



WELLS + ASSOCIATES

MEMORANDUM

TO: District of Columbia Zoning Commission

CC: Lucy Wildrick
Street-Works

FROM: Martin J. Wells, P.E.
Michael R. Pinkoske

DATE: October 22, 2008

SUBJECT: Friendship Shopping Center PUD
Traffic Impact Study Addendum,
Zoning Commission Case No. 08-15
Washington, D.C.

Section I Introduction

This memorandum is an addendum to the Wisconsin Avenue Giant Transportation Impact Study that is part of the May 14, 2008, PUD Application in Zoning Commission Case No. 08-15.

The subject site consists of two parcels, as shown on Figure I-1: (1) the triangular-shaped North Parcel that is bounded on the east by Wisconsin Avenue, the west by Idaho Avenue, and the south by Newark Street and (2) the South Parcel that is located south of Newark Street between Wisconsin Avenue and Idaho Avenue.

The North Parcel, which is located in Square 1920N, is improved with a free-standing, 5,750 S.F. Sun Trust Bank, 10 retail stores (including a Starbucks) with a total of 44,000 S.F. of space, and a 45-space surface parking lot.

The South Parcel, which is located in Square 1920, is improved with an obsolete 18,478 S.F. Giant supermarket, three retail stores with a total of 46,406 S.F. of space, and a 233-space surface parking lot.

The PUD application proposes to raze all existing buildings on both parcels and build the following, as shown on Figure I-2:

- North Parcel: 30,799 S.F. of ground-level retail space along Wisconsin Avenue and Newark Street,
124 Apartments on four above-grade levels,
124 Below-grade parking spaces, and
2 30-foot loading berths.
- South Parcel: 56,210 S.F. Giant supermarket,
32,155 S.F. of ground-level retail space along Wisconsin Avenue and Newark Street,
17,320 S.F. of flex/office space,
8 Townhouses fronting on Idaho Avenue,
14 Flats fronting on Newark Street,
395 Below-grade parking spaces,
16 parking spaces for the townhouses,
2 55-foot loading berths,
3 30-foot loading berths, and
3 Delivery spaces.

The District of Columbia Office of Planning (OP), the District of Columbia Department of Transportation (DDOT), Advisory Neighborhood Commission 3C (ANC) and members of the community raised concerns regarding the parking, loading and traffic issues that might result from this project. This memorandum addresses these concerns.



Figure 1-1
Site Location



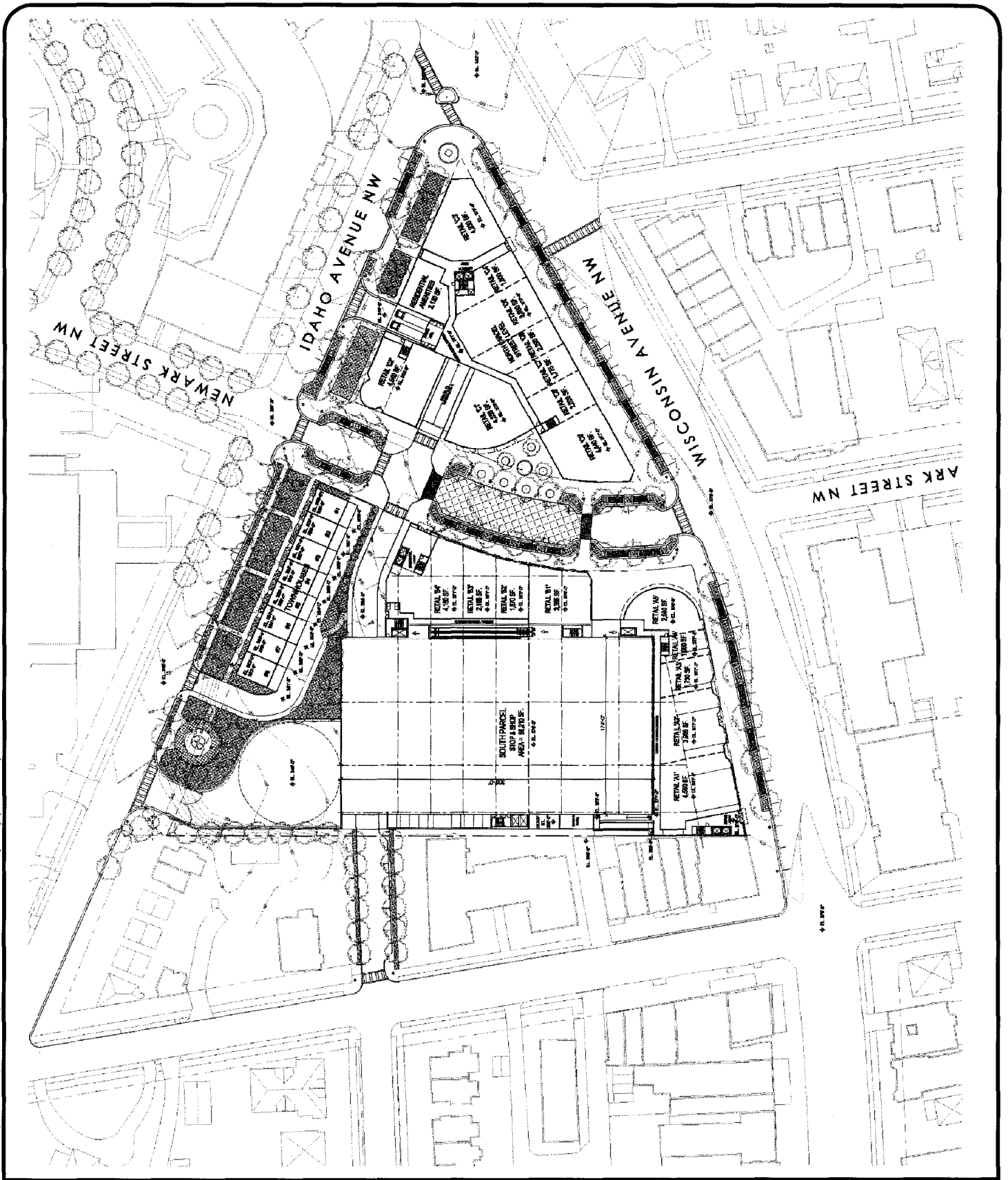


Figure 1-2
Proposed Site Plan



Section 2

PARKING ANALYSIS

This section presents information on parking needs generated by the PUD project.

The Applicant has taken a balanced approach to parking. It intends to provide enough parking spaces to adequately accommodate reasonable parking demands without spilling over into the adjacent residential neighborhood, but not too many spaces, which would encourage driving instead of walking, biking, or use of public transportation.

As the data cited below shows, the parking needs of both the retail and the residential uses will be satisfied on site without adversely affecting the surrounding residential neighborhood.

The number of parking spaces required by the Zoning Regulations is, as shown in detail in Table 2-1, 512 parking spaces, total. The Applicant proposes to provide a total of 535 spaces, which is 24 spaces *more* spaces than required by the Regulations.

Retail Analysis

The project contains 136,484 S.F. of new retail space, including a new, 56,210 S.F. supermarket, 30,799 S.F. of new retail space on the North Parcel, and 49,475 S.F. of new retail and commercial space on the South Parcel. These retail uses would be served by a total of 388 parking spaces, or 2.84 spaces per 1,000 S.F. All of these spaces would be located in the structured parking garage on the South Parcel.

Zoning Regulations - The Zoning Regulations require one parking space per 300 S.F., in excess of 3,000 S.F., or 435 spaces. Since the project will provide 388 spaces for retail uses, the proposed parking supply is 47 fewer spaces than required by the Regulations.

Industry Standards - The proposed parking ratio, however, is greater than the industry standard for urban supermarkets and general retail uses. The industry standard for urban supermarkets is 2.27 spaces per 1,000 S.F. while the industry standard for general retail uses is 2.65 spaces per 1,000 S.F. as reported by the Institute of Transportation Engineers (ITE). The ITE parking demand ratio for general retail is not exclusively for urban areas where pedestrian traffic to and from the site is higher.

Observations - This study also observed parking demand at urban grocery stores. The peak parking ratios observed at two (2) other free-standing supermarkets in the District of Columbia, and three (3) other supermarkets in the inner suburbs of the Washington metropolitan area, are presented in Table 2-2.

Table 2-1
Wisconsin Avenue Giant
Parking Spaces Required and Provided

Land Use	Units	Spaces Required (Ratio)	Spaces Provided (Ratio)
North Parcel			
Residential	124 Apts.	62 (0.5 sp/unit)	124 (1.0 sp/unit)
Retail	30,779 S.F.	93 (1.0 sp/300 S.F.)*	0
Subtotal		155	124
South Parcel			
Residential	14 Apts.	7 (0.5 sp/unit)	7 (0.5 sp/unit)
	8 TH's	8 (1.0 sp/unit)	16 (2.0 sp/unit)
Supermarket	56,210 S.F.	177 (1.0 sp/300 S.F.)*	388** (2.84 sp/1,000 S.F.)
Retail/Office	49,475 S.F.	165 (1.0 sp/300 S.F.) *	----
Subtotal		357	412
Total		512	535

* In excess of 3,000 S.F.; 1 space per 300 S.F.

** Includes parking for the supermarket and retail/office on the north and south parcels.

Table 2-2
Peak Parking Ratios Observed at Other Supermarkets

Location	Size (S.F.)	Peak No. of Occupied Parking Spaces	Occupied Spaces Per 1,000 S.F.
Washington, D.C.			
Georgia Avenue Safeway	46,800	111	2.37
Wisconsin Avenue Safeway	43,875	121	2.76
Inner Suburbs			
Arlington Road Safeway, Bethesda	26,856	58	2.16
Arlington Road Giant, Bethesda	65,000	200	3.08
1700 Duke St Whole Foods	42,554	151	3.50
Average			2.78

Conclusion - Thus, while the parking provided in the PUD for the retail component of the project is slightly less than required by the Zoning Regulations, it is in excess of industry standards for retail and, more importantly, consistent with the ratios observed at existing stores in the urban District of Columbia region.

Residential Analysis

The PUD proposes that there will be 124 apartments on the North Parcel and the building will have 124 parking spaces (1.0 space per unit). Each of the eight townhouses on the South Parcel would have two spaces, or 16 total spaces. The 14 apartments on the South Parcel would be served by the parking on the South Parcel at 0.5 spaces per unit.

The Zoning Regulations require a total of 77 spaces for the residential uses, a total of 147 spaces are proposed. Thus, the parking for the residential uses in the project will be sufficient to accommodate demand.

Summary and Conclusions

The Zoning Regulations require a minimum of 435 parking spaces for the proposed commercial uses and 77 parking spaces for the proposed residential units, a total of 512 spaces. The Applicant proposes to provide 388 spaces for the commercial uses and 147 residential parking spaces, a total of 535 spaces.

The proposed parking for the retail is comparable with other supermarkets in the metropolitan area. On average other grocery stores demand a parking ratio of 2.78 spaces per 1,000 S.F., compared to the proposed retail parking at 2.84 spaces per 1,000 S.F.

Adequate parking is provided for the new residents. The proposed residential parking supply is consistent with auto ownership in this neighborhood, as reported by the U.S. Census (Census Tracts 6, 7.01, and 10.02 report an average auto availability of 1.012 vehicles per dwelling unit).

The PUD would provide sufficient parking to support the proposed residential, supermarket, and other commercial uses. However, in order to insure that the project will not create an adverse impact on the neighboring streets, the Applicant has proposed Transportation and Parking Management Plans in its Pre-hearing Submission.

Section 3

Loading

This section presents an evaluation of loading requirements for the project.

Zoning Regulations - The off-street loading requirements for the PUD pursuant to the Zoning Regulations, shown in Table 3-1, are a total of seven loading berths.

The Applicant proposes to provide a total of seven loading berths, including two 55-foot berths, three 30-foot berths, and three 20-foot service spaces on the South Parcel and two 30-foot berths on the North Parcel, as shown on Figures 3-1, 3-2, and 3-3.

Field Observations - As shown in Table 3-1, as the property is currently used, the maximum number of delivery vehicles observed at any given time on a weekday at the Giant site was seven. The maximum number of observed delivery vehicles parked along Newark Street and Wisconsin Avenue. At any given time the maximum combined number for the Giant site and the surrounding area was 11. These 11 trucks included one tractor-trailer truck, seven box trucks, and three vans.

The maximum observed delivery vehicles at the two free standing supermarkets in the District of Columbia at any one time were seven or eight on weekdays, as shown in Table 3-1.

The average weekday delivery time for a vehicle parked in the parking lot at the current Giant was 82 minutes. The average for all other deliveries (vehicles parked along Newark Street and Wisconsin Avenue) was 30 minutes. The average delivery time of the two other supermarkets in the District of Columbia ranged from 45 to 47 minutes.

As shown in Table 3-1 the maximum number of delivery vehicles observed at any given time at the Wisconsin Avenue Giant on Saturday was four. The maximum number of observed delivery vehicles parked along Newark Street and Wisconsin Avenue was four. At any given time the maximum combined number for the Wisconsin Avenue Giant and the surrounding area was five.

The maximum observed delivery vehicles at two freestanding supermarkets in the District of Columbia at any one time ranged from three to 11.

The average Saturday delivery time for a vehicle parked on site was 26 minutes. The average for all other deliveries was 12 minutes. The average delivery time of the two other supermarkets in the District of Columbia ranged from 53 to 202 minutes, as shown in Table 3-1.

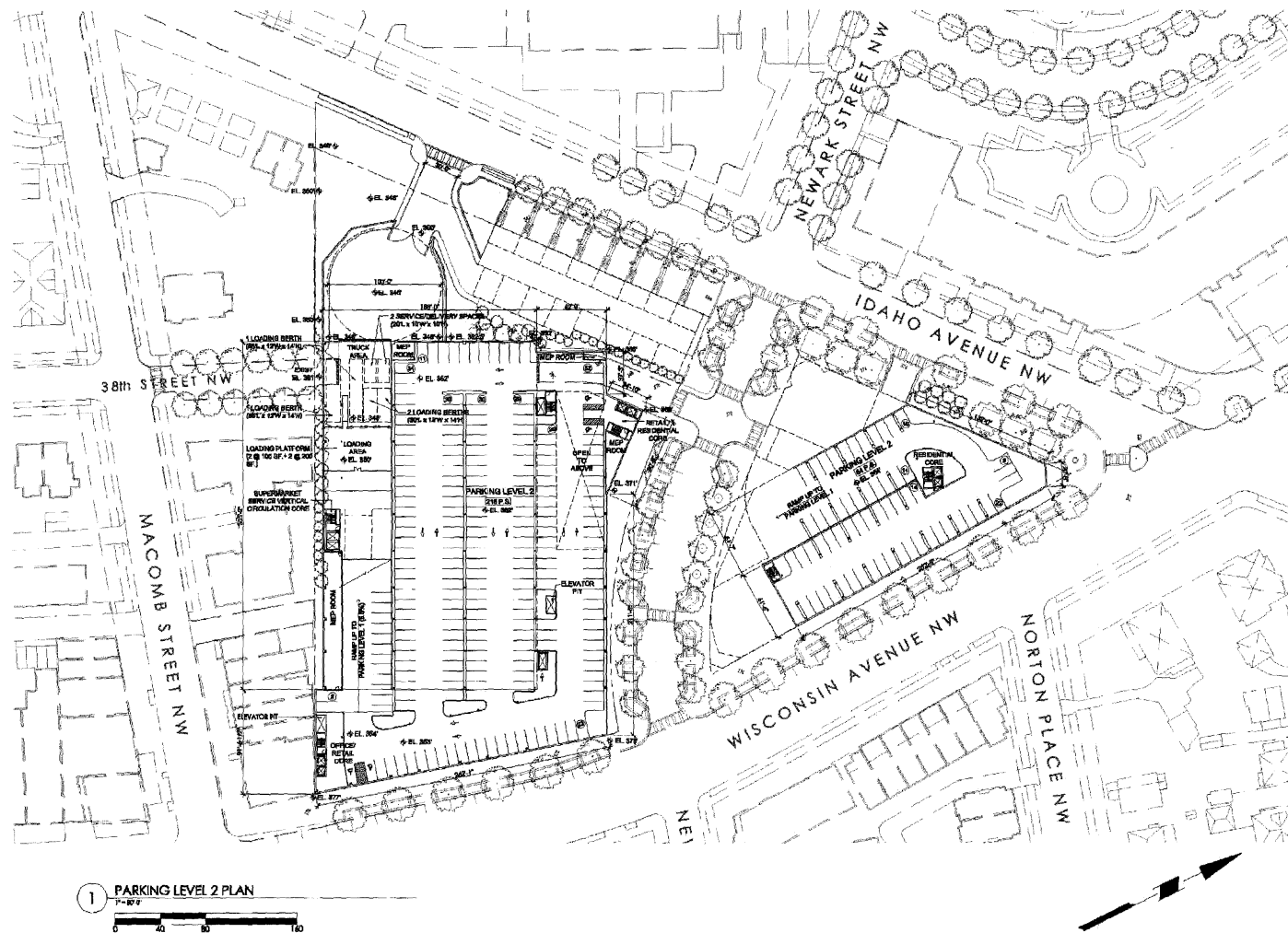


Figure 3-1
Parking Level II Plan

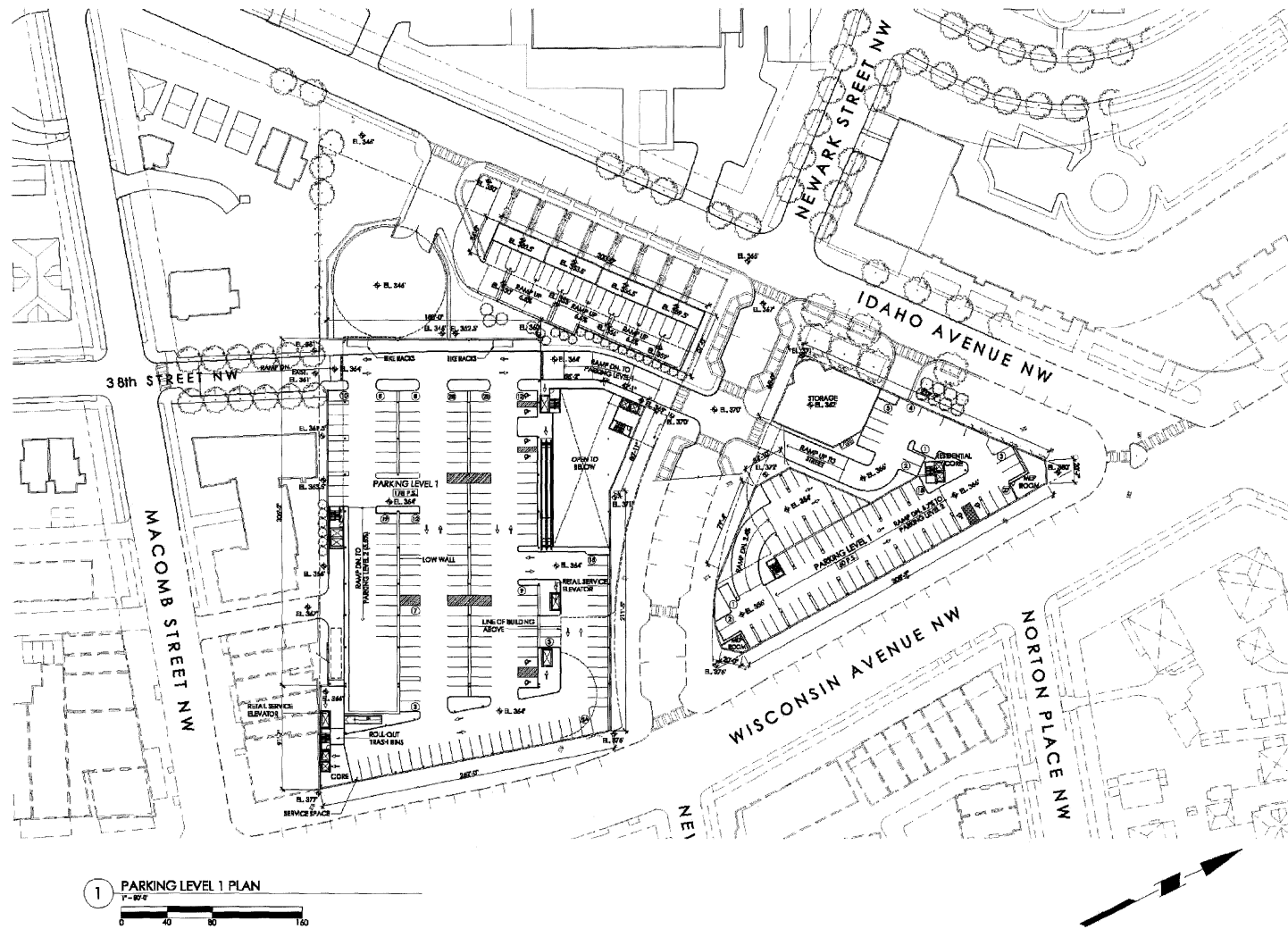


Figure 3-2
Parking Level 1 Plan

Figure 3-3
Ground Level Plan

In order to mitigate truck traffic impact of the proposed development, the Applicant has proposed a Truck Management Plan in its Pre-Hearing Submission.

Summary and Conclusions – Adequate loading and service facilities will be provided for the PUD project.

The PUD project will provide the seven off-street loading berths, and three of the four service spaces, required by the Zoning Regulations. In addition, space will be available on the apron to the Giant loading berths to temporarily store a tractor-trailer truck and/or single-unit box trucks in the unlikely event that all of the seven loading berths and the three service spaces are occupied at one time.

A 55-foot loading berth is not needed, as a practical matter, to serve the residential units on the North Parcel. The proposed apartments are small and will be marketed primarily to one-to two-person households. Smaller vehicles will be used to move residents in and out of these units. Based on surveys of other, comparable residential buildings in the District of Columbia conducted by Wells + Associates, nearly all of the surveyed sites indicated that use of large tractor-trailer trucks is a rare occurrence. Many of these buildings require pre-scheduling of moves and furniture deliveries. Further, only one to two moves occur on an average month, indicating a low turnover rate. The residential and commercial uses could share loading berths since each berth will only be used occasionally throughout the day and deliveries will be managed as outlined in the Truck Management Plan.

**Table 3-1
Loading Requirements**

Requirement			Proposed		
Berths	Platforms	Service Spaces	Berths	Platforms	Service Spaces
North Parcel:			North Parcel:		
Retail: <u>(30k – 100k S.F.)</u> 1 @ 30 ft. 1 @ 55 ft. Multi-Family Dwelling (50+) 1 @ 55 ft.	1 @ 100 S.F. 1 @ 200 S.F. 1 @ 200 S.F.	1 @ 20 ft. 1 @ 20 ft.	2 @ 30 ft.	2 @ 100 S.F. 1 @ 200 S.F.	
South Parcel:			South Parcel:		
Grocery Store <u>(20k – 100k S.F.)</u> 1 @ 30 ft. 1 @ 55 ft. Retail: <u>(30k – 100k S.F.)</u> 1 @ 30 ft. 1 @ 55 ft.	1 @ 100 S.F. 1 @ 200 S.F. 1 @ 100 S.F. 1 @ 200 S.F.	1 @ 20 ft. 1 @ 20 ft.	2 @ 55 ft. 3 @ 30 ft.	2 @ 200 S.F. 3 @ 100 S.F.	3 @ 20 ft.
Totals:			Totals		
7	7	4	7	7	3

Table 3-2
Daily Delivery Truck Comparison

Day of the Week/ Location	Daily Delivery Trucks				Average Delivery Time (Minutes)	Maximum Observed on Site at One Time: All Trucks	Maximum Observed on Site at One Time: Tractor Trailer
	Tractor Trailer	Box Truck	Vans	Total			
Weekday							
Wisconsin Avenue Giant Tuesday, September 16, 2008							
Giant	5	18	7	30	82	7	2
All Other	<u>1</u>	<u>9</u>	<u>4</u>	<u>14</u>	<u>30</u>	4	<u>1</u>
Total	6	27	11	44	44	11	2
Wisconsin Avenue Safeway Tuesday, September 23, 2008	3	16	7	26	45	7	1
Georgia Avenue Safeway Tuesday, September 23, 2008	2	14	8	24	47	8	1
Saturday							
Wisconsin Avenue Giant Saturday, September 20, 2008							
Giant	6	5	4	15	26	4	3
All Other	<u>2</u>	<u>8</u>	<u>4</u>	<u>14</u>	<u>12</u>	4	<u>1</u>
Total	8	13	5*	29	19	5	3
Wisconsin Avenue Safeway Saturday, October 4, 2008	1	27	11	39	202	11	1
Georgia Avenue Safeway Saturday, October 4, 2008	1	8	3	12	53	3	1

* Daily maximums were observed during differing time periods.

Section 4

LEFT TURN PHASE ASSESSMENT

Overview

This section presents information on the potential impacts of adding a lead/lag left turn phase on northbound Wisconsin Avenue at the existing traffic signals at Macomb and Newark Streets and the proposed new traffic signal at Idaho Avenue. This section compares total future levels of service (1) without a lead/lag northbound left turn phase as reported by Wells + Associates in the Transportation Impact Study that is part of the May 14, 2008 PUD Application and (2) with a lead northbound left turn phase and allocation of an additional five (5) seconds for pedestrians.

Future site forecasts and signal timing cycle lengths (100 seconds) remained as evaluated with the May 14, 2008 PUD Application.

Levels of Service

Table 4-1 shows that all three signalized intersections would operate at an acceptable level of service (LOS) "D" or better during the weekday AM and PM peak hours, and during the Saturday mid-day peak hour, without a northbound left turn phase. All intersection approaches also would operate at LOS "D" or better.

These intersections and approaches would continue to operate at an acceptable LOS "D" or better, with a northbound left-turn phase and an additional five second lead pedestrian phase. Delays would increase slightly, however, as shown on Table 4-1. Overall, the change in signal phasing would increase delays by about four to 10 seconds during the weekday AM peak hour, by five to ten seconds during the weekday PM peak hour, and by three to five seconds during the Saturday mid-day peak hour.

Therefore, implementing a lead/lag left turn phase on northbound Wisconsin Avenue will not have an appreciable impact on traffic flow in the corridor.

Table 4-1
Intersection Level of Service (LOS) Comparison

Intersec- tion	Approach	LOS <i>without</i> Northbound Left-turn Phase			LOS <i>with</i> Northbound Left-turn Phase		
		AM	PM	SAT	AM	PM	SAT
Macomb Street	EB	D (53.8)	D (49.9)	D (40.3)	D (54.0) + 0.2	D (53.5) -0.3	D (45.0) +4.7
	WB	D (52.2)	D (36.9)	C (31.7)	D (51.5) -0.7	D (36.6) -0.3	C (34.4) +2.7
	NB	C (26.2)	B (17.6)	C (30.2)	D (41.2) +15.0	C (23.2) +5.6	D (46.2)+16.0
	SB	<u>B (16.8)</u>	<u>C (20.9)</u>	<u>B (15.7)</u>	<u>C (26.3) + 9.5</u>	<u>D (40.7) +19.8</u>	<u>A (7.4) -8.3</u>
	Overall	C (26.0)	C (23.1)	C (25.6)	D (35.6) +9.6	C (33.5) +10.4	C (30.3) +4.7
Newark Street	EB	D (40.6)	D (51.6)	D (51.4)	D (45.3) +4.7	D (47.7) -3.9	D (45.0) -6.4
	WB	C (32.3)	C (30.7)	C (27.8)	D (38.4) +6.1	C (31.7) +1.0	C (28.5) +0.7
	NB	A (2.0)	C (22.9)	A (2.4)	A (2.0) 0.0	C (33.1) +10.2	A (4.6) +2.2
	SB	<u>B (15.8)</u>	<u>A (2.7)</u>	<u>B (16.4)</u>	<u>C (30.1) +14.3</u>	<u>A (3.3) +0.6</u>	<u>C (23.5) +17.1</u>
	Overall	B (13.8)	B (18.0)	B (14.8)	C (22.3) +8.5	C (22.9) +4.9	B (18.1) +3.3
Idaho Avenue	EB	D (40.9)	D (36.1)	D (36.2)	D (44.0) +3.1	D (39.3) +3.2	B (16.5) -19.7
	NB	A (5.5)	A (3.5)	B (17.6)	A (6.3) +0.8	A (5.7) +2.2	B (17.9) +0.3
	SB	<u>B (14.6)</u>	<u>A (3.6)</u>	<u>A (9.9)</u>	<u>C (20.3) +5.7</u>	<u>C (22.6) +19.0</u>	<u>D (44.2) +34.3</u>
	Overall	B (12.4)	A (5.4)	B (15.6)	B (16.3) +3.9	B (15.4) +10.0	B (19.1) +3.5

Section 5

Traffic Calming Assessment

Introduction

As requested by the District of Columbia Department of Transportation (“DDOT”) and members of the community, a Traffic Calming Assessment was conducted for the neighborhoods adjacent to the PUD site on Thursday, September 25, Friday, September 26 and Saturday, September 27, 2008. This Assessment evaluates existing transportation activity and recommends strategies for safely and efficiently accommodating motorists, bicyclists, pedestrians, and residents. This Assessment utilized data and information originally collected by our team and was supplemented by two previous studies commissioned by DDOT:

1. The Wisconsin Avenue Corridor Transportation Study, prepared by The Louis Berger Group, Inc., dated October 2005 and
2. The Connecticut Avenue Transportation Study prepared by DMJM + Harris, Inc., dated June 2003.

Study Area

The study area generally is bounded by Porter Street, 34th Street, Woodley Road and 39th Street, as shown on Figure 5-1. The study area includes commercial clusters along the Wisconsin Avenue corridor and sections of Cleveland Park and McLean Gardens residential neighborhoods.

Study Findings

The Traffic Calming Assessment, conducted for the neighborhoods on Thursday, September 25, Friday, September 26 and Saturday, September 27, 2008 evaluated existing transportation activity and the findings of the traffic calming assessment are as follows:

1. The Wisconsin Avenue Giant and adjacent neighborhoods are served by a connected network of arterial, collector, and local streets. This network offers multiple route choices, effectively disperses traffic, and provides sufficient capacity to adequately accommodate existing and future traffic.
2. The Wisconsin Avenue Giant and adjacent neighborhoods also are served by multiple bus lines and branches. These lines link Giant with multiple Metro stations, which are located beyond convenient walking distance for most people.
3. Vehicle speeds generally follow posted speed limits except for 34th Street, N.W.



Figure 5-1
Traffic Calming Study Area

Wisconsin Avenue Giant
Washington, D.C.



4. Trucks and buses do not exceed 13 percent of all daily vehicles on study area streets, which is typical of most urban areas.
5. No new traffic signals are warranted or recommended for the Traffic Calming Study Area. As recommended in the PUD application, the Wisconsin Avenue/Idaho Avenue/Ordway Street intersection should be signalized with a new traffic signal and crosswalk.

Study Recommendations

The study recommendations are as follows:

1. Intersection Reconstruction
 - a. Convert Idaho Avenue from one-way to two-way operation west of Wisconsin Avenue
 - b. Reconstruct the Wisconsin Avenue/Idaho Avenue/Ordway intersection to adequately accommodate pedestrians, bicyclists, buses, trucks, and automobiles.
2. Traffic Signals
 - a. Install a new traffic signal at the Wisconsin Avenue/Idaho Avenue/Ordway Street intersection.
 - b. Adjust existing signal timings to optimize allocation of green time for current vehicular and pedestrian traffic flows.
 - c. Adjust signal timings, over time, in response to changing traffic flows.
 - d. Change signal phasing to improve capacity, where warranted. Specifically, provide a lead signal phase to clear left turning traffic from the left lane on northbound Wisconsin Avenue at Macomb Street, Newark Street, and/or Idaho Avenue.
 - e. Upgrade signal equipment, as required, to meet current DDOT standards.
3. Speeds
 - a. Monitor and enforce the posted speed limits throughout the study area.
 - b. Provide consistent location of speed limit signs, preferably just downstream from each intersection.
 - c. Install digital radar speed limit signs along 34th Street.

4. Signs and Pavement Markings

- a. Re-locate the existing unsignalized Wisconsin Avenue crosswalk from Norton Place to the new signal at Idaho Avenue.
- b. Provide adequate pavement markings, and renew as needed, for crosswalks, stop lines, lane lines, and lane use designation.
- c. Re-stripe pedestrian crosswalks to current DDOT standards.
- d. Install parking stall striping to define parking limits, in accordance with current DDOT standards.
- e. Provide adequate signage, including warning, regulatory, and directional signs.
- f. Replace faded signs along the corridor.
- e. Clear overgrown vegetation to improve visibility of signs and signals.

5. Sidewalks

- a. Reconstruct all non-conforming wheel chair ramps to current ADA and DDOT standards.
- b. Relocate improperly placed wheel chair ramps.

6. Additional Measures

- a. Potential additional traffic calming measures that could be implemented to reduce vehicle speeds along local streets include raised crosswalks, mini-roundabouts, speed humps, and neckdowns at intersections.
- b. These measures could reduce speeds by up to 23 percent.

It is recommended that Items Numbered 1, 2a, and 4a be implemented as part of the Friendship Shopping Center PUD and that funds be escrowed to implement the remaining items that are directly related to the PUD, as required by new traffic patterns after the PUD is built and operating.

Data Collection

Overview. This section presents information on the existing street network, existing traffic counts, vehicle classification, and speeds.

Street Network. The Friendship Neighborhood Center and adjacent neighborhoods are served by a connected network of arterial, collector, and local streets, as shown on Figure 5-2. The streets within the study area are as follows:

<u>Street</u>	<u>Functional Class.</u>	<u>No. Lanes</u>
Wisconsin Avenue	Principal Arterial	4-5
Woodley Road (east of Wisconsin Ave.)	Collector	2
Woodley Road (west of Wisconsin Ave.)	Local	2
Macomb Street	Collector	2
Newark Street	Local	2
Ordway Street	Local	2
Porter Street (east of Wisconsin Ave.)	Minor Arterial	2
Porter Street (west of Wisconsin Ave.)	Collector	2
4 th Street	Minor Arterial	2
36 th Street	Local	2
Idaho Avenue	Local	2
38 th Street	Local	2
39 th Street	Local	2

Most streets are operated two ways during all times of day. The following streets are operated one-way at all times of day:

Table 5-1
One-Way Streets

Street	Direction	From	To
Idaho Avenue	Northbound	Wisconsin Avenue	Porter Street
Idaho Avenue	Southbound	Wisconsin Avenue	Newark Street
Idaho Avenue	Northbound	Massachusetts Avenue	Macomb Street
37 th Street	Northbound	Idaho Avenue	Porter Street
39 th Street	Southbound	Macomb Street	Massachusetts Avenue

Intersection lane use and traffic controls are shown on Figure 5-3. Curb parking is permitted on most study area streets as shown on Figure 5-4. The mid-block curb-to-curb widths of most local streets range from 28 to 40 feet, as shown on Figure 5-5. Posted speed limits typically are 25 miles per hour (mph) as shown on Figure 5-6.

Public Transportation. The subject site is served by four bus lines with multiple branches, which link the subject site with multiple Metro stations:

<u>Metrobus Line</u>	<u>Metro Station:</u>
1. 30, 32, 34, 35, 36: Pennsylvania Ave Line	Friendship Heights, Tenleytown-AU, Farragut West, Farragut North, Federal Triangle, Archives Navy Memorial Penn Quarter, Eastern Market, Potomac Avenue, Southern Avenue, Naylor Road
2. 96: East Capitol St.-Cardozo Line	Woodley Park-Zoo/Adams Morgan, U Street/ African-Amer. Civil War Memorial/Cardozo, Union Station, Stadium-Armory, Benning Road, Capitol Heights
3. H4: Crosstown Line	Tenleytown-AU, Cleveland Park, Columbia Heights, Brookland-CUA
4. X3: Benning Road Line	Woodley Park-Zoo/Adams Morgan, U Street/ African-Amer. Civil War Memorial/Cardozo, New York Ave-Florida Ave-Gallaudet U, Minnesota Ave, Federal Triangle

The Cleveland Park Metro station is located 0.8 airline-miles to the east on Connecticut Avenue between Ordway and Porter Street. The Tenleytown-American University (AU) Metro station is located 1.0 airline-mile to the north on Wisconsin Avenue at Albemarle Street

Bus stops are located on both sides of Newark Street, between Wisconsin Avenue and Idaho Avenue, and Wisconsin Avenue on both sides of Macomb Street, Newark Street, in the northbound direction at Norton Place and in the southbound direction at Idaho Avenue (see Figure 5-6).

Bicycle Facilities. A signed bicycle route traverses through the Cleveland Park neighborhood along 36th Street between Porter Street and Woodley Road. The route continues east and south on Woodley Road and 34th Street. To the north, the bike route includes 37th Street, Veazy Street and back onto 36th Street. Massachusetts Avenue, south of the study area is also a signed bicycle route.

Intersection Counts. Vehicle and pedestrian counts were conducted on Tuesday, September 16 and Saturday, September 20, from 6:30 AM to 7:30 PM, at the following intersections:

1. 34th Street/Porter Street,
2. 34th Street/Ordway Street,
3. 34th Street/Newark Street,
4. 34th Street/Macomb Street,
5. 34th Street/Woodley Road,
6. 36th Street/Newark Street,
7. 38th Street/Newark Street,
8. 38th Street/Woodley Road,
9. Idaho Avenue/Newark Street,
10. Idaho Avenue/Macomb Street, and
11. 39th Street/Macomb Street.

Tuesday, September 16 was a typical weekday, when public and private schools in the study area were in session. Saturday, September 20 was a typical Saturday. The weather on both days was sunny and pleasant.

The morning commuter peak hour and afternoon commuter peak hour varied from intersection to intersection. The most common peak hours began at 7:30 AM and 5:30 PM, respectively. The weekday peak hour vehicular traffic counts are presented on Figure 5-7 and the Saturday peak hour vehicular traffic counts are presented on Figure 5-8. Pedestrian traffic counts are presented on Figures 5-9 and 5-10.

Link Traffic Counts. Mechanical counts were conducted on: Thursday, September 25; Friday, September 26; and Saturday, September 27 on the following links:

1. 34th Street, between Macomb and Newark Streets,
2. Macomb Street, west of 34th Street,
3. Newark Street, west of 34th Street,
4. Ordway Street, west of 34th Street,
5. Porter Street, west of 34th Street,
6. Macomb Street, west of Idaho Avenue,
7. Newark Street, west of Idaho Avenue, and
8. 38th Street, south of Woodley Road.

Daily (24-hour), two-way traffic varied from 965 to 13,383 vehicles per day (vpd) on Thursday, September 25; from 957 to 12,964 vpd on Friday, September 26; and from 889 to 10,858 vpd on Saturday, September 27, as shown in Table 5-2. The most heavily traveled link is 34TH Street between Macomb Street and Newark Street; the least heavily traveled link is Ordway Street west of 34th Street.

On average, the Friday traffic counts were five percent lower than the Thursday counts. The Saturday counts were 18 percent lower than the Thursday counts.

The hourly volume variation patterns on Thursday, Friday, and Saturday are shown on Table 5-2, as shown on Figure 5-11, 5-12, and 5-13, respectively.

Table 5-2
Daily Vehicular Traffic Counts

Link	Thursday, September 25	Friday, September 26	Saturday, September 27
34 th Street, Bet. Macomb and Newark Streets	13,383	12,964	10,858
Macomb Street, west of 34 th Street	3,207	3,016	2,937
Newark Street, west of 34 th Street	1,308	1,319	1,279
Ordway Street, west of 34 th Street	965	957	889
Porter Street, west of 34 th Street	5,845	5,724	4,592
Macomb Street, west of Idaho Avenue	5,251	4,347	3,591
Newark Street, west of Idaho Avenue	1,192	1,250	1,168
38 th Street, south of Woodley Road	972	1,081	917

Vehicle Classification. Most of the vehicles on the study area streets on a typical day (82 percent) are automobiles, as shown in Table 5-3. Trucks and buses do not exceed 13 percent of all daily vehicles on study area streets, which is typical of most urban areas. No tractor-trailer trucks were recorded on neighborhood streets.

Table 5-3
Vehicle Classification
(Thursday, September 25; Friday, September 26; and Saturday, September 27)

Link	Direction	Passenger Vehicles	Vans and Pick-ups	Buses and Trucks	Tractor Trailer Trucks	Total
34 th Street, Bet. Macomb and Newark Streets	Northbound	13,673 (72%)	3,383 (18%)	1,851 (10%)	0	18,907
	Southbound	15,633 (88%)	1,114 (6%)	996 (6%)	0	17,743
Macomb Street, west of 34 th Street	Westbound	2,739 (88%)	160 (5%)	231 (7%)	0	3,184
	Eastbound	4,028 (77%)	688 (13%)	525 (10%)	0	5,241
Newark Street, west of 34 th Street	Westbound	721 (78%)	71 (8%)	136 (14%)	0	584
	Eastbound	1,647 (88%)	117 (6%)	115 (6%)	0	2,519
Ordway Street, west of 34 th Street	Westbound	952 (74%)	171 (13%)	159 (12%)	0	1,282
	Eastbound	823 (72%)	157 (14%)	160 (14%)	0	1,140
Porter Street, west of 34 th Street	Westbound	6,557 (82%)	666 (8%)	742 (9%)	0	7,965
	Eastbound	5,683 (79%)	759 (11%)	717 (10%)	0	7,159
Macomb Street, west of Idaho Avenue	Westbound	7,851 (89%)	454 (8%)	539 (6%)	0	8,844
	Eastbound	3,203 (83%)	345 (11%)	290 (8%)	0	3,838
Newark Street, west of Idaho Avenue	Westbound	1,614 (79%)	154 (8%)	275 (13%)	0	2,043
	Eastbound	1,919 (89%)	135 (6%)	114 (5%)	0	2,168
38 th St., south of Woodley Road	Northbound	706 (81%)	51 (6%)	112 (13%)	0	869
	Southbound	1,086 (76%)	207 (15%)	127 (9%)	0	1,420

Vehicle Speeds. Average speeds do not exceed posted speed limits, except on 34th Street, as shown on Table 5-4. Average measured speeds did not exceed the 25 mph posted speed limits on Macomb, Newark, Ordway, Porter, or 38th Street. Eighty-fifth (85th) percentile speeds did not exceed the posted speed limits by more than four mph, except on 34th Street, where they exceeded the posted speed limit by 12 mph in the northbound direction and by five mph in the southbound direction.

According to the District of Columbia Transportation Audit Guidelines, when the 85th percentile speed on a street segment exceeds the posted speed limit by at least 10 mph, traffic calming measures shall be considered.

Table 5-4

Link Speeds

(Thursday, September 25; Friday, September 26; and Saturday, September 27)

Link	Direction	Posted Speed Limit (mph)	Average Speed (mph)	85th Percentile Speed (mph)
34 th Street, Bet. Macomb and Newark Streets	Northbound	25	31	37
	Southbound	25	24	30
Macomb Street, west of 34 th Street	Westbound	25	19	25
	Eastbound	25	19	25
Newark Street, west of 34 th Street	Westbound	25	18	25
	Eastbound	25	18	22
Ordway Street, west of 34 th Street	Westbound	25	22	27
	Eastbound	25	22	27
Porter Street, west of 34 th Street	Westbound	25	17	26
	Eastbound	25	24	29
Macomb Street, west of Idaho Avenue	Westbound	25	20	25
	Eastbound	25	20	25
Newark Street, west of Idaho Avenue	Westbound	25	20	26
	Eastbound	25	16	20
38 th Street, south of Woodley Road	Northbound	25	14	19
	Southbound	25	21	27

Accordingly, measures that would reduce speeds on 34th Street are appropriate.

The following measures should be considered:

1. More closely monitor and enforce the posted speed limits.
2. Install more speed limit signs.
3. Provide consistent location of speed limit signs, preferably just downstream from each intersection.
4. Install digital radar speed limit signs.

Capacity Analysis

Intersection levels of service were calculated at each of the study intersections for the weekday AM and PM peak hours and the Saturday mid-day peak hour. The results are shown in Table 5-5.

As shown in Table 5-5, each of the study intersections operates at acceptable levels of service (LOS) during peak hours. Each approach operates at LOS "D" or better during the peak hours with the exception of the westbound approach at the 34th Street/Ordway Street intersection during the AM peak hour, which operates near capacity at LOS "E".

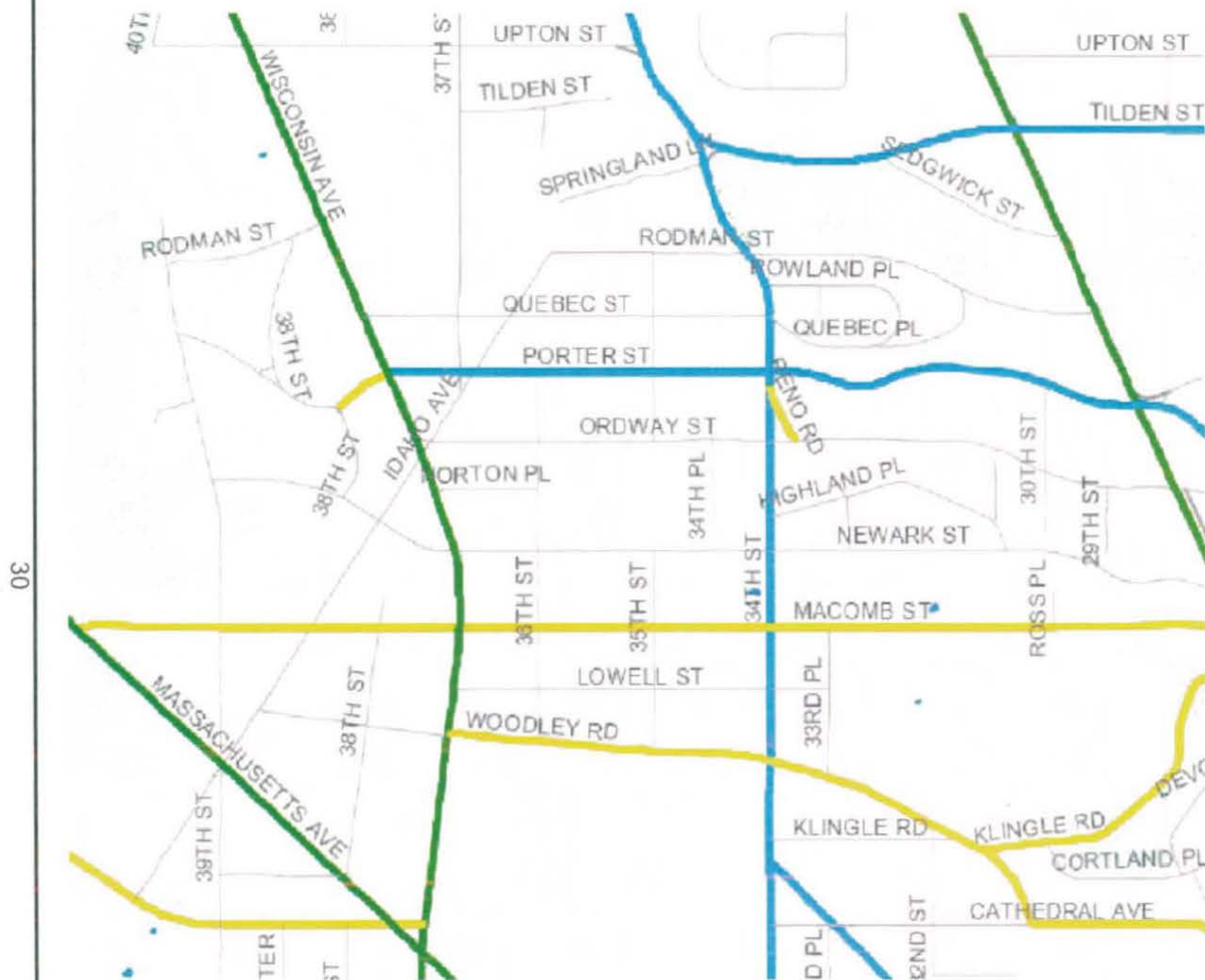
A traffic signal potentially would improve this sub-standard level of service. Accordingly, a signal warrant analysis was conducted for the 34th Street/Ordway Street intersection based on the Manual on Uniform Traffic Control Devices (MUTCD), 2003.

It was determined that a new traffic signal is **not warranted** at the 34th Street/Ordway Street intersection. A new traffic signal, therefore, is not recommended at this intersection.

Currently, 34th Street, the major street, carries 1,079 vehicles in northbound and southbound directions at Ordway Street. Traffic on Ordway Street, the minor approach, would have to equal or exceed 175 vehicles on either the eastbound or westbound approach to satisfy the Peak Hour Warrant. Currently, Ordway Street carries 47 vehicles in the eastbound direction, and 29 vehicles in the westbound direction, during the AM peak hour, which is considerably less than the 175 vehicles needed to satisfy the Peak Hour Warrant.

Table 5-5**Intersection Peak Hour Levels of Service (and Delays, in Seconds per Vehicle)**

Intersection	Approach	Thursday, September 18		Saturday, September 20
		AM	PM	Mid-Day
Porter Street/34th Street	EB	B (10.1)	B (13.6)	B (11.5)
	WB	B (13.9)	A (5.4)	B (10.2)
	NB	C (22.2)	C (31.2)	C (24.8)
	SB	<u>C (32.8)</u>	<u>C (28.0)</u>	<u>B (19.7)</u>
	Overall	C (22.4)	C (23.8)	B (19.1)
Ordway Street/34th Street	EB	D [29.4]	C [17.3]	C [19.9]
	WB	E [36.9]	C [23.5]	C [24.2]
	NBL	A [9.3]	A [9.0]	A [8.7]
	SBL	A [8.4]	A [9.5]	A [8.5]
Newark Street/34th Street	EB	C [22.7]	C [24.0]	C [19.7]
	WB	C [23.0]	C [22.6]	C [20.3]
	NBL	A [9.5]	A [9.3]	A [8.7]
	SBL	A [8.4]	A [9.3]	A [8.5]
Macomb/34th Street	EB	B (12.5)	B (12.3)	A (9.5)
	WB	B (11.3)	B (10.6)	B (11.0)
	NB	B (17.9)	C (33.5)	C (22.2)
	SB	<u>B (10.7)</u>	<u>B (16.4)</u>	<u>B (10.8)</u>
	Overall	B (13.3)	C (22.9)	B (14.8)
Woodley Road/34th Street	EB	C (20.9)	B (12.4)	B (11.3)
	WB	B (14.8)	B (12.3)	B (11.3)
	NB	B (12.4)	B (16.5)	B (11.9)
	SB	<u>C (20.6)</u>	<u>C (23.5)</u>	<u>B (19.1)</u>
	Overall	B (18.0)	B (17.9)	B (14.9)
Newark/36th Street	EB	A [9.0]	A [7.7]	A [7.5]
	WB	A [8.8]	A [7.8]	A [7.4]
	NB	A [8.4]	A [7.8]	A [7.4]
	SB	B [10.1]	A [7.8]	A [7.5]
Newark Street/38th Street	EB	A [1.6]	A [2.9]	A [0.8]
	WB	A [0.0]	A [0.0]	A [0.0]
	SB	A [9.9]	A [9.6]	A [9.6]
Woodley Road/38th Street	EB	A [8.2]	A [7.4]	A [7.3]
	WB	A [7.9]	A [7.8]	A [7.3]
	NB	A [7.6]	A [7.3]	A [7.1]
	SB	A [8.3]	A [7.6]	A [7.5]
Newark Street/Idaho Avenue	EB	A [8.4]	A [7.9]	A [7.4]
	WB	A [8.8]	A [8.3]	A [8.2]
	NB	A [8.5]	A [7.8]	A [7.6]
	SB	A [8.8]	A [8.2]	A [8.0]
Macomb Street/Idaho Avenue	EB	B [14.1]	B [10.1]	A [9.1]
	WB	B [11.1]	A [9.3]	A [8.5]
	NB	B [12.9]	A [10.0]	A [8.9]
	SB	B [10.3]	A [8.4]	A [8.1]
Macomb Street/39th Street	EB	B [11.4]	B [10.1]	A [8.7]
	WB	A [8.5]	A [9.8]	A [8.8]
	SB	A [9.1]	A [9.1]	A [8.0]



Legend

- Interstate
- Other Freeway and Expressway
- Principal Arterial
- Minor Arterial
- Collector
- Local

Figure 5-2
Functional Classification Map





Figure 5-3
Intersection Lane Use and Traffic Control

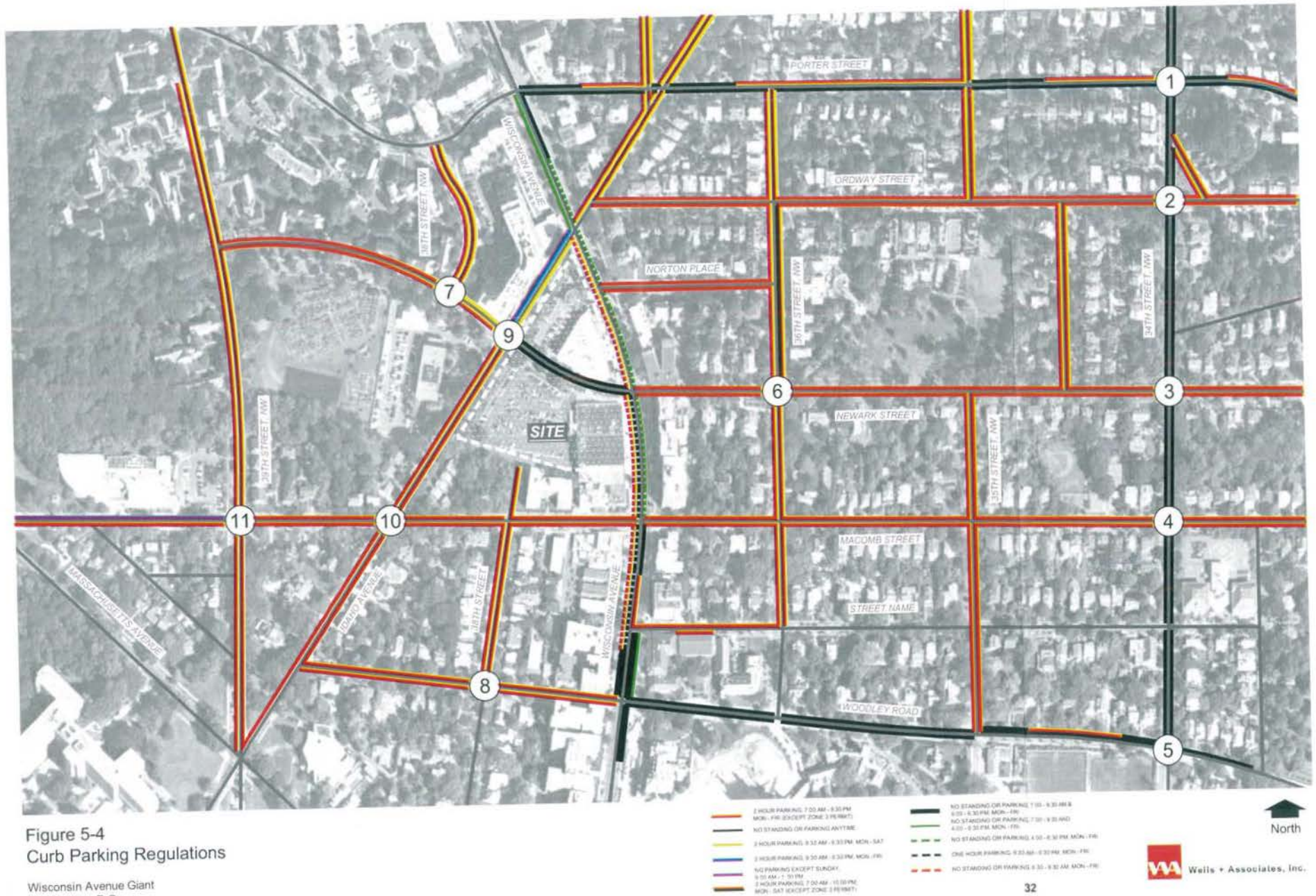




Figure 5-5
Curb to Curb Street Widths (Feet)

Wisconsin Avenue Giant
Washington, D.C.

(XX) ROAD WIDTH



WA Wells + Associates, Inc.

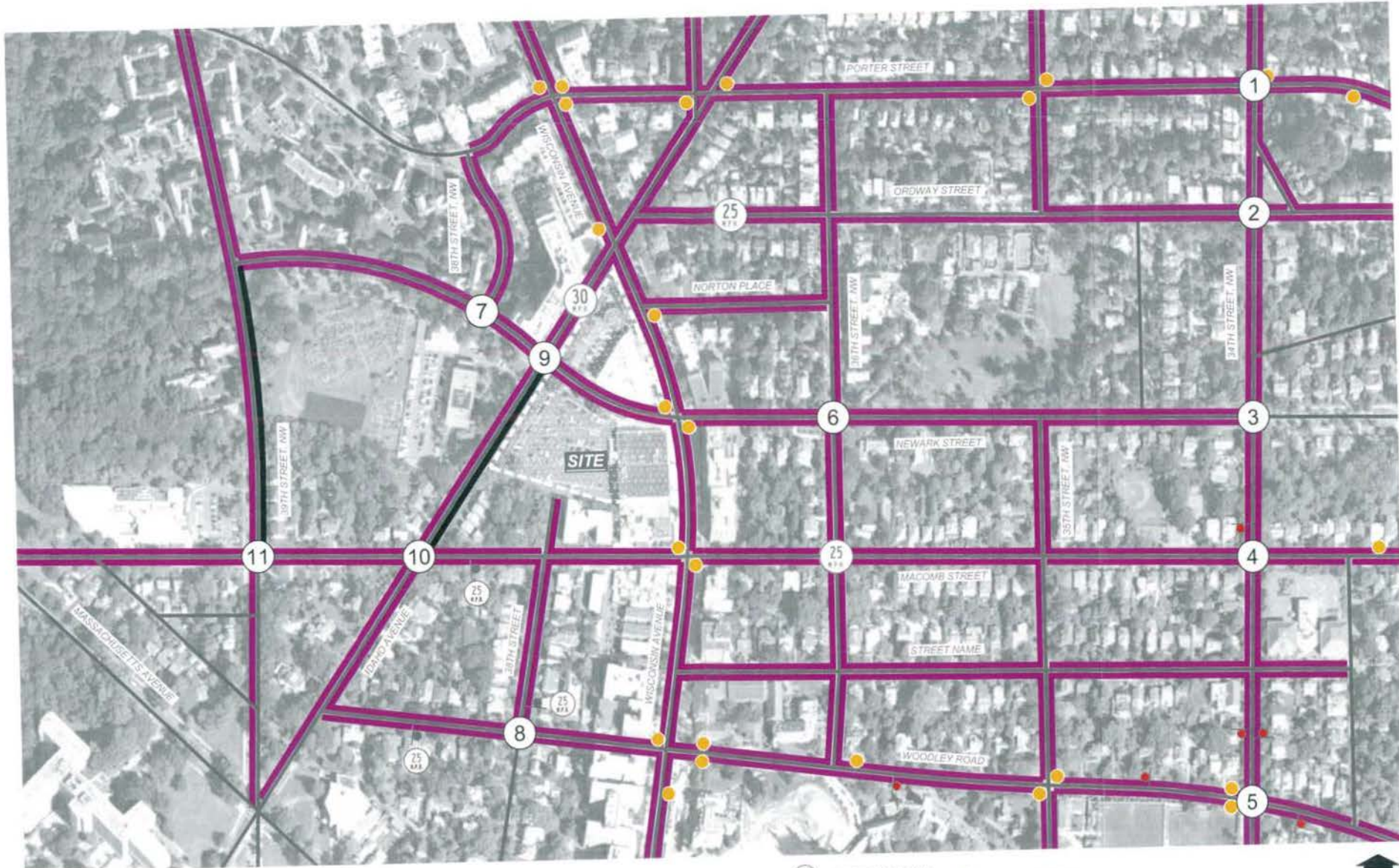


Figure 5-6
Public Transportation Facilities and Posted Speed Limits

Wisconsin Avenue Giant
Washington, D.C.



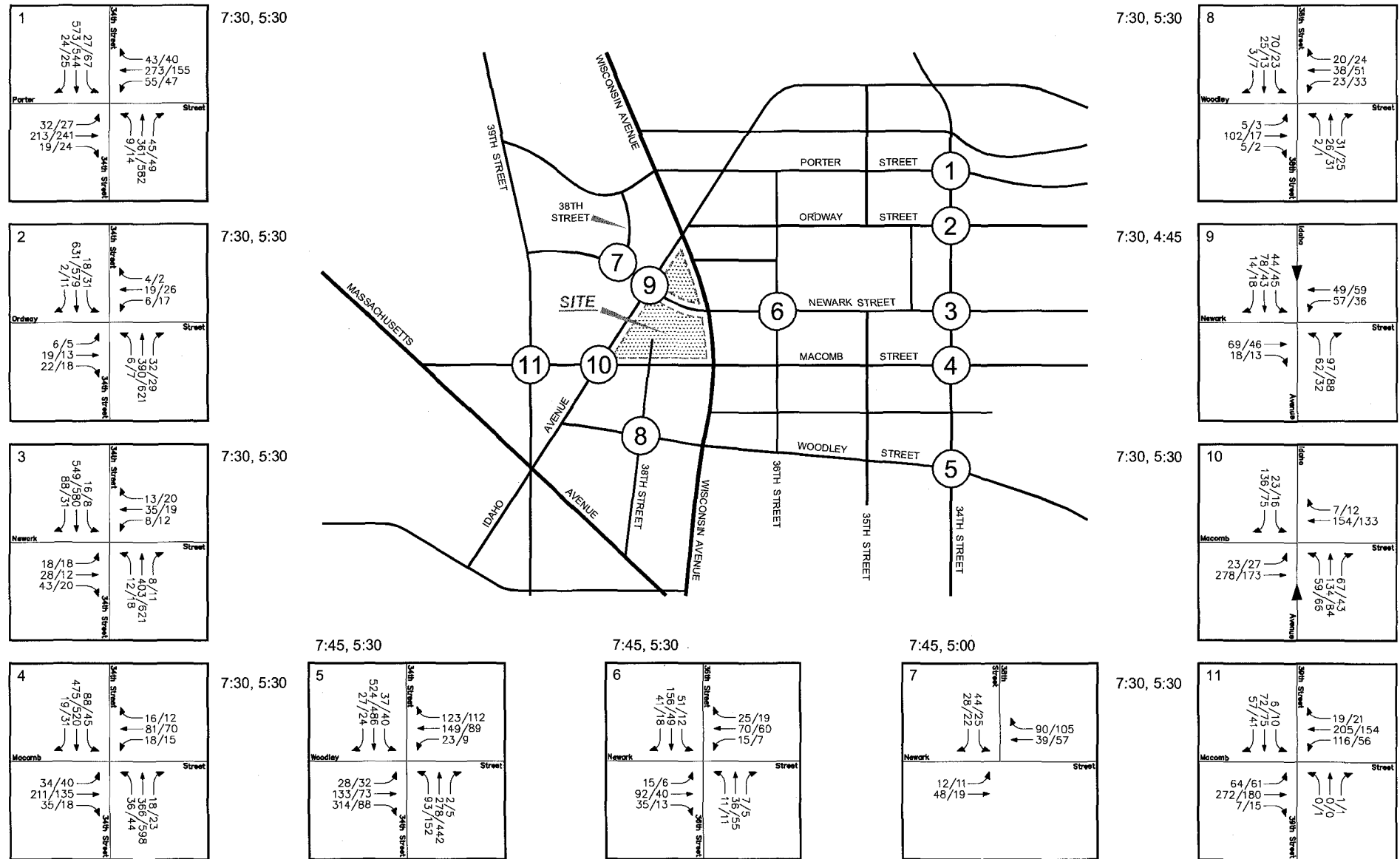


Figure 5-7
Weekday Peak Hour Vehicular Traffic Counts

AM PEAK HOUR
PM PEAK HOUR
000/000



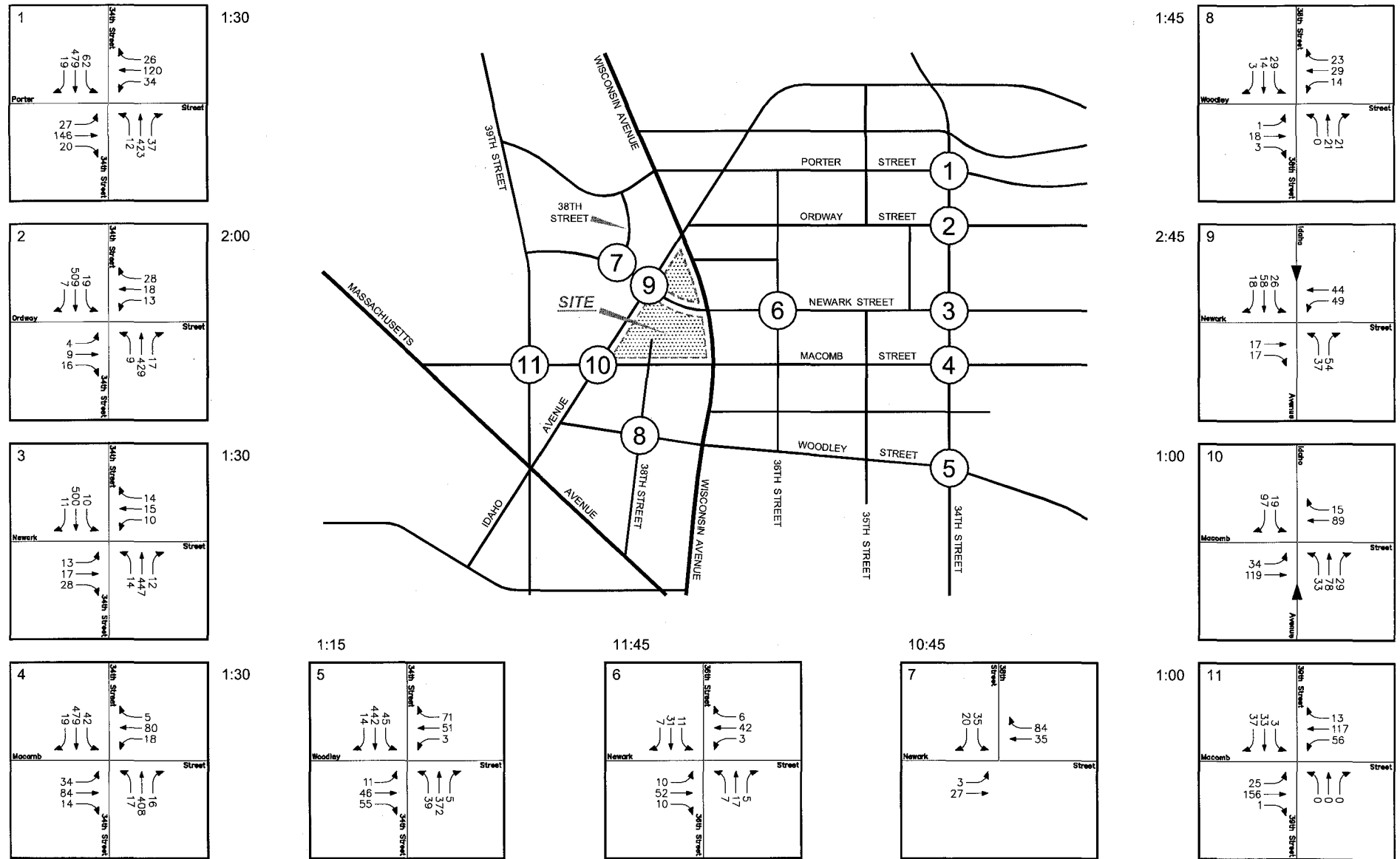


Figure 5-8
Saturday Midday Peak Hour Vehicular Traffic Counts



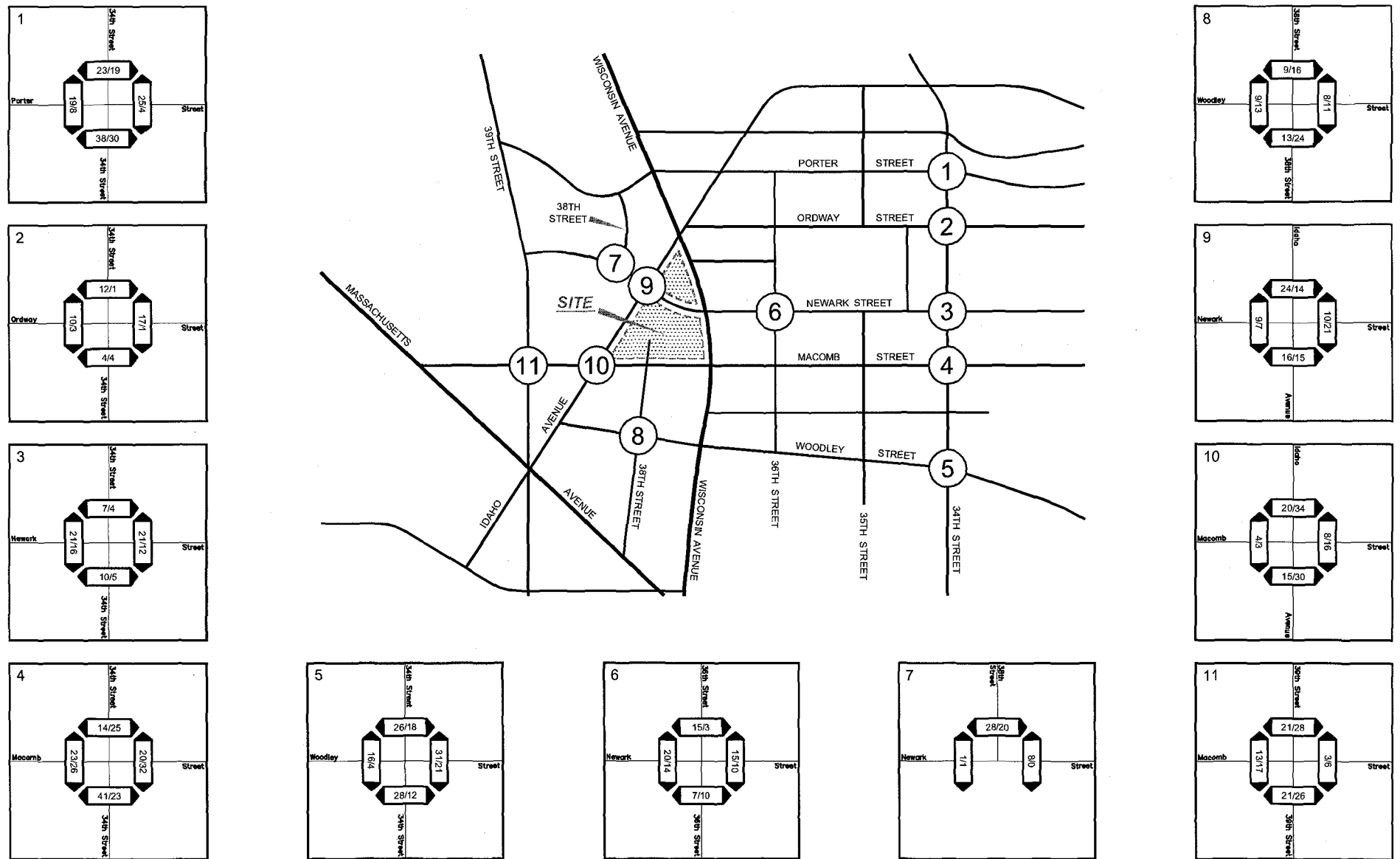


Figure 5-9
Weekday Peak Hour Pedestrian Traffic Counts

AM PEAK HOUR
PM PEAK HOUR
000/000



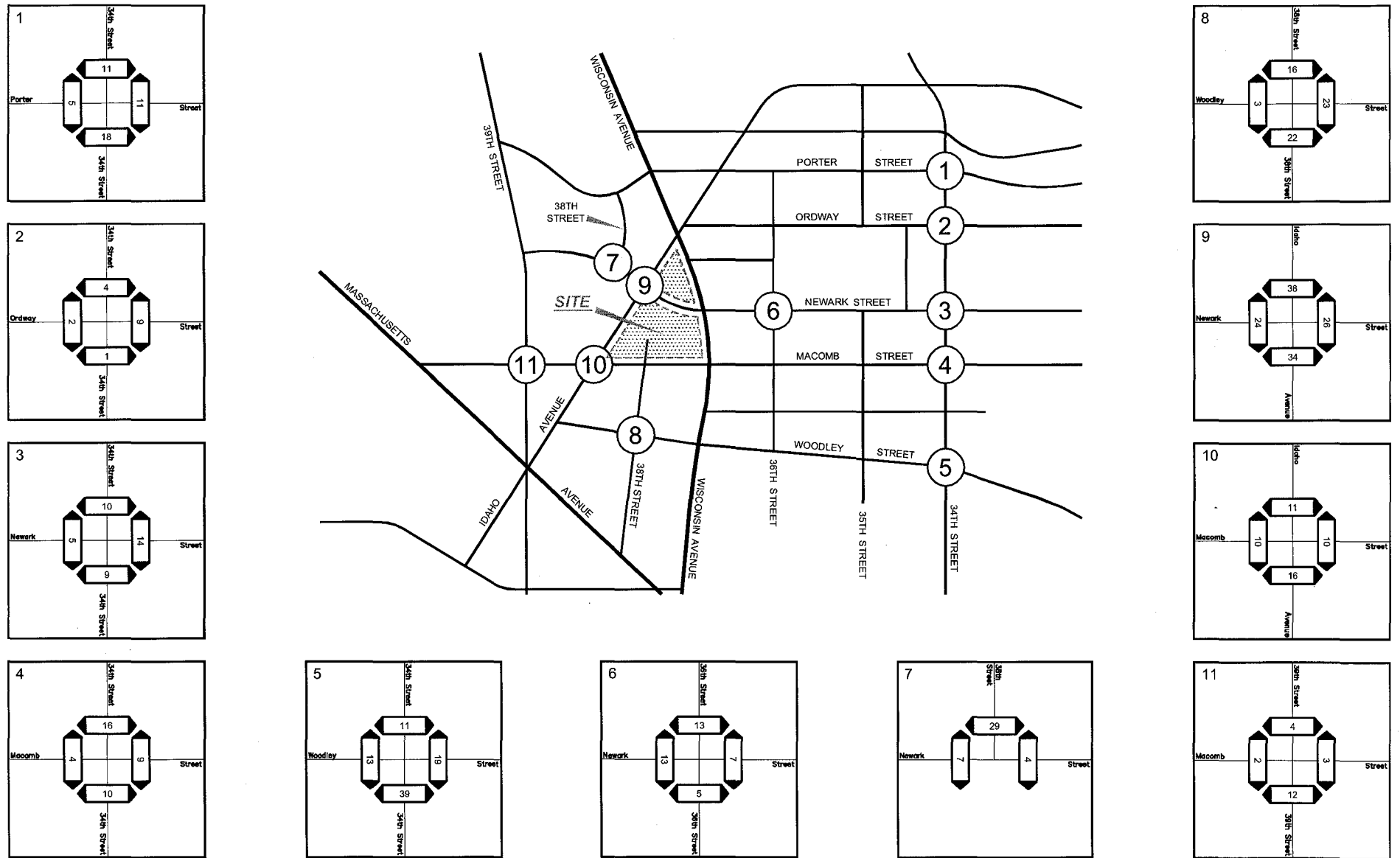


Figure 5-10
Saturday Peak Hour Pedestrian Traffic Counts

SAT PEAK HOUR
000



Figure 5-11
Wisconsin Avenue Giant
24 Hour Traffic Counts (15 Minute Intervals)
Thursday, September 25, 2008

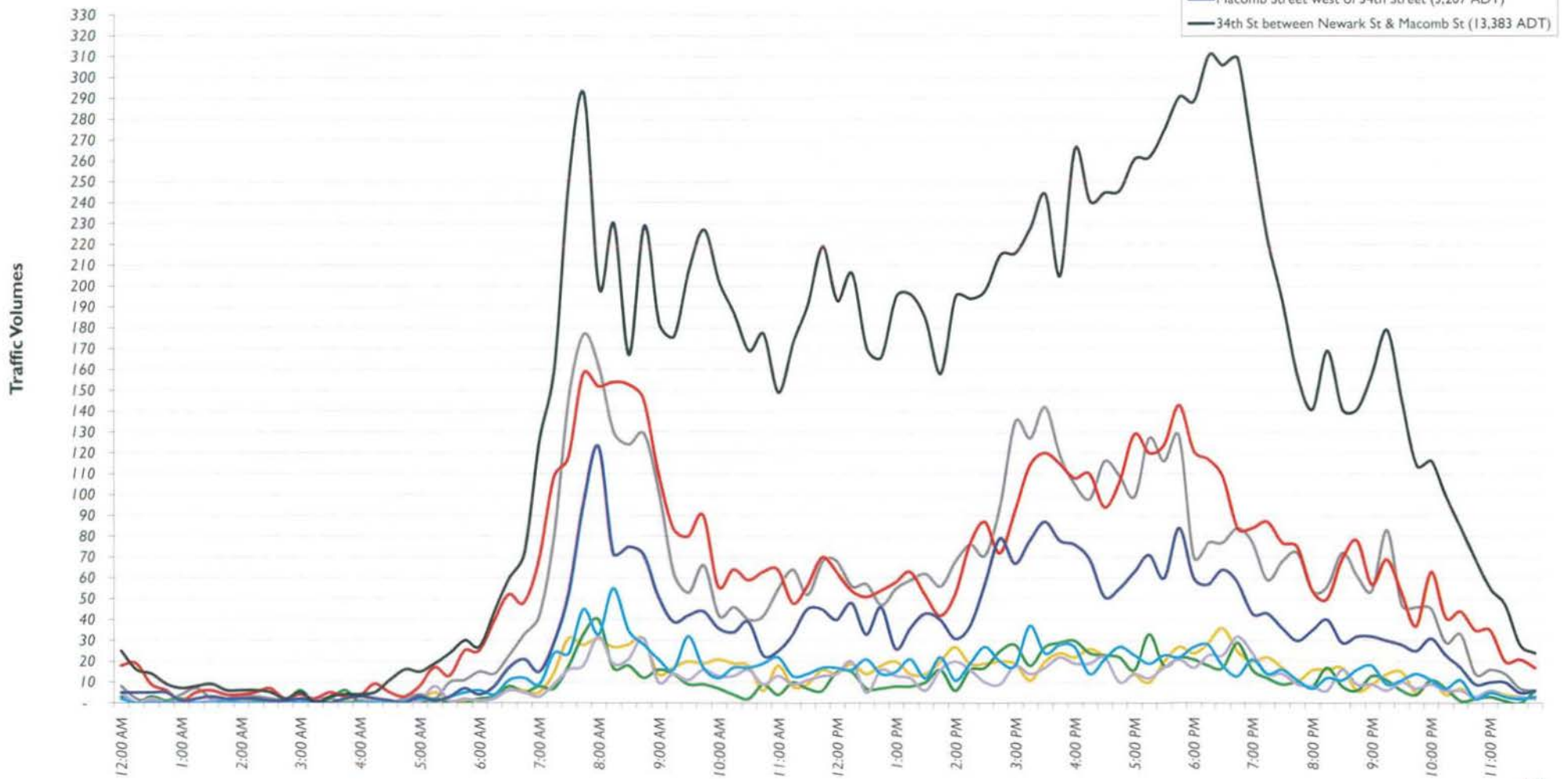


Figure 5-13
Wisconsin Avenue Giant
24 Hour Traffic Counts (15 Minute Intervals)
Saturday, September 27 2008

