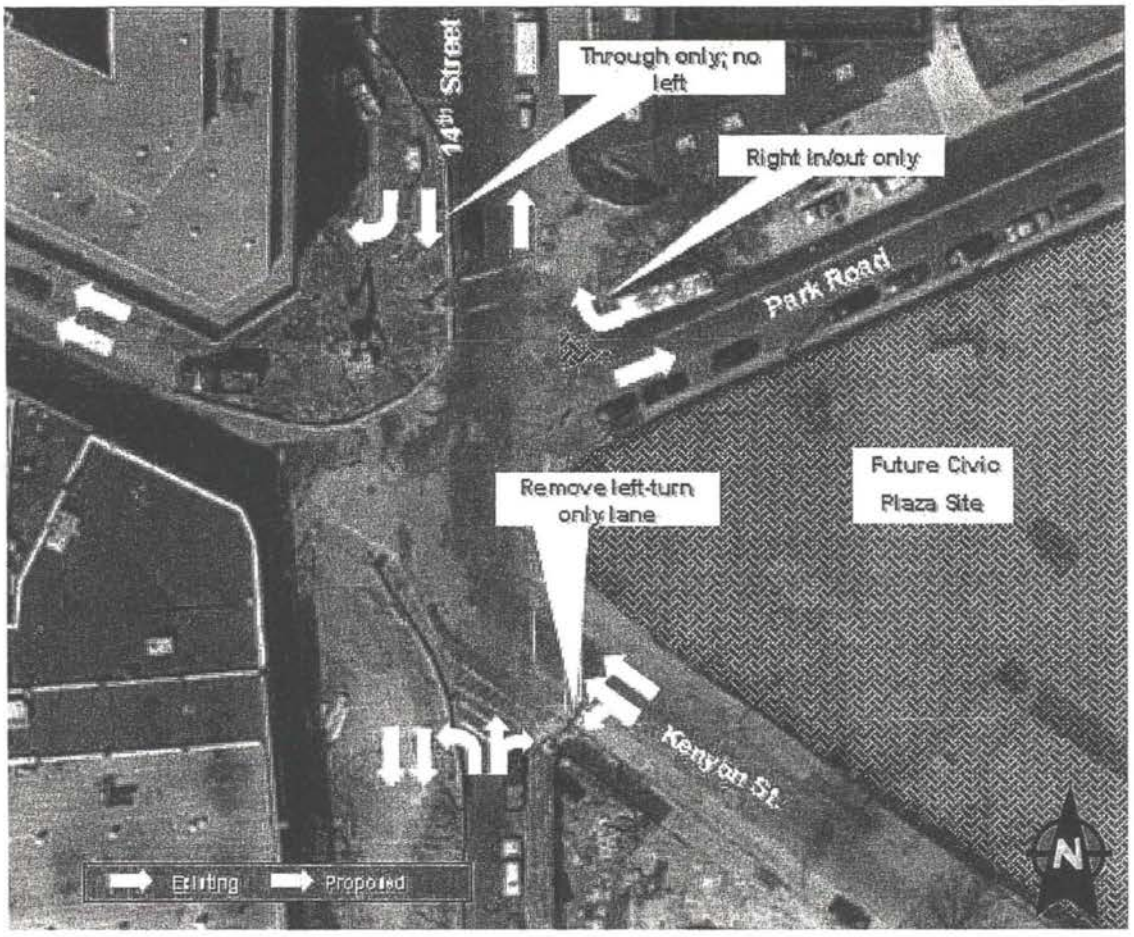
As shown in Figure 2.6, the recommendation is to make a number of changes at the intersection to improve pedestrian safety and provide adequate vehicle capacity to accommodate projected increases in traffic. Restricting Park Road to right-in, right-out will help improve the overall pedestrian environment and the level of service for vehicles. This change will shift a nominal amount of westbound traffic on Park Road to Monroe Street. Westbound traffic on Park Road is less than one-third of that on Kenyon Street during peak periods. Vehicles traveling westbound will have the option of using Kenyon Street or Monroe Street to access 14th Street.

In addition to changes on Park Road, the recommendation is to shift the point at which 14th narrows to one lane in the northbound direction from Monroe Street to the intersection of 14th/Park/Kenyon. This will better align the shift in 14th Street from a major commercial center to a neighborhood retail corridor. It will also allow for an extension of bike lanes to the Metrorail Station and enhance the pedestrian environment. This change will result in two lanes on northbound 14th Street, a left-turn only and a shared through and right-turn lane.

Finally, the current westbound approach on Kenyon Street should be narrowed from three lanes to two by removing the left-turn only lane. Vehicles turning left onto 14th Street will use a shared through and left-turn lane.

*Estimated Cost: Intersection improvements - $80,000.*

## Figure 2.6 Recommendation – 14th/Park/Kenyon




**6. Restripe intersection at 14th/Irving to a shared left and through lane. (Short term)**

Southbound 14th Street at the intersection of 14th/Irving is currently striped with a left-turn only lane and two through lanes. However, the right through lane does not continue through the intersection. At the south side of this intersection, parking is allowed on 14th Street. The effect is only a single through lane. Given the low volumes of left turns onto Irving Street, the recommendation is to change the left-turn only lane to a shared left and through lane. This change will better align the two through lanes north and south of the intersection and improve the operation and safety of the intersection. A period of protected left turn is still recommended to facilitate movement through the intersection.

*Estimated Cost: Restripe intersection – $24,000.*

7. **Improve intersection of 16th/Park Road to address intersection delays on westbound Park Road. (Short term)**

   - **Permit left turns from 16th Street northbound to westbound Park Road;**
   - **Stripe three narrow lanes on Park Road west of Pine Street (left, through, and shared through/right);**
   - **Improve parking enforcement on north side of Park Road west of the intersection;**
   - **Remove traffic signal at Park/Pine and replace with stop sign; and**
   - **Provide pedestrian crosswalk across Pine Street at 16th Street.**

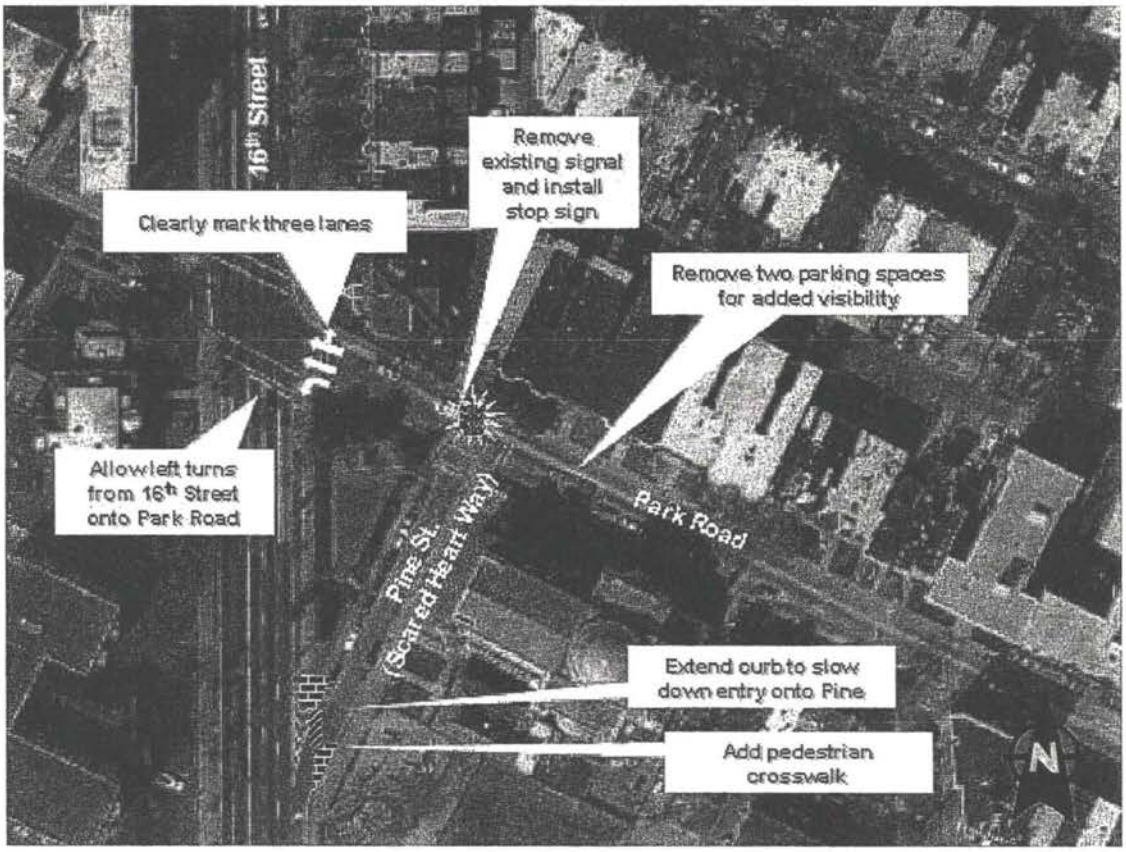
Delays at the intersection of 16th/Park are the most significant of the 12 evaluated within the study area. These delays are particularly significant on weekends when on-street parking reduces capacity through the intersections. Improvements are critical to provide adequate capacity for additional traffic expected with the new development along 14th Street. Recommended improvements are depicted in Figure 2.7.

Left turns should be permitted from northbound 16th Street onto westbound Park Road. Currently, northbound traffic must turn right on Pine Street and left on Park Road to make this westbound movement.

In addition, Park Road should be restriped for three westbound lanes at the intersection with 16th Street (a narrow left-turn lane, a through lane, and a shared right and through lane). Park Road is only 29 feet at the intersection, allowing for three lanes, albeit narrower than the standard 11-foot lanes found throughout the District.

As shown in Figure 2.8, the intersection of Pine Street and 16th Street was designed to allow vehicles to turn right without reducing their speeds. As a result, pedestrians crossing Pine Street on the east side of 16th Street face a safety hazard and the District has installed barriers to prevent pedestrian crossings. Permitting left turns at 16th Street will allow for a new pedestrian crosswalk on the east side of 16th Street across Pine Street. As a part of this change, the signal at Pine Street and Park Road should be removed and replaced with a stop sign, which should slightly increase the capacity of westbound Park Road. In addition, the radius of the curb should be decreased at Pine Street and the barriers removed.

## Figure 2.7 Recommendation – 16th/Park/Pine




## Figure 2.8 Physical Barrier for Pedestrians Along 16th Street



Finally, parking enforcement should be improved on the west side of the intersection, particularly during the morning peak period. Parking and standing is prohibited on the north side of Park Road west of 16th Street during peak periods. However, parents dropping off children and buses unloading at a school on the west side of this intersection frequently block traffic. As a result, Park Road effectively narrows to one lane through the intersection. Parking enforcement officials should work with the school to encourage parents to drop off children away from the intersection. Although this will still reduce Park Road to one lane, it will provide for additional capacity through the intersection.

As an alternative, parking restrictions could be shifted from the north to south side of Park Road with a loading zone in front of the school. Although this might be a more effective approach, it will reduce the number of available on-street parking spaces in an area with limited parking. This option should be considered if recommended improvements do not provide adequate capacity on Park Road.

*Estimated Cost: Intersection changes - $65,000.*

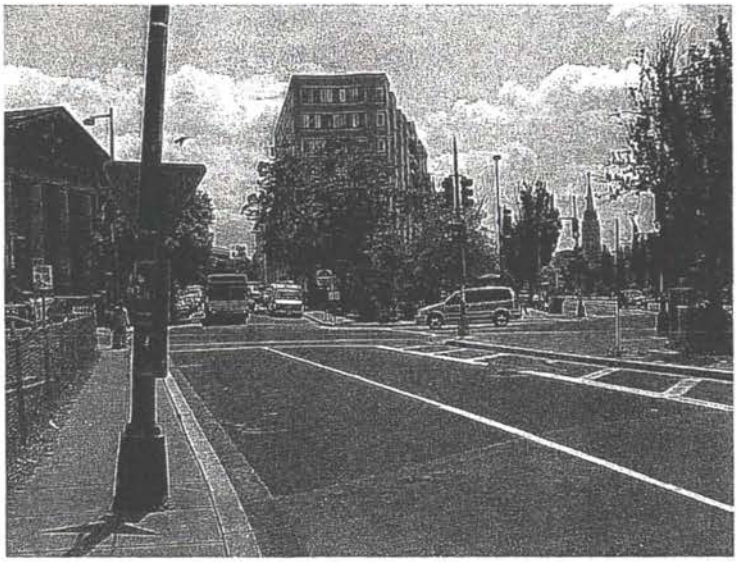
**8. Address significant pedestrian safety and operational issues at 16th/Irving. (Long term)**

The intersection of 16th and Irving and the adjacent intersection of 15th and Irving present one of the more significant pedestrian hazards in the study area. Vehicles traveling northbound on 15th Street must merge with 16th Street, at a relatively high rate of speed. In addition, a pedestrian crosswalk is not provided across Irving along 16th Street, despite a high level of pedestrian activity. Field observations indicate that pedestrians continue to cross despite the absence of this crosswalk.

Irving Street serves as a key pedestrian corridor between Adams Morgan and the Columbia Heights Metrorail Station. In addition, a new charter school and a new public school are under construction adjacent to the intersection. Pedestrian activity along Irving will continue to increase as new retail development is completed in Columbia Heights. Addressing safety issues at this location is critical.

The intersection also has some operational issues that must be addressed before the new retail development in Columbia Heights is completed. Vehicles turning left from southbound 16th Street or right from northbound 16th Street onto Irving Street face an immediate red light for the intersection with 15th Street. Storage capacity is available for only a few vehicles. Vehicles often back up onto 16th Street. As new retail development is completed, the number of left and right turns off of 16th Street will increase.

## Figure 2.9 15th/16th Merge



**Alternative 1:**

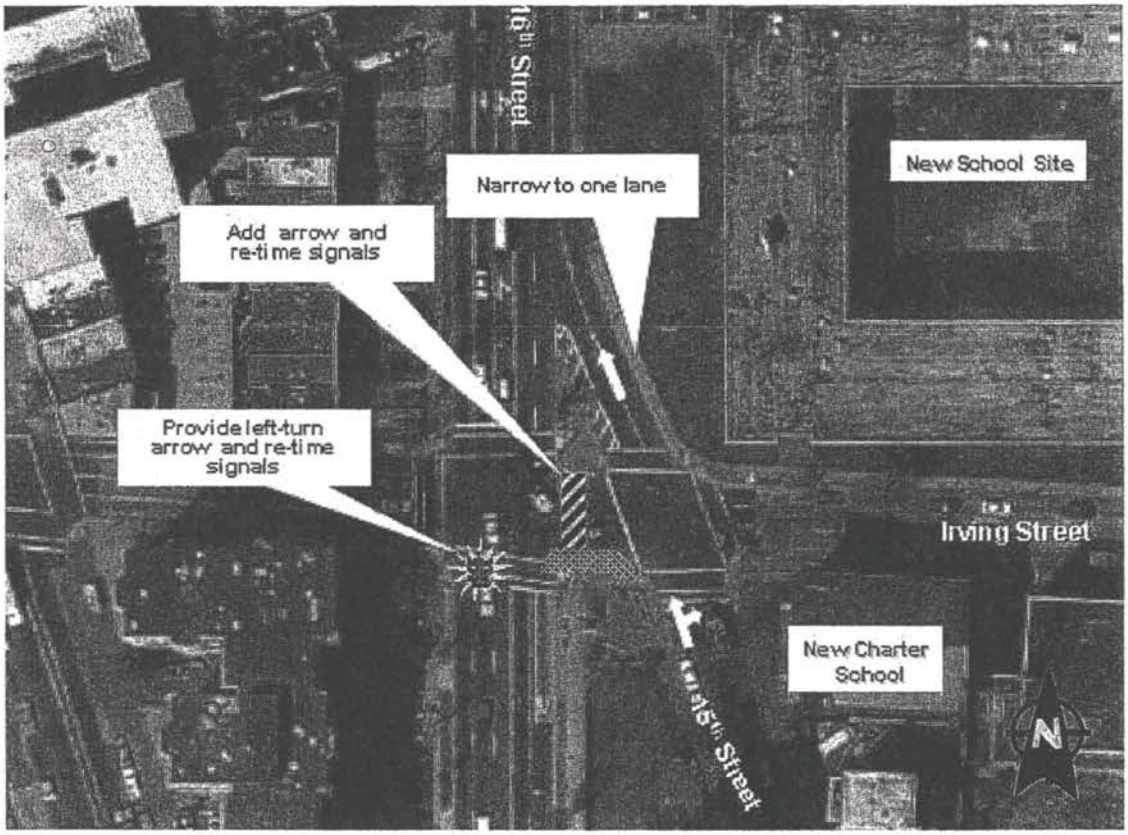
- **Provide protected left turn from southbound 16th Street to eastbound Irving Street; and**
- **Enhance pedestrian safety of the intersection (bump-outs, enhanced pedestrian crosswalks).**

As an alternative to significant intersection changes at this intersection, signal retimings can provide some improvements. Currently, a protected left-turn phase is provided from southbound 16th Street onto eastbound Irving Street. However, the close intersection spacing between 16th Street and 15th Street provides storage capacity for only a few vehicles. The recommendation is to stop northbound vehicles on 15th Street during this protected left-turn phase. This will increase left turn capacity onto Irving Street.

In addition, some pedestrian safety improvements should be provided. DDOT is currently evaluating this intersection in detail. A preliminary assessment of potential improvements is provided in the Appendix to this report. The addition of a crosswalk across Irving Street on the east side of 16th Street should be considered as a part of the pedestrian improvements as well as narrowing 15th Street north of Irving Street.

*Estimated Cost: $18,000 (excludes potential bump-outs).*

## Figure 2.10 Recommendation - 16th/15th/Irving *(Alternative 1)*




**Alternative 2:**

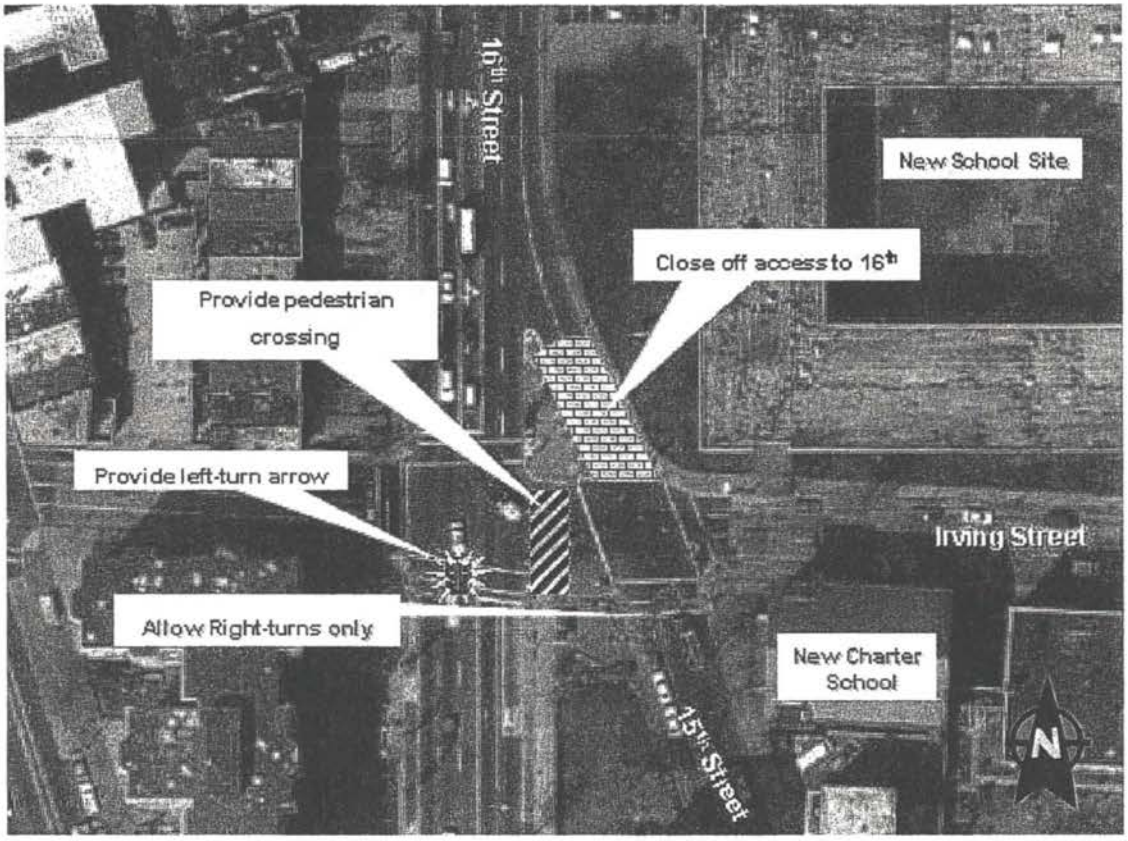
- **Remove access from northbound 15th Street to 16th Street (restrict 15th Street northbound to right-turn only);**
- **Add protected left-turn arrow from 16th Street southbound onto Irving Street; and**
- **Add pedestrian crosswalk across Irving Street on east side of 16th Street.**

The second alternative, as outlined in Figure 2.11, is to remove access from northbound 15th Street to northbound 16th Street. Drivers headed northbound on 15th Street would face a right-turn only onto Irving Street. Those headed northbound on 15th Street would use Columbia Road or Euclid Street to access northbound 16th Street. Removing this connection to 16th Street will also allow for the removal of the traffic signal at the intersection of 15th/Irving. Vehicles turning left from southbound 16th Street onto Irving Street will no longer face an immediate red light for the 15th Street intersection. This will improve the operations of the intersection and increase the capacity for left turns. Although this alternative will significantly enhance pedestrian safety at this intersection, a number of

neighborhood residents expressed a desire to continue to allow access from 15th Street on 16th Street.

*Estimated Cost: Intersection changes – $137,000.*

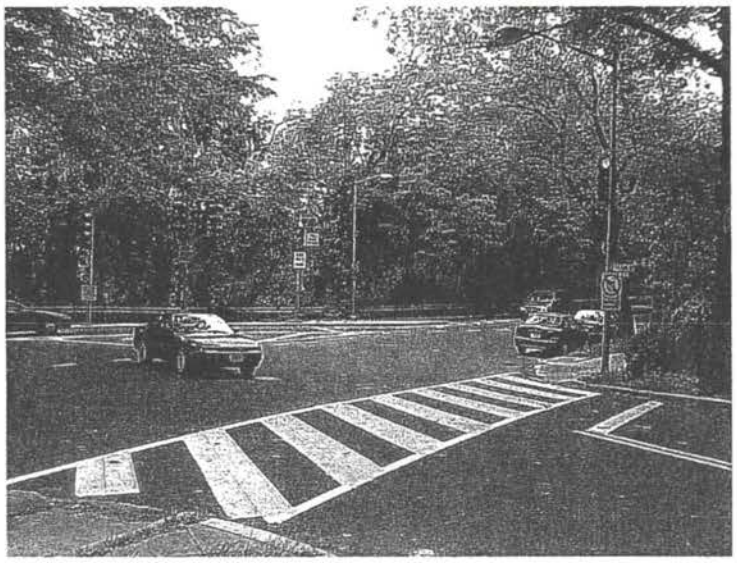
## Figure 2.11 Recommendation – 16th/15th/Irving *(Alternative 2)*




**9. Provide access from westbound Kenyon Street to southbound Adams Mill Road. (Long term)**

Movements are currently prohibited from westbound Kenyon Street onto southbound Adams Mill Road, as shown in Figure 2.12. Drivers headed westbound on Kenyon Street are required to either turn left onto Irving Street or right onto Adams Mill Road. However, drivers routinely turn right onto Adams Mill Road and then make a u-turn just past the intersection to head south on Adams Mill Road. Other drivers access Adams Mill by turn left from an alley behind the residential units along Kenyon Street. This movement is not unexpected because residents of the Mount Pleasant neighborhood are currently required to use Park Road to gain access to southbound Adams Mill Road. This could require a detour of more than a half-mile for some Mount Pleasant residents.

## Figure 2.12 Adams Mill Road/Kenyon



The recommendation is to acknowledge the demand for this movement and provide access from westbound Kenyon Street onto southbound Adams Mill Road. This will also require a red phase for drivers headed southbound on Adams Mill Road.

*Estimated Cost: Left-turn access onto Adams Mill – $43,000.*

**10. Explore potential for a traffic circle at 16th/Harvard/Columbia/Mt. Pleasant with grade separation for 16th Street. (Long term)**

The intersections of 16th/Harvard and 16th/Columbia are in close proximity and essentially operate as a single intersection. Traffic headed eastbound into Columbia Heights must use Harvard Street. Traffic headed westbound out of Columbia Heights must use Columbia Road. Columbia Road is two way on the west side of 16th Street. Several access and pedestrian issues suggest the need to explore a traffic circle at this location. Traffic volumes on 16th Street peak just north of these intersections. A number of drivers headed southbound on 16th Street turn right onto Columbia Road. Residents also expressed a desire to turn left onto Harvard Road from southbound 16th Street. This movement is currently prohibited, although a number of vehicles made this turn during the collection of traffic counts.

The recommendation is to explore the construction of a traffic circle at this intersection with a grade separation for through traffic on 16th Street. A traffic circle consistent with the character of the District would enhance the connection between Adams Morgan and Columbia Heights, improve pedestrian safety, allow for full access onto and off of Harvard and potentially Mt. Pleasant Street, and increase the capacity of the intersection. Although this improvement has the potential to provide significant benefit to the

community, it may be difficult to implement given the proximity of existing development, concern over park land adjacent to 16th Street, and the cost of grade separation. The analysis of this improvement is beyond the scope of this study, but should be explored in greater detail.

*Detailed study required for cost estimates. Preliminary estimates are approximately $14 million.*

## Traffic Calming

The District of Columbia has recently issued a publication outlining potential options for traffic claming on District streets. Traffic calming is an approach used to slow traffic in areas where speed is a concern with the goal to enhance pedestrian safety and preserve community character. Several specific locations where District strategies should be implemented are outlined below.

### 11. Implement traffic calming along Holmead Place between Spring Road and Park Road. (Short term)

Residents along Holmead Place have expressed concerns regarding vehicle speeds. Residents are concerned that increased traffic associated with the Tivoli development in particular will result in an increase in through traffic. Given right-in, right-out restrictions recommended for Park Road, Holmead Place may experience a slight increase in traffic volumes, particularly after the completion of the Tivoli development and as 14th Street congestion increases with the completion of other developments.

The recommendation is to implement adopted traffic calming techniques along Holmead Place between Spring Road and Park Road. Traffic calming will address neighborhood resident concerns regarding speeds and preserve the residential character. Some of the measures approved by DDOT that would be applicable along Holmead Place include speed humps, chicanes, or rumble strips.

*Estimated Cost: (Samples of individual traffic calming devices)*

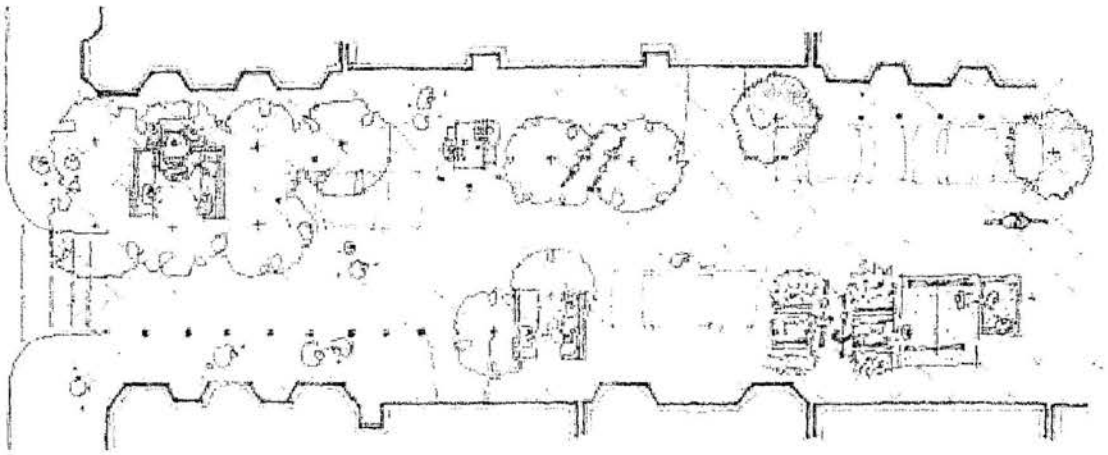
- *Speed Humps - $2,000;*
- *Rumble Strips (1 set) - $50;*
- *Street Lights - $2,500 to $5,000.*

### 12. Implement traffic calming in neighborhood alleys. (Long term)

Residents have expressed concerns regarding the speed of traffic through a number of alleys in the neighborhood. In some specific cases, alleys are being used as short cuts to avoid signals or congestion at intersections. As traffic continues to increase in the neighborhood, this issue is likely to become more significant. The District's traffic calming strategies currently focus on neighborhoods streets. The City of San Francisco is

in the process of looking at strategies for calming alleys by adding trees and improving lighting along neighborhood alleys. As seen in Figure 2.13, alleys can be designed to provide more public space for local residents, with seating and play areas for children and gardens.

### Figure 2.13 Example of Alley Traffic Calming



Source: City of San Francisco.

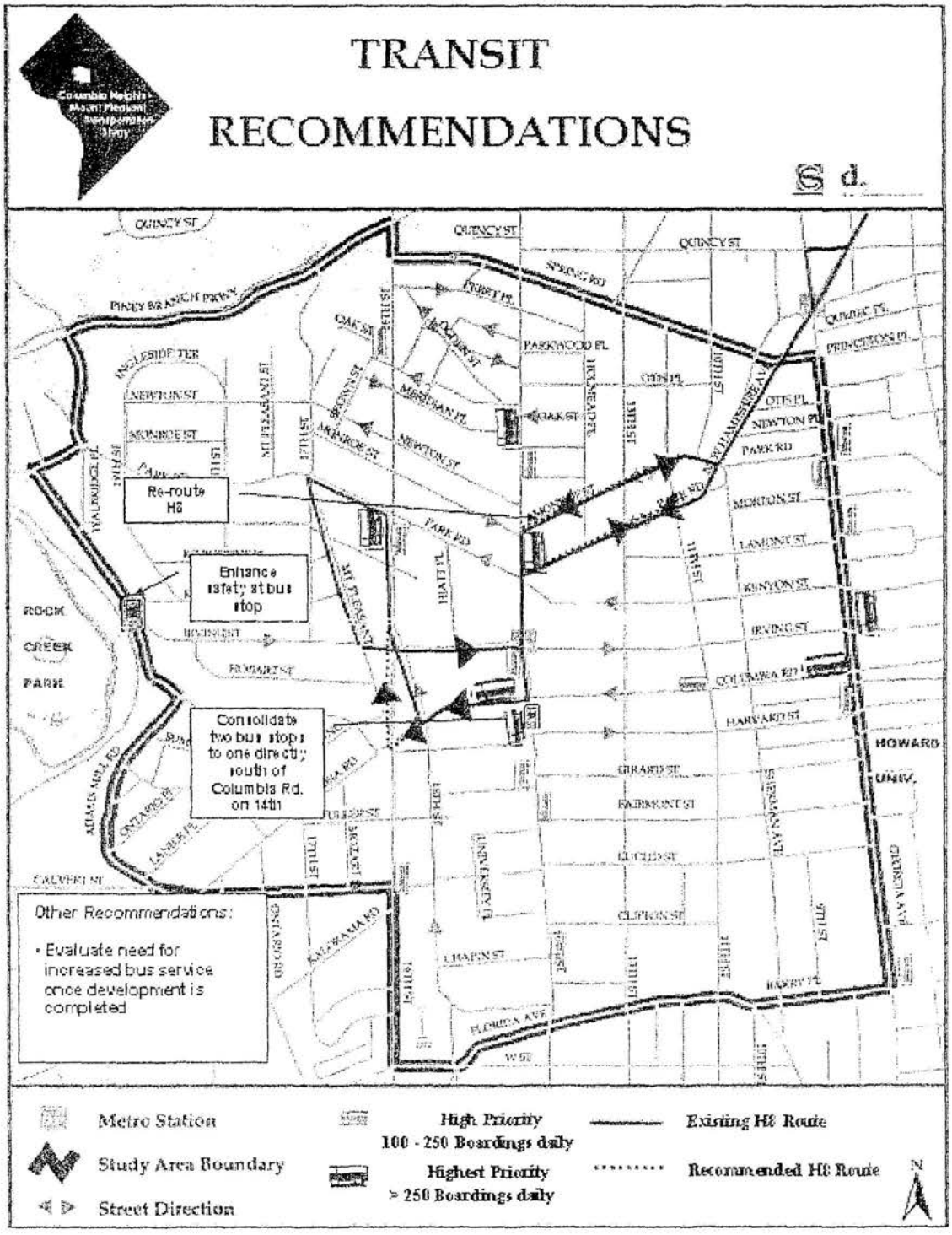
The recommendation is to develop District guidelines for alleyway traffic calming using the Columbia Heights and Mount Pleasant neighborhoods as a test location. It is recommended that a prototype be developed through a process by which local residents can propose specific improvements and actively participate in the design.

*Estimated Cost: $100,000 to develop District-wide policy and guidance.*

## 2.2 Transit

The Columbia Heights and Mount Pleasant neighborhoods are provided with a wealth of transit services with Metrorail and numerous WMATA bus routes. As illustrated in Figure 2.14, recommendations included in this subsection fine tune the existing transit system with an emphasis on improving bus-related infrastructure, recognizing the significance of bus travel within the neighborhood.

## Figure 2.14 Transit Recommendations



1. **Expand coverage of bus shelters - prioritize based on boarding data. (Short term - highest priority; Long term - high priority)**

Despite the opening of the Columbia Heights Metrorail Station in 1999, bus travel still dominants mode choice in the Columbia Heights and Mount Pleasant neighborhoods. Residents have expressed an interest in increasing the number of bus shelters throughout the neighborhood. WMATA installs bus shelters based on guidelines published under the TCRP. Based on these guidelines and bus boarding data provided by WMATA, a number of locations within the neighborhood meet the criteria for the installation of bus shelters. WMATA has tended to focus on the installation of shelters for southbound routes. However, a number of bus stops on northbound routes meet the shelter criteria.

The recommendation is to increase the coverage of bus shelters in the neighborhood. The implementation of shelters is prioritized into high (between 100 and 250 boardings), and highest (more than 250 boardings). All of the locations shown on Figure 2.14 have at least 100 boardings per day, well above the minimum guideline of 50 per day recommended under the TCRP guidelines. Additional features that should be included at the shelters would be trash receptacles, schedules, benches, and adequate lighting.

*Estimated Cost: Shelter costs are absorbed by bus-shelter advertisers.*

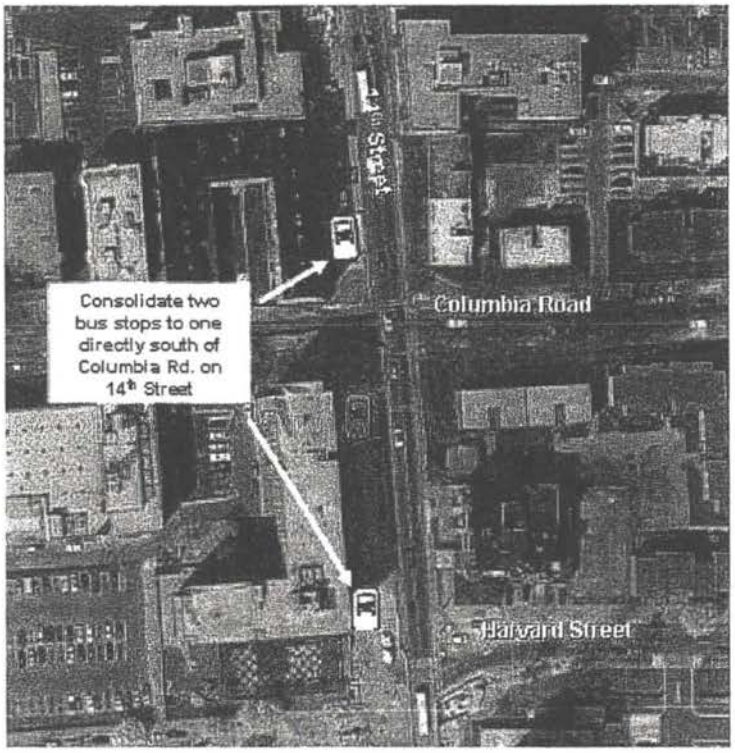
2. **Eliminate two bus stops on 14th Street between Irving/Columbia Road and Columbia/Harvard Street. Consolidate these two stops into one stop at the southern end of Columbia Road. (Short term)**

WMATA currently has two bus stops on the southbound block of 14th Street between Irving Street and Columbia Road. The stop on the north end of the block serves passengers exiting from the Columbia Heights Metrorail Station. The stop on the south end of the block serves as a transfer location for those connecting from westbound routes on Columbia Road. This second stop is in front of a 7-11 convenience store and is frequently blocked by illegally parked cars. There is also an additional stop at the north end of Harvard and 14th Street.

The recommendation, as shown in Figure 2.15, is to eliminate the bus stop in front of the 7-11 as well as the stop north of Harvard to a single location directly south of the Columbia Road intersection. The consolidation of stops will improve the speed of transit service, and address the issue of illegal parking at the stop at the corner of Columbia Road.

*Estimated Cost: Referred to WMATA for implementation.*

## Figure 2.15 Consolidate Bus Stops




**3. Modify H8 Route. (Long term – coordinate with changes from Traffic Recommendations #5 and #8)**

*Monroe Street and Park Road to adjust to turn restrictions on Park Road.*

WMATA currently provides service on Monroe Street and Park Road with the H8 Route. The route currently heads eastbound on Monroe Street and westbound on Park Road. Turn restrictions recommended on Park Road will prohibit the left turn this route currently takes from westbound Park Road onto southbound 14th Street.

The recommendation is to reroute the WMATA H8 Route to reverse the direction of service along Monroe Street and Park Road between 14th Street and New Hampshire Avenue. With this change, the route should head westbound on Monroe Street and eastbound on Park Road.

*15th Street/16th Street/Irving Street to adjust to blocked access to 16th Street and right only.*

The H8 Route currently travels northbound on 15th Street, merges onto the 16th Street, and continues onto Park Road where it turns right. If Alternative 2 under Recommendation #7

is implemented, the recommendation is to continue the route along Columbia going westbound and turn right onto 16th Street, rather than turning right onto 15th Street.

**4. Evaluate the need for increased bus service once development along 14th Street is completed. (Long term)**

WMATA has implemented several shuttles in the District of Columbia to serve significant retail and entertainment corridors such as the Adams Morgan/U Street entertainment district. Several existing bus routes in Columbia Heights that connect to the Red Line have the potential to serve a similar purpose. As new retail and entertainment establishments expand along 14th Street, WMATA should evaluate the potential for an expanded bus service, particularly during off-peak times to serve the retail and commercial district. Although the Columbia Heights neighborhood is well served by the Green Line, Metrorail passengers traveling to the neighborhood from areas along the Red Line from areas north of Cleveland Park will be required to transfer to the Green Line at Gallery Place with an estimated travel time of 20 minutes in comparison to just 10 to 12 minutes on bus routes between these two Stations. The added travel time, together with the transfer, may discourage transit use from these areas. Bus routes H1, H2, H3, H4, H5, and H5/H7 that provide east-west service should be revisited as well as routes 52, 53, and 54 offering north-south service.

*Estimated Cost: Part of WMATA operating budget.*

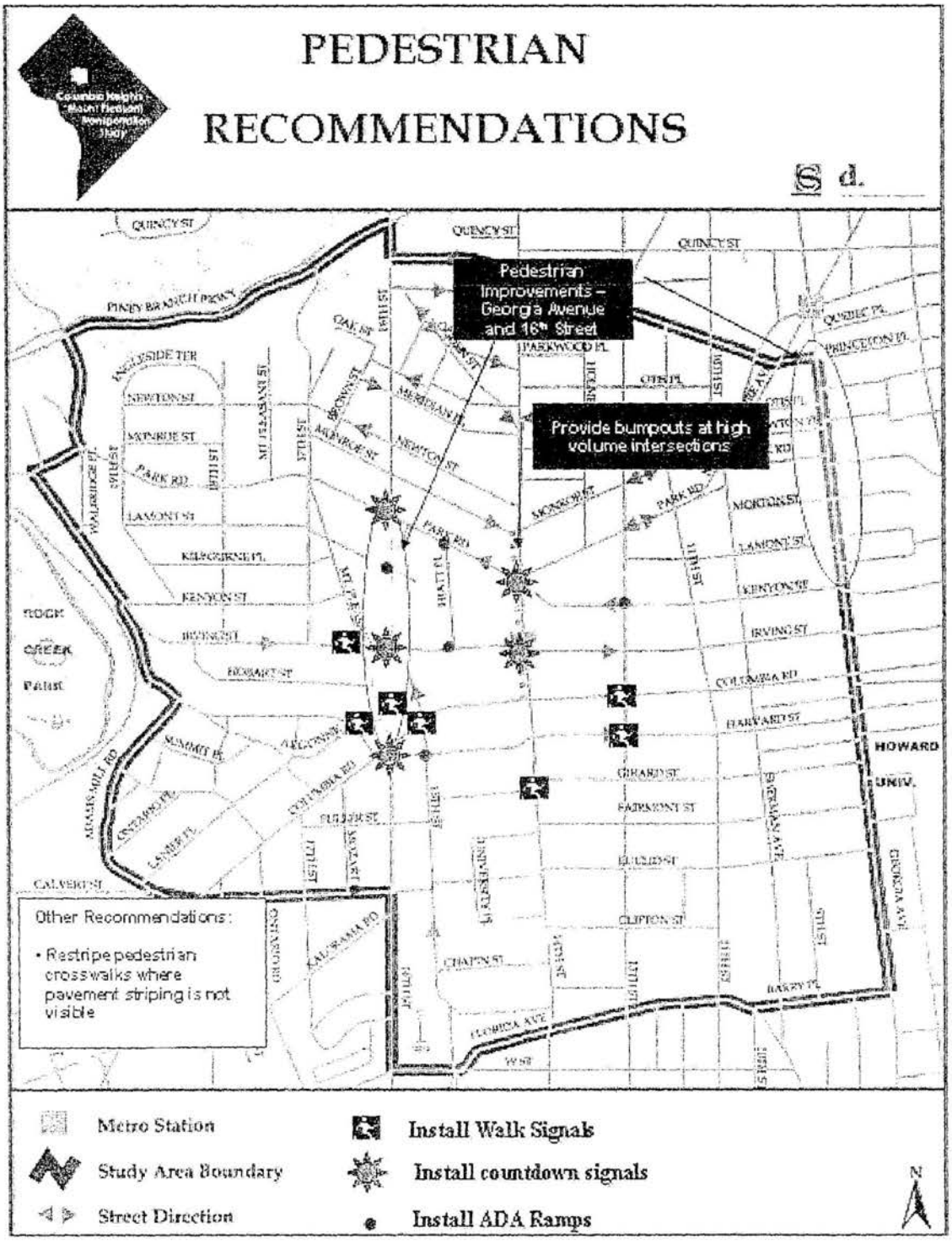
**5. Enhance bus stop at the intersection of Kenyon/Adams Mill/Irving Street. (Short term)**

The bus stop (eastbound Irving Street) is on a short section of sidewalk that is cantilevered out over a steep embankment above Adams Mill Road. No railings are in place at this location, creating a safety hazard for transit users. Improvements should be made at this location to protect riders.

## 2.3 Pedestrian

Pedestrian travel plays a critical role in the Columbia Heights and Mount Pleasant neighborhoods. The study area has developed as a high-density neighborhood that allows residents to access services and jobs on foot. Unfortunately, the study area suffers from the burden of commuter traffic that travels through the neighborhoods during the morning and evening peaks. A number of the pedestrian safety and environment issues have been created by an overemphasis on facilitating the flow of vehicles through the neighborhood. Recommendations contained within this subsection seek to remove some of these safety issues and enhance the overall safety and pedestrian environment within the neighborhood. Addressing these issues will facilitate pedestrian travel and reduce the level of auto travel among area residents. Figure 2.16 illustrates the pedestrian recommendations.

## Figure 2.16 Pedestrian Recommendations



1. **Enhance pedestrian crosswalks along Georgia Avenue north of Kenyon Street. (Short term)**

A number of pedestrian accidents have occurred along Georgia Avenue between Kenyon Street and the north edge of the study area. This section of Georgia has a number of unsignalized intersections where pedestrian crossings are shown on Georgia. Most of these pedestrian crossings are faded and are not clearly visible to drivers.

The recommendation is to enhance the visibility of crosswalks with both improvements to the pavement markings and pedestrian crossing signs in the median indicating a crosswalk is present.

*Estimated Cost:* *$27,000.*

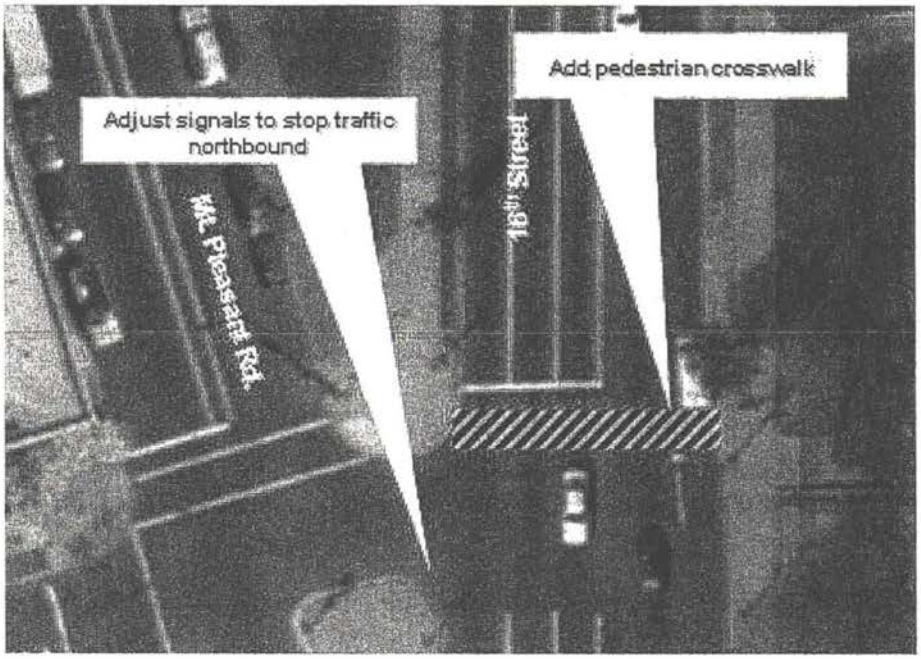
2. **Provide pedestrian crossing across 16th Street at the intersection with Mt. Pleasant Street. (Short term)**

The intersection of Mt. Pleasant Street and 16th Street creates a pedestrian safety hazard. The traffic signal at this intersection is set up to provide access from northbound 16th Street onto northbound Mt. Pleasant Street. Southbound vehicles on 16th Street receive a red light while a protected left turn is provided for vehicles turning onto Mt. Pleasant. At the same time, drivers headed northbound on 16th Street receive a continuous green light. No crosswalk is provided at this location. Pedestrians consistently cross at this location and appear to be confused by the signal that stops traffic only in the southbound direction. Pedestrians assume that northbound traffic will also stop and seem to walk regularly into oncoming traffic on northbound 16th Street.

The recommendation, as shown in Figure 2.17, is to add a pedestrian crosswalk at this location and stop traffic on north and southbound 16th Street to provide for this crossing. The signals should be timed with others to limit the effect of this change on 16th Street vehicular traffic.

*Estimated Cost:* *Crosswalk and traffic light changes - $28,000.*

## Figure 2.17 Recommendation – 16th/Mt. Pleasant




**3. Install pedestrian signals at all traffic signals within one-quarter mile of Columbia Heights Metrorail Station. (Long term)**

The heaviest concentration of pedestrian activity within the study area is found in proximity to the Columbia Heights Metrorail Station. As new retail and residential development is completed in proximity to the Station, this level of activity will increase. A number of traffic signals in the study area do not have walk signals, despite high levels of pedestrian activity. The District should install pedestrian signals for all crossings at each intersection where a traffic signal exists within one-fourth mile of the Columbia Heights Metrorail Station. Locations where pedestrian signals should be installed as a part of this recommendation are as follows:

- 13th/Harvard;
- 13th/Columbia;
- 14th/Girard;
- Mt. Pleasant/Irving;
- 15th/Columbia;
- 16th/Columbia; and
- Harvard/Columbia.

*Estimated Cost:* *$20,000.*

**4. Install countdown pedestrian signals at high-volume crosswalks. (Short term)**

The District has embarked on a program to improve pedestrian crossing signals in areas with significant pedestrian activity. The new signals provide a countdown for remaining time available before the signal changes. It is recommended that the District install signals at the following intersections:

- 16th/Irving;
- 14th/Irving;
- 14th/Park/Kenyon; and
- 16th/Park.

*Estimated Cost: $10,000 per location.*

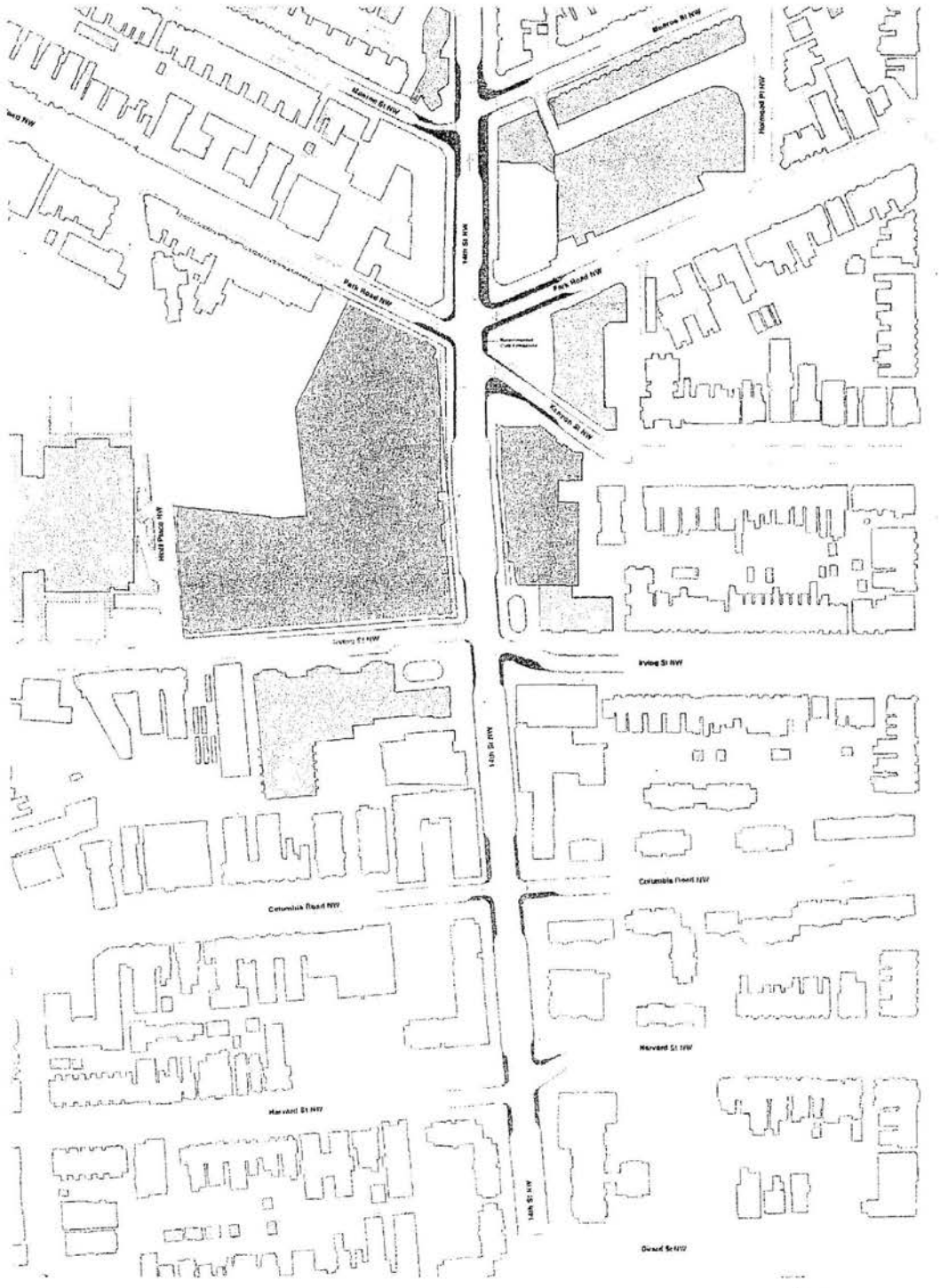
**5. Provide bulb outs at high-volume pedestrian locations in proximity to new retail and residential development near the Columbia Heights Metrorail Station. (Long term)**

A number of new retail and residential developments are planned along 14th Street. The intention is to promote travel to these developments by a means other than the automobile. Many of the intersections along 14th Street are relatively wide and require that pedestrians cross the equivalent of five or six lanes of traffic.

In support of a general improvement of the pedestrian environment, the recommendation is to narrow the width of intersections by providing "bulb outs" where feasible at the intersections of 14th/Irving, 14th/Park/Kenyon, 14th/Monroe, and 14th/Columbia. The intersection analysis conducted as a part of this effort indicates that this can be implemented without adversely affecting the level of service at the intersections. This study has been coordinated with the Public Realm Study, an effort lead by the District Office of Planning. As illustrated in Figure 2.18, specific design recommendations for the public space are detailed in this parallel study.

*Estimated Cost: Estimated by Public Realm Study by the Office of Planning and ZGF.*

## Figure 2.18 Bulb-Outs (courtesy of Public Realm Forum)



**6. Install ADA-accessible curb ramps where needed. (Coordination with reconstruction at specific locations)**

The American with Disabilities Act requires curb ramps at all marked crosswalks. An inventory of ramps was conducted for the one-fourth mile radius from the Metrorail Station and along major commercial corridors on Columbia Road (between 18th and 16th) and Mt. Pleasant Street (between 16th Street and Park Road). The following is a list of intersections where ramps need to be installed or are in poor condition:

- 13th/Kenyon;
- 16th/Lamont;
- 15th/Harvard;
- Hiatt Place/Irving;
- Hiatt Place/Park; and
- 16th/Columbia.

*Estimated Cost: ADA ramp – $3,000 to $7,000 per ramp.*

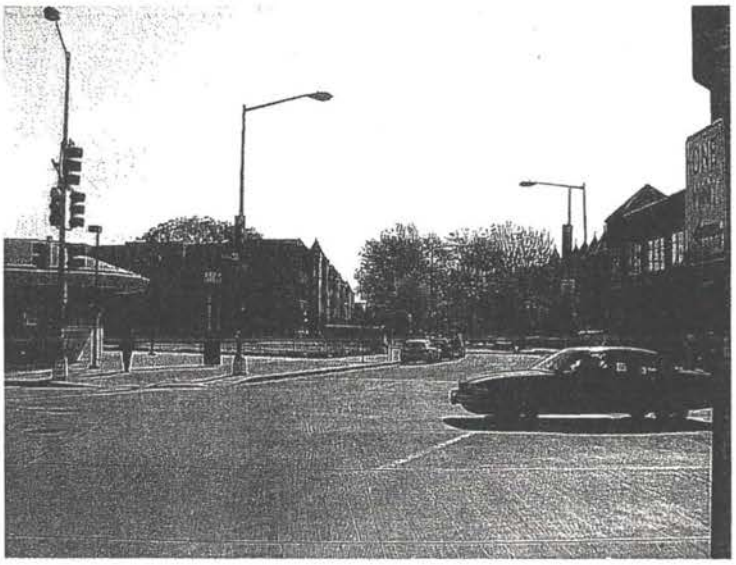
**7. Restripe pedestrian crosswalks where pavement striping is not clearly visible. (Short term)**

At a number of intersections within the study area, existing pavement striping for pedestrian crossings has faded and is no longer clearly visible as is shown in Figure 2.19. A field survey was conducted of all intersections within one-fourth mile of the Columbia Heights Metrorail Station. At the following locations, the pedestrian crosswalks are not clearly visible and should be restriped:

- 13th/Kenyon;
- 14th/Harvard;
- 14th/Irving;
- 14th/Girard;
- 14th/Columbia;
- 14th/Park/Kenyon;
- 15th/Harvard;
- 16th/Park;
- 16th/15th;
- Hiatt Place/Irving; and
- Hiatt Place/Park.

*Estimated Cost: $300 per location.*

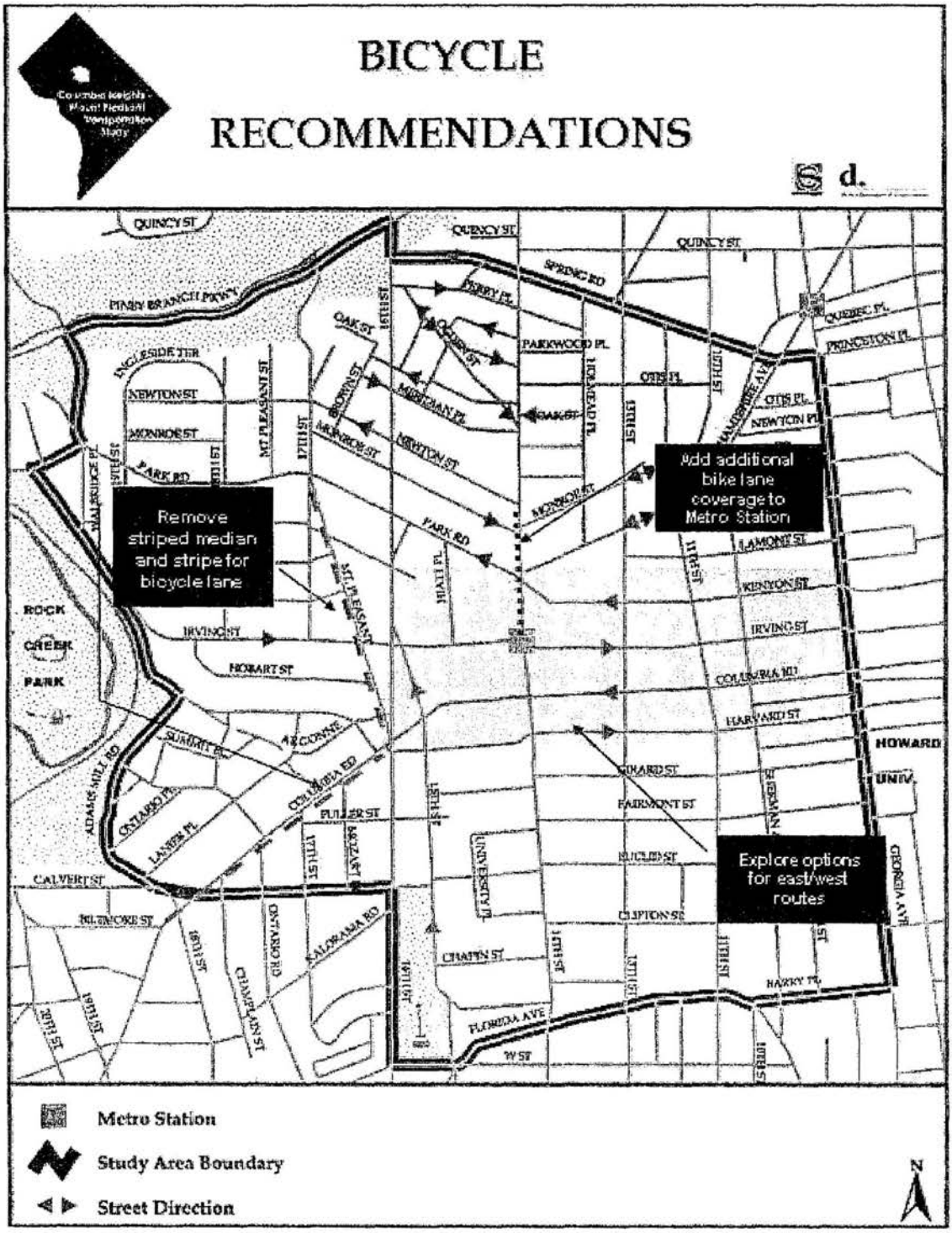
**Figure 2.19 Pedestrian Striping not Visible at 14th/Irving**



## 2.4 Bicycle

The District has recently begun to promote bicycle travel aggressively with the designation of bike lanes, bicycle parking, and other supporting facilities. Although the coverage of bicycle lanes within the study area is currently limited to 14th Street, bicycles were observed in regular numbers during the intersection traffic counts, particularly along 16th Street. Bicycle travel will play a large role in discouraging automobile travel to the new retail developments along 14th Street. In urban locations, bicycles often provide an easy alternative for trips slightly longer than those made comfortably on foot. The challenge of parking provides a disincentive to short automobile trips within urban locations. The key is to provide safe facilities for bicyclists to promote bicycle travel as an alternative. The recommendations are shown in Figure 2.20.

## Figure 2.20 Bicycle Recommendations

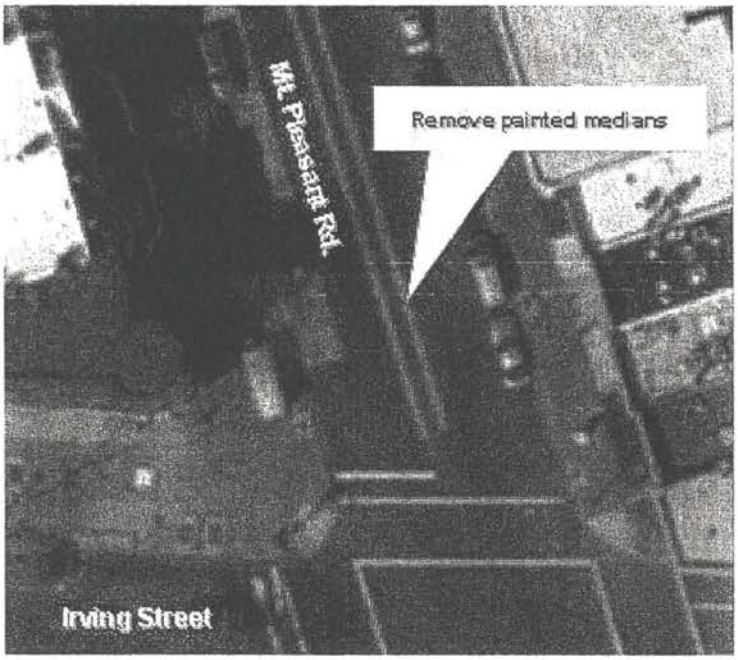


1. **Remove painted medians along Mt. Pleasant between 16th Street and Park Road to allow for bike lanes. (Short term)**

The District is seeking to expand the coverage of bike lanes. Bicycle use is high in the study area with some of the highest bike-to-work rates within the District. In support of the expansion of bike lanes, the recommendation is to provide designated bicycle lanes along Mt. Pleasant Street between Park Road and 16th Street, as shown in Figure 2.21. The roadway has adequate width to provide designated lanes by removing an existing painted median. Bicyclists frequently use these median to travel along this commercial corridor.

*Estimated Cost: $15,000.*

## Figure 2.21 Recommendation – Mt. Pleasant Street




2. **Remove painted medians and turn lane along Columbia between 16th Street and 18th Street to allow for bike lanes. (Short term)**

Similarly, the recommendation is made to provide designated bike lanes along Columbia Road between 18th Street and 16th Street. The roadway has adequate space to designate lanes by removing an existing painted median. Field observations indicate that bicycle use is already high along this commercial corridor.

*Estimated Cost: $15,000.*

3. **Extend bike lanes and bike parking through out study area. (Long term)**

   - **Dedicated bike lanes along 14th Street from Newton Street to Park Road;**
   - **Shared bike/auto lanes along 14th Street from Park Road to Columbia Heights Metrorail Station;**
   - **Identify additional east-west routes east of 16th Street; and**
   - **Provide bicycle parking at major retail developments.**

As shown in Figure 2.22, bicycle lanes have been striped on 14th Street down to Newton, but they are discontinuous and do not extend to the Metrorail Station. The District is seeking to expand the coverage of bike lanes and improve connectivity to transit stations. As a part of the lane restructuring along 14th Street, the recommendation is to extend marked bike lanes south to Park Road and establish shared 14-foot travel lanes with vehicles between Park Road and Irving Street.

In addition, there is a need to identify potential bike routes along east-west roadways in Columbia Heights to the east of 16th Street. A specific recommendation is not included in this study. However, some analysis was conducted to evaluate the effect of a reduction in travel lanes on Harvard and Columbia to provide for a parking lane. Currently, parking is prohibited during peak hours on one side of each of these roadways to provide two travel lanes. This analysis shows that at this change would still provide an adequate level of service at the intersection with 14th Street. However, traffic data was not collected for other intersections along Harvard and Columbia to determine fully the feasibility of bike lanes.

## Figure 2.22 14th Street Bicycle Lanes



## 2.5 Parking

The Columbia Heights and Mount Pleasant neighborhoods struggle with a limited supply of on- and off-street parking. Residents in the neighborhood are concerned that new developments along 14th Street may reduce an already limited supply. Recommendations within this subsection focus on areas within the study area within one-fourth mile of the Columbia Heights Metrorail Station. Recommendations address issues of enforcements, regulations, and potential shared parking strategies to ensure that the neighborhood will not be adversely affected by increased demand for parking. The shared parking strategies may offer some relief to the neighborhood on Sundays when excessive on-street parking blocks travel lanes and contributes to increased traffic congestion.

The overall demand for parking provided with major new developments near the Columbia Heights Metrorail Station is expected to exceed supply slightly, as shown in Table 2.1. If tenants are unsuccessful in meeting the targeted 50 percent non-auto mode split, actual parking demand will be higher and the parking demands will affect on-street parking in the adjacent neighborhood. Maintaining a high share of non-auto trips to the developments is critical to insure that parking supplies are adequate. Overall, the parking supply planned for these developments is below the projected demand. Only the Grid Properties site (Parcel 27) indicates a very slight excess of parking supply, although the final mix of retailers may negate this available parking.

### Table 2.1 Parking Demand for New Development

| Parcel | Developer | Location | Anticipated Parking Supply | Calculated Parking Demand Total Demand (Assuming a 50% Modal Split) |
|---|---|---|---|---|
| 24 | Dance Institute | 14th/Monroe | 9 | 22 |
| 29 | Tivoli Partners | 1365 Park Road | 259 | 455 |
| 38 | NPCDC | 14th/Park/Kenyon | N/A | N/A |
| 27 | Grid Properties | 1400 Park Road | 1,300 | 1,139 |
| 15 | CHV/Victory | 1365 Irving | 177 | 217 plus retail demand |
| 26 | CHV | 1444 Irving | 242 | 407 |
| 40 | Urban League | 2901 14th Street | N/A | N/A |
| 5 | NPCDC | Not specified | 70 | 109 |
| 19 | Triangle | 1330 Euclid | 20 | 30 |
| 11 | Duron, Inc. | 2511 14th Street | 22 | N/A |
| 32 | Triangle | 1431 Chapin | 11 | 33 |
| 78 | Triangle | 14th Park Kenyon | 109 | 92 |
| **Total** | | | **2,219** | **2,504** |

Source: NCRC, Chance Management.

Given the expectation that parking provided with planned new developments will provide only an adequate supply, several recommendations will minimize the effect of the new development on the surrounding neighborhoods.

**1. Provide additional on-street metered parking along 14th Street. (Long term in coordination with retail development completion)**

On-street parking should be provided along 14th Street between Irving Street and Park Road. New spaces will provide additional parking for patrons of the retail district while also providing a safe buffer between pedestrians and vehicles traveling along 14th Street.

*Estimated Cost: Net benefit to District revenue from meter installation.*

**2. Extend two-hour RPP regulations to Saturdays. Evening RPP hours may be needed as development progresses. (Long term)**

As parking demands increase in the neighborhood, it may be necessary to increase the time periods for on-street residential permit regulations to preserve on-street parking for neighborhood residents.

*Estimated Cost: Parking enforcement operating budget.*

**3. Encourage non-auto trips to major commercial centers. (Long term in coordination with retail development completion)**

Several specific strategies can be used to encourage patrons to take Metro, taxis, or walk to area developments to insure that retail and commercial developments attract 50 percent of their customers by a means other than the automobile:

- Provide taxi drop-off and loading locations.
- Provide wayfinding signs from the Columbia Heights Metrorail Station to area development.
- Provide on-street "area maps" to encourage walking between developments (from either Metro or parking in only one location).
- Provide on-street bicycle parking at major retail developments.

*Estimated Cost: Specific improvements should be included as part of developer-provided improvements.*

**4. Support parking coordination among major developments. (Long term as retail development completed)**

As an alternative to a formal parking management district, the commercial district should support a single point of coordination to encourage informal shared parking. As an

example, the Tivoli Theater is likely to experience sharp peaks in demand during limited periods. The adjacent D.C. USA site may offer an option for patrons of the theater. By establishing a single point of contact for area parking needs, overflow parking will have only a limited effect on neighborhood streets. Parking coordination can occur through a grant to a neighborhood commerce committee, or another non-profit organization within the neighborhood.

*Estimated Cost:* *Annual operating support for neighborhood organization. Can be included as a part of the business improvement district operations.*

## Neighborhood Parking Regulations and Signage

A number of recommendations are made to address neighborhood parking regulations. In many cases, these changes are suggested to address neighborhood frustration with unreasonable regulations and signage.

**5. Modify parking meter time periods for consistency with commercial activity. (Short term)**

- Begin parking meter regulations at 9:30 a.m., Monday through Friday (versus the present starting time of 7:00 a.m.).
- Establish parking meter regulations on Saturdays from 10:00 a.m. through 6:00 p.m.
- Extend meter time to 90 minutes to reduce commercial parking on residential streets.

*Estimated Cost:* *Parking enforcement operating budget.*

**6. Improve parking meter and residential parking permit enforcement. (Short term)**

The enforcement rate for residential parking permits and parking meters is relatively low. A relatively adequate parking supply has allowed this to occur without a dramatic effect on neighborhood parking. However, enforcement should increase as new development is complete to insure that neighborhood parking continues to be adequate.

*Estimated Cost:* *Parking enforcement operating budget.*

**7. Improve alley lighting to encourage off-street parking. (Long term)**

A number of community members suggested that area residents with available parking often park on the street because of safety concerns related to inadequate lighting in neighborhood alleys. Improvements to area lighting will allow residents to comfortably park off-street and open up additional spaces on the street. A survey of alleys was not

included in the scope of this study. However, the District should work with area residents to identify specific locations where current lighting is inadequate.

*Estimated Cost: $3,000 - $5,000 per installation.*

## Congested-Related Parking Recommendations

Given limited rights-of-way within the District and the ever-increasing challenge of providing adequate on-street parking, in many cases parking and traffic compete for the same space. On-street parking can contribute to significant delays and congestion, particularly on weekends when parking restrictions are not as extensive. Several specific recommendations are made within the study area to address this particular issue.

**8. Establish shared parking strategy to reduce Sunday on-street parking and related congestion. (Long term in coordination with D.C. USA completion)**

Given the number of off-street parking spaces being created as a part of new development in the vicinity of the Columbia Heights Metrorail Station, several recommendations are made to address an immediate congestion issue related to on-street parking on Sundays:

- Restrict parking on Sundays along 16th Street between Spring Road and Irving Street.
- Restrict parking along Park Road between 14th Street and 16th Street.
- Allow free Sunday parking in the D.C. USA garage on Sundays before 2:00 p.m. to coincide with previous on-street parking allowed.

These recommendations should be implemented at the same time with outreach to area churches notifying members of changes in permitted Sunday parking. Members of area churches would be able to park in the retail garages early in the day on Sunday. The developer of the D.C. USA is supportive of this arrangement and has noted that Sunday parking demand is relatively low.

*Estimated Cost: Cost borne by operator of parking garage at D.C. USA, should be included in negotiations for garage construction contribution from the District.*

**9. Significantly increase weekend parking safety enforcements for driveways, no stopping, and bus zones (e.g., 16th Street south of Spring). (Short term)**

Limited enforcement of parking restrictions throughout the weekend is contributing to area congestion and, in some cases, is creating safety hazards. Parking enforcements should be increased on weekends, particularly along major arterials, such as 16th Street.

*Estimated Cost: Parking enforcement operating budget.*

**10. Enforce regulations for double-parked vehicles or vehicles in "no stopping zones" (currently not enforced while vehicles unloading). (Short term)**

Similarly, loading vehicles frequently block lanes along major arterials. In general, adequate capacity on area roadways allows this to occur without creating significant congestion. However, loading vehicles do create hazards for other vehicles and, as traffic increases, will likely contribute to increases in area congestion.

*Estimated Cost: Parking enforcement operating budget.*

## 2.6 Issues for Further Study

In the course of this project, a number of issues have been raised that require further study or outreach with neighborhood residents to make a final recommendation. This subsection summarizes a number of outstanding issues that will require additional evaluation:

**1. Evaluate alternatives for intersection improvements at Monroe Street at 14th Street:**

- **Alternative 1: Intersection Realignments.**
- **Alternative 2: Separate signal phasing.**

Two distinct alternatives have been proposed to address intersection operational and pedestrian issues at Monroe/14th. A number of residents in the neighborhood have expressed an interest in realigning the intersection. Given the narrow existing right-of-way at this location, a more detailed intersection design study is required to make a final determination.

**2. Evaluate intersection improvements at Irving/16th Street/15th Street:**

- **Alternative 1: Significant intersection modifications.**
- **Alternative 2: Signal retimings and pedestrian improvements.**

Two significantly different alternatives have been proposed to address significant pedestrian safety and operational issues at the intersections of 16th/Irving, 15th/Irving, and 16th/15th. Neighborhood residents have expressed both strong support and strong opposition to an alternative that would remove access from 15th Street to 16th Street (Alternative 2). DDOT is currently undertaking a more detailed intersection design study at this location to specify intersection improvements.

**3. Identify east-west bicycle route east of 16th Street.**

A number of area residents have expressed a desire to expand the coverage of bike lanes in the Columbia Heights neighborhood. The current recommendations include new bike lanes on Columbia and Mt. Pleasant to the west of 16th Street and an extension of bike

lanes on 14th Street to Park Road (with shared lanes to the Columbia Heights Metrorail Station). More than 20 e-mails were submitted by area bicyclists expressing a desire also to include new bike lanes on east west routes, such as Harvard and Columbia, to the east of 16th Street. Given the width of these roadways, the addition of bike lanes would require removing a lane of traffic during peak hours on both roadways. DDOT is exploring options for east-west travel as a part of a District-wide bicycle study.

**4. Explore extensions of bicycle lanes south of Park Road on 14th Street.**

A number of area residents, bicycle supporters, and the Washington Area Bicyclists Association have expressed support for an extension of bicycle lanes along 14th Street to the south of Park Road. Given the right-of-way available along 14th Street, this extension would require the removal of a travel lane in each direction. Such a change would result in a significant increase in congestion along 14th Street, particularly as new retail and residential development is completed in the vicinity of Irving Street. DDOT is currently in the process of developing a District-wide bicycle plan. This extension should be evaluated as a part of that process.

**5. Evaluate residential parking needs.**

The scope of this study has focused on the effect of new retail and commercial development on the demand for parking, particularly within one-quarter mile of the Columbia Heights Metrorail Station. Several recommendations are included that relate to enforcements, new metered parking in front of retail development, and changes in meter regulations. The assessment of on-street parking showed that parking was generally available during weekdays and on weekends, although not necessarily on every block. A number of residents have requested changes in on-street parking permitted during parts of the day, such as on Kenyon and Irving during off-peak hours.

## 2.7 Summary

This section contains more than 30 specific recommendations for improvements to the transportation system in the Columbia Heights and Mount Pleasant neighborhoods. Many of these recommendations focus on low-cost high-impact recommendations that will address specific transportation issues identified. A number of these recommendations seek to rebalance the transportation system with an increased emphasis on transit, pedestrian, and bicycle travel. Although recommendations are grouped by various modes of transportation, many will provide benefit to more than one form of travel. In particular, a number of the traffic recommendations are intended to address pedestrian safety issues identified at specific intersections. The recommendations contained in this section will help support increased travel that will come with planned new development in the neighborhood.