Law Offices
HOLLAND & KNIGHT LLP

2099 Pennsylvania Avenue, N.W.
Suite 100
Washington, D.C. 20006-6801

202-955-3000
FAX 202-955-5564
www.hklaw.com

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LISA L. JACKSON
202/419-2559
lljackso@hklaw.com

April 9, 2002

D.C. OFFICE OF ZONING
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VIA HAND DELIVERY

Members of the Board of Zoning Adjustment
District of Columbia Office of Zoning
441 4th Street, N.W., Suite 210S
Washington, D.C. 20001
Attention: Richard S. Nero, Jr.

Re: BZA Case No. 16858 (Square 2674, Lots 719, 720, 812, 832, 863, 866, and 869-872; 1400-1420 Park Road, 3100-3220 14th Street, and 1417-1437 Irving Street, N.W.)

Dear Board Members:

On behalf of the Applicant, the RLA Revitalization Corporation, a subsidiary of the National Capital Revitalization Corporation, please find enclosed an original and twelve copies of the Statement of the Applicant in connection with the above-referenced application for a special exception for a 25% reduction in the required number of parking spaces. Reduced sets of architectural drawings are included as an exhibit to same.

Should you have any questions regarding this matter, please do not hesitate to contact me at (202) 419-2559.

Sincerely,

Lisa L. Jackson

cc: Steve Cochran, Office of Planning
Drew Greenwald
Jim Tuman

BZA
Case No. 16858
Exhibit No. 23

Board of Zoning Adjustment
District of Columbia
CASE NO.16858
EXHIBIT NO.23A1

BEFORE THE BOARD OF ZONING ADJUSTMENT
OF THE DISTRICT OF COLUMBIA

Application of: RLA Revitalization Corporation	BZA Application 16858 Public Hearing: April 23, 2002
1400 – 1420 Park Road, N.W., 3100—3220 14th Street, N.W. and 1417—1437 Irving Street, N.W.	ANC 1A

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2002 APR -9 PM 4:05

STATEMENT OF THE APPLICANT

I.
Nature of Relief Sought

This application is filed pursuant to § 3104.1 of Title 11 of the District of Columbia Code of Municipal Regulations (the "Zoning Regulations" or "Regulations") for a special exception in accordance with the requirements of Section 2108 and 3104.1 of the Regulations, to have fewer than the required number of parking spaces for a complex of retail, service and entertainment uses in the C-3-A District.

II.
Jurisdiction of the Board

The Board of Zoning Adjustment has jurisdiction to grant the requested special exception relief pursuant to § 3104.1 of the Zoning Regulations.

III.
Background of the Case/Overview of Development Activities

1. Description of Subject Property

The subject property consists of Lots 719, 720, 812, 832, 863, 866, 869, 870, 871 and 872, and a series of public alleys to be closed in Square 2674 (the "Property"

or "Subject Property") in the C-3-A District in the Columbia Heights neighborhood of the City. The Property comprises the majority of Square 2674 with the exception of the Bell Multicultural School and various row dwellings, an apartment building and various small commercial uses in the northwestern corner of the Square. The Subject Square is bounded on the west by 14th Street, N.W., on the north by Park Road, on the east by Hiatt Place, and on the south by Irving Street. The Property consists of approximately 215,940 square feet and is primarily vacant with the exception of various small retail uses in the northeast corner of the square fronting on 14th Street and Park Roads. (See Exhibits A, B, C and D, attached)

2. Description of Surrounding Uses/Area

The area surrounding the site can be described as containing a mixture of residential, commercial and institutional uses.

a. North

The uses to the north include the Riggs Bank building on the corner of 14th and Park Roads, the Kelsey Temple Church of God in Christ, the Park Tivoli Apartments, and numerous row dwellings.

b. Northeast

The Tivoli Theatre re-development site is located diagonally to the northeast across 14th Street.

c. East

A largely vacant parcel is located directly across 14th Street to the east. One of the two entrances to the Columbia Heights Metrorail station is located in the lower portion of the parcel.

d. Southeast

A newly constructed CVS drugstore is located diagonally southeast of the subject property across 14th Street. Various residential uses are located to the east and south of the CVS.

e. South/Southwest

The property directly south of the site is largely vacant with the exception of the entrance to the Columbia Heights Metrorail station. An automotive sales store, a surface parking lot, and the Central Presbyterial Church and church offices are located to the southwest. More residential and institutional uses are located further south of these uses.

f. West

The Abraham Lincoln Middle School is located directly west of the site across Hiatt Place.

IV.
Description of Proposal and Required Relief

The Property is owned by the RLA Revitalization Corporation, a subsidiary of the National Capital Revitalization Corporation, which in 1999, selected a development team including affiliates of Grid Properties Inc., Gotham Organization, Joseph Searles III, and the Development Corporation of Columbia Heights (the

"Developer") to develop the Property with a variety of retail and services uses. The proposed DC USA development is planned to include the following development: 378,500 square feet for general retail, 25,000 square feet for a health club, and a 40-lane bowling alley. In addition, the development will include either 3,500 movie theater seats or, in its place, 80,000 square-feet of discount retail.

Consistent with the amount of proposed square footage and the close proximity of the site to the Columbia Heights Metrorail station and major Metrobus routes and the significant number of nearby residences which the proposed project is intended to primarily serve, the Applicant proposes to provide 1,364 spaces for the development, which represents an approximately 24.6% reduction from the required number of 1,810 parking spaces.

V.
Exhibits in Support of the Application

The following additional materials are submitted in support of the Application and will be referenced herein this Statement.

Exhibit A: A portion of the Sanborn Atlas showing the Subject Property outlined in red.

Exhibit B: A portion of the Zoning Map showing the subject square outlined in red.

Exhibit C: Surveyor's Plat of the Subject Property.

Exhibit D: Photographs of the Subject property.

Exhibit E: Traffic Impact Analysis memorandum dated April 2, 2002 prepared by Gorove/Slade Associates, Inc, updating a prior analysis dated December 19, 2000

Exhibit F: Architectural Plans

Exhibit G: Outline of testimony of representative of Grid Properties, Inc.

Exhibit H: Outline of testimony of Bower, Lewis, Thrower, Architect.

Exhibit I: Outline of testimony Lou Slade, Gorove/Slade Associates, Inc.

Exhibit J: Outline of testimony of Steven E. Sher, Director of Land Use Planning & Zoning, Holland & Knight LLP

VI.
Applicant is Entitled to Special Exception Relief Under § 2108 of the Zoning Regulations

1. Applicable Standards for Granting a Special Exception Application For a 25% reduction in the Parking requirements

Pursuant to Section 2108 of the Regulations, the Board may grant a special exception for a 25% reduction in the parking requirements:

a. where in the judgment of the Board, the proposed development will be in harmony with the general purpose and intent of the Zoning Regulations and Zoning Maps and:

b. will not tend to affect adversely the use of neighboring property in accordance with the Regulations; and

c. subject to the conditions specified in Sections 2108 of the Regulations, which requires the Board to give consideration to:

(i) The nature and location of the structure;

(ii) The maximum number of students, employees, guests, customers, or clients who can reasonably be expected to use the proposed building or structure at one time;

(iii) The amount of traffic congestion existing or which the building or structure can reasonably be expected to create in the neighborhood;

(iv) The quantity of existing public, commercial, or private parking, other than curb parking, on the property or in the neighborhood which can reasonably be expected to be available when the building or structure is in use; and

(v) The proximity to public transportation, particularly Metrorail stations, and the availability of public transportation service in the area, or a ride-sharing program approved by the District of Columbia Department of Public Works.

A special exception use is deemed compatible with other uses permitted in a particular zoning classification provided that the specific regulatory requirements are met. In reviewing applications for a special exception, the Board's discretion is limited to determining whether the proposed exception satisfies the requirements set forth in the appropriate section. If an applicant meets its burden, the Board must ordinarily grant the application. *First Baptist Church of Washington v. District of Columbia Board of Zoning Adjustment*, 432 A.2d 695 (1981); *Stewart v. District of Columbia Board of Zoning Adjustment*, 305 A.2d 516, 518 (1973).

As outlined below and in further detail in the attached Traffic Impact Study, consideration of the factors outlined in Section 2108 will lead the Board to a finding that the application is in harmony with the purpose and intent of the regulations and that the reduction in the parking requirements will not adversely affect neighboring properties.

2. Factors to Consider in Determining Effect of Parking Space Reduction

a) The Nature and Location of the Structure

The DC USA retail and entertainment complex is largely intended to serve the residents of Columbia Heights and surrounding communities within a two-mile radius of the site, and to attract other district residents in the nearby area. It is anticipated that the vibrant nearby neighborhoods of Columbia Heights, Mount Pleasant, Adams-Morgan and U-Street, combined with the adjacent Columbia Heights Metrorail station and several bus lines next to the site, will result in a significant amount of transit and pedestrian access to the site, resulting in at least a 45% decrease in the number of vehicle trips that would otherwise be generated if the property were not in close proximity to a metro station. (See Exhibit E, Traffic Impact Analysis, attached)

b) The maximum number of students, employees, guests, customers, or clients who can reasonably be expected to use the building or structure at one time;

Using analysis based on the guidelines of the Institute of Transportation Engineers (ITE) Trip Generation Manual (6th Ed., 1997), and various other impact analyses, the Traffic Impact Analysis indicates that the maximum number of spaces that will be required based on the proposed uses at the site and the proximity of the Metrorail station is approximately 1, 243 spaces if a movie theater is constructed, and 1,071 spaces if a discount retail store is built at the site. Thus, the maximum number of spaces that would be required based on the amount of vehicular trips

expected to be generated by the proposed uses is 1,243 spaces, which is 121 spaces fewer than the 1,364 that are to be provided by the Applicant.

c) The amount of traffic congestion existing or which the building or structure can reasonably be expected to create in the neighborhood;

As the Traffic Impact Analysis indicates, the development will not have an adverse impact on traffic in the area. The existing street network in the vicinity of the proposed DC/USA project is projected to accommodate the traffic levels after development of the site at an acceptable level of service "D" or better at each of the intersections in the study scope, without major additional roadway improvements or modifications. Given the site's close proximity to the Columbia Heights Metrorail Station, and several bus lines traveling along 14th Street, Park Road, and Irving Street, a transit modal split of approximately 45% is anticipated. In addition, in consultation with the Department of Public Works, the Developer has suggested certain mitigation measures to maximize the efficiency of the traffic flow in the area.

d) The quantity of existing public, commercial, or private parking, other than curb parking, on the property or in the neighborhood which can reasonably be expected to be available when the building or structure is in use;

There are no public lots or garages other than private parking facilities located within close proximity to the DC USA property which would be available for use by development employees and customers during business hours. As indicated above, the Developer will provide 1,364 on-site parking spaces that will serve the forecasted peak parking demand generated by the development on the site.

e) The proximity to public transportation, particularly Metrorail stations, and the availability of public transportation service in the area, or a ride-sharing program approved by the District of Columbia Department of Public Works.

As mentioned above, the property is located immediately across the street from the entrances to the Columbia Heights Metrorail Station. In addition, several metrobus lines serve the streets in the vicinity of the project. These bus lines provide service throughout the day and evenings at short, periodic intervals.

3. No Impairment of Intent of Zoning Regulations or Map and No adverse Adverse Effect on Neighboring Properties

Based on a consideration of the above-referenced factors as well as the purposes of the C-3-A District, and the evidence before the Board leads to the conclusion that the application will not impair the purpose or intent of the zone plan and that it will not have any adverse impact on neighboring properties.

Sections 740.4 and 740.5 of the Zoning Regulations provide that the C-3-A District is intended to support medium density commercial uses in compact areas near railstops. The Zoning Regulations also recognize that it may be appropriate to reduce the required number of parking spaces for developments in close proximity to Metrorail stations. In this case, where the Applicant has demonstrated that it will provide a more than adequate number of parking spaces given the nature of the proposed uses and the property's close proximity to Metrorail, the reduction in the required number of parking spaces will not at all affect the neighboring properties.

VII.
Witnesses

A. Representative of the Grid Properties, Inc

B. Representative of Bower, Lewis, Thrower, Architects

C. Representation of Gorove/Slade Associates, Inc., Traffic Engineers

D. Steven E. Sher, Holland & Knight LLP, Director of Land Use Planning and Zoning

VIII
Conclusion

For the reasons stated above, the requested relief is in harmony with the general purposes and intent of the Zoning Regulations and Zoning Map and will not tend to adversely affect the use of neighboring property. The Applicant therefore requests that the Board grant the subject application.

Respectfully submitted,

HOLLAND & KNIGHT LLP

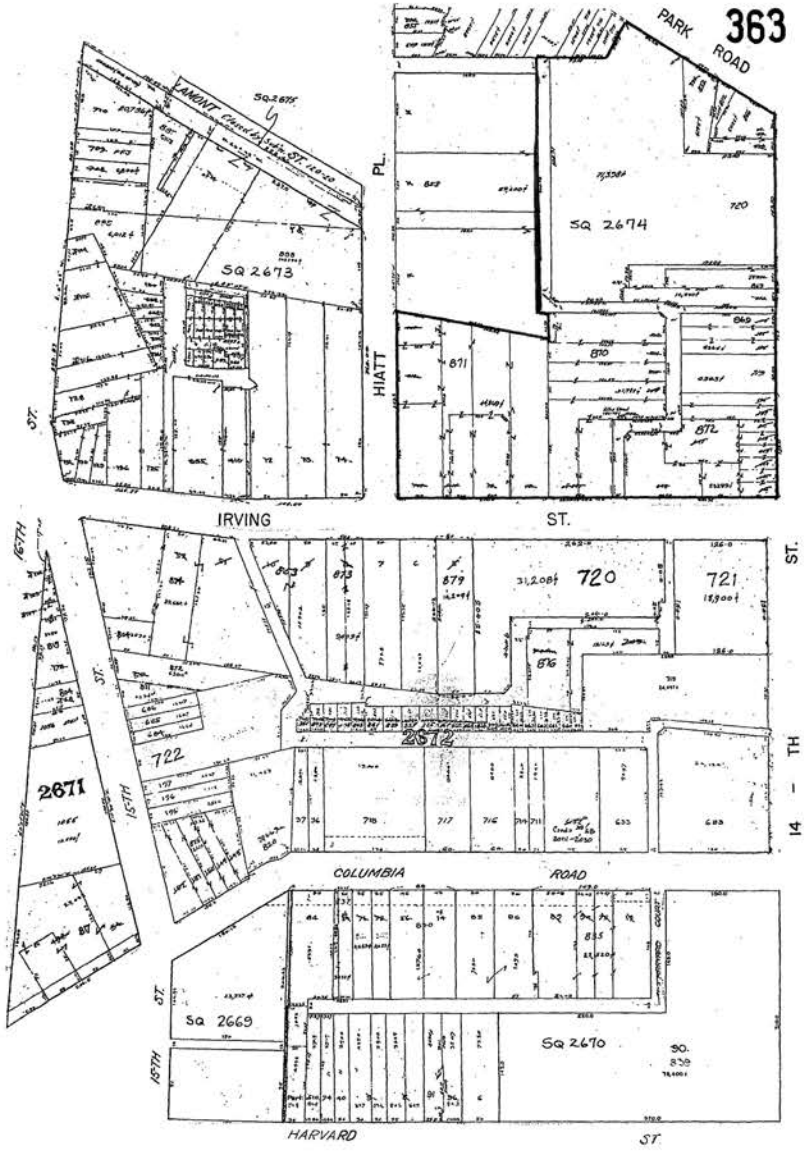
By: _____
Norman M. Glasgow, Jr.

_____
Lisa L. Jackson

2099 Pennsylvania Avenue, N.W., Suite 100
Washington, D.C. 20006
(202) 955-3000

WAS1 #1070132 v6




PARK ROAD
LAMONT Court
SQ 2673
SQ 2674
HIATT PL.
IRVING ST.
ST.
871
870
872
720
721
31,208f
879
876
873
2672
722
2671
16TH ST.
15TH ST.
14 - TH ST.
COLUMBIA ROAD
SQ 2669
SQ 2670
HARVARD ST.



R-4
C-3-A
R-4
C-2-A
R-5-D
C-3-A
C-2-A
R-5-D
R-4
C-2-B
R-5-B
C-2-B
SPRING
AVENUE
SHERMAN
QUINCY
POWELL
PLEASANT
HARVARD
FAIRMONT
GEORGIA
NEW HAMPSHIRE
TAYLOR
KANSAS
CHURCH
CREEK
RANDOLPH
MERIDIAN PL.
11TH
10TH
9TH
7TH
4

C

DISTRICT OF COLUMBIA GOVERNMENT
OFFICE OF THE SURVEYOR

Washington, D.C., AUGUST 21, 2001

Plat for Building Permit of SQUARE 2674 LOTS 719, 720, 812, 832, 863, 866, 869, 870, 871 & 872

Scale: 1 inch = 60 feet

Recorded in Book 154 Page 127 (LOT 719), Book 155 Page 76 (LOT 720)
A & T Book Page 360 (LOT 812), A & T Book Page 914 (LOT 832), A & T
Book Page 2274 (LOT 863), A & T Book Page 3458-W (LOT 866), A & T
Book Page 2414 (LOTS 869, 870, 871 & 872)

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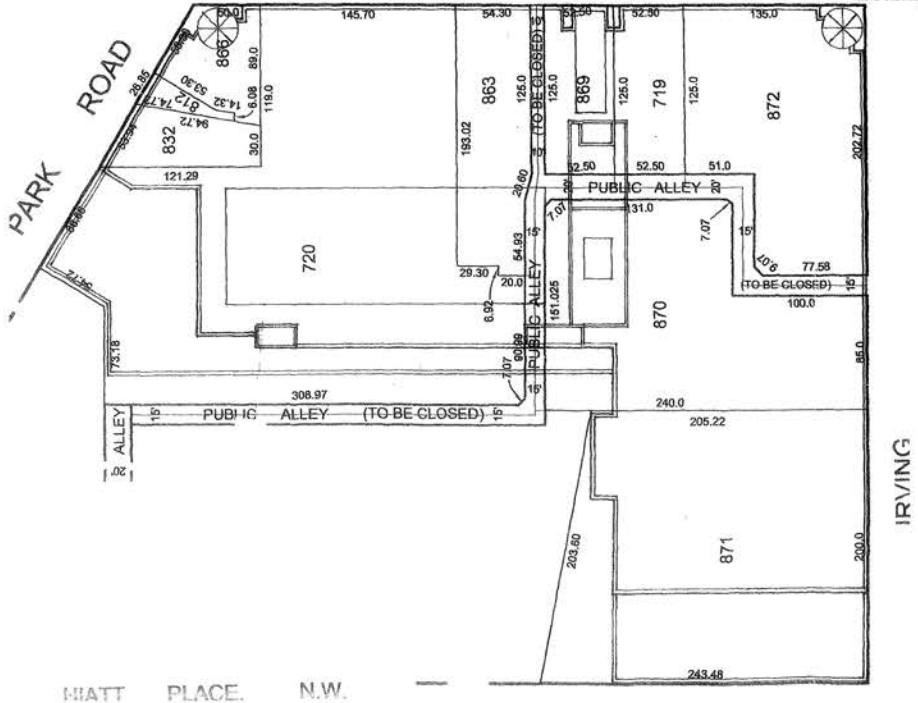
By: L.E.S.

I hereby certify that all existing improvements shown hereon, are completely dimensioned, and are correctly platted; that all proposed buildings or construction, or parts thereof, including covered porches, are correctly dimensioned and platted and agree with plans accompanying the application; that the foundation plans as shown hereon is drawn, and dimensioned accurately to the same scale as the property lines shown on this platand that by reason of the proposed improvements to be erected as shown hereon the size of any adjoining lot or premises is not decreased to an area less than is required by the Zoning Regulations for light and ventilation; and it is further certified and agreed that accessible parking area where required by the Zoning Regulations will be reserved in accordance with the Zoning Regulations, and that this area has been correctly drawn and dimensioned hereon. It is further agreed that the elevation of the accessible parking area with respect to the Highway Department approved curb and alley grade will not result in a rate of grade along centerline of driveway at any point on private property in excess of 20% for single-family dwellings or flats, or in excess of 12% at any point for other buildings. (The policy of the Highway Department permits a maximum driveway grade of 12% across the public parking and the private restricted property.)

Date: _____

_____
(Signature of owner or his authorized agent)

NOTE: Data shown for Assessment and Taxation Lots or Parcels are in accordance with the records of the Department of Finance and Revenue, Assessment Administration, and do not necessarily agree with deed description.







From 14th Street, N.W.



From 14th Street, N.W.



Looking Across Irving Street, N.W. at 14th Street, N.W.



Looking Across Irving Street, N.W. between 14th Street, N.W. & Hiatt Place, N.W.



Looking Across Irving Street, N.W. at Hiatt Place, N.W.



Looking Across Hiatt Place, N.W. at Irving Street, N.W.



Looking across Hiatt Place, N.W.



GOROVE/SLADE ASSOCIATES, Inc.
Suite 700 / 1140 Connecticut Ave. NW / Washington, DC 20036
Phone: (202) 296-8625
Fax: (202) 785-1276
Toll Free: (888) 212-4242

MEMORANDUM

TO:	Ken Laden	DCDPW
	Abdoulaye Bah	DCDPW
CC:	Jim Tuman	DC USA
	Lisa Jackson	Holland & Knight, LLP
	Steve Sher	Holland & Knight, LLP
	Chip Glasgow	Holland & Knight, LLP
FROM:	Michael W. Weil, AICP	
	Erwin Andres	
	Lou Slade, PE, PTOE	
DATE:	April 2, 2002	
SUBJECT:	DC USA Property Parking Reduction Analysis	

INTRODUCTION

The proposed DC USA development is planned to include the following development: 378,500 square feet for general retail, 25,000 square feet for a health club, and a 40-lane bowling alley. In addition, the development will include either 3,500 movie theater seats or a 80,000 square-foot retail discount store.

The current development plan for both scenarios provides 1,364 spaces, 24.6% fewer parking spaces than is required by the District of Columbia zoning requirement of 1,810 spaces for the types of uses in both of the potential development programs. Based on the District of Columbia Municipal Regulations, a reduction of up to 25% of the zoning requirement for parking can be allowed based on the development's ability to address five factors identified in "Exception to the Schedule of Requirements: Outside the Central Employment Area" (Section 2108 of the Regulations). This memorandum provides the technical support to justify that this development adequately addresses the five factors allowing for a reduction in the number of parking spaces that are required to be provided.

BACKGROUND

A traffic impact study was completed for the DC USA development on December 19, 2000 by Gorove/Slade Associates, Inc. (G/SA). The location of the subject site is shown in Figure 1. The 2000 traffic impact study analyzed the traffic impacts and parking needs of the DC USA development containing: 79,000 square feet for movie theaters, 358,000 square feet for general retail, 79,500 square feet for an ice rink, and 18,000 square feet for other auxiliary uses.

Though there are differences between the two potential development programs currently proposed and the development program analyzed in the December, 2000 study, the difference in local street network traffic impacts would be negligible for the three different programs. Thus, the mitigation measures recommended in the original traffic impact study would still adequately mitigate any significant future traffic impacts upon the local street network by the proposed development; The recommended improvements are a future adjustment to the signal timing at the 14th Street/Park Road/Kenyon Street intersection and a future lane marking change at the 16th Street/Irving Street intersection.

The proposed number of parking spaces represents a 24.6% space reduction from the total number of spaces required by the District's zoning regulations for the proposed development program, which is within the allowable 25% parking reduction limit. The current District regulations require a total of 1,810 parking spaces for the DC USA development program. The projected peak parking demands for the development programs are 1,243 spaces for the movie-theater development program and 1,071 spaces for the large discount retailer development program. The proposed development plan provides for 1,364 on-site parking spaces, which is a more than adequate amount of parking necessary for the projected peak parking demands generated by either development program.



Figure 1
Site Location Map

EXCEPTION TO THE SCHEDULE OF REQUIREMENTS

The following five factors are addressed in order to justify an exception to the current District zoning regulations which require that the proposed DC USA development provide a minimum of 1,810 parking spaces for two potential development programs. The following numbered statements (in bold print) present the explicit factor from the "Exception to the Schedule of Requirements: Outside the Central Employment Area" and the text following these statements (in bold print) represents how this development addresses that factor.

1. The nature and location of the building or structure and the nature and location of the connection to Metrorail;

The proposed development by DC USA is located in the Columbia Heights section of Washington, D.C. The site is bounded by 14th Street (eastside), Irving Street (southside), Park Road (northside), and Hiatt Place (westside), shown in Figure 1. The Columbia Heights community is a densely populated, vibrant, urban neighborhood located near the geographic center of Washington, D.C. The community's proximity to metrorail, as well as its close proximity to downtown Washington and Adams Morgan, situates the neighborhood as a geographic crossroads within the District. Columbia Heights has sidewalks along all of the streets, with relatively heavy pedestrian traffic along Irving Street and 14th Street. Based on each of these factors, it is anticipated that a significant number of future employees and customers of the proposed mixed-use DC USA development will travel to and from the development by walking. These employee/customer pedestrians will walk from the Metrorail station, their residences, and bus stops located throughout the neighborhood.

There are two access points to the Columbia Heights metrorail station; One access point is located on the northeast corner of the 14th Street/Irving Street intersection and the other access point is located on the southwest corner of the 14th Street/Irving Street intersection. The proposed development site is located at the northwest corner of the 14th Street/Irving Street intersection (Figure 1). There are currently sidewalks located along both sides of 14th Street and Irving Street which provide pedestrian connectivity between the proposed development site location and the Columbia Heights metrorail station. As a result, the proposed development by DC USA is conducive to Metrorail access for future patrons and employees.

2. The maximum number of students, employees, guests, customers, or clients who can reasonably be expected to use the proposed building or structure at one (1) time;

It is assumed that the peak hour for employees and customers who will use the proposed DC USA mixed-use development will occur during the peak hour for parking demand. Peak parking generation rates are taken from the ITE Parking Generation Manual, 2nd Edition (see Appendix A), a G/SA traffic impact study completed for a mixed-use development located at 2200 "M" Street in Washington, D.C. (see Appendix B), and a case study article written about an urban cinema development.

Tables 2 and 3 show the projected peak parking demand for the two potential development programs. Because the Institute of Transportation Engineers (ITE) manual separates parking rates into weekday and weekend peak rates for each use, the heavier peak parking rate, as applicable, is used for each program use in order to produce more conservative overall peak parking demand estimates. Each peak parking demand rate is also adjusted to account for the anticipated high transit usage due to the development site's close proximity (approximately 120 feet) to the Columbia Heights metrorail station and spaces left vacant during parking turnover. Assuming a standard four foot per second walk speed, there a walk-time of approximately 30 seconds between the metrorail station escalators and the proposed DC USA development.

The 45% transit mode share assumption and resulting reduction in parking demand for the proposed DC USA development is based on a 1989 WMATA survey ("Development-Related Ridership Survey II"). The survey examines the relationships among major land uses, distances to and from metrorail stations, and transit ridership, and is widely used as a source for transit modal share information in the Washington, D.C. metropolitan area. Retail is one of the major land uses specifically addressed in the study. A 45% transit mode share assumption is used in the DC USA development peak parking demand projection as a conservative estimate considering the relatively dense urban nature of the Columbia Heights neighborhood in which the DC USA development will be located.

Though the proposed DC USA development is expected to attract a significant number of employees and customers who will walk to the development, the peak parking demand is not reduced to account for this local pedestrian traffic, due to the lack of a reliable, applicable study or literature on the subject. However, the fact that the peak parking demand estimate is not further reduced to account for patrons and employees who will walk to the proposed DC USA development results in an even more conservative estimate of peak parking demand for the development.

TABLE 2
Development Program w/ Movie Theater

CALCULATION OF PRACTICAL NEED				Transit Mode Share ^	PARKING DEMAND w/ TRANSIT	Circulation Efficiency	RECOMMENDED PARKING SUPPLY
Use	Unit	Ratio/Formula	Subtotal		Subtotal		Total
Bowling Alley *							
Number of Lanes	40						
Number of Spaces		(5.66 * # of lanes) * 73.89% =	167	45%	92	10%	101
Health Club **							
Gross Square Feet	25,000						
Number of Spaces		(130 vehicles * 2) * 31% =	81	45%	45	10%	49
Movie Theater ***							
Number of Seats	3,500						
Number of Spaces		(1 space per 4.3 seats) * 70% =	570	45%	313	10%	345
Shopping Center ****							
Gross Square Feet	378,500						
Number of Spaces		(Ln(P) = (1.261 * (Ln (# of Gross Square Feet / 1,000))) - 0.365) =	1,237	45%	680	10%	748
SPACES			2,055		1,130		1,243

* ITE Parking Generation, 2nd Edition - Code 493 "Bowling Center - Weekday", based on a 40-lane bowling alley

** "2200 "M" Street Traffic Impact Analysis and Transportation Management Plan", G/SA Report, December 20, 1996, based on Vertical Club, NY Survey

*** "Developers Need to Know Parking Demand for Projects", Pacific Theaters Developing Cinerama Dome Site article, (assumes 3 patrons per vehicle)

**** ITE Parking Generation, 2nd Edition - Code 824 "Shopping Center - Saturday"

^ "Development-Related Ridership Survey II", WMATA, December, 1989

04/08/02 10:30 FAX 202 785 1276 GUKOVE/SLAUB ASSOCIATES

TABLE 3

Development Program w/ Large Discount Retail Store

CALCULATION OF PRACTICAL NEED				Transit Mode Share ^	PARKING DEMAND w/ TRANSIT	Circulation Efficiency	RECOMMENDED PARKING SUPPLY
Use	Unit	Ratio/Formula	Subtotal		Subtotal		Total
Bowling Alley *							
Number of Lanes	40						
Number of Spaces		(5.66 * # of lanes) * 73.89% =	167	45%	92	10%	101
Health Club **							
Gross Square Feet	25,000						
Number of Spaces		(130 vehicles * 2) * 31% =	81	45%	45	10%	49
Discount Store ***							
Gross Square Feet	80,000						
Number of Spaces		(GSF / 1,000) * 3.57 Avg. Rate =	286	45%	157	10%	173
Shopping Center ****							
Gross Square Feet	378,500						
Number of Spaces		(Ln(P) = (1.261 * (Ln (# of Gross Square Feet / 1,000))) - 0.365) =	1,237	45%	680	10%	748
SPACES			1,771		974		1,071

* ITE Parking Generation, 2nd Edition - Code 493 "Bowling Center - Weekday", based on a 40-lane bowling alley

** "2200 "M" Street Traffic Impact Analysis and Transportation Management Plan", G/SA Report, December 20, 1996, based on Vertical Club, NY Survey

*** ITE Parking Generation, 2nd Edition - Code 815 "Discount Store - Weekday"

**** ITE Parking Generation, 2nd Edition - Code 824 "Shopping Center - Saturday"

^ "Development-Related Ridership Survey II", WMATA, December, 1989

3. The amount of traffic congestion existing or which the building or structure can reasonably be expected to create in the neighborhood;

Although the traffic impact study completed in December, 2000, addresses the traffic impacts for the DC USA property with a slightly different development program, the current two proposed development programs would have traffic impacts similar to the original development program on the local area roadway network. As a result, the mitigation measures recommended in the original traffic impact study would still adequately mitigate any significant future traffic impacts upon the local street network by the proposed development. The recommended improvements are a future adjustment to the signal timing at the 14th Street/Park Road/Kenyon Street intersection and a future lane marking change at the 16th Street/Irving Street intersection.

The only significant change in the local street network since the December, 2000 traffic impact study is that on-street parking is now allowed along both sides of 13th Street during both the morning and evening peak periods. The December, 2000 study shows 13th Street, NW as having a four-lane cross section with parking prohibited during the morning peak period (7:00-9:30 AM) along the west curb of 13th Street, providing two (2) southbound traffic lanes and one (1) northbound lane in order to accommodate the prevailing southbound AM peak period traffic volume. Conversely, parking was prohibited during the evening peak period (4:00-6:30 PM) along the east curb of 13th Street, NW providing two (2) northbound traffic lanes and one (1) southbound lane in order to accommodate the prevailing northbound PM peak period traffic volume. On September 23rd, 2001, 13th Street, NW was reconfigured so that it has one (1) travel lane and one (1) parking lane for each travel direction at all times, without any rush hour parking restrictions. A recent re-analysis of two of the study intersections used in the December, 2000 traffic impact study concluded that the traffic diverted from the lane closure along 13th Street, NW would not cause any of the study intersections to operate at below an acceptable level of service of "D" under Total Future conditions.

4. The quantity of existing public, commercial, or private parking, other than on-street parking, on the property or in the neighborhood which can reasonably be expected to be available when the building or structure is in use; and

There are no public lots or garages or other private parking facilities located within close proximity to the DC USA property which would be available for use by development employees and customers during business hours. However, the planned 1,364 on-site parking spaces will be adequate to serve the forecasted peak parking demand generated from either of the proposed development programs. Table 2 and Table 3 show the projected peak parking demands for both development programs.

5. The availability of public transportation service in the area, or a ride-sharing program approved by the District of Columbia Department of Public Works.

Several Metrobus lines serve the streets in the vicinity of the project site:

- 14th Street - 52, 53, 54
- 16th Street - S1, S2, S4
- Monroe Street/14th Street/Park Road - H8
- Columbia Road - H1, H2, H3, H4, L30, L31, L32, L33, L34, 99
- Irving Street - H1, H2, H3, H4

Buses travel all day along these streets with headways of approximately 10 minutes during the peak periods and 30 minutes during the off-peak periods. Employees who will work at the various retail, entertainment, and service uses located in the development will be encouraged to rideshare and use alternative modes of transportation to travel to and from work, such as Metrorail, Metrobus, walking, and bicycling (NOTE: the parking demand analysis does not account for a rideshare program, people who will walk, and people who will bicycle to the DC USA development.) Therefore, the DC USA property is well served by public transportation.

CONCLUSION

Due to the adjacent location of the proposed DC USA development site to the Columbia Heights metrorail station and anticipated extensive use of transit and walking to travel to the proposed development by employees and patrons, a reduction of the planned parking supply is warranted. The parking reduction of 24.6% is within the allowable limit of 25% for parking reduction as identified in "Exception to the Schedule of Requirements: Outside the Central Employment Area". The number of planned parking spaces (1,364) is more than adequate to meet the forecasted peak parking demands (1,243 and 1,071) which would be generated by both potential development programs by DC USA development.

Appendix A

SHOPPING CENTER (820–828)

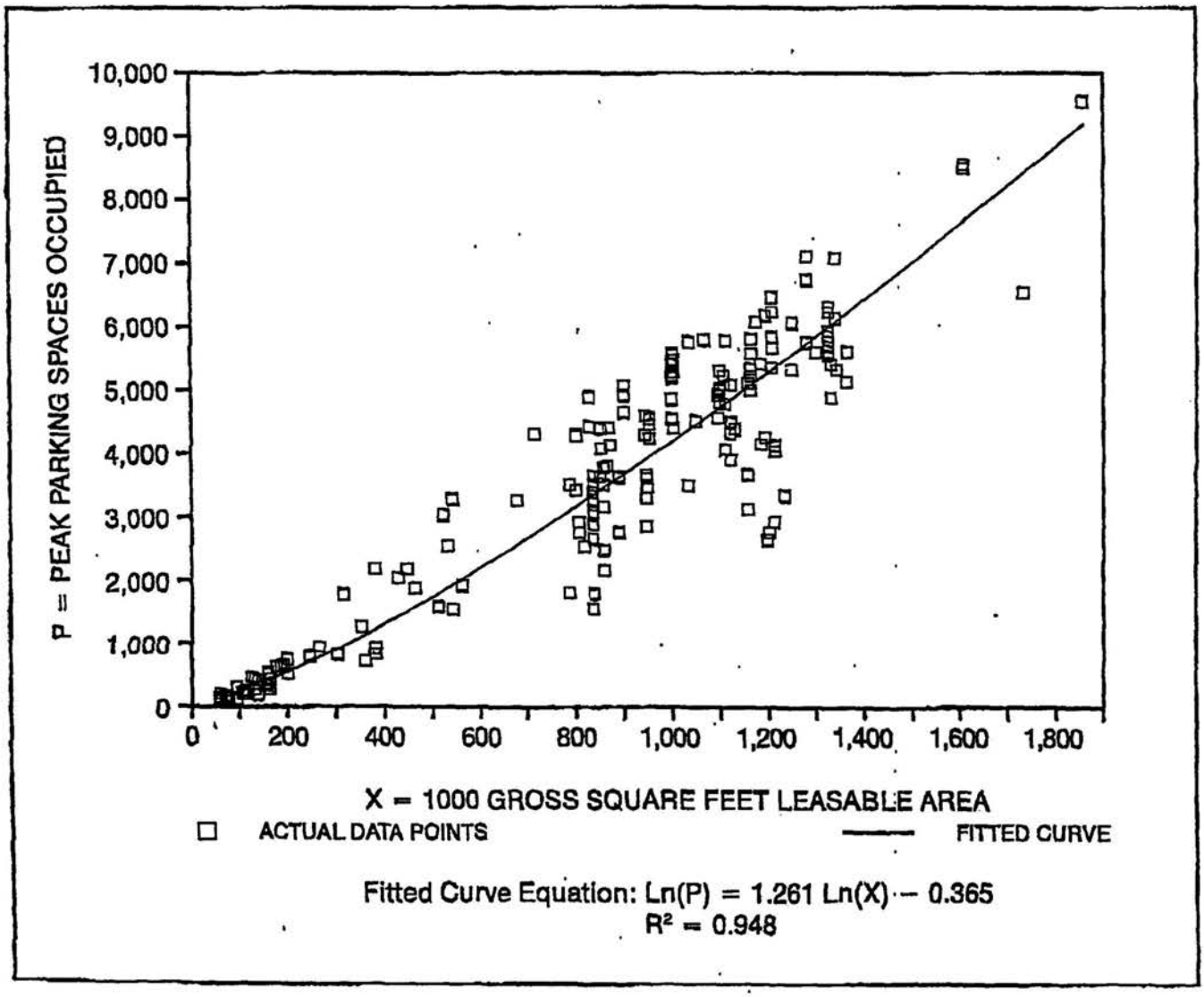
Peak Parking Spaces Occupied vs: **1,000 GROSS SQUARE FEET LEASABLE AREA**

On a: **SATURDAY**

PARKING GENERATION RATES

Average Rate	*Range of Rates*	*Standard Deviation*	*Number of Studies*	*Average 1,000 Square Feet GLA*
3.97	1.11–6.06	1.13	178	838

DATA PLOT AND EQUATION



Fitted Curve Equation: Ln(P) = 1.261 Ln(X) – 0.365

R^2 = 0.948

Appendix B

Chart 4
2200 "M" Street
Estimates for 6 a.m. to 11 p.m. Based on Vertical Club, N.Y. Survey
Cumulative Health Club Parking Demand

Hour	In	Out	Person Accumulation	*Vehicle Accumulation
6am	145	29	116	45
7am	103	72	147	57
8am	52	100	99	38
9am	73	77	95	37
10am	58	70	83	32
11am	77	75	85	33
12pm	86	96	75	29
1pm	76	92	59	23
2pm	99	93	65	25
3pm	122	88	99	38
4pm	135	73	161	62
5pm	189	110	240	93
6pm	210	129	321	124
7pm	227	216	337	130
8pm	109	200	246	95
9pm	63	201	108	42
10pm	26	134	0	0

Washington, D.C. Assumptions

Maximum Accumulation	Occupancy Average	Automobile Mode %
337	1.3	50

Maximum Vehicle Accumulation
(MAX PEOPLE)*(%AUTOS)/(AVE OCCUPANCY)
(337)*(0.5)/1.3 = 130 vehicles

* Vehicle Accumulation with Washington, D.C. assumptions. The Vertical Club of New York contains 22,560 square feet of "High Use Atheletic Area" and 130,658 square feet of total area.

GRID PROPERTIES DEVELOPMENT
COLUMBIA HEIGHTS
WASHINGTON, DC
Traffic Impact Analysis

Prepared For

Grid Properties, Inc.
New York, NY

Prepared by

Gorove/Slade Associates, Inc.
1140 Connecticut Avenue NW
Suite 700
Washington, D.C. 20036
202-296-8625

December 19, 2000

INTRODUCTION

Project Description

The retail/entertainment development proposed by Grid Properties, Inc., to be located in the Columbia Heights district of Northwest Washington, D.C. will consist of 534,500 square feet of retail/entertainment area (approximately 79,000 s.f for movie theaters, 358,000 s.f for retail, 79,500 s.f. for an ice rink, and 18,000 s.f. for other auxiliary uses), and 1,000 parking spaces. The site parcel is bounded by Park Road to the north, 14th Street to the east, Irving Street to the south, and Hiatt Place to the west. The proposed development site is presently mostly unoccupied except for a parking lot and a few small stores along 14th Street. Two access drives to the parking facility of the proposed development are planned, one along the one-way westbound Park Road and the other along the one-way eastbound Irving Street.

Scope of Study

The purpose of this study is to identify the traffic and parking impacts of the proposed development on the roadway network in the vicinity of the project. This traffic study assesses existing traffic conditions within the immediate neighborhood of the development and examines the adequacy of the proposed site parking provision.

The scope of this traffic impact study was defined through standard procedure of traffic impact studies conducted previously with the District of Columbia Department of Public Works (DC DPW). Assumptions regarding various traffic characteristics of the proposed development were applied in this report based on judgment and local resources.

The scope of work for this report is outlined as follows:

- Review the proposed development plans.
- Obtain the peak hour turning movement counts and project the future site traffic volumes.
- Identify approved but unbuilt development projects in the area that will affect future traffic for the project and surrounding neighborhood.
- Identify eventual transportation improvements already scheduled in the area that would affect future traffic for the project and surrounding neighborhood.
- Recommend roadway improvements and/or project phasing, if any, as warranted by findings to mitigate site traffic impacts.
- Identify the parking needs of the site.

Sources of data for this study include: District of Columbia Department of Public Works, Grid Properties, Inc., and the files and data collection efforts of Gorove/Slade Associates, Inc.

STUDY AREA

Critical Intersections

The ten intersections studied in this impact analysis were specified based on correspondence with the District of Columbia Office of Intermodal Planning. The following are the intersections studied for the analysis:

1. 13th Street and Harvard Street
2. 13th Street and Columbia Road
3. 14th Street and Park Road
4. 14th Street and Irving Street
5. 14th Street and Columbia Road
6. 14th Street and Harvard Street
7. 16th Street and Park Street
8. 16th Street and Irving Street
9. 16th Street and Columbia Road
10. 16th Street and Harvard Street

Traffic capacity analyses were made to determine the existing and total future (with subject site) levels of service for the ten intersections. The results of these analyses provide a means for ascertaining the specific impacts of background development within the region and the proposed site development.

Existing Roadway Network

A description of the roadways surrounding the site is as follows:

- 13th Street: In the vicinity of the site, 13th Street is a two-way north-south major arterial with a four-lane cross section.

  Throughout the day with the exception of the weekday a.m. and p.m. commuter peak periods, 13th Street is operated as a two-lane roadway with restricted parking allowed on both sides of the street.

  During the morning peak period parking is prohibited (7:00-9:30 AM) along the west curb of 13th Street, providing two southbound traffic lanes and one northbound lane. Parking is prohibited during the evening peak period (4:00-6:30 PM) along the east curb of 13th Street during the evening peak period, providing two northbound traffic lanes and one southbound lane.

- 14th Street: 14th Street is a two-way north-south arterial with variable use in the vicinity of the site.

  South of Irving Street, 14th Street operates as a four-lane roadway with on-street parking allowed on both sides throughout the day.

North of Park Road, 14th Street operates as a four-lane road with curb parking allowed only along the east side.

Between Irving Street and Park Road, parking is allowed on both sides of 14th Street. In the northbound direction, there are two through lanes plus an exclusive left turn lane. In the southbound direction, however, there is only one through lane and one exclusive left turn lane, restricting the through southbound flow capacity to a single lane.

- 15th Street: 15th Street is a one-way northbound minor arterial with restricted parking allowed along the west curb.

  From 9:30 AM to 6:30 PM, parking is prohibited along the east curb allowing 15th Street and it operates as a two-lane roadway with restricted parking on the west side.

  During the morning peak period, 15th Street is operated as a one-lane roadway with restricted parking allowed on both sides.

- 16th Street: In the site vicinity, 16th Street is a two-way north-south major arterial operating as a five-lane roadway with parking prohibited on both sides during the morning peak (7:00-9:30 AM, Mon-Fri) and the evening peak (4:00-6:30PM, Mon-Fri). During all other times, restricted parking is allowed on both sides, effectively reducing it to three operating lanes.

  South of the junction between 16th Street and the one-way northbound 15th Street, both in the morning and evening peak periods, 16th Street operates with three southbound lanes and two northbound lanes. The 16th Street northbound approach at Irving Street, however, is striped as only one through lane and one exclusive right turn lane. This is presumably to facilitate the downstream merging of the 15th Street two northbound lanes with 16th Street northbound traffic.

  Field observations during both AM and PM peak hours indicate that many vehicles approaching along northbound 16th Street use the right turn lane as a through lane since there are two receiving lanes available. This in turn forces vehicles in the left-most through lane of 15th Street to yield before merging into 16th Street. Vehicles in the right-most through lane of 15th Street have their own receiving lane, as an additional lane is provided along northbound 16th Street, between 15th Street and Pine Street. At Pine Street, however, this additional lane becomes an exclusive right turn lane onto Pine Street.

  North of the junction between 16th Street and the one-way northbound 15th Street, the 16th Street center lane is a reversible lane operating southbound in the morning peak (7:00-9:30 AM, Mon-Fri) and northbound the remainder of the day. During the peak periods, when parking is prohibited on both sides, this reversible system

provides three southbound lanes/two northbound lanes during the morning peak, and three northbound lanes/two southbound lanes during the evening peak.

- Hiatt Place: Hiatt Place is a minor local two-way narrow two-lane street, with restricted parking allowed along the east curb between Park Road and Irving Street. It partially borders the west side of the site, and allows for a practical counterclockwise direction of flow around the site.

- Park Road: East of 14th Street, Park Road is a two-way two-lane east-west minor arterial with restricted parking allowed on both sides. West of 14th Street, Park Road becomes a one-way westbound-only two-lane arterial with restricted parking allowed along the south curb.

- Kenyon Street: Kenyon Street is a one-way eastbound arterial forming the fifth leg of the signalized intersection of 14th Street and Park Road. Parking is prohibited along the north curb at all times except on Sundays. Restricted parking is allowed along the south curb. Therefore Kenyon Street is operated as a one-way two-lane roadway with restricted parking on the south side, between 13th Street and 14th Street.

- Irving Street: Irving Street is a one-way eastbound arterial with parking prohibited along the south side of the street between 7:00 AM-6:30 PM, Monday through Friday.

  From 16th Street to Hiatt Place, parking is prohibited between 7:00-9:30 AM and 4:00-6:30 PM, Monday through Friday, along the north side of the street.

  From Hiatt Place to 14th Street, parking is also prohibited at all times along the northside of Irving Street except for a short stretch of 30-minute parking allowed in the middle of the block.

  From 14th Street to 11th Street, two-hour on-street parking (except for Zone 1 sticker holders) is allowed from 7:00 AM-8:30 PM, Monday through Friday along the north side of the street.

  Therefore during peak periods, from 16th Street to 14th Street, Irving Street is operated as a three-lane roadway without parking for the exception of the short stretch of 30-minute parking allowed on the north side. West of 14th Street, Irving Street is operating as a two-lane roadway with restricted parking allowed along the north curb.

- Columbia Road: Columbia Road together with Harvard Street form an east-west one-way arterial pair. Columbia Road is a one-way westbound arterial with two-hour on-street parking (except for Zone 1 sticker holders) allowed from 7:00 AM-8:30 PM, Monday through Friday along the southside of the street within the study area. Parking is only allowed on Wednesdays from 7AM-7PM from 13th Street to 14th Street along the north side of Columbia Road, and is not allowed at any other time during the week.

  Parking is not allowed along the north side of Columbia Road between 14th and 15th Streets, between 7:00 AM-6:30 PM, Monday through Friday, with the exception of Tuesdays when parking is allowed. Therefore, in the vicinity of the site, Columbia Street operates as a one-way two-lane roadway with parking on one side during peak hours, and a one-lane roadway with parking both sides during off peak hours.

- Harvard Street: Harvard Street is one-way eastbound with two-hour on-street parking (except for Zone 1 sticker holders) allowed from 7:00 AM-8:30 PM, Monday through Friday along the north side of the street. On-street parking is prohibited on the south side of the street during peak periods (7:00-9:30 AM and 4:00-6:30 PM). Therefore in the vicinity of the site, Harvard Street is operating as a one-way two-lane roadway with restricted parking allowed on one side during peak hours, and as a one-lane roadway with restricted parking allowed on both sides during off peak hours.

Figure 1 presents the regional roadway network and site location. Figures 2 and 3 illustrate the roadway network in the vicinity of the site and the existing AM and PM peak lane configuration along each approach of the study intersections where additional approach lanes such as right turn and left turn lanes may be provided.

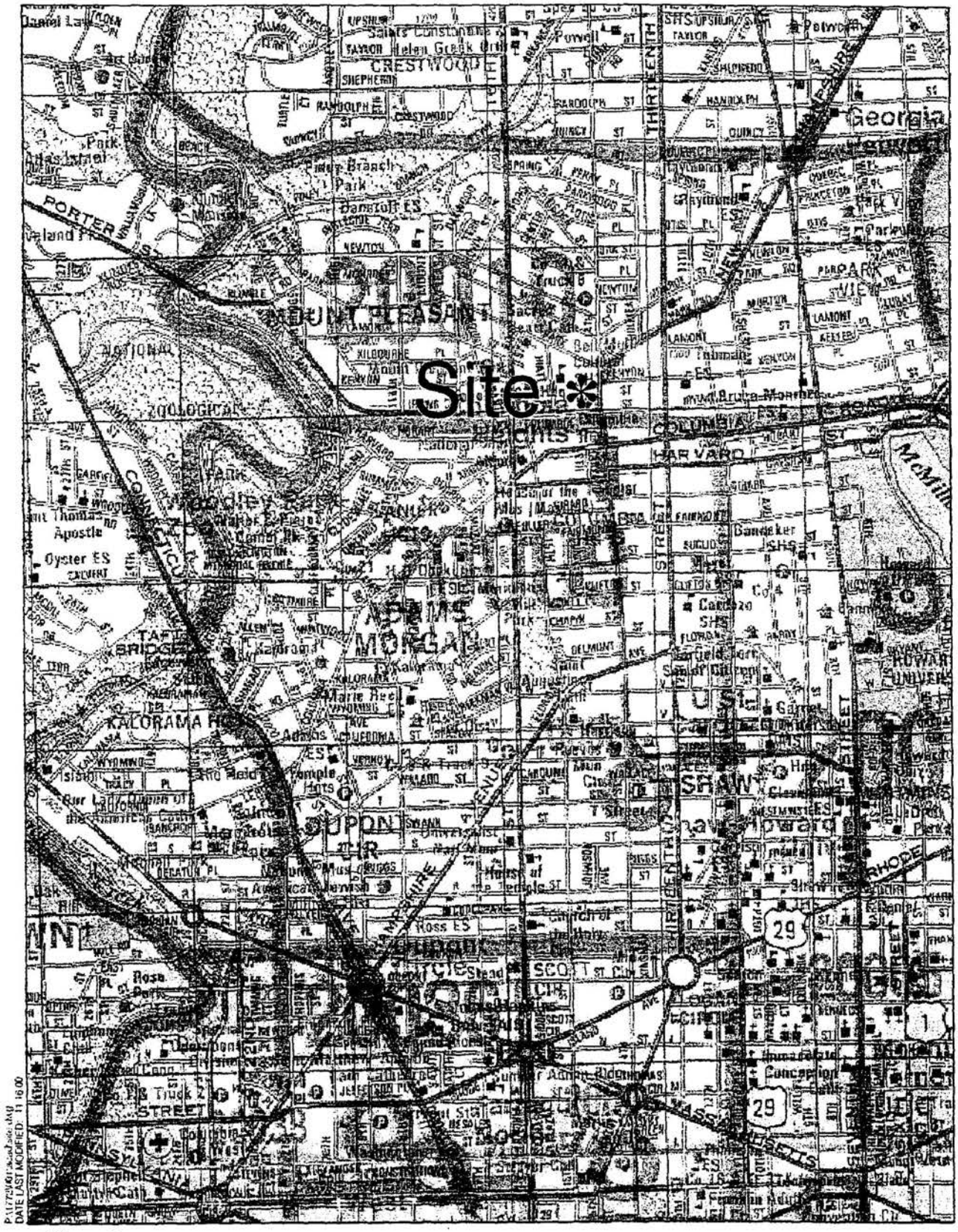


Figure 1
Site Location Map

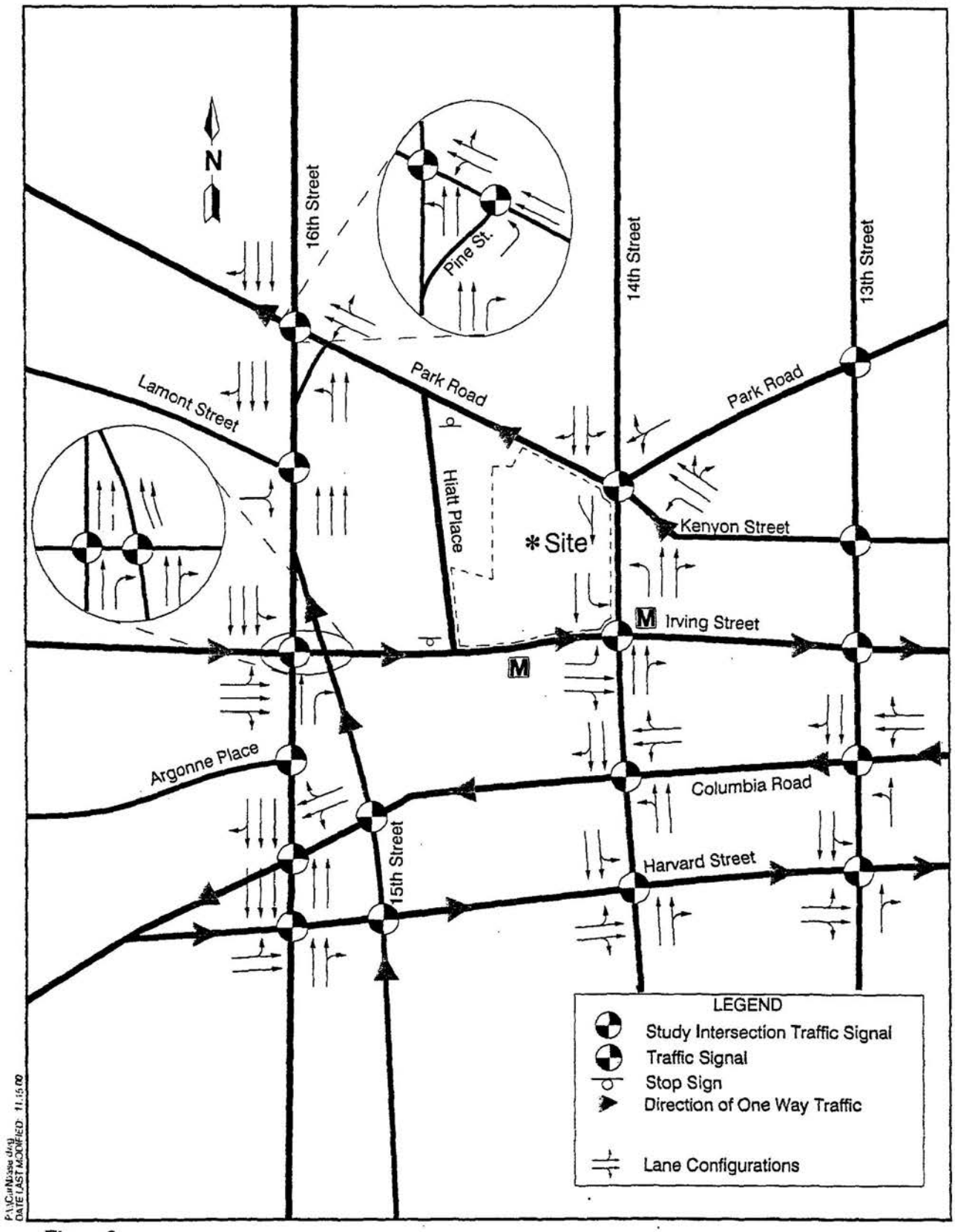


Figure 2
Existing Lane Configurations AM Peak Hour

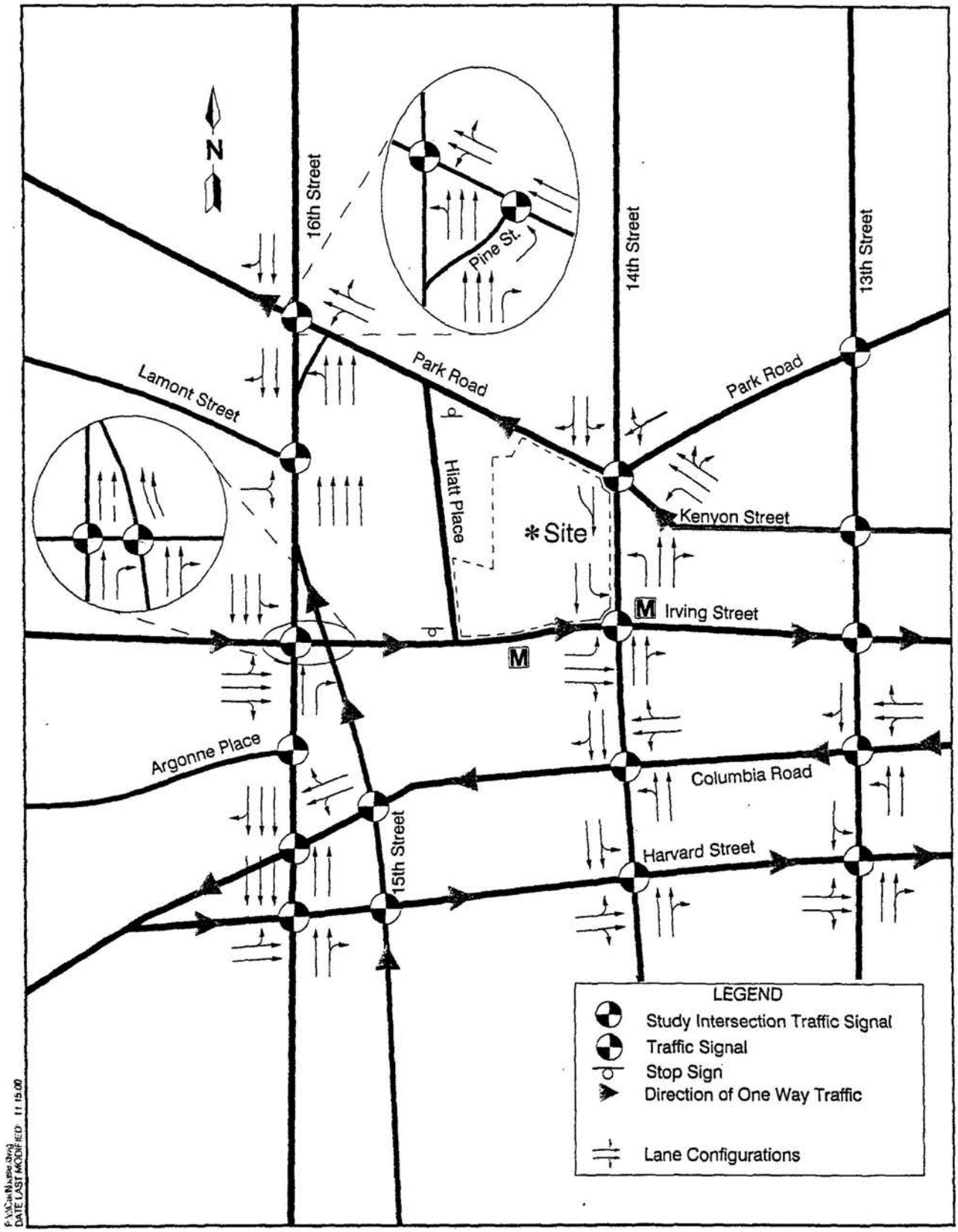


Figure 3
Existing Lane Configurations PM Peak Hour

EXISTING CONDITIONS (2000)

Existing Traffic Volumes

Existing 2000 traffic count data for the intersections were collected by Gorove/Slade Associates, Inc. A field reconnaissance was conducted to obtain the existing lane usage and traffic controls at each intersection. The traffic counts used in this report represent traffic volumes that were recorded in early November, 2000.

Traffic counts were conducted Tuesday through Thursday, between 7:00 A.M. and 10:00 A.M. in the morning and 3:30 P.M. and 7:00 P.M. in the evening. The A.M. and P.M. peak hours varied slightly between each intersection. The system peak, however, showed that the A.M. peak hour was from 8:15 A.M. to 9:15 A.M. and the P.M. peak hour was from 4:45 P.M. to 5:45 P.M. The existing traffic volumes were analyzed in order to establish the baseline levels of operation in the area. Figure 4 illustrates the existing traffic volumes at each study intersection.

Existing Capacity Analysis

Intersection capacity analyses were performed for the A.M. and P.M. peak hours for existing conditions. The capacity analyses are based on methods outlined by the *Transportation Research Board's Special Report 209 Third Edition: Highway Capacity Manual (HCM), 1998.* Levels of Service (LOS) for a capacity analysis range from "A" (best) to "F" (worst). A level of service "D" was used as the minimum acceptable level of service during peak hours. A detailed description of the criteria for signalized and unsignalized intersection LOS is included in the Technical Appendix to this report. All ten study intersections are signalized. Each signal is controlled by the DC DPW computerized signal system and all signals operate on an 80-second cycle length during both the AM and PM peak periods. The results of the capacity analyses for existing conditions are presented in Table 1.

Table 1			
Existing Capacity Analysis (2000)			
		Level of Service Delay (in seconds/vehicle)	
Roadway Intersection		**A.M. Peak Hour**	**P.M. Peak Hour**
13th Street / Harvard Street	Total Delay	B(13.6)	B(13.5)
(signalized intersection)	NB	A(7.6)	A(8.6)
	SB	B(11.6)	B(10.0)
	EB	C(36.1)	C(28.0)
13th Street / Columbia Road	Total Delay	B(15.1)	B(16.8)
(signalized intersection)	NB	A (8.1)	B(14.6)
	SB	B(11.8)	B(12.6)
	WB	C(29.1)	C(26.7)
14 Street / Park Road / Kenyon Street	Total Delay	C(30.9)	C(33.7)
(signalized intersection)	NB	C(23.8)	C(34.4)
	SB	D(35.5)	D(36.6)
	EB	C(24.4)	C(24.3)
	WB	D(47.0)	D(47.6)
14th Street / Irving Street	Total Delay	B(18.6)	B(19.2)
(signalized intersection)	NB	B(16.7)	B(17.7)
	SB	B(17.5)	B(12.2)
	EB	C(21.5)	C(26.2)
14th Street / Columbia Road	Total Delay	B(15.5)	B(14.8)
(signalized intersection)	NB	B(13.3)	B(13.1)
	SB	B(12.9)	B(10.6)
	WB	C(22.6)	C(23.8)
14th Street / Harvard Street	Total Delay	B(13.3)	B(14.3)
(signalized intersection)	NB	A(9.0)	B(11.0)
	SB	B(11.0)	B(10.9)
	EB	C(23.0)	C(24.6)

16th Street / Park Street	Total Delay	B(15.2)	B(15.1)
(signalized intersection)	NB*	A(7.3)	B(11.4)
	SB	B(11.7)	B(11.9)
	WB	C(32.4)	C(27.7)
16th Street / Irving Street	Total Delay	B(13.8)	F(93.1)
(signalized intersection)	NB	B(17.4)	F(203.4)
	SB	A(9.6)	A(6.8)
	EB	C(27.5)	C(31.5)
16th Street / Columbia Road	Total Delay	B(19.1)	B(19.1)
(signalized intersection)	NB	B(11.1)	B(17.9)
	SB	B(17.6)	B(14.0)
	WB	C(33.7)	C(29.3)
16th Street / Harvard Street	Total Delay	B(17.8)	B(15.9)
(signalized intersection)	NB	B(12.8)	B(14.8)
	SB	B(17.6)	B(10.7)
	EB	C(25.7)	C(26.5)

* *At 16th Street and Park Road: Bus-Only northbound left turns*

The results of the existing capacity analysis indicate that all but one of the signalized intersections within the study area currently operate at acceptable levels of service "D" or better during the A.M. and P.M. peak hours. A significant number of northbound vehicles were observed using the northbound, right turn only lane on 16th Street at Irving Street, to continue traveling northbound through the intersection during the peak hours. The official lane use designation is one through lane and one right turn lane. Analysis of this configuration results is level of service "F" during the PM peak hour. Mitigation for this failing condition is discussed in subsequent report sections.

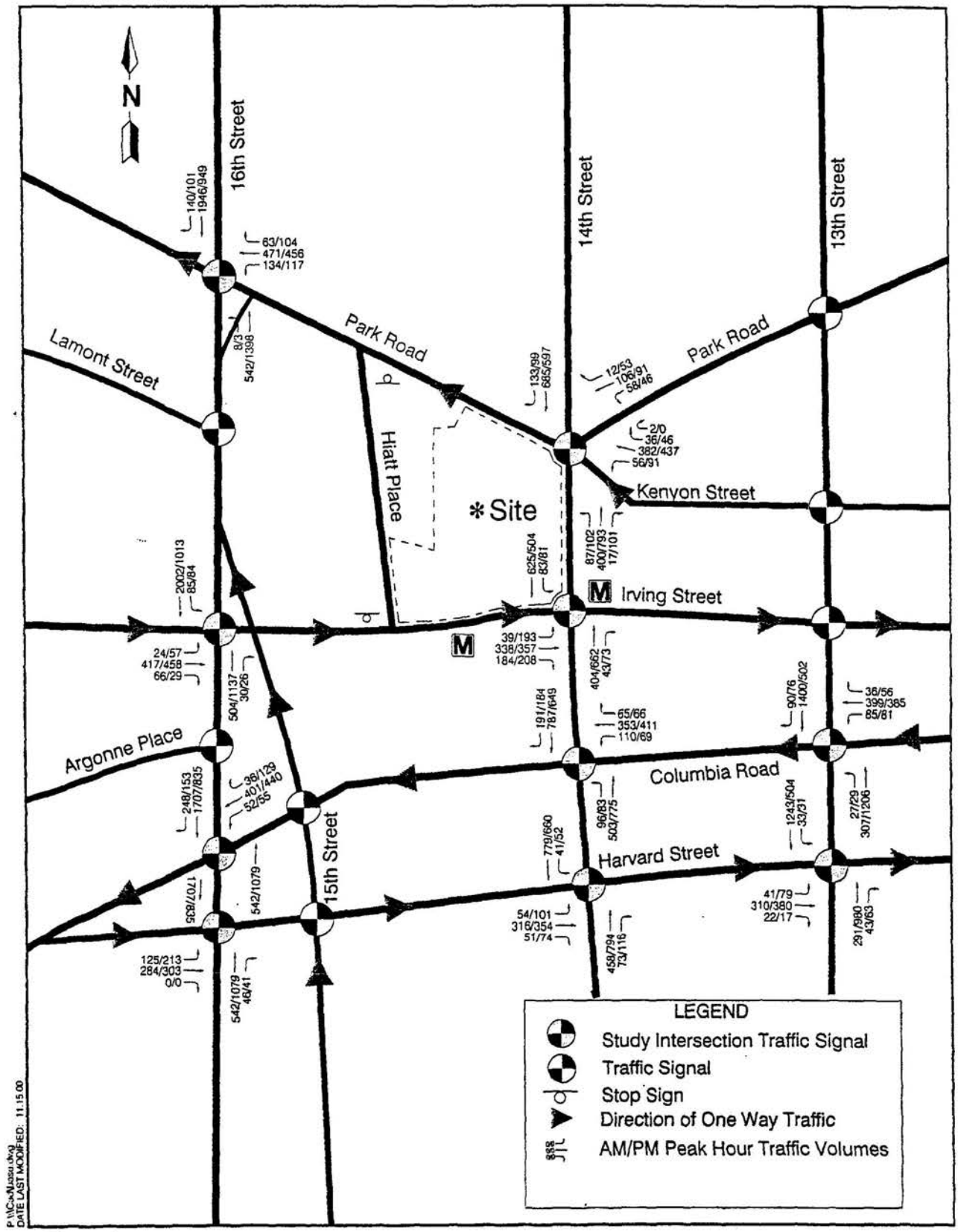


Figure 4
Existing AM/PM Peak Hour Traffic Volumes

Existing Transit and Pedestrian Conditions

Metrorail

The closest metrorail station is the Columbia Heights station which is located directly across the street from the site. The site is located in the northwest quadrant of the Irving Street and 14th Street intersection, and the metro station has two entrances located in the southwest and the northeast corners of the intersection. The Columbia Heights station is located along the north-south metrorail Green Line which links Greenbelt to the north with Anacostia to the south, and provides direct access to downtown Washington D.C.

Metrobus

In addition, several Metrobus lines serve the streets in the vicinity of the project site:

- 13th Street - 67
- 14th Street - 52, 54
- 16th Street - S1, S2, S3, S4, S5
- Monroe Street/14th Street/Park Road - H8
- Columbia Road - H2, H4
- Irving Street - H2, H4, H8

Buses travel all day along these streets with headways of approximately 10 minutes during the peak periods and 30 minutes during the off-peak periods.

Sidewalks

Sidewalks are provided on all of the streets in the vicinity of the site and the following are the average sidewalk widths in the vicinity of the site:

- 13th Street - 5-6 feet
- 14th Street - 13 feet
- 16th Street - 6 feet (east side)
- Park Road - 4-5 feet (south side), 5-11 feet (north side)
- Columbia Road - 6-7 feet
- Harvard Street - 6-10 feet (north side), 5-6 feet (south side)
- Irving Street - 6-14 feet (north side), 6-14 feet (south side)

These widths include parking meters, landscaping, fire hydrants, signs, and other objects.

FUTURE BACKGROUND CONDITIONS (2003)

Future Background Conditions include traffic volumes through the year 2003 without the development of the site. The Future Background traffic projections were made to isolate and identify specific impacts of the site from the impacts of regional growth in area traffic volumes.

Future Background Traffic (2003)

The Department of Public Works indicated that there was one approved development in the vicinity of the Grid Property site, which is an office/retail development proposed by Horning Brothers and will be referred to as the Tivoli Theater site, consisting of 104,000 square feet (approximately 52,000 for a Giant grocery store, 26,000 for local retail, and 26,000 for office use), and 200 parking spaces. The site parcel is bounded by Monroe Street to the north, Holmead Place to the east, Park Road to the south, and 14th Street to the west, which is located on the other side of 14th Street (eastside) and one block north of the Grid Property site.

In addition to the proposed Tivoli Theater site development, future background traffic along the local streets adjacent to the study area was accounted for through a one (1) % annual growth factor, applied for three years. Each peak hour turning movements of every study intersection was increased by three (3) %. A review of the infrastructure programs in the District of Columbia revealed that there are no approved and financed roadway infrastructure improvements in the vicinity of the subject site.

The Project Site Traffic and Total Future Conditions sections to follow contains year 2003 capacity analyses for the intersections in the vicinity of the site with future growth in traffic volumes from both regional developments and site-specific traffic. Figure 5 shows the resulting Future Background Conditions traffic volumes.

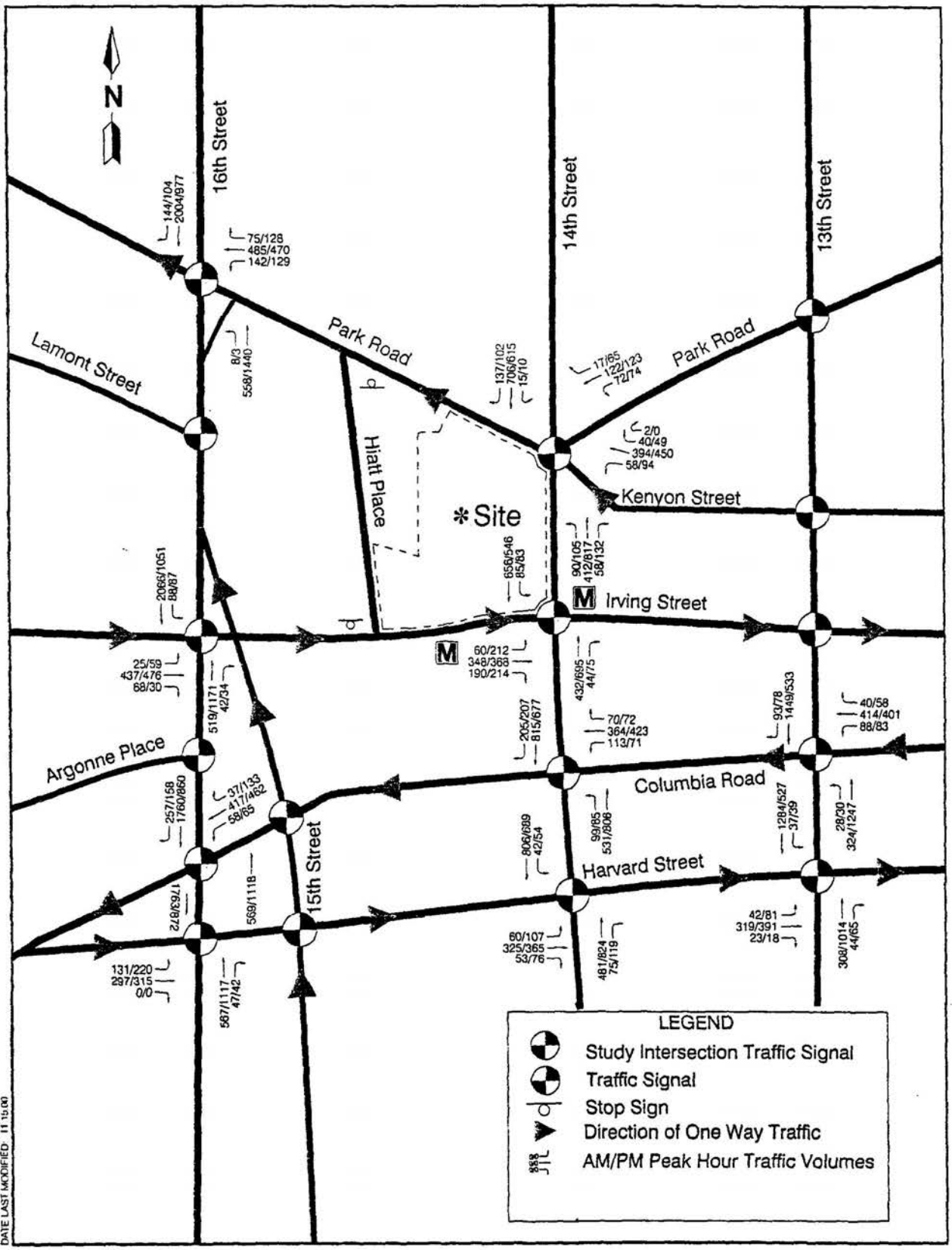


Figure 5
Future Background Peak Hour Traffic Volumes

PROJECTED SITE TRAFFIC

The retail/entertainment development will consist of 534,500 square feet of retail/entertainment area, including 78,750 s.f. for movie theaters, 358,000 s.f. for retail, 79,500 s.f. for an ice rink, and the remaining 18,000 s.f. for auxiliary uses. Total Future Conditions include the future background 2003 traffic volumes (existing traffic grown by three [3] % and the Tivoli Theater development traffic) plus the projected traffic expected to be generated by the full site development. Two access drives to the parking facility of the proposed retail/entertainment development are planned, one along the one-way westbound Park Road and the other along the one-way eastbound Irving Street.

Site Trip Generation

The estimated trips that will be generated by the retail/entertainment development were based on the site development program. The trip generation projections were determined using the *6th Edition* of the Institute of Transportation Engineers' Trip Generation manual for the retail and entertainment components of the project. The Trip Generation manual is a compilation of empirical studies of vehicle traffic generation for a comprehensive list of categories of land uses.

Also taken into consideration for this project is its proximity to public transit. During the A.M. and P.M. peak hours, many of the neighboring residents will walk, and many other regional patrons will travel to and from the site via the Columbia Heights Metrorail station or take the area Metrobus. Given the proximity of the site to the Metrorail station and the bus stops for several connecting bus lines, it is expected that particularly during the evening peak hours that a high percentage of patrons will reach the site by means other than the use of private automobiles. Since the site location is also very close to several large residential neighborhoods, there will be many people who will walk to the site.

It is estimated that the vibrant nearby neighborhoods of Columbia Heights, Mount Pleasant, Adams-Morgan and U-Street, combined with the adjacent Columbia Heights metrorail station and the several bus lines next to the site, will generate a significant amount of transit and walking modal choices, resulting in a 50 % decrease in the number of vehicle trips as projected when using the *6th Edition* of the Institute of Transportation Engineers (ITE) Trip Generation manual.

This modal split assumption is supported by the Development-Related Ridership Survey II, undertaken by WMATA (Washington Metropolitan Area Transit Authority) in December, 1989, which documents a 50% modal split for transit use in medium-density urban neighborhoods like Columbia Heights, Mount Pleasant, Adams-Morgan and U-Street. As a result, the ITE trip rates for retail and entertainment components which are based on field surveys typically taken for developments located in low-density suburban neighborhoods not served by metrorail or with limited bus service, were adjusted to reflect the site location in a medium-density, urban area.

Table 2 shows the projected trip generation associated with the development.

Table 2
Columbia Heights Grid Property
Trip Generation

Land Use	Size	ITE Code	A.M. Peak Hour			P.M. Peak Hour		
			In	Out	Total	In	Out	Total
Retail	358,000 s.f.	820	209	133	342	700	757	1,457
Theater	78,750 s.f.	444				192	107	299
Ice Rink	79,500 s.f.	465				85	103	188
Subtotals			**209**	**133**	**342**	**977**	**967**	**1,944**
50% Transit or Walk/Bike: Retail			-104	-67	-171	-350	-378	-728
50% Transit or Walk/Bike: Theater						-96	-53	-149
50% Transit or Walk/Bike: Ice Rink						-42	-51	-93
TOTAL			**105**	**66**	**171**	**489**	**485**	**974**

Weekday Street A.M. Peak Hour trip generation
Retail-ITE Code 820, Ln (Trips) = 0.596 Ln (Square feet in thousands) + 2.329, 61% in / 39% out

Weekday Street P.M. Peak Hour trip generation
Retail-ITE Code 820, Ln (Trips) = 0.660 Ln (Square feet in thousands) + 3.403, 48% in / 52% out
Theater w/Matinee-ITE Code 444, Trips = (3.80 average rate) x (Square feet in thousands), 64% in / 36% out
Ice Rink-ITE Code 465, Trips = 2.36(Square feet in thousands), 45% in / 55% out

Site Trip Assignment

The trips expected to be generated by the proposed development were assigned to the adjacent roadway network based on the directional street patterns and the existing traffic distribution along the adjacent roadways. The anticipated directional site approach distribution (inbound and outbound) is illustrated in Figure 6. The resulting peak hour site trips estimated at each study intersection are shown in Figure 7.

PARKING

A total of approximately 1,000 parking spaces are planned for the project. Based on the ULI's *The Dimensions of Parking, 3rd Edition, 1993* the appropriate range is between 1 and 4 spaces per 1,000 square feet of development for sites with no alternative transportation mode choices. The project will feature approximately 518,500 square feet of development. Using a value of 4 spaces per 1,000 square feet (at the maximum end of the range) a total of 2,066 spaces would be recommended for a site without access to transit and other travel modes such as walking. However, since 50% or more trips are anticipated to be made by modes other than automobile, 1,000 spaces are an appropriate number for the project.

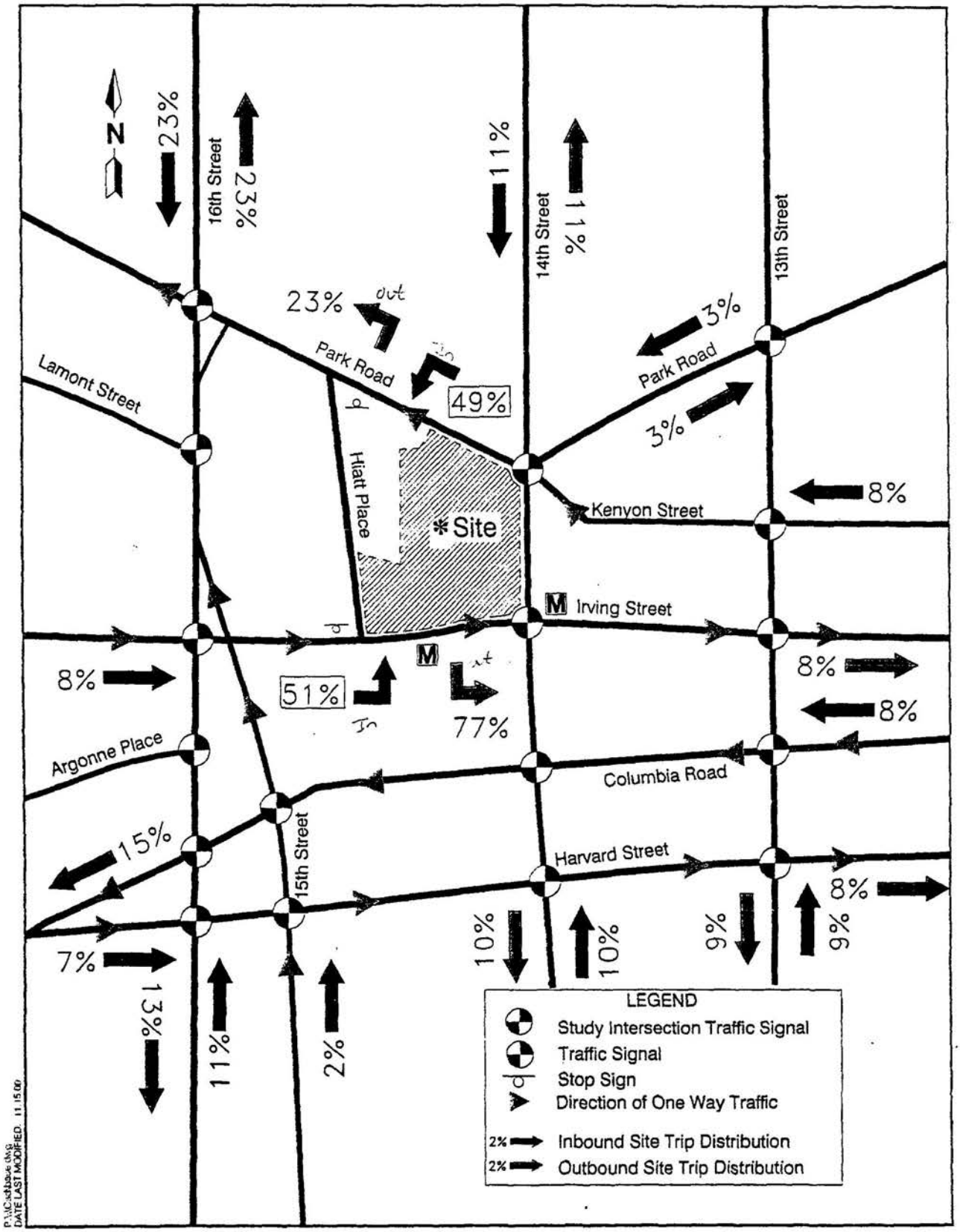


Figure 6
Site Approach Distribution

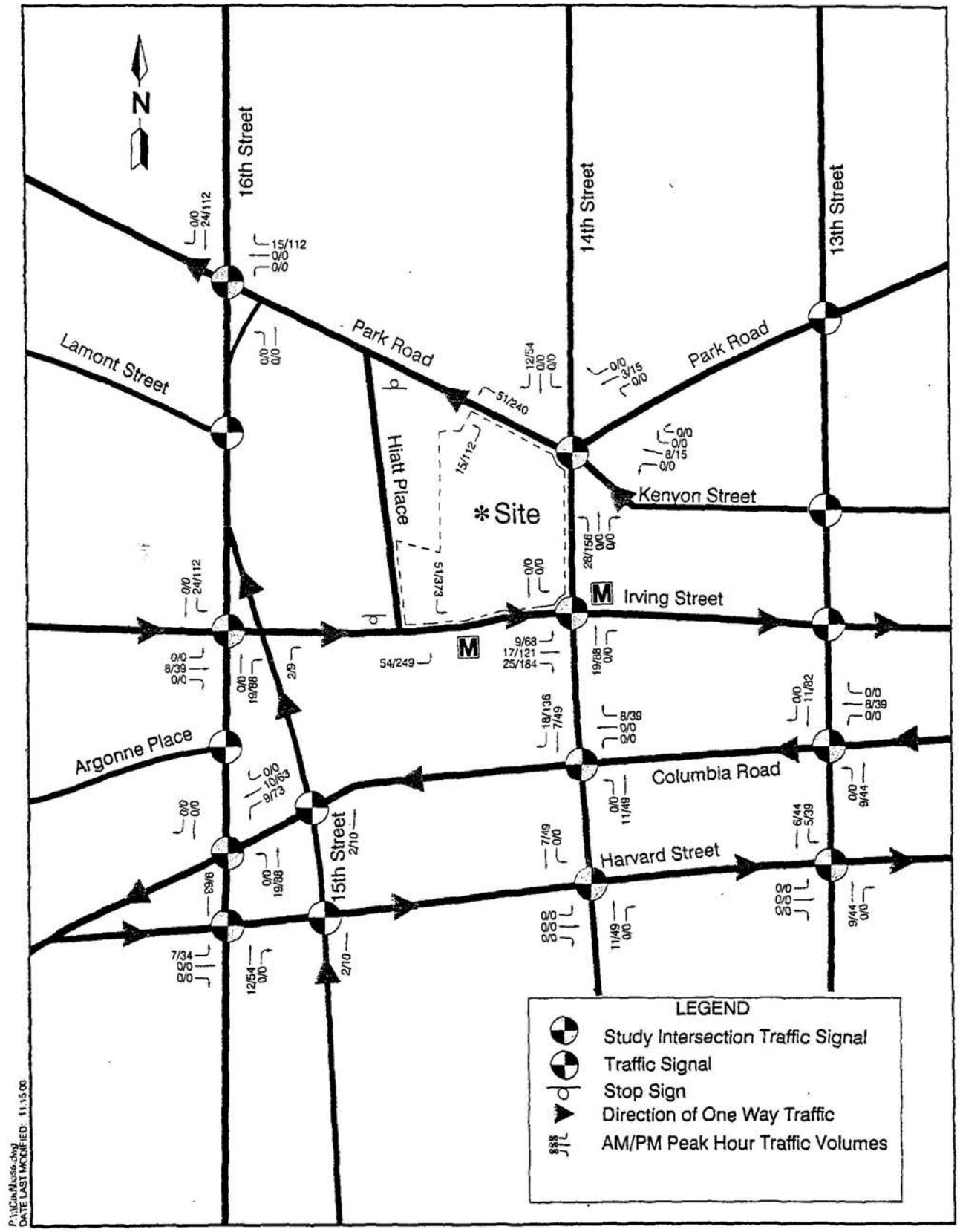


Figure 7
Site Peak Hour Traffic Volumes

TOTAL FUTURE CONDITIONS (2003)

Future Development Traffic Projections

The Total Future traffic volumes projected for the roadways in the vicinity of the site consist of the site traffic volumes (Figure 7) added to Future Background volumes (Figure 5). These Total Future traffic volumes are given in Figure 8 for the A.M. and P.M. peak hours. The following report sections describe the operational levels of service and provide a few recommended minor improvements to maximize the efficiency of traffic flow throughout the area.

Total Future Capacity Analysis Results (2003)

Table 3 summarizes the results of the Total Future Capacity Analysis.

Table 3			
Total Future Capacity Analysis (2003)			
		Level of Service Delay (in seconds/vehicle)	
Roadway Intersection		**A.M. Peak Hour**	**P.M. Peak Hour**
13th Street / Harvard Street	Total Delay	B(14.3)	B(16.4)
(signalized intersection)	NB	A(7.9)	A(9.0)
	SB	B(12.6)	C(20.0)
	EB	C(26.3)	C(28.3)
13th Street / Columbia Road	Total Delay	B(15.8)	B(19.8)
(signalized intersection)	NB	A(8.5)	B(18.1)
	SB	B(12.5)	B(16.0)
	WB	C(29.9)	C(27.9)
14th Street / Kenyon Street / Park Road	Total Delay	D(37.6)	D(35.5)
(signalized intersection)	NB	C(25.1)	C(22.8)
	SB	D(49.5)	D(45.7)
	EB	C(32.5)	D(39.4)
	WB	D(36.1)	E(57.4)
14th Street / Irving Street	Total Delay	B(19.4)	C(29.2)
(signalized intersection)	NB	B(17.1)	B(19.1)
	SB	B(18.6)	B(13.2)
	EB	C(22.1)	D(45.2)

14th Street / Columbia Road	Total Delay	B(16.1)	B(16.8)
(signalized intersection)	NB	B(14.3)	B(16.5)
	SB	B(13.5)	B(12.4)
	WB	C(23.0)	C(24.9)
14th Street / Harvard Street	Total Delay	B(13.5)	B(14.7)
(signalized intersection)	NB	A(9.2)	B(11.5)
	SB	B(11.3)	B(11.7)
	EB	C(23.2)	C(24.9)
16th Street / Park Street	Total Delay	B(16.3)	B(17.9)
(signalized intersection)	NB*	A(7.4)	B(11.6)
	SB	B(12.3)	B(13.1)
	WB	D(35.3)	D(35.6)
16th Street / Irving Street	Total Delay	B(13.7)	C(20.0)
(signalized intersection)	NB	B(13.5)	C(24.1)
	SB	B(10.3)	A(9.7)
	EB	C(27.8)	C(32.7)
16th Street / Columbia Road	Total Delay	B(19.8)	C(22.8)
(signalized intersection)	NB	B(11.3)	B(19.9)
	SB	B(18.3)	B(14.2)
	WB	D(35.0)	D(38.2)
16th Street / Harvard Street	Total Delay	B(18.3)	B(16.7)
(signalized intersection)	NB	B(13.1)	B(15.8)
	SB	B(18.3)	B(11.1)
	EB	C(26.1)	C(27.6)

** At 16th Street and Park Road: Bus-Only northbound left turns*

The results of the Total Future capacity analysis indicate that all intersections will continue to operate at acceptable levels of service "D" or better in the future during the A.M. and P.M. peak hours with minor improvements to the roadway network. . These improvements are described in the paragraphs to follow.

RECOMMENDED IMPROVEMENTS

16th Street and Irving Street Intersection

At the intersection of 16th Street and Irving Street, a minor mitigation measure is recommended. This is to change the pavement marking for the 16th Street northbound exclusive right turn lane into a shared through-right turn lane which will provide for two through northbound travel lanes during both the AM and PM peak hours. There are two receiving lanes on 16th Street for this movement on the north side of Irving Street, and motorists in the northbound lanes were observed to already utilize the roadway as a shared through-right turn lane. The new paint striping will clarify the options of motorists who use this roadway and maximize the capacity for this movement group at the intersection. With these improvements at the intersection of 16th Street and Irving Street, a resulting level of service "B" is expected in the future during the A.M. peak hour and a level of service "C" during the P.M. peak hour, as indicated in Table 3.

14th Street, Park Road and Kenyon Street Intersection

For the intersection of 14th Street at Park Road and Kenyon Street, it is recommended to slightly modify the signal timing splits during the morning and evening peak periods, by redistributing the green time in a more balanced way between the existing phases. This intersection under future 2003 conditions, using the same signal phase timing splits as existing, would be expected to operate at an overall level of service "F" during the PM peak hour, with the westbound Park Road, northbound 14th Street, and southbound 14th Street approaches all operating at a level of service "F". However, the recommended signal timing redistribution at the intersection of 14th Street at Park Road and Kenyon Street will result in an overall level of service "D" for the overall intersection, with the westbound Park Road, northbound 14th Street, and southbound 14th Street approaches operating at levels of service "E", "C", and "D", respectively, during the PM peak hour as given in the following table.

Table 4

Approach	Signal Phase	Existing Green Time		Suggested Future Green Time	
		AM	PM	AM	PM
Northbound/Southbound	1	24 sec.	21 sec.	24 sec.	22 sec.
Northbound	2	4 sec.	5 sec.	5 sec.	9 sec.
Eastbound	3	23 sec.	24 sec.	17 sec.	16 sec.
Westbound	4	13 sec.	14 sec.	18 sec.	17 sec.

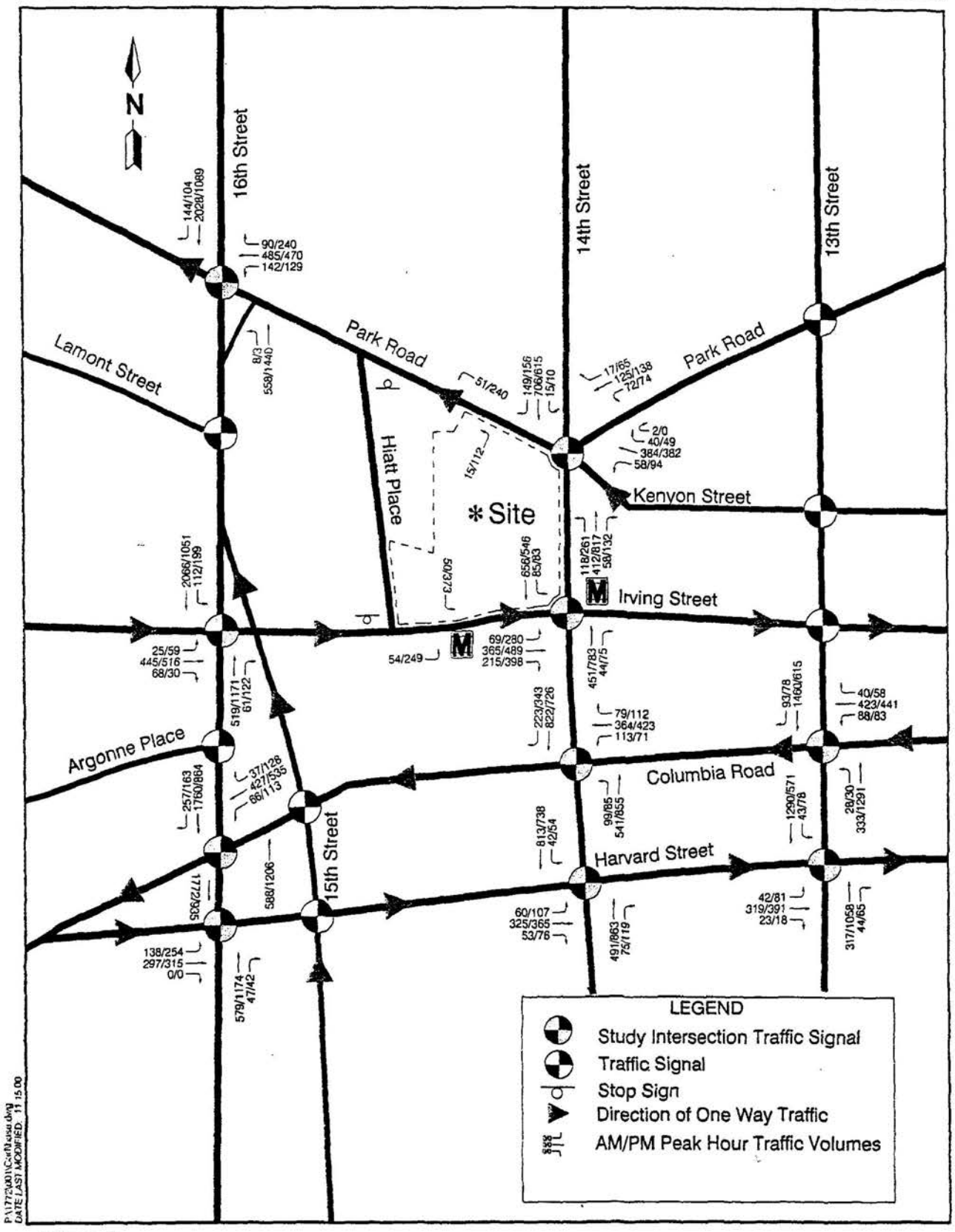


Figure 8
Total Future Peak Hour Traffic Volumes

CONCLUSIONS

The existing street network in the vicinity of the proposed Grid Properties development in the Columbia Heights neighborhood of Washington, D.C. is projected to accommodate the future traffic levels after site development (2003 conditions) at an acceptable level of service "D" or better at each of the intersections in the study scope, without major additional roadway improvements or modifications. Given the site close proximity to the Columbia Heights Green Line Metrorail station and the several bus lines traveling along 14th Street, Park Road, and Irving Street, a high usage of transit is expected. The following minor improvements are recommended prior to the completion of the site buildout to maximize the efficiency of traffic flow in the area:

- At the intersection of 16th Street and Irving Street, it is recommended to change the pavement marking and related signs for the 16th Street northbound exclusive right turn lane into a shared through-right turn lane which will provide for two through northbound travel lanes. There are two receiving lanes on 16th Street for this movement on the north side of Irving Street, and motorists in the northbound lanes were observed to utilize the roadway as a shared through-right turn lane under current conditions.

- The new paint striping at this location will clarify the options of motorists who use this roadway and maximize the capacity for this movement group at the intersection. With these improvements at the intersection of 16th Street and Irving Street, a resulting level of service "B" is expected in the future during the AM peak hour and resulting level of service "C" during the PM peak hour. This will be an improvement above the existing level of service "F" duing the PM peak hour with the single through and right turn only lane at this location.

- For the intersection of 14th Street at Park Road and Kenyon Street, it is recommended to slightly modify the signal timing splits during the evening peak period, by redistributing the green time in a more balanced way between the existing phases (see p. 23). This intersection under future 2003 conditions, using the same signal phase timing splits as in existing conditions would be expected to operate at an overall level of service "F", with the northbound 14th Street, southbound 14th Street, and westbound Park Road approaches all operating at levels of service "F".

- The recommended signal timing redistribution at the intersection of 14th Street at Park Road and Kenyon Street will result in an overall intersection level of service "D", with a level of service "E" for the westbound Park Road approach, a level of service "C" for the northbound 14th Street approach, and a level of service "D" for the southbound 14th Street approach during the PM peak hour. In addition, a slight signal timing modification is required during the AM peak hour to maintain an acceptable level of service for the northbound left turn movement onto Park Road (see p. 23). No additional modifications are necessary to maintain satisfactory traffic operational levels in the vicinity of the site.

- The proposed 1,000 parking spaces are anticipated to be satisfactory to accommodate the needs of the project given the location of the site in a highly populated area with a Metrorail station directly across the street.

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