4.0 TRAFFIC AND TRANSPORTATION

4.1 Existing Conditions

The study area is bounded by 135th Street to the north, 116th Street to the south, Franklin D. Roosevelt Drive (FDR)/Harlem River Drive to the east, and Henry Hudson Parkway (HHP) to the west. It has a grid-like arterial network system, with 125th Street and 126th Street west of Morningside Avenue running at a diagonal. The main east/west corridor traversing the study area is 125th Street. Henry Hudson Parkway, Broadway, Adam Clayton Powell Boulevard, Lenox Avenue, Park Avenue, Third Avenue, Second Avenue, and the FDR/Harlem River Drive are the main north/south arterials. Exhibit 4-1 shows some of the main arterials in the study area with the Henry Hudson Parkway and the FDR Drive providing regional access.

Street System

The street network provides fairly adequate vehicular access to the study area. The study area can be accessed mainly from Franklin D. Roosevelt Drive (FDR)/Harlem River Drive and Henry Hudson Parkway/Route 9A on the eastern and western limits respectively of the study area. These are the major north-south uninterrupted flow facilities in the study area. FDR Drive connects Financial District and Sherman Creek in Manhattan. In the study area, access to and from the Bronx and Queens is provided by Willis Avenue, Third Avenue and Triborough Bridges. Henry Hudson Parkway/Route 9A running along the western edge of Manhattan connects Lincoln Square and Inwood in Manhattan.

125th Street is the main east/west corridor passing through the study area. It divides the area into a north half and south half. This is the main cross-town street providing access to the bridges leading to other boroughs (Queens and Bronx). *125th Street* comprises of two moving lanes and one parking lane in each direction and provides access to the FDR Drive/Harlem River Drive and Henry Hudson Parkway. The street is approximately 70 feet wide from Riverside Drive to Morningside Avenue, and 60 feet wide from Morningside Avenue to First Avenue.

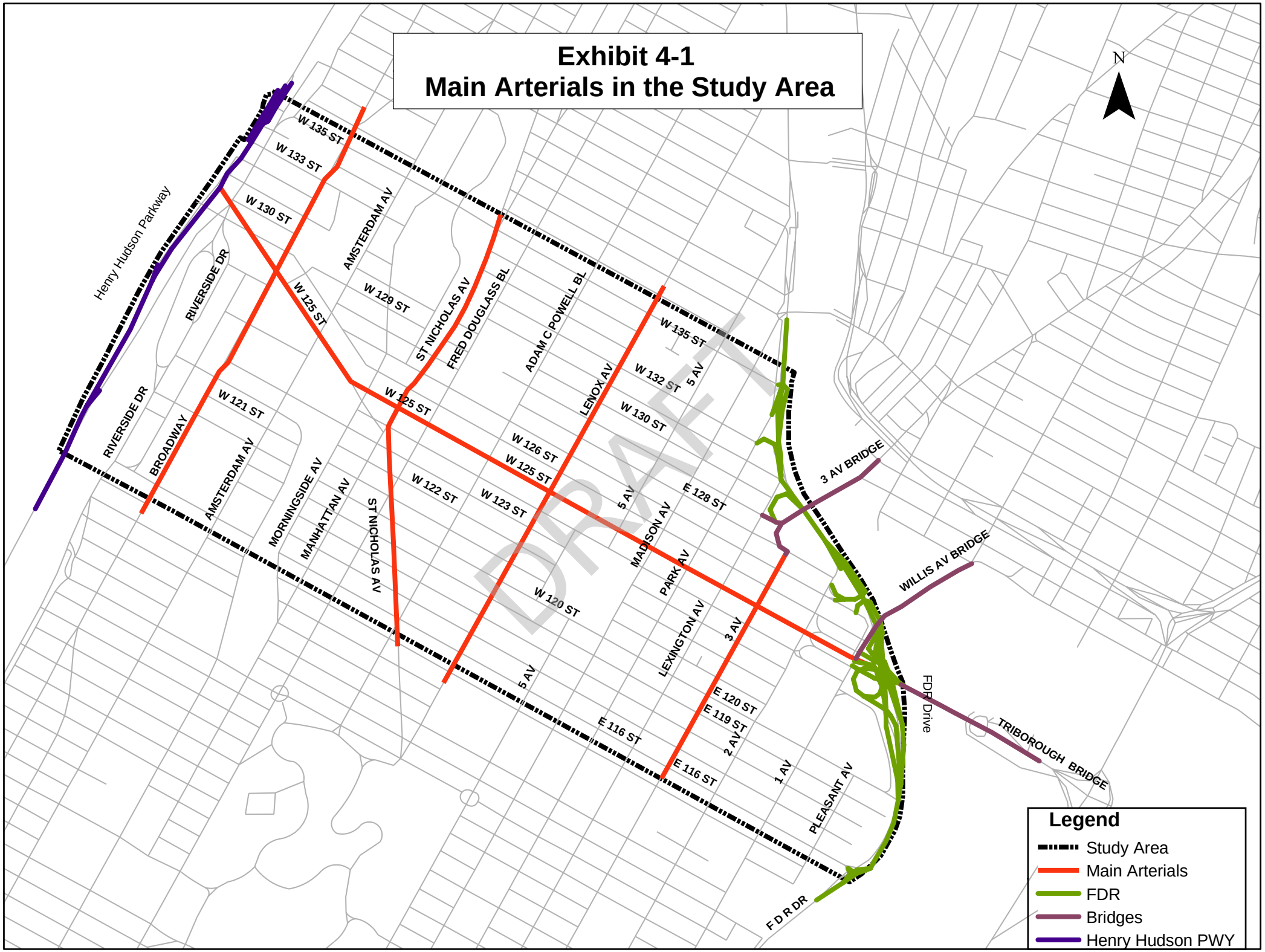


Exhibit 4-1
Main Arterials in the Study Area
N
Henry Hudson Parkway
RIVERSIDE DR
RIVERSIDE DR
BROADWAY
AMSTERDAM AV
AMSTERDAM AV
MORNINGSIDE AV
MANHATTAN AV
ST NICHOLAS AV
ST NICHOLAS AV
FRED DOUGLASS BL
ADAM C POWELL BL
LENOX AV
MADISON AV
PARK AV
LEXINGTON AV
3 AV
2 AV
1 AV
PLEASANT AV
5 AV
5 AV
5 AV
W 135 ST
W 133 ST
W 130 ST
W 129 ST
W 125 ST
W 121 ST
W 125 ST
W 126 ST
W 125 ST
W 122 ST
W 123 ST
W 120 ST
W 135 ST
W 132 ST
W 130 ST
E 128 ST
E 120 ST
E 119 ST
E 116 ST
E 116 ST
3 AV BRIDGE
WILLIS AV BRIDGE
TRIBOROUGH BRIDGE
FDR Drive
F D R DR
DRAFT
Legend
Study Area
Main Arterials
FDR
Bridges
Henry Hudson PWY

The street is truly mixed use in character, there are commercial, residential and major entertainment centers (e.g. Apollo Theater) located along this corridor.
There are many north/south considers in the study area, but the following represent the principal arterials:

Broadway: This is a busy four and three lane north/south corridor with the northbound and southbound lanes divided by the elevated subway tracks. The tracks are elevated from 122nd Street to 135th Street. The 1/9 subway station, a land marked elevated structure, is located at the intersection of West 125th Street and Broadway. Parking is allowed in the median under the elevated structure, adjacent to the intersection of West 125th Street and Broadway.

Adam Clayton Powell Boulevard: This is a two way north-south corridor with three lanes and a parking lane in each direction. Northbound and southbound lanes are divided by 10-foot raised median. There is a mixture of residential and commercial/retail land use along this corridor.

Lenox Avenue: This is a two way north-south corridor with a 150 feet ROW, with 80-foot wide pavement and 35-foot wide sidewalks on both side and a four feet wide traffic median. The boulevard has two traveling lanes and one parking lane in each direction.

Park Avenue: This is a north/south collector that extends from Harlem uptown to Union Square downtown. *Park Avenue*'s northbound and southbound lanes are divided by the elevated viaduct of Metro North Rail road. It has one moving lane in each direction outside of the viaduct columns of 19 feet width that sometimes operates as two lanes under congested conditions. The area under the Metro North viaduct is not accessible to the public. There is a mixture of commercial/retail and residential uses along this corridor in the study area.

Third Avenue: This is a one-way northbound corridor from the East Village downtown to East Harlem uptown. In the study area, Third Avenue is approximately 70 feet wide and consists in five effective moving lanes and one parking lane on each side. There is a mixture of commercial/retail and residential use along this corridor in the study area.

Second Avenue: This is a one-way southbound corridor running from East Harlem uptown (East 128th Street) to the East Village downtown at east Houston Street. In the study area, it has four effective moving lanes and a parking lane on both sides with approximately 60 feet wide from curb to curb. There is a mixture of commercial/retail and residential use along this corridor in the study area.

4.2 Activity Centers & The Transportation Network

Peak hour vehicle trips in the study area are primarily work and shopping oriented. The trips leaving the area in the AM are home based trips (origins) while those coming into the area constitute a high share of non-home based trips (destinations). The reverse pattern is somewhat evident in the PM peak. The area's economic activity, local retail/offices and entertainment centers make this area a destination point. Intra-area trips are distributed throughout the study area but these are not significant due to the size of the study area. On the other hand a significant amount of through trips traverses the area from the north and south via the FDR Drive and the Henry Hudson Parkway. Also a significant number of through trips use the 125th Street corridor with direct access to the other boroughs via the Tri-Borough Bridge.

In general, trips destined to the study area are concentrated in five main locations. These locations are referred to as activity centers. The five major activity centers in the study area are as follow:

Activity Center # 1: is concentrated along West 135th Street between Adam C. Powell and 5th Avenue. This area contains the Harlem Hospital Center, a library, the Harlem YMCA center and the Thurgood Marshall academic institution. The area is easily accessible by automobile and very well served by transit with three public bus lines (M102, M7, and Bx33), and two subway lines (2 and 3) that stop adjacent to the hospital.

Activity Center # 2: is located near the Hudson River Waterfront in the vicinity of Marginal Street between West 125th Street to West 133rd Street. This activity center hinges on water-front access, a food shopping center including the *Fairway Supermarket* at West 132nd Street @ Marginal Street. This major retail center attracts vehicular and pedestrian traffic and can

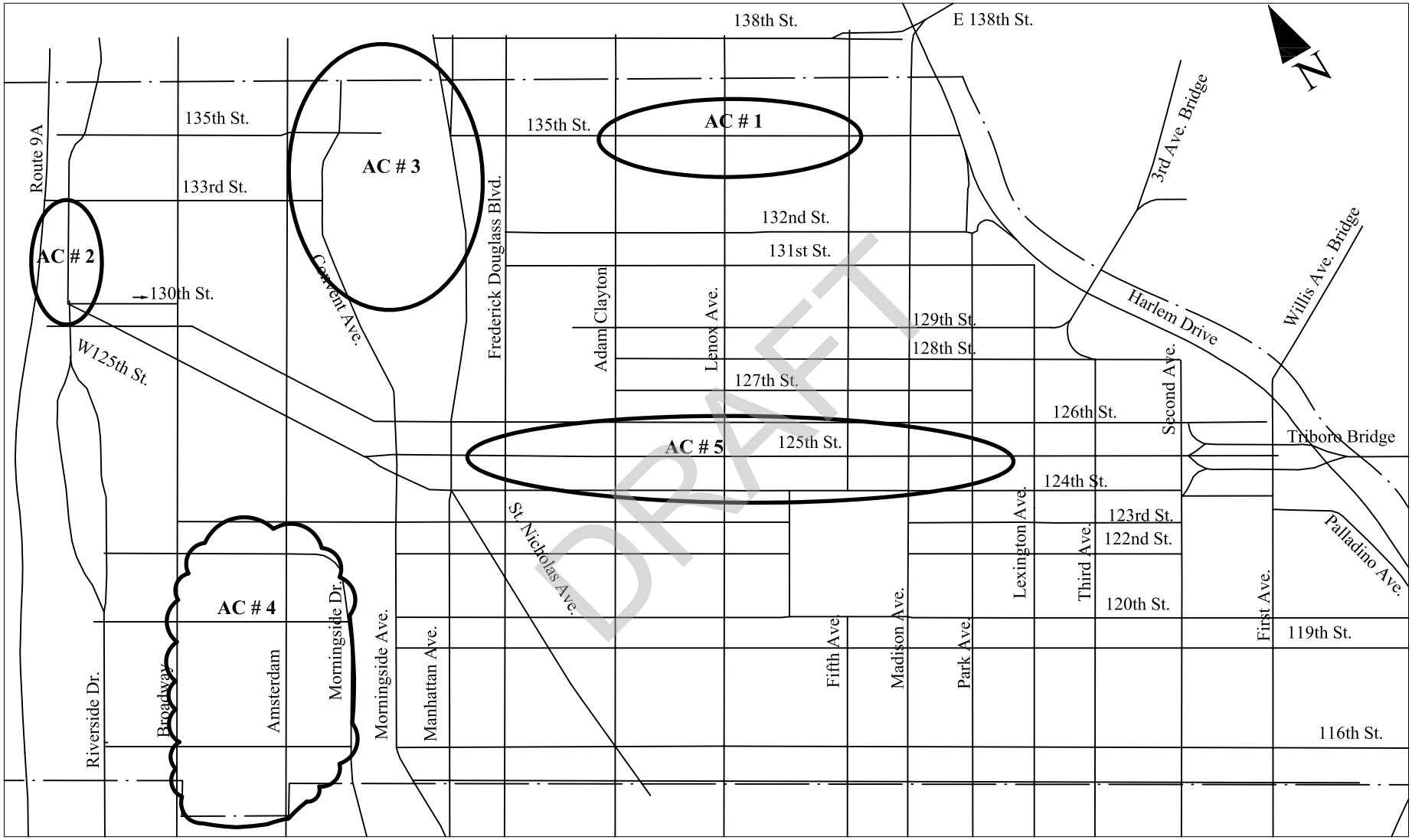
be access by two public bus lines (M5, and Bx15), and two subway lines 1 and 9 at the 125th Street Station which is approximately 1,000 feet from the supermarket. Regional access by automobile is easily available with entrance and exit ramps to and from the Henry Hudson Parkway in the immediately vicinity of the retail activity.

Activity Center # 3: is generally located between Saint Nicholas, Amsterdam Avenue and West 131st Street and West 140th Street. It is predominantly institutional and residential in character with City College of The City University of New York north and south campus generating significant trips, and the Saint Nicholas Park as a recreational meeting place. Contributing to the liveliness of the area there are three public bus lines (M18, M100, and M101), and four subway lines 1 and 9 at 137th Street Station, and the B and C lines with a station at 135th Street. Like most parts of the study area activity center #3 is easily accessible by automobile.

Activity Center # 4: is generally located between Claremont Avenue/Broadway/ Morningside Drive and West 114th Street and West 122nd Street. Similar to activity center #3 it is dominated by academic, institutional and residential buildings representing Columbia University's campus. It has four public bus lines (M4, M11, M60, and M104), and two subway lines 1 and 9 (116th Street Station) providing services to the area. It is also accessible by automobile.

Activity Center # 5: is the *125th Street Corridor* between Manhattan Avenue and Lexington Avenue. This section of the corridor is predominately commercial in nature with retail activity on the ground floor. There are shoes and clothing stores, restaurants/fast food national chains, grocery stores, national chain stores (PathMark, HMV, Modell's, KeG, and Staples), entertainment and banking. The corridor which functions as a hub is well served by public transit with bus lines (100, 101, Bx15, and M60), and eleven subway lines (1, 2, 3, 4, 5, 6, 9, A, B, C, and D) with stops along 125th Street. It is easily accessible by automobile being the gateway to the area. Exhibit 4-2 shows the activity centers in the study area.

Exhibit 4-2
Activity Centers in the Study Area



Activity Centers:

1. Harlem Hospital Center/ Others
2. Fairway Supermarket/ Waterfront access
3. City College of New York
4. Columbia University
5. 125th Street Corridor

LEGEND

Study Area Boundary

0 Activity Centers #

4.3 Data Collection & Traffic Operations

Data Collection

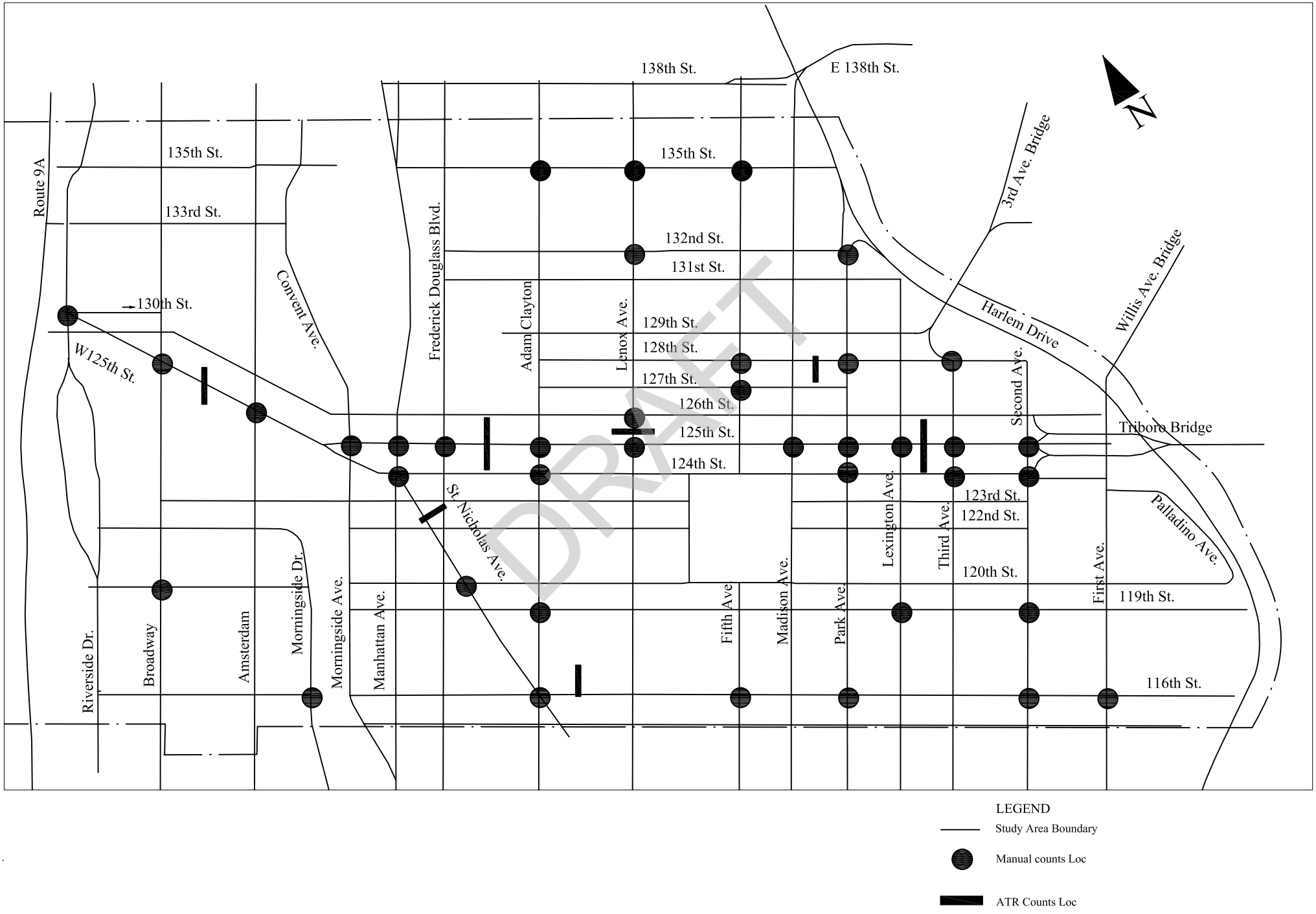
Existing traffic conditions were defined through field surveys conducted in October and November 2003, and supplemented with information from recent environmental impact statements (EIS) conducted for proposed projects within the study area, as well as from other studies such as Malcolm X Boulevard Streetscape Enhancement Project, Harlem Center Project, West Harlem Master Plan, and Central Harlem Environmental Assessment.

Traffic volume counts included vehicle classification and turning movements for three midweek days (Tuesday, Wednesday, and Thursday) during the AM, midday, and PM peak hours and for the Saturday Midday peak hour. Automatic Traffic Recording (ATR) machines were place at seven locations for the duration of seven days. Exhibit 4-3 shows the ATR and traffic manual count locations in the study area. Speed and delay runs were also conducted for the various peak hours.

Automatic Traffic Recorders (ATR) were placed at the following seven locations:

- 125th St. between Lexington and 3rd avenues, East and West bounds
- 125th St. between Broadway and Amsterdam Avenue, East and West bounds
- 128th St. between Madison and Park avenues, Eastbound
- 125th St between Fredrick D. and Adam Clayton avenues, East and West bounds
- Lenox Ave. between 126th and 125th streets, North and South bounds
- 116th St. between Lenox and Adam Clayton avenues, Westbound
- St. Nicholas Avenue between 122nd and 123rd streets, Northbound

Exhibit 4-3
ATR and Manual Count Locations



Vehicle classification and turning movement counts were conducted for the various peak periods at the following 38 signalized and one un-signalized location:

Signalized intersections:

1. 2nd Avenue @116th Street
2. 5th Avenue @ 127th Street
3. 5th Avenue @ 116th Street
4. 5th Avenue @ 135th Street
5. Adam C. Powell, Jr Boulevard @ 124th Street
6. Adam C. Powell, Jr Boulevard @ 135th Street
7. Morningside Drive @116th Street
8. Broadway @ 120th Street
9. 1st Avenue @ E 116th Street
10. 2nd Avenue @ E 119th Street
11. 2nd Avenue @ E 124th Street
12. 3rd Avenue @ E 124th Street
13. 3rd Avenue @ E 125th Street
14. Lexington Avenue @ E 119th Street
15. Lexington Avenue @ E 125th Street
16. Park Avenue @ E 116th Street
17. Park Avenue @ E 124th Street
18. Park Avenue @ E 125th Street
19. Park Avenue @ E 128th Street
20. Park Avenue @ E 132nd Street
21. Madison Avenue @ E 125th Street
22. 5th Avenue @ 128th Street
23. Lenox Avenue @ W 125th Street
24. Lenox Avenue @ W 126th Street
25. Lenox Avenue @ W 132nd Street
26. Lenox Avenue @ W 135th Street
27. 7th Avenue/Adam Clayton @ W 116th Street

28. 7th Avenue/Adam Clayton @ W 119th Street
29. 7th Avenue/Adam Clayton @ W 125th Street
30. ST Nicholas Avenue @ W 120th Street
31. Morningside/Covenant Avenue @ W 125th Street
32. Amsterdam Avenue @ W 125th Street
33. Morningside Avenue @ W 125th Street
34. Manhattan Avenue/St Nicholas @ W 125th Street
35. Manhattan Avenue @ St Nicholas Avenue/124th Street
36. 8th Avenue/Frederick Douglas @ W 125th Street
37. Broadway @ W 125th Street
38. Riverside Drive @ W 125th Street

Unsignalized intersection:

1. 3rd Avenue @ E 128th Street

Parking Data

On and off street parking facilities data was collected as well as on street meter parking and non-meter parking regulations.

Accident Data

Accident data from NYSDOT and DMV records was analyzed for the 13 locations identify in the study area from year 1998 to 2000.

4.4 Network Traffic Volumes

Balanced traffic networks for the various peak periods were prepared using the ATRs and the manual turning movement counts. This information has been plotted on traffic flow maps for the AM (7:45 - 8:45), midday (12:15 - 1:15), PM (4:45 - 5:45), and Saturday midday (1:00 - 2:00) peak hours. Exhibits 4-4, 4-5, 4-6, and 4-7 present the 2003 existing peak hour traffic volumes for the four peak hours, respectively.

Data collected from the Automatic Traffic Recorders (ATR) showed that the 125th Street corridor processed the highest number of vehicles for all four peak periods. The traffic volume data analysis revealed the following:

1. The eastbound 125th Street between Broadway and Amsterdam Avenue carries approximately 690, 684, 786, and 746 vehicles per hour (vph) in the AM, midday, PM, and Saturday midday peak hours, respectively; while the westbound carries approximately 511, 449, 565, and 560 vph, for the respective peak hours.

2. In the eastbound direction between Lexington Avenue and Third Avenue traffic volumes were approximately 513, 490, 561, and 476 vehicles per hour (vph) in the AM, midday, PM, and Saturday midday peak hours, respectively; while the westbound were approximately 568, 483, 465, and 545 vehicles per hour (vph) for the respective hours.
Exhibits 4-4 to 4-7 show the balanced traffic network volumes for the various peak hours.

Because of the complexity of the traffic network within the study area and its connection to major access roads and bridges such us the Henry Hudson Parkway, FDR Drive/Harlem River Drive and the Willis Avenue, Third Avenue and tri-borough Bridges a review of the traffic on these regional facilities was done to have a better understanding of the traffic coming in and out of the local street network. The regional traffic volumes maps for the AM, MD and PM peak hours are shown in Appendix A.

Exhibit 4-4 AM Peak Hour Volume

HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

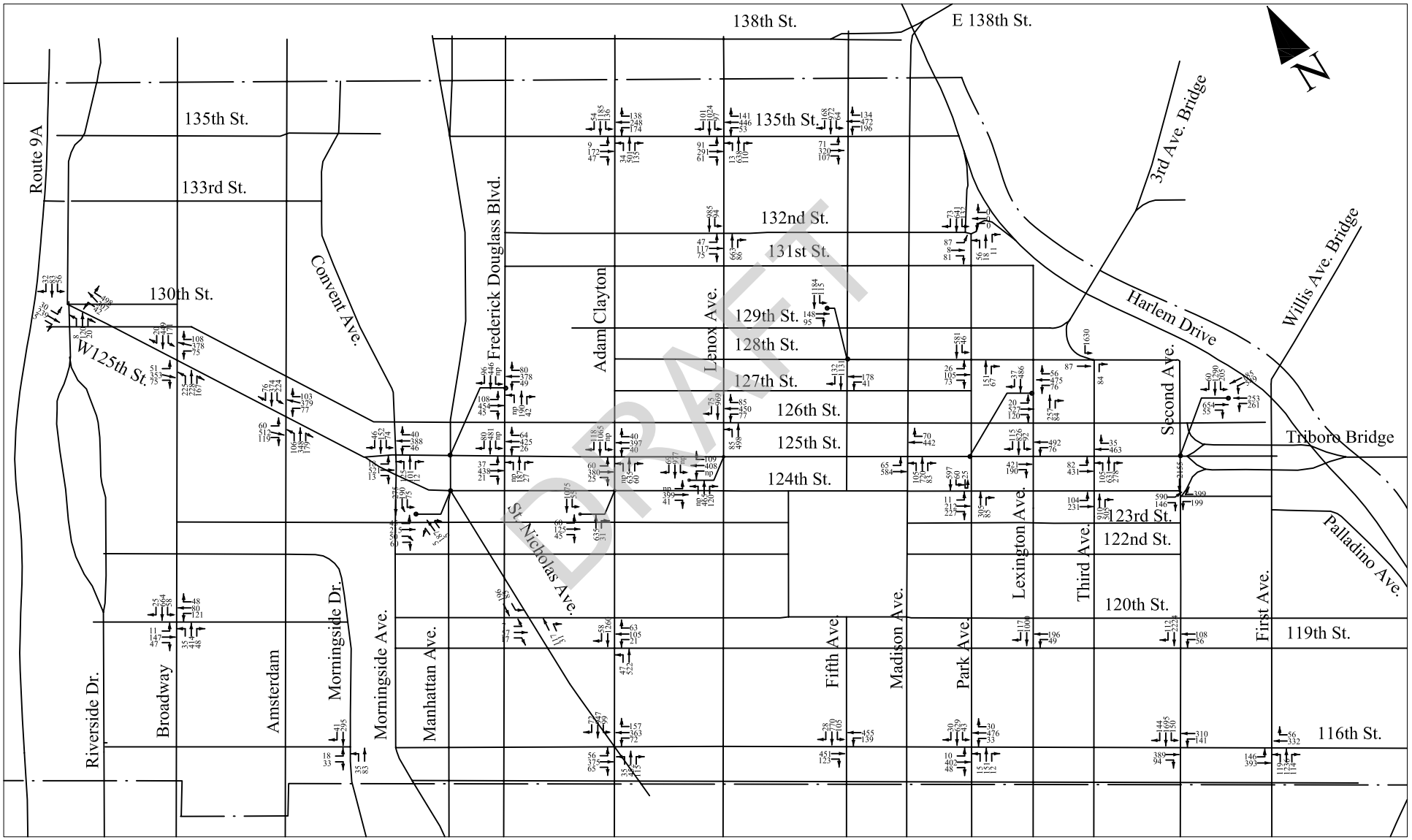


Exhibit 4-5 Midday Peak Hour Volume
HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

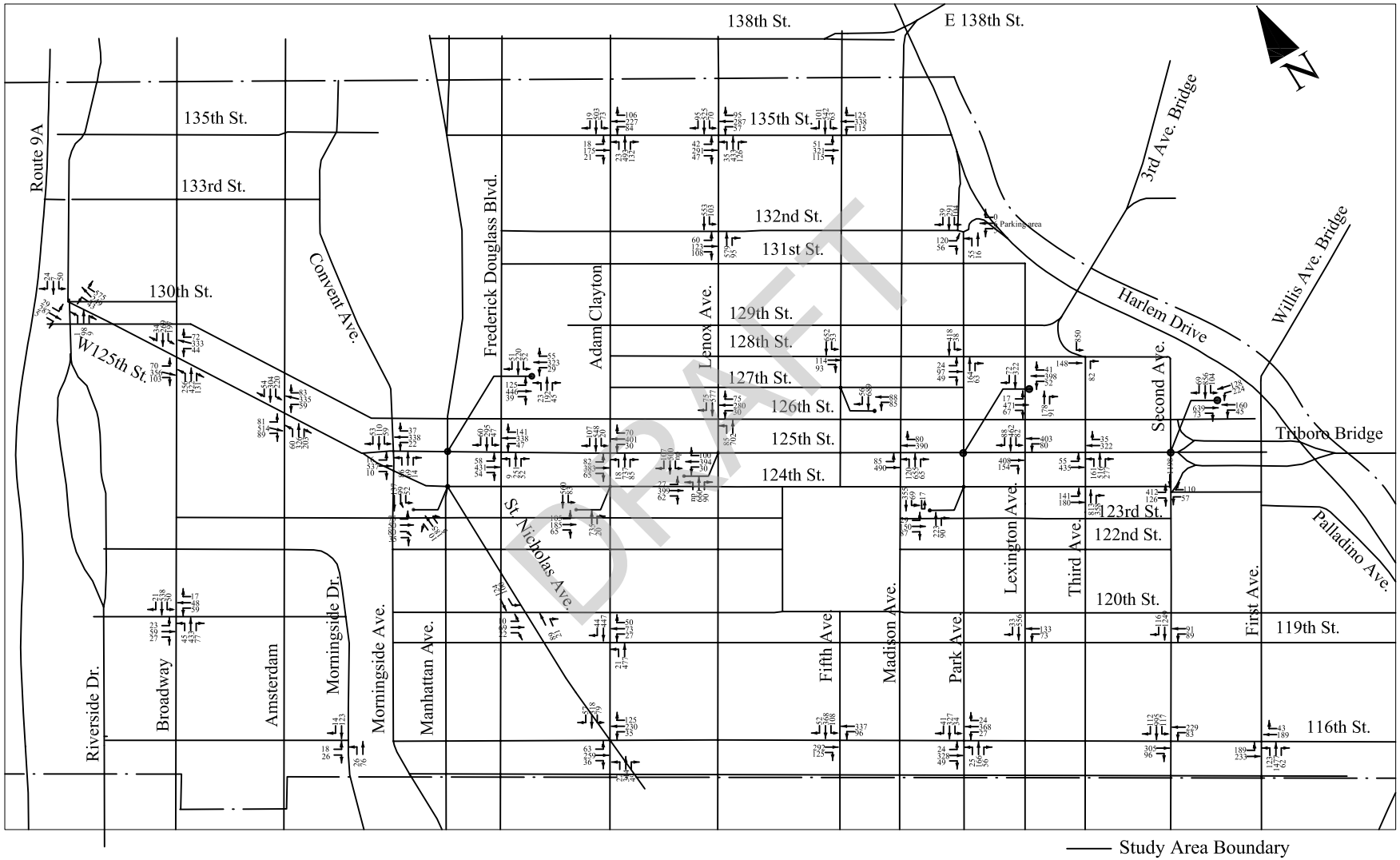


Exhibit 4-6 PM Peak Hour Volume

HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

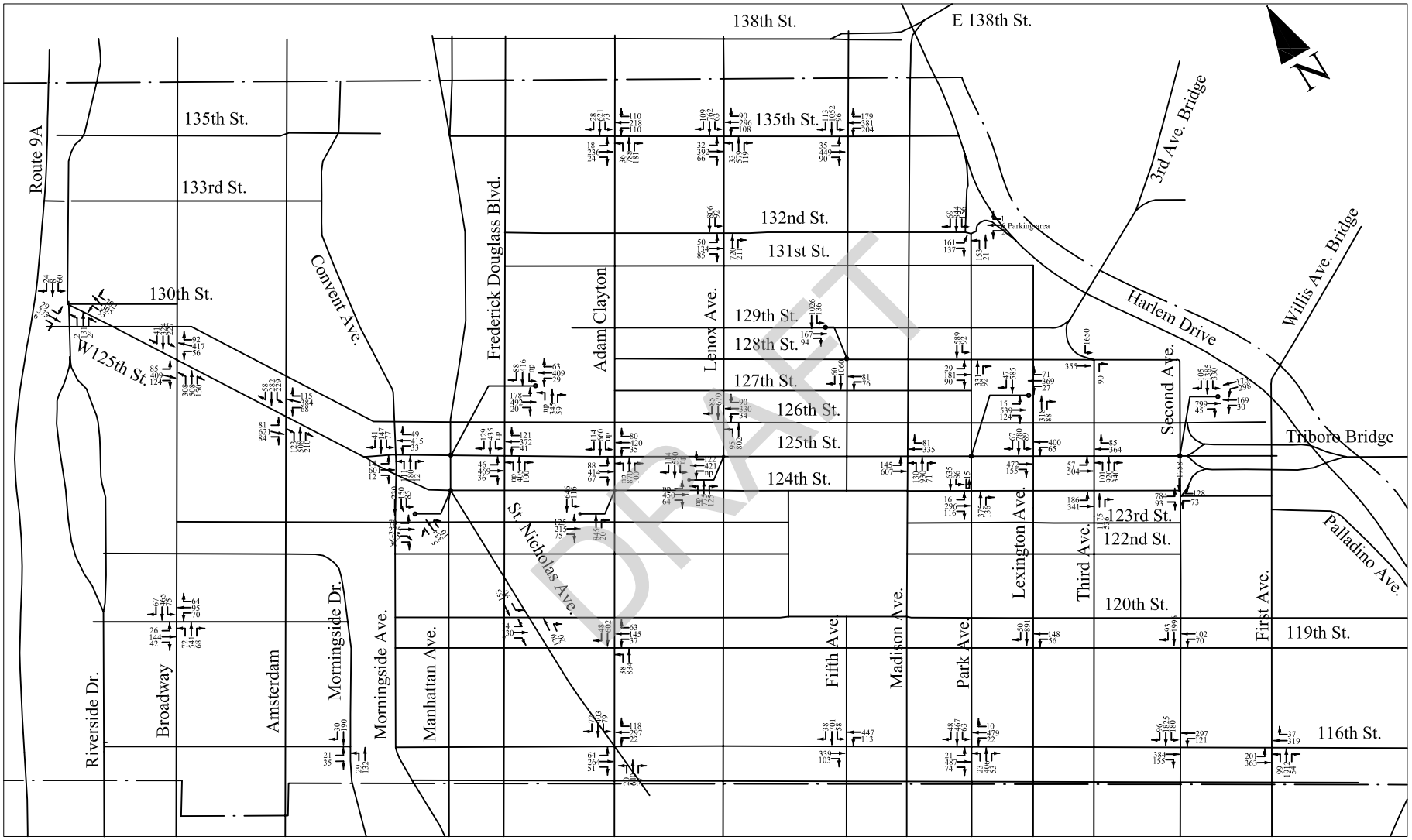
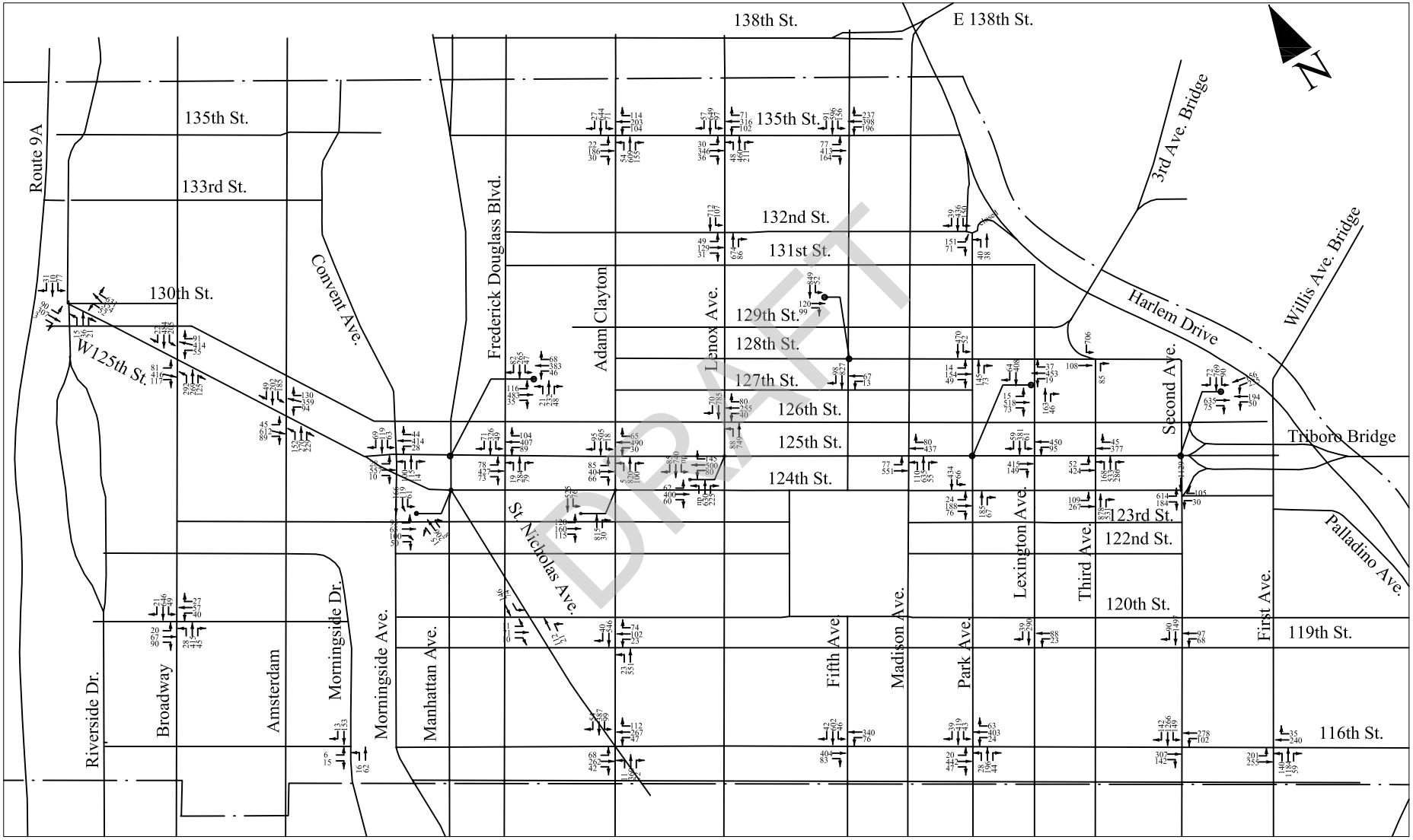


Exhibit 4-7 Sat. Midday Peak Hour Volume
HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY



4.5 Street Capacity & Level of Service (LOS)

The capacity of the roadways is the maximum rate of flow which may pass through a section of roadway under prevailing traffic, roadway and signalization conditions. The capacity of a roadway is determined by several factors including turning movements, signal timing, geometric design of the intersection, pedestrian movements, type of vehicle, illegal and/or double parking, grade, roadway conditions, and weather. In determining street capacity within the Study Area the 2000 Highway Capacity Manual methodology was used. The methodology requires the use of official signal timings, street geometry, and other relevant information for performing capacity and LOS analyses. The study area contains 38 signalized and one un-signalized intersection. Visits to the field were conducted in order to gather the prevailing conditions of the intersection.

The traffic flow characteristics are measured in terms of the volume-to-capacity (v/c) ratios and delays. The quality of the flow is expressed in terms of LOS, which is based on an average delay experienced by a vehicle. When the v/c ratio exceeds 1.0, a facility or intersection operates at or over capacity. In this situation severe congestion occurs in traffic with stop-and-start conditions, and extensive vehicle queuing and delays. Volume-to-capacity ratios of less than 0.85 are considered to be reflective of acceptable traffic conditions, with average delays of 45 seconds or less. The following are level of service criteria as specified in the 2000 HCM Methodology.

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Level of Service	Control Delay Per Vehicle	Description of Traffic Condition
A	≤10.0	LOS A describes operations with low control delay, up to 10 s/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	>10 to 20	LOS B describes operations with control delay greater than 10 and up to 20 s/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	> 20 to 35	LOS C describes operations with control delay greater than 20 and up to 35 s/veh. These higher delays may result from only fair progression, longer cycle lengths or both. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	> 35 to 55	LOS D describes operations with control delay greater than 35 and up to 55 s/veh. The influence of congestion becomes more noticeable at this level. Longer delays may result from a combination of unfavorable progression, long cycle lengths, and/or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 to 80	LOS E describes operations with control delay greater than 55 and up to 80 s/veh. These higher delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	> 80	LOS F describes operations with delay in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Sources: Highway Capacity Manual, Transportation Research Board;
National Research Council, Washington D.C., 2000;
New York City Department of Transportation;
New York State Department of Transportation.

Note: Control delay is measured in terms of seconds per vehicle.

In the case of un-signalized intersections, capacity analysis at Two-Way Stopped-Controlled (TWSC) intersection depends on a clear understanding of the interaction between the drivers from the minor and major street approach. Level of service (LOS) for a TWSC intersection is determined by the measure of the average control delay defined for each of the minor movement. LOS is not defined for the intersection as a whole. The following are level of service criteria as specified in the 2000 HCM Methodology for TWSC intersections.

TWSC UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Average Control Delay (s/veh)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	> 35-50
F	> 50
Sources: Highway Capacity Manual 2000, Transportation Research Board	
Note: Average Control delay is measured in terms of seconds per vehicle.	

4.6 Existing Traffic Conditions

Problem intersections were identified and analyzed for roadway capacity using the 2000 Highway Capacity Manual (HCM) methodology. A balanced traffic network for the weekday AM, Midday, PM, peak hours and Saturday Midday peak hour were developed and volume-to-capacity (v/c) ratios, vehicular delay, and level-of-service (LOS) for the respective peak hours were determined.

Table 4-1 shows the 2003 Existing Conditions, v/c ratios, delays, and level of service (LOS) for AM, midday, PM, and Saturday midday peak hours for the 38 signalized intersections analyzed in the study area.

The analysis shows that most intersections operated at an acceptable level of service (LOS) B or better during the AM, midday, PM, and Saturday midday peak hours. However, some

intersections experienced LOS D, E, and F for some or all lane groups during some peak hours.

The intersections with approaches or lane groups with mid LOS D (equal to 45 sec/veh.) or worse are listed below and shown in Exhibits 4-8, 4-9, 4-10, and 4-11.

- 1st Avenue @ E 116th St (AM, MD, PM, and Sat. midday)
- 2nd Avenue @ 116th St (AM)
- 2nd Avenue @ E 125th St (AM, MD, PM, and Sat. midday)
- Park Avenue @ E 116th St (AM)
- Park Avenue @ E 128th St (PM)
- Park Avenue @ E 132nd St (PM)
- Madison Avenue @ E 125th St (PM)
- 5th Avenue @ 116th Street (AM)
- 5th Avenue @ 135th Street (AM, PM, and Sat. midday)
- Lenox Avenue @ W 125th St (Sat. midday)
- Lenox Avenue @ W 126th St (AM, and Sat. midday)
- Lenox Avenue @ W 135th St (AM)
- 7th Avenue/Adam Clayton Blvd @ W 116th St (AM)
- 7th Avenue/Adam Clayton Blvd @ W 135th St (AM, and MD)
- Manhattan Avenue @ W 125th St (AM, MD, PM, and Sat. Midday)
- Amsterdam Avenue @ W 125th St (AM, PM, and Sat. midday)
- Broadway @ W 120th St (AM, and PM)
- Broadway @ W 125th St (PM and Sat. Midday)

TABLE 4-1
TRAFFIC CAPACITY ANALYSIS FOR SIGNALIZED INTERSECTIONS
2003 EXISTING CONDITIONS

INTERSECTION	Lane Group		AM V/C	AM DELAY	AM LOS	MID V/C	MID DELAY	MID LOS	PM V/C	PM DELAY	PM LOS	SAT V/C	SAT DELAY	SAT LOS
	EB	LT	1.00	66.0	E				1.04	78.9	E			
		DefL				0.85	56.9	E				0.89	62.0	E
1ST Avenue @ E 116TH ST		T				0.59	30.3	C				0.60	30.0	C
	WB	TR	0.55	26.6	C	0.32	22.7	C	0.48	25.2	C	0.35	23.1	C
	NB	LTR	0.58	14.5	B	0.67	16.2	B	0.81	19.6	B	0.53	13.9	B
Intersection LOS				28.2	C		21.6	C		31.5	C		21.7	C
	EB	TR	0.64	28.4	C	0.48	25.1	C	0.63	28.0	C	0.52	25.7	C
2nd Avenue @116th Street	WB	LT	0.98	63.6	E	0.64	29.8	C	0.84	40.7	D	0.69	31.5	C
	SB	LTR	0.79	18.9	B	0.52	13.8	B	0.80	19.1	B	0.60	14.8	B
Intersection LOS				27.8	C		18.9	B		23.8	C		19.6	B
2ND Avenue @ E 119TH ST	WB	LT	0.46	26.5	C	0.46	26.2	C	0.45	26.0	C	0.45	25.9	C
	SB	TR	0.95	28.8	C	0.57	14.4	B	0.81	19.3	B	0.62	15.2	B
Intersection LOS				28.6	C		15.9	B		19.9	B		16.4	B
	EB	L	0.72	30.8	C	0.53	26.1	C	0.92	44.8	D	0.74	31.8	C
		R	0.54	30.7	C	0.35	24.5	C	0.27	23.0	C	0.53	29.0	C
2ND Avenue @ E 124TH ST	WB	L	0.47	26.5	C	0.14	20.9	C	0.17	21.3	C	0.09	20.3	C
		R	0.31	11.8	B	0.09	10.0	A	0.11	10.1	B	0.08	9.9	A
	SB	T	0.80	19.2	B	0.46	13.1	B	0.63	15.3	B	0.41	12.5	B
Intersection LOS				21.3	C		16.7	B		23.5	C		19.7	B
	EB	TR	1.04	82.5	F	1.03	79.4	E	1.04	79.6	E	1.03	78.4	E
		R	0.28	33.0	C	0.37	35.4	D	0.24	32.2	C	0.39	36.1	D
	WB	DefL	1.03	100.6	F									
		LT	0.81	53.6	D	0.66	42.7	D	0.53	36.2	D	0.76	47.3	D
2ND Avenue @ E 125TH ST	SB-2ave	LTR	0.75	26.0	C	0.57	22.8	C	0.93	35.0	D	0.49	21.7	C
			LOS	48.3	D	**LOS**	43.6	D	**LOS**	47.2	D	**LOS**	44.3	D
	SB-Bridge	TR	1.03	77.2	E	0.65	37.9	D	0.74	40.4	D	0.69	39.0	D
Intersection LOS				77.2	E		59.0	E		59.6	E		58.3	E
3RD Avenue @ E 124TH ST	WB	LT	0.36	23.0	C	0.36	23.0	C	0.52	25.3	C	0.43	24.0	C
	NB	TR	0.49	13.3	B	0.43	12.6	B	0.55	14.0	B	0.46	12.9	B
Intersection LOS				15.2	B		14.9	B		16.8	B		15.6	B
	EB	LT	0.78	32.7	C	0.66	26.6	C	0.76	30.5	C	0.68	27.4	C
3RD Avenue @ E 125TH ST	WB	TR	0.58	24.5	C	0.46	22.0	C	0.58	24.3	C	0.57	24.2	C
	NB	LTR	0.38	14.3	B	0.40	14.5	B	0.54	16.1	B	0.44	15.0	B
Intersection LOS				21.5	C		19.2	B		21.0	C		20.1	C
LEXINGTON Avenue @ E 119TH ST	WB	LT	0.68	34.0	C	0.60	30.9	C	0.54	28.5	C	0.30	23.3	C
	SB	TR	0.95	34.6	C	0.47	13.7	B	0.73	18.9	B	0.26	11.3	B
Intersection LOS				34.5	C		18.5	B		20.7	C		14.4	B
LEXINGTON Avenue @ E 125TH ST	EB	TR	0.76	30.3	C	0.67	26.9	C	0.75	29.2	C	0.67	26.4	C
	WB	LT	0.83	35.5	D	0.82	35.4	D	0.66	26.9	C	0.80	33.6	C
	SB	LTR	0.92	34.2	C	0.58	17.8	B	0.76	22.4	C	0.44	15.6	B
Intersection LOS				33.4	C		25.9	C		25.6	C		25.3	C
	EB	LTR	0.57	24.4	C	0.56	24.1	C	0.68	26.1	C	0.65	25.8	C
PARK Avenue @ E 116TH ST	WB	LTR	0.68	27.3	C	0.52	23.2	C	0.57	24.1	C	0.62	25.2	C
	NB	LTR	0.32	14.7	B	0.46	17.0	B	0.75	25.0	C	0.48	17.4	B
	SB	LTR	1.04	68.1	E	0.67	22.2	C	0.93	43.1	D	0.81	28.8	C
Intersection LOS				40.1	D		22.1	C		29.8	C		25.2	C
PARK Avenue @ E 124TH ST	EB	LTR	0.44	21.5	C	0.70	32.0	C	0.39	20.7	C	0.55	24.9	C
	NB	TR	0.33	14.2	B	0.45	16.2	B	0.42	15.2	B	0.36	14.9	B
	SB	LT	0.63	19.0	B	0.74	24.9	C	0.70	21.0	C	0.66	20.7	C
Intersection LOS				18.5	B		24.0	C		19.1	B		20.4	C
	EB	LTR	0.59	16.0	B	0.55	15.3	B	0.67	17.6	B	0.51	14.5	B
PARK Avenue @ E 125TH ST	WB	LTR	0.66	18.2	B	0.54	15.3	B	0.45	13.6	B	0.43	13.3	B
	NB	TR	0.45	24.7	C	0.35	23.1	C	0.49	25.1	C	0.26	21.8	C
	SB	TR	0.58	26.7	C	0.53	25.9	C	0.70	29.5	C	0.56	26.3	C
Intersection LOS				20.6	C		19.1	B		21.5	C		18.3	B

TABLE 4-1
TRAFFIC CAPACITY ANALYSIS FOR SIGNALIZED INTERSECTIONS
2003 EXISTING CONDITIONS

INTERSECTION	Lane Group		AM V/C	AM DELAY	AM LOS	MID V/C	MID DELAY	MID LOS	PM V/C	PM DELAY	PM LOS	SAT V/C	SAT DELAY	SAT LOS
PARK Avenue @ E 128TH ST	EB	LTR	0.62	34.5	C	0.58	32.9	C	0.81	45.5	D	0.23	34.0	C
	NB	TR	0.30	10.1	B	0.31	10.1	B	0.46	11.9	B	0.27	9.8	A
	SB	LT	0.85	26.4	C	0.65	16.5	B	0.99	48.7	D	0.81	24.0	C
Intersection LOS				24.0	C		18.2	B		36.3	D		22.9	C
PARK Avenue @ E 132ND ST	EB	LTR	0.30	25.3	C	0.50	29.7	C	0.51	28.5	C	0.38	26.3	C
	NB	LTR	0.45	16.4	B	0.30	11.4	B	1.02	92.2	F	0.29	11.3	B
	SB	LTR	0.58	13.2	B	0.59	14.7	B	0.71	15.7	B	0.91	31.1	C
Intersection LOS				15.6	B		18.3	B		26.6	C		28.4	C
MADISON Avenue @ E 125TH ST	EB	LT	0.72	25.3	C	0.71	25.4	C	0.96	46.2	D	0.77	27.5	C
	WB	TR	0.5	19.4	B	0.49	19.4	B	0.42	18.2	B	0.52	19.8	B
	NB	LTR	0.59	20.3	C	0.56	19.8	B	0.71	22.7	B	0.52	19.2	B
Intersection LOS				21.6	C		21.3	C		29.5	C		22.0	C
5th Avenue @ 116th Street	EB	TR	0.65	26.0	C	0.45	21.8	C	0.44	21.6	C	0.55	23.5	C
	WB	LT	1.04	75.8	E	0.56	24.3	C	0.76	31.1	C	0.65	26.7	C
	SB	LTR	0.49	15.7	B	0.31	13.7	B	0.42	14.9	B	0.37	14.4	B
Intersection LOS				36.1	D		19.5	B		21.6	C		20.6	C
5th Avenue @ 127th Street	WB	LT	0.46	25.8	C	0.46	26.0	C	0.44	25.3	C	0.19	21.5	C
	SB	TR	0.97	38.4	D	0.61	16.1	B	0.84	23.3	C	0.70	17.9	B
Intersection LOS				36.4	D		18.2	B		23.7	C		18.2	B
5TH Avenue @ 128TH ST	EB	TR	0.63	30.4	C	0.54	28.2	C	0.65	31.9	C	0.56	28.8	C
	SB	LT	0.92	28.7	C	0.56	15.0	B	0.86	24.6	C	0.66	17.0	B
Intersection LOS				29.0	C		18.2	B		26.1	C		19.5	B
5th Avenue @ 135th Street	EB	LTR	0.78	30.0	C	0.64	23.0	C	0.64	22.5	C	0.93	43.4	D
	WB	LTR	1.00	55.3	E	0.85	34.1	C	1.03	64.5	E	1.00	56.2	E
	SB	LTR	1.02	56.5	E	0.70	23.8	C	1.03	59.0	E	0.77	25.9	C
Intersection LOS				50.7	D		26.9	C		52.3	D		41.6	D
LENOX Avenue @ W 125TH ST	EB	TR	0.4	17.9	B				0.54	20.4	C			
		LTR				0.56	20.9	C				0.72	26.0	C
	WB	TR	0.55	20.5	C				0.69	24.6	C			
		LTR				0.67	23.7	C				1.01	61.3	E
	NB	TR	0.61	21.6	C	0.78	26.9	C	0.95	43.4	D	0.94	42.4	D
	SB	TR	0.73	23.6	C	0.67	23.5	C	0.80	28.8	C	0.87	33.5	C
Intersection LOS				21.6	C		24.1	C		31.2	C		41.6	D
LENOX Avenue @ W 126TH ST	WB	LTR	0.4	17.6	B	0.24	15.9	B	0.27	16.2	B	0.25	15.9	B
	NB	L	1.03	130.5	F	0.49	26.4	C	0.66	39.2	D	0.74	52.5	D
		T	0.43	18.2	B	0.62	21.7	C	0.71	24.0	C	0.65	22.3	C
	SB	TR	0.9	34.3	C	0.58	20.7	C	0.67	22.7	C	0.75	25.1	C
Intersection LOS				29.8	C		20.3	C		22.5	C		23.5	C
LENOX Avenue @ W 132ND ST	EB	LTR	0.77	43.5	D	0.80	44.4	D	0.73	39.0	D	0.63	34.6	C
	NB	TR	0.63	14.3	B	0.50	12.0	B	0.65	14.6	B	0..54	12.5	B
	SB	L	0.46	16.7	B	0.45	15.5	B	0.58	22.7	C	0.55	20.2	C
		T	0.7	15.6	B	0.36	10.3	B	0.49	11.7	B	0.44	11.2	B
Intersection LOS				18.3	B		17.5	B		17.2	B		15.2	B
LENOX Avenue @ W 135TH ST	EB	LTR	0.91	50.9	D	0.64	29.6	C	0.65	29.0	C	0.56	26.8	C
	WB	LTR	0.95	51.6	D	0.71	31.4	C	0.88	44.0	D	0.86	42.4	D
	NB	L	0.14	12.8	B	0.17	11.8	B	0.23	13.4	B	0.23	12.8	B
		TR	0.59	15.7	B	0.44	13.3	B	0.50	14.1	B	0.55	14.9	B
	SB	L	0.49	20.5	C	0.34	14.6	B	0.32	14.7	B	0.45	18.2	B
		TR	0.82	22.3	C	0.52	14.4	B	0.63	16.2	B	0.52	14.3	B
Intersection LOS				30.8	C		20.3	C		23.2	C		22.4	C

TABLE 4-1
TRAFFIC CAPACITY ANALYSIS FOR SIGNALIZED INTERSECTIONS
2003 EXISTING CONDITIONS

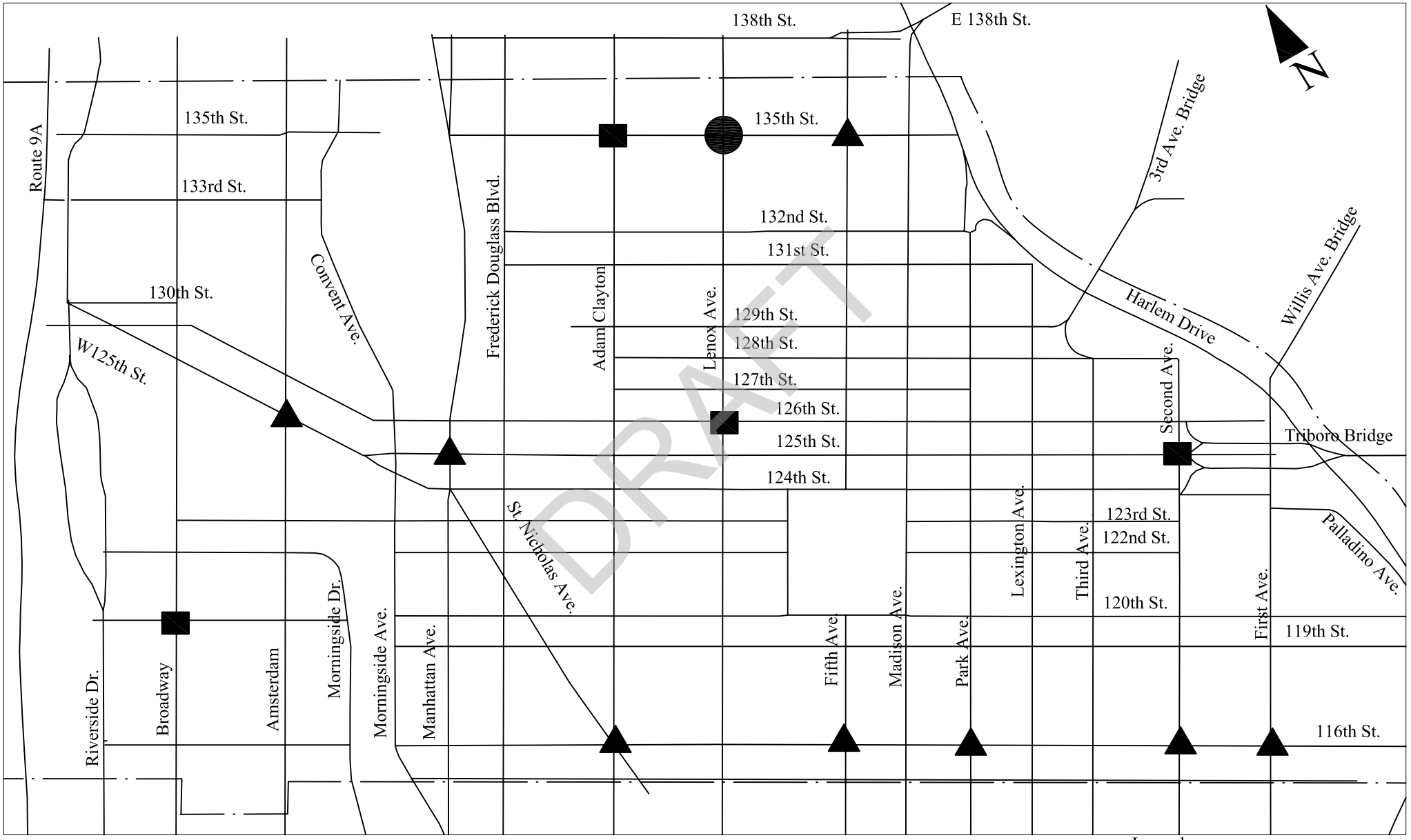
INTERSECTION	Lane Group		AM V/C	AM DELAY	AM LOS	MID V/C	MID DELAY	MID LOS	PM V/C	PM DELAY	PM LOS	SAT V/C	SAT DELAY	SAT LOS
	EB	LTR	0.86	41.8	D	0.69	31.8	C	0.70	31.9	C	0.65	29.8	C
7TH Avenue/ADAM	WB	LTR	1.02	69.9	E	0.71	31.8	C	0.66	29.7	C	0.64	29.2	C
CLAYTON @ W 116TH ST	NB	LTR	0.41	12.8	B	0.24	11.1	B	0.39	12.5	B	0.25	11.1	B
	SB	LTR	0.67	16.6	B	0.31	11.7	B	0.38	12.4	B	0.34	12.0	B
Intersection LOS				31.3	C		21.2	C		19.8	B		19.6	B
	WB	LTR	0.59	31.1	C	0.50	28.2	C	0.72	36.9	D	0.64	33.0	C
7TH Avenue/ADAM	NB	LT	0.37	12.3	B	0.29	11.5	B	0.52	14.0	B	0.32	11.7	B
CLAYTON @ W 119TH ST	SB	TR	0.64	15.8	B	0.24	11.0	B	0.31	11.6	B	0.29	11.4	B
Intersection LOS				16.4	B		13.8	B		16.4	B		14.9	B
	EB	LTR	0.39	21.6	C	0.72	34.0	C	0.77	34.1	C	0.79	37.4	D
Adam C. Powell, Jr	NB	TR	0.37	14.4	B	0.39	12.4	B	0.47	14.9	B	0.40	12.5	B
Boulevard @ 124th Street	SB	LT	0.68	19.2	B	0.43	13.0	B				0.37	12.4	B
		Defl							0.64	31.0	C			
		T							0.50	15.8	B			
Intersection LOS				17.9	B		17.1	B		20.1	C		17.9	B
	EB	LTR	0.53	20.3	C	0.74	26.8	C	0.81	30.7	C	0.71	25.4	C
	WB	LTR	0.55	20.7	C	0.62	22.6	C	0.68	24.2	C	0.61	21.8	C
7TH Avenue/ADAM	NB	TR	0.41	17.7	B				0.61	20.7	C			
CLAYTON @ W 125TH ST		LTR				0.57	20.2	C				0.56	19.9	B
	SB	TR	0.68	22.0	C				0.47	18.4	B			
		LTR				0.45	18.3	B				0.40	17.6	B
Intersection LOS				20.4	C		21.6	C		22.8	C		20.9	C
	EB	LTR	0.56	28.9	C	0.53	28.0	C	0.63	30.7	C	0.58	29.1	C
	WB	L	0.86	60.3	E	0.38	26.9	C	0.59	36.0	D	0.49	30.2	C
Adam C. Powell, Jr		TR	1.03	81.8	F	0.87	48.9	D	0.84	44.8	D	0.81	41.9	D
Boulevard @ 135th Street	NB	LTR	0.48	13.7	B	0.39	12.5	B	0.62	15.8	B	0.53	14.4	B
	SB	LTR	0.90	26.4	C	0.36	12.2	B	0.46	13.3	B	0.46	13.4	B
Intersection LOS				33.1	C		21.4	C		21.7	C		20.3	C
ST NICHOLAS Avenue @	EB	LTR	0.33	30.1	C	0.42	31.9	C	0.50	33.6	C	0.37	30.7	C
W 120TH ST	NB	TR	0.22	7.6	A	0.16	7.2	A	0.22	7.6	A	0.20	7.4	A
	SB	LT	0.43	10.1	B	0.38	9.7	A	0.41	10.0	A	0.36	9.2	A
Intersection LOS				12.8	B		14.7	B		15.6	B		13.3	B
	EB	LTR	0.60	21.8	C	0.58	16.1	B	0.60	21.7	C	0.65	17.7	B
	WB	LTR	0.65	23.3	C	0.60	16.5	B	0.67	23.9	C	0.71	19.5	B
8TH Avenue/FREDERICK	NB	TR	0.24	16.1	B				0.51	19.5	B			
DOUGLAS @ W 125TH ST		LTR				0.45	24.8	C				0.53	26.0	C
	SB	TR	0.53	19.9	B				0.56	20.3	C			
		LTR				0.61	28.3	C				0.68	30.1	C
Intersection LOS				20.9	C		20.5	C		21.3	C		22.6	C
	EB	LTR	0.73	20.6	C	0.73	20.7	C	0.80	24.0	C	0.65	17.5	B
	WB	L	0.23	12.6	B	0.14	11.2	B	0.13	11.0	B	0.17	11.5	B
MANHATTAN Avenue/ST		TR	0.78	25.7	C	0.76	24.3	C	0.78	25.4	C	0.70	20.8	C
@ W 125TH ST	NB	TR	0.53	27.6	C				0.80	38.6	D			
		LTR				0.66	32.7	C				0.70	33.9	C
	SB	TR	1.03	76.3	E				1.00	68.6	E			
		LTR				0.90	54.2	D				1.00	72.0	E
Intersection LOS				37.8	D		29.9	C		37.4	D		33.0	C
MANHATTAN Avenue @	EB	LTR	0.68	26.1	C	0.51	21.4	C	0.87	39.0	D	0.61	24.1	C
ST NICHOLAS Avenue/124	NB	LTR	0.32	17.4	B	0.33	17.7	B	0.55	21.7	C	0.39	18.5	B
St	SB	LT	0.85	35.5	D	0.48	20.1	C	0.80	31.8	C	0.56	22.0	C
Intersection LOS				29.1	C		19.9	B		31.8	C		21.9	C
	EB	LTR	0.51	14.3	B	0.48	13.9	B	0.47	13.7	B	0.48	13.9	B
	WB	LTR	0.49	14.2	B	0.39	12.9	B	0.50	14.3	B	0.43	13.3	B
MORNINGSIDE/COVENA	NB	Defl	0.64	36.6	D	0.40	27.0	C				0.56	32.5	C
NT Avenue @ W 125TH ST		TR	0.26	22.4	C	0.20	21.6	C				0.34	23.3	C
		LTR							0.52	26.1	C			
	SB	LTR	0.49	25.9	C	0.41	24.3	C	0.43	24.7	C	0.42	24.4	C
Intersection LOS				19.0	B		16.8	B		18.0	B		17.9	B

TABLE 4-1
TRAFFIC CAPACITY ANALYSIS FOR SIGNALIZED INTERSECTIONS
2003 EXISTING CONDITIONS

INTERSECTION	Lane Group		AM V/C	AM DELAY	AM LOS	MID V/C	MID DELAY	MID LOS	PM V/C	PM DELAY	PM LOS	SAT V/C	SAT DELAY	SAT LOS
Morningside Drive @116th Street	EB	LR	0.23	27.1	C	0.18	26.0	C	0.23	26.7	C	0.09	24.7	C
	NB	LT	0.23	8.7	A	0.17	8.1	A	0.24	8.7	A	0.12	7.7	A
	SB	TR	0.48	11.6	B	0.19	8.3	A	0.31	9.3	A	0.24	8.7	A
Intersection LOS				12.5	B		11.1	B		11.6	B		9.7	A
AMSTERDAM Avenue @ W 125TH ST	EB	L	0.52	37.2	D	0.60	40.5	D	0.63	44.0	D	0.36	29.7	C
		TR	0.87	41.2	D	0.78	34.6	C	0.86	39.0	D	0.87	39.9	D
	WB	L	0.80	72.8	E	0.56	42.5	D	0.80	76.3	E	1.01	123.2	F
		TR	0.70	31.6	C	0.63	29.3	C	0.68	30.7	C	0.68	30.8	C
	NB	Defl	0.31	13.8	B							0.35	13.4	B
		TR	0.68	27.2	C							0.64	26.0	C
		LTR				0.65	25.9	C	0.85	33.8	C			
	SB	Defl	0.64	26.7	C	0.64	28.1	C	0.73	38.5	D	0.52	20.1	C
		TR	0.59	25.0	C	0.86	44.9	D	0.79	37.3	D	0.57	26.7	C
Intersection LOS				32.1	C		32.8	C		36.8	D		33.5	D
Broadway @ 120th Street	EB	LTR	0.34	26.6	C	0.22	25.1	C	0.37	27.0	C	0.37	27.3	C
	WB	LTR	1.03	95.6	F	0.57	36.2	D	0.96	78.3	E	0.52	33.4	C
	NB	LTR	0.22	8.5	A	0.26	8.8	A	0.47	11.0	B	0.20	8.4	A
	SB	LTR	0.44	10.6	B	0.37	9.9	A	0.42	10.4	B	0.43	10.4	B
Intersection LOS				24.3	C		13.2	B		21.2	C		13.8	B
BROADWAY @ W 125TH ST	EB	L	0.31	26.1	C	0.39	27.9	C	0.55	36.6	D	0.51	34.1	C
		TR	0.54	26.2	C	0.61	28.0	C	0.70	30.4	C	0.70	30.6	C
	WB	L	0.41	28.4	C	0.27	24.9	C	0.39	29.4	C	0.37	28.7	C
		TR	0.64	28.7	C	0.53	26.0	C	0.66	29.2	C	0.63	28.3	C
	NB	L	0.70	42.1	D	0.84	54.2	D	0.91	62.6	E	0.91	63.9	E
		LTR	0.51	31.6	C	0.66	34.6	C	0.73	36.3	D	0.49	31.1	C
	SB	L	0.44	32.2	C	0.52	34.2	C	0.59	36.1	D	0.54	34.6	C
		LTR	0.77	40.6	D	0.55	33.3	C	0.62	35.0	C	0.82	43.4	D
Intersection LOS				32.6	C		33.4	C		36.4	D		36.8	D
RIVERSIDE DRIVE/ 12 Ave @ W 125TH ST	EB	LTR	0.25	13.4	B	0.29	13.8	B	0.36	14.6	B	0.52	17.5	B
	WB	L	0.12	12.6	B	0.14	12.9	B	0.18	13.6	B	0.17	13.3	B
		TR	0.69	20.4	C	0.78	23.7	C	0.93	35.6	D	0.83	26.0	C
	NB	LTR	0.28	20.0	C	0.20	19.0	B	0.30	20.4	C	0.15	18.4	B
	SB	LT	0.27	20.0	B	0.07	17.5	B	0.17	18.9	B	0.20	19.1	B
Intersection LOS				18.7	B		20.3	C		27.7	C		22.6	C

Approach with mid LOS D or worse

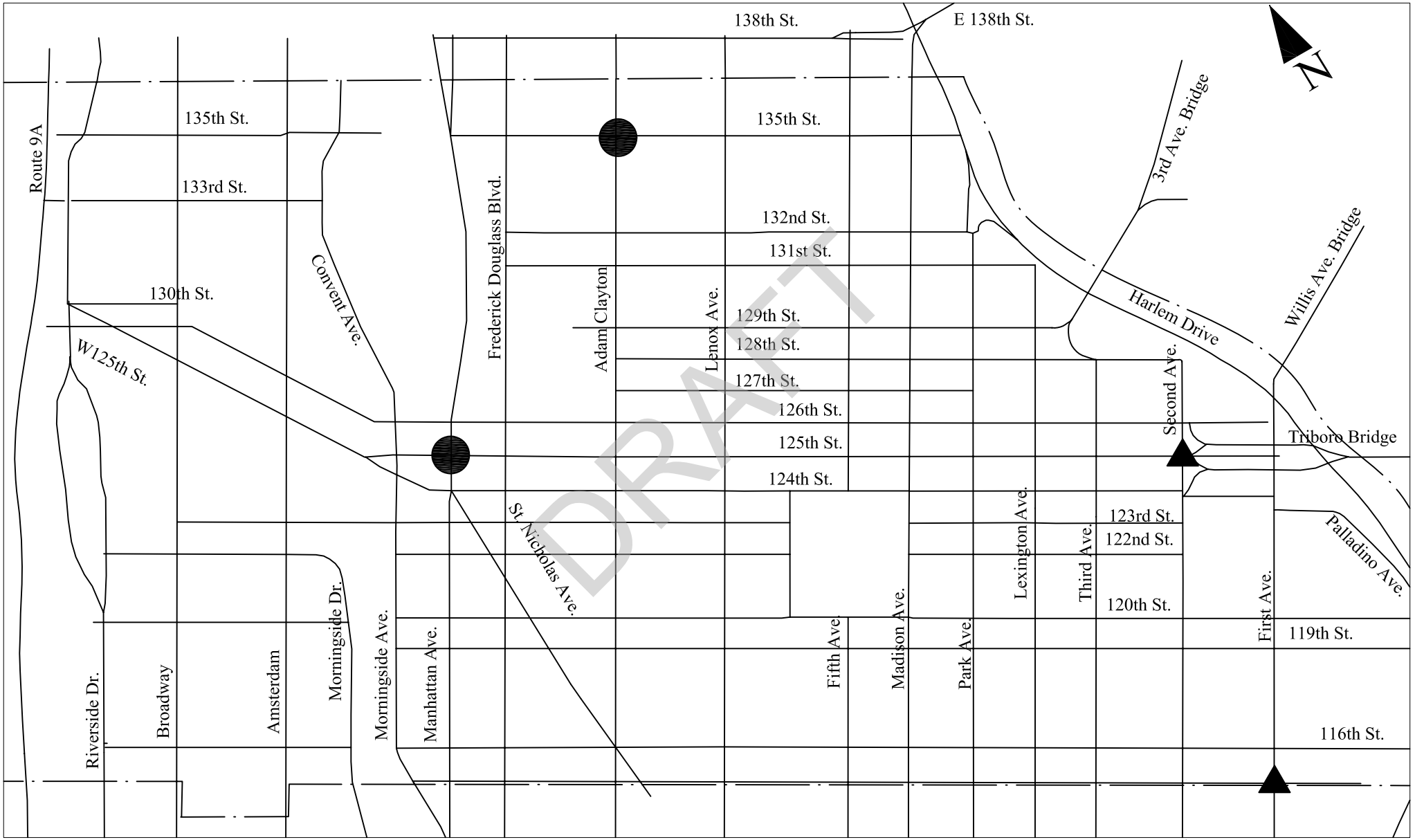
Exhibit 4-8 (Intersections with LOS D, E, and F (AM Peak Hour)



Legend:
- Study Area Boundary
- LOS D (Delay>45 sec)
- LOS E
- LOS F

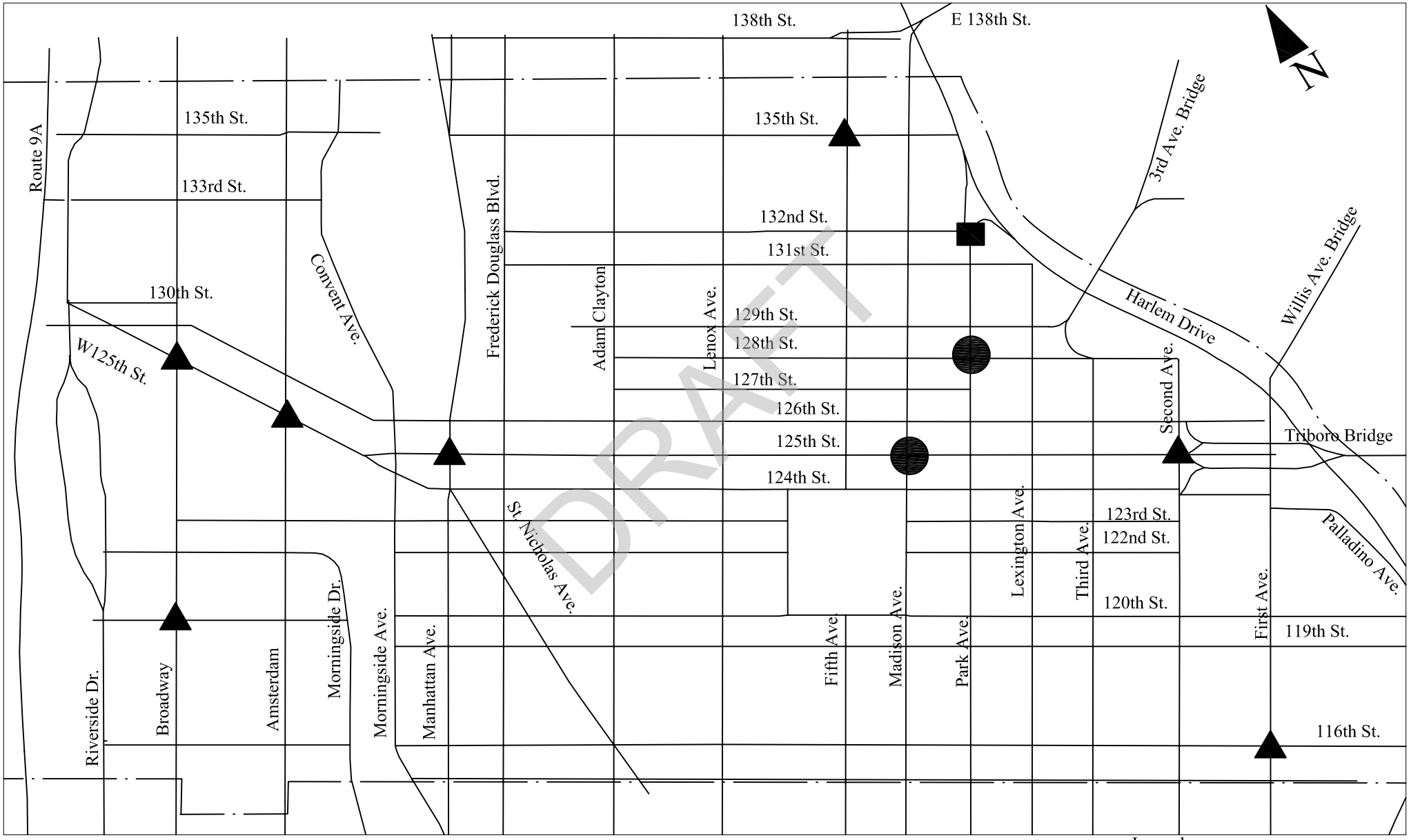
HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

Exhibit 4-9 (Intersections with LOS D, E, and F (MD Peak Hour)



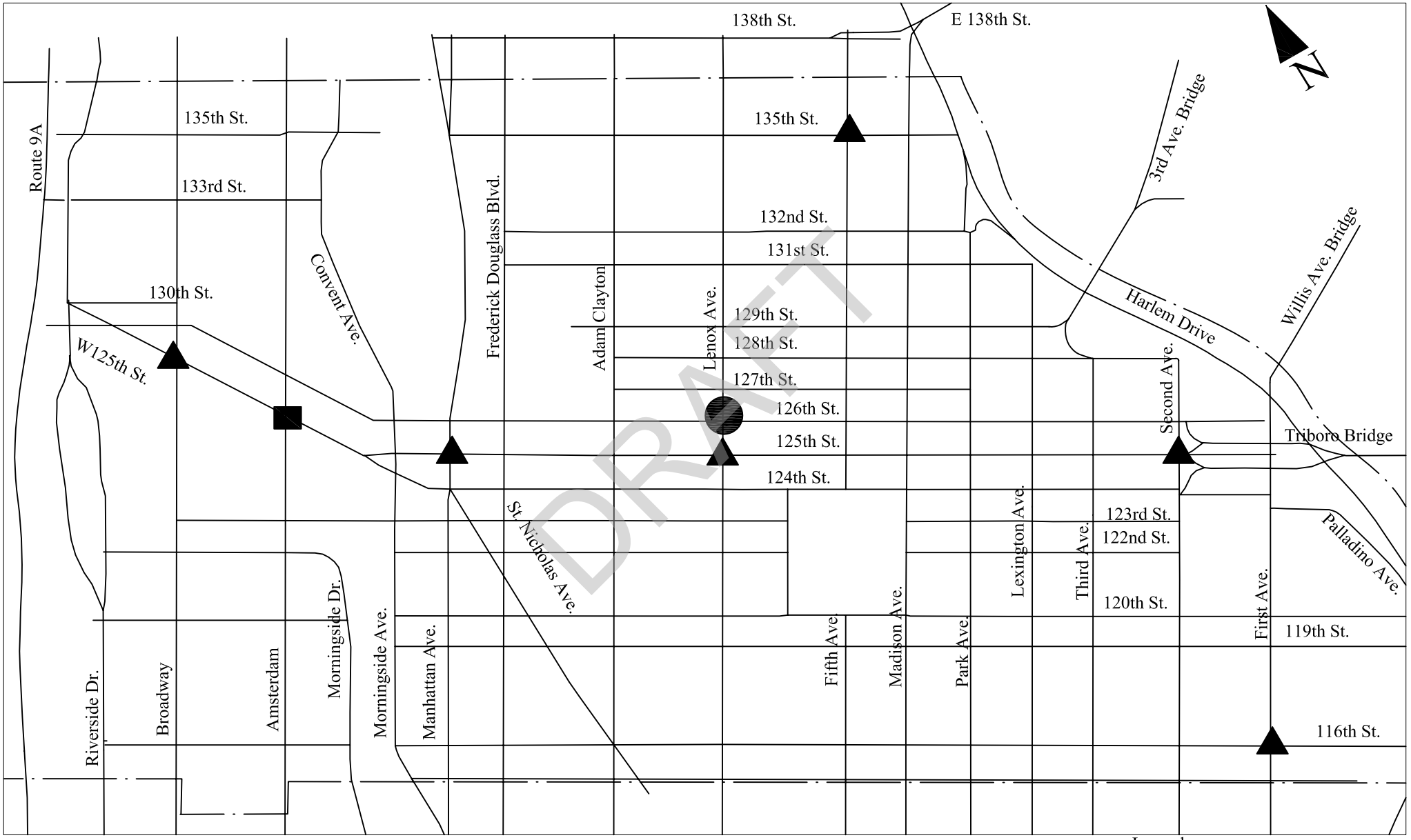
HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

Exhibit 4-10 (Intersections with LOS D, E, and F (PM Peak Hour)



HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

Exhibit 4-11 (Intersections with LOS D, E, and F (Sat Midday Peak Hour)



Legend:
- Study Area Boundary
- LOS D (Delay>45 sec)
- LOS E
- LOS F

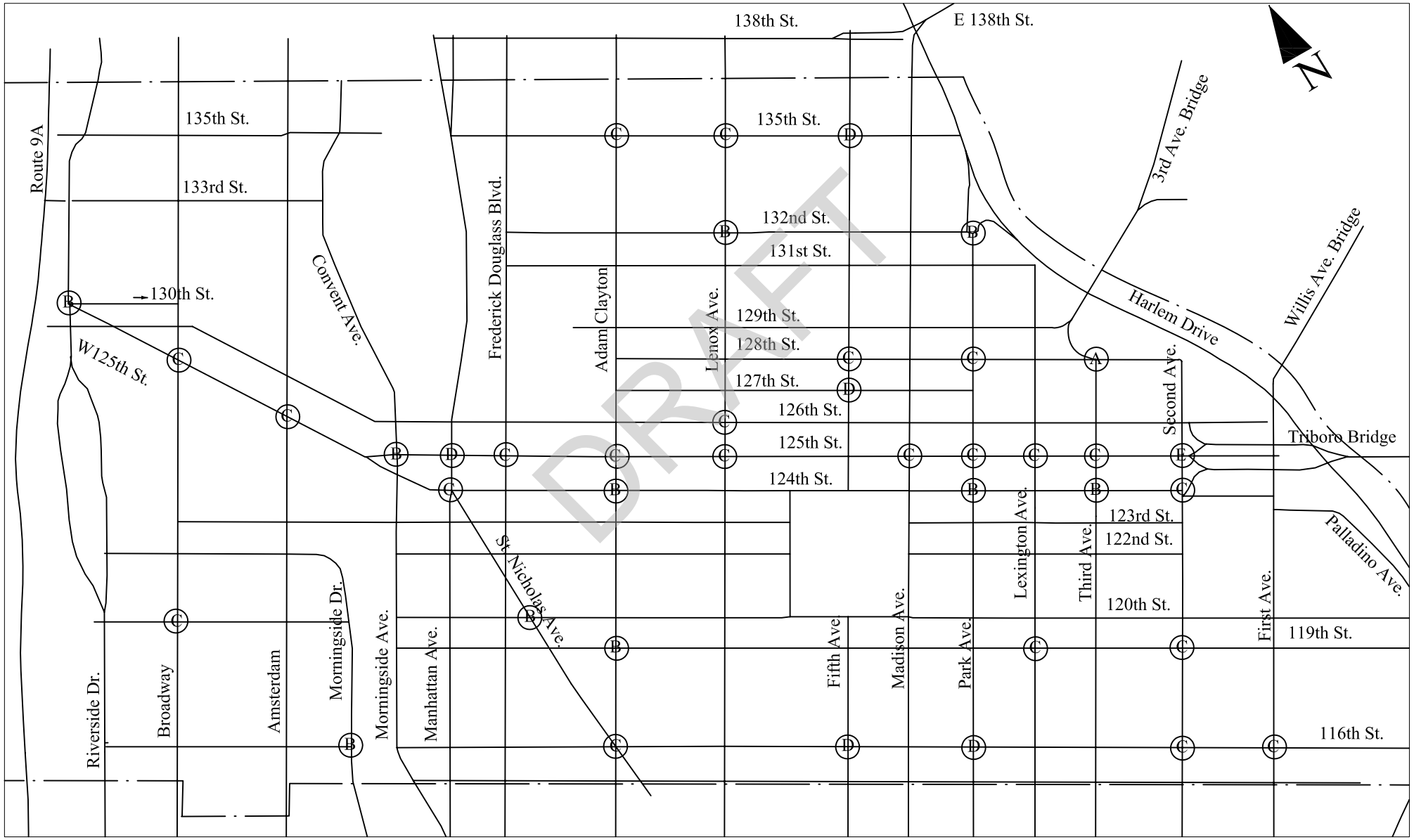
HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

Table 4-2 shows the 2003 Existing Conditions v/c ratios, delays, and level of service (LOS) for AM, midday, PM, and Saturday midday peak hours for the unsignalized intersection of 3rd Avenue @ East 128th Street. The analysis showed the intersection operates at an acceptable level of service with LOS B or better during the AM, midday, PM, and Saturday midday peak hours. Exhibits 4-12, 4-13, 4-14, and 4-15 show the overall LOS for all of the intersections in the study area.

Table 4-2: LOS Summary for 3rd Avenue @ E 128th St

INTERSECTION	Lane Group		AM			MD		
			V/C	DELAY	LOS	V/C	DELAY	LOS
3rd Avenue @ 128th Street	EB (T)	Major	-	-	-	-	-	-
	NB (RT)	Minor	0.06	9.70	A	0.12	10.20	B
	Lane Group		**PM**			**SAT**		
			V/C	**DELAY**	**LOS**	**V/C**	**DELAY**	**LOS**
	EB (T)	Major	-	-	-	-	-	-
	NB (RT)	Minor	0.17	12.40	B	0.11	9.90	A

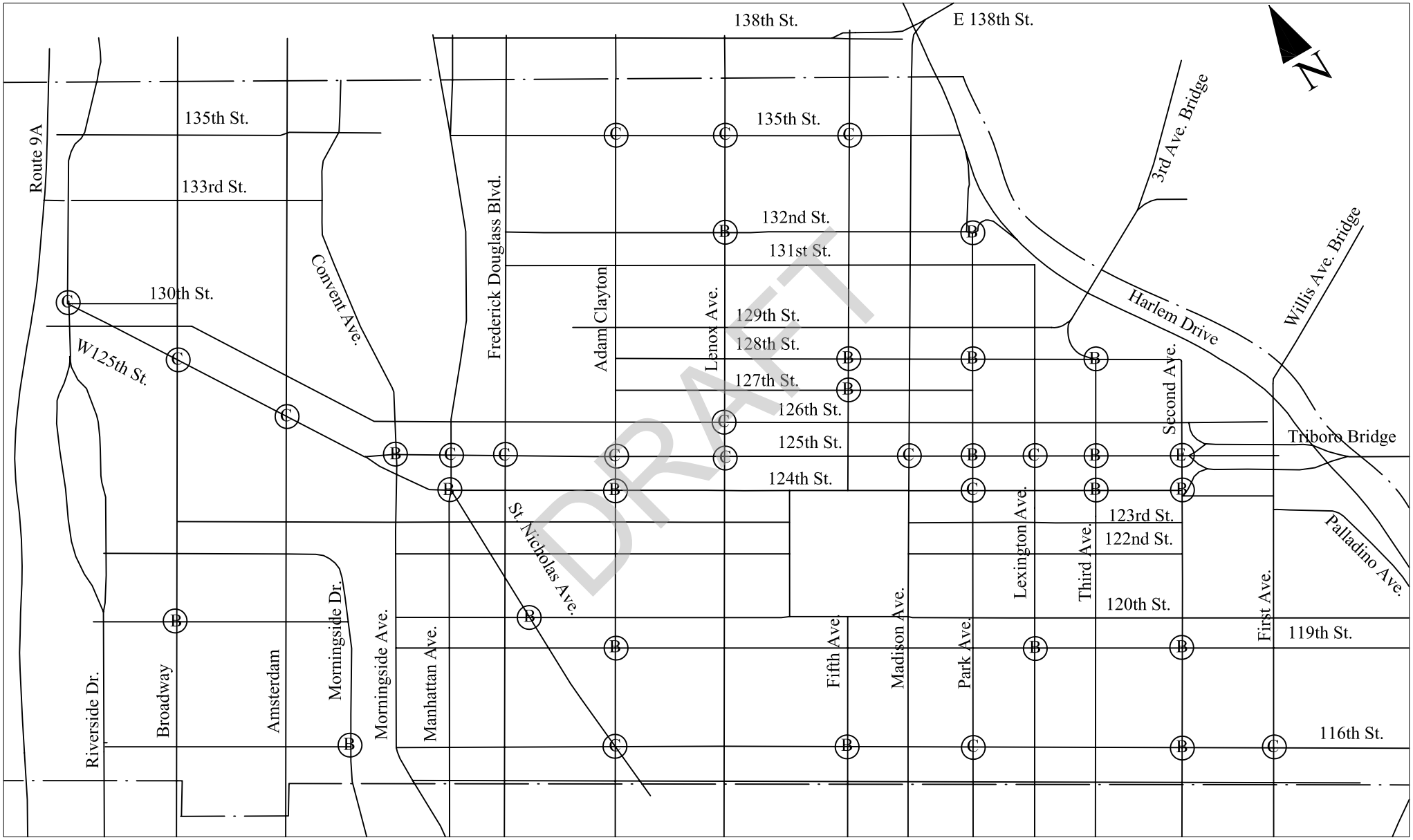
Exhibit 4-12 (Overall LOS-AMPeak Hour)



Study Area Boundary
LOS AM PEAK
7:45am-8:45am

HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

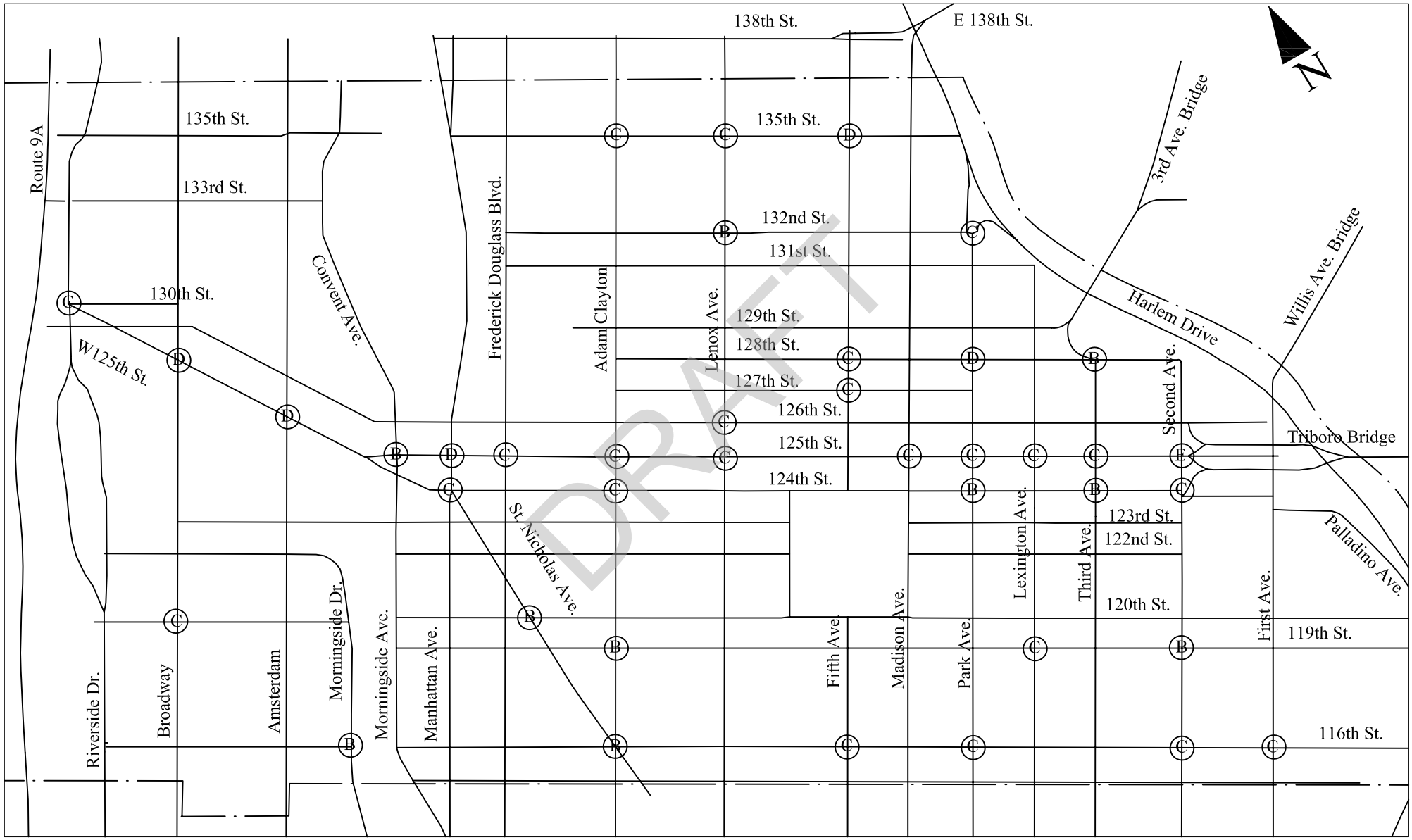
Exhibit 4-13 (Overall LOS-Midday Peak Hour)



Study Area Boundary
LOS MD PEAK
12:15pm-1:15pm

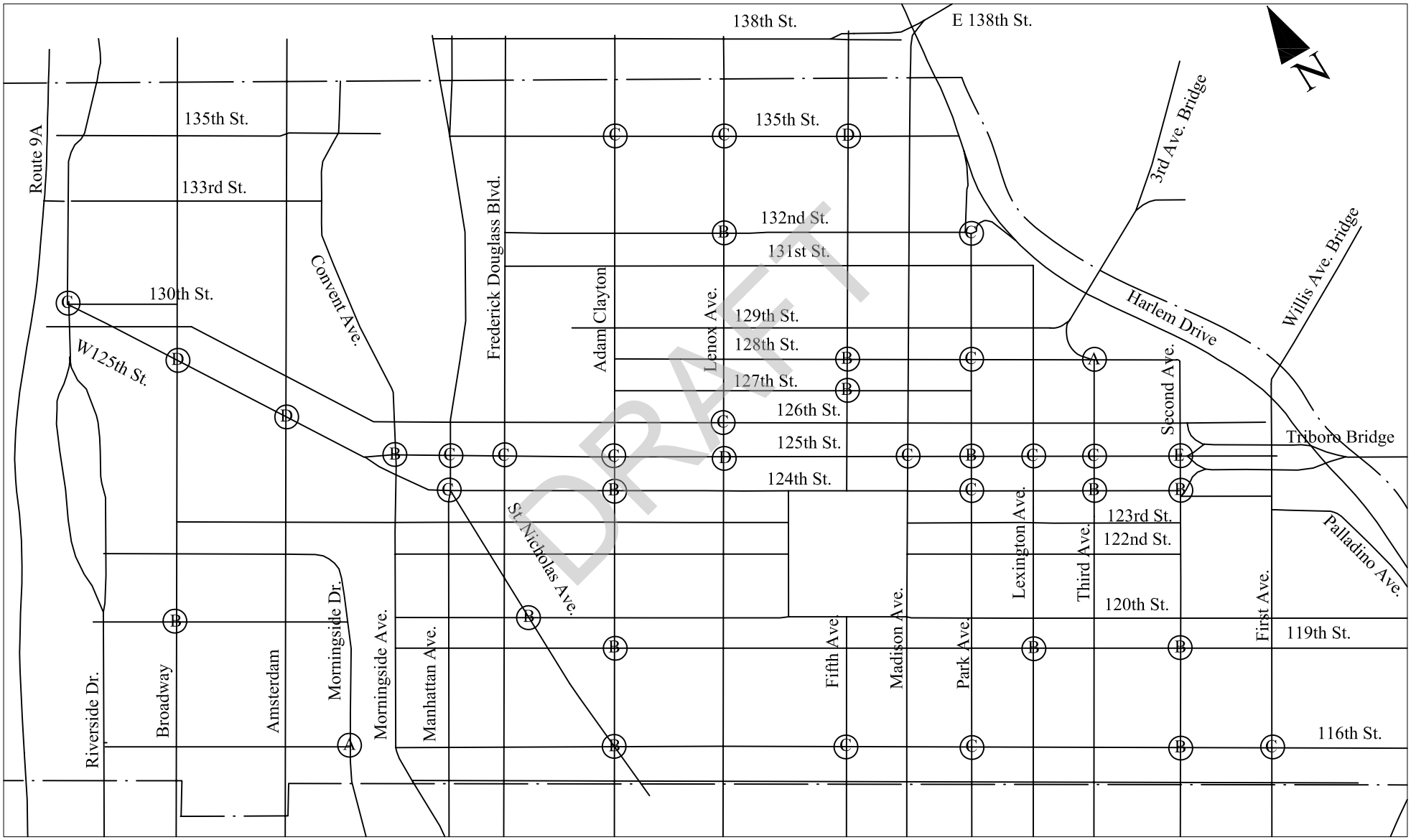
HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

Exhibit 4-14 (Overall LOS-PM Peak Hour)



HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

Exhibit 4-15 (Overall LOS-Sat Midday Peak Hour)



HARLEM/MORNINGSIDE HEIGHTS TRANSPORTATION STUDY

4.7 Vehicle Speeds

Congestion occurs on several roadways in the study area, particularly during the peak hours. The 125th Street corridor experiences congestion almost through out the day. Congestion is attributed to several factors including bus/car/truck/pedestrian conflicts, and illegal curbside and double parking and standing which reduce roadway capacity and result in delays and reduced travel speeds.

To measure peak hour travel time, vehicle speeds in the study area and identify locations with traffic delay, speed and travel time runs were conducted. The "floating car" method (a technique whereby a field vehicle travels at speeds under prevailing traffic conditions) was used to obtain peak hour travel speeds on the following corridors:

1. 125th Street from Marginal Street to 1st Avenue (east and westbound)
2. Third Avenue from East 116th Street to East 128th Street (northbound)
3. Lenox Avenue from West 116th Street to West 135th Street (north and southbound)
4. St. Nicholas Avenue from West 116th Street to West 135th Street (north and southbound)
5. Broadway from West 116th Street to West 135th St (north and southbound)

Travel time runs were conducted for each peak period for three consecutive weekdays, and a Saturday for the weekend peak hour, concurrently with traffic volume data collection. Three travel runs were performed for each corridor during each peak travel period.

Travel speeds throughout the study area for the various peak periods range from 10 mph to 27 mph approximately. The corridor with the lowest travel speed is 125th Street, ranging from 10 mph to 14 mph during the four peak hours. Exhibit 4-16 shows the speed run corridors and Table 4-3 and 4-4 display a summary of average link and corridor travel speeds.

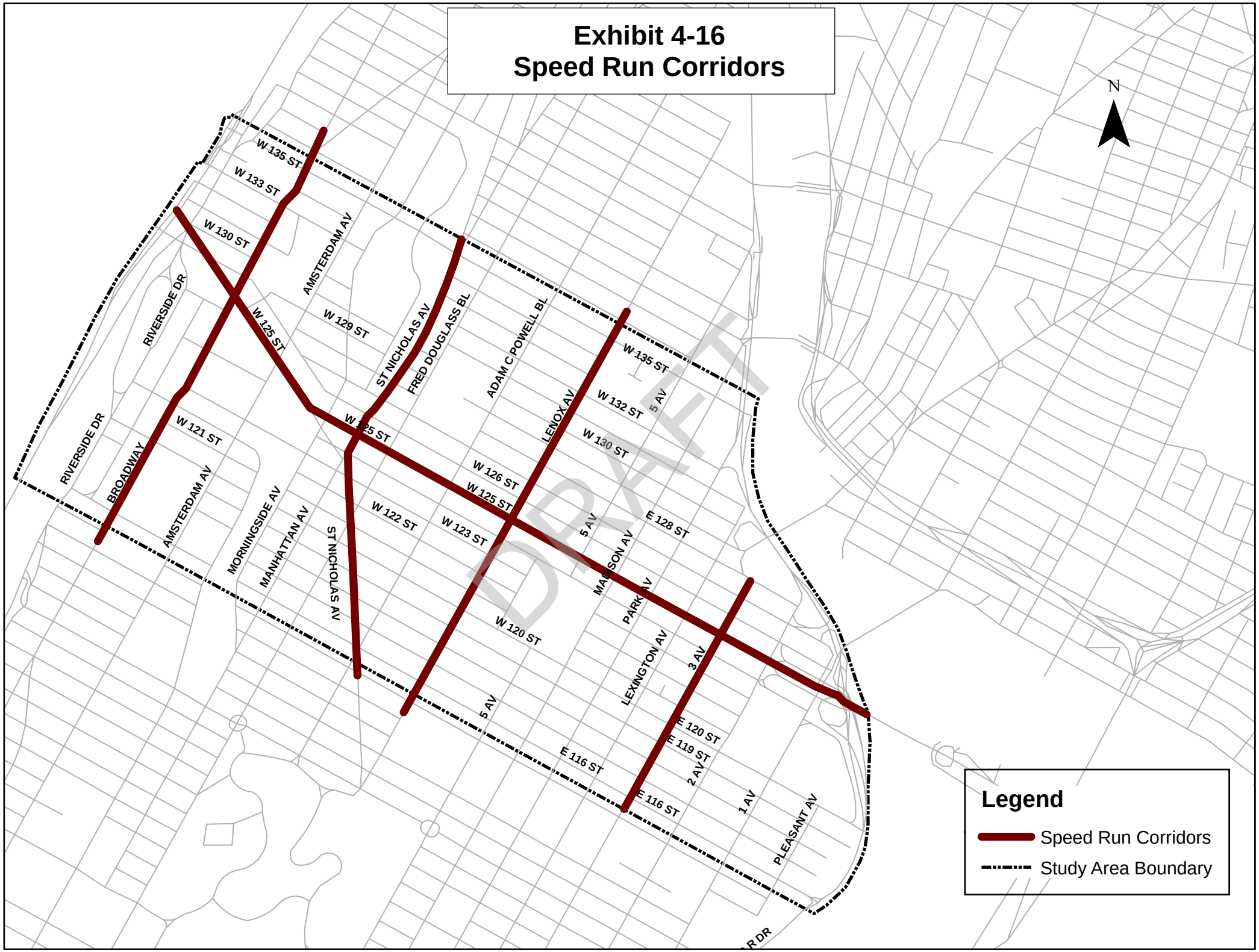


Exhibit 4-16
Speed Run Corridors
N
W 135 ST
W 133 ST
W 130 ST
W 129 ST
W 125 ST
W 121 ST
W 122 ST
W 123 ST
W 126 ST
W 132 ST
W 130 ST
W 120 ST
E 128 ST
E 120 ST
E 119 ST
E 116 ST
AMSTERDAM AV
RIVERSIDE DR
BROADWAY
MORNINGSIDE AV
MANHATTAN AV
ST NICHOLAS AV
FRED DOUGLASS BL
ADAM C POWELL BL
LENOX AV
5 AV
MADISON AV
PARK AV
LEXINGTON AV
3 AV
2 AV
1 AV
PLEASANT AV
DRAFT
Legend
Speed Run Corridors
Study Area Boundary

Table 4-3
CORRIDOR TRAVEL SPEEDS

125th Street-Corridor 1
(from Marginal Street to 1st Avenue)

Direction-Eastbound		Speed (MPH)			
Links	**Dist. (ft.)**	**AM**	**MD**	**PM**	**Sat MD**
Marginal Street to Riverside Drive	258	4.8	6.4	5.1	17.8
Riverside Dr to Broadway	1,031	25.8	12.5	20.2	27.8
Broadway to Old Broadway	232	10.0	22.1	17.1	17.0
Old Broadway to Amsterdam Avenue	779	10.0	7.8	13.7	14.3
Amsterdan Avenue to Morningside Avenue	983	6.6	14.1	21.5	11.4
Morningside Avenue to St. Nicholas Avenue	450	11.7	6.9	4.6	11.8
St Nicholas Avenue to Fr. Douglass Blvd	450	6.3	4.3	7.9	2.8
Fr Douglass Blvd to Adam C. Powell	899	22.4	12.3	4.0	4.0
Adam C Powell to Lenox Avenue	901	12.9	7.8	10.3	4.8
Lenox Avennue to 5th Avenue	1,019	8.3	5.8	7.4	3.4
5th Avenue to Madison Avenue	511	7.4	10.6	7.8	6.6
Madison Avenue to Park Avenue	510	16.4	21.9	20.6	18.5
Park Avenue to Lexington Avenue	512	8.2	3.4	3.6	9.5
Lexington Avenue to 3rd Avenue	507	10.4	17.2	2.8	21.8
3rd Avenue to 2nd Avenue	707	3.6	3.7	2.6	4.1
2nd Avenue to 1st Avenue	757	6.3	6.9	22.3	29.6
Tot Dist & Eastbound Average Travel Speed	**10,506**	**10.6**	**10.2**	**10.7**	**12.8**

Direction-Westbound		Speed (MPH)			
Links	**Dist. (ft.)**	**AM**	**MD**	**PM**	**Sat MD**
1st Avenue to 2nd Avenue	757	8.1	7.0	8.9	12.7
2nd Avenue to 3rd Avenue	707	15.7	17.4	24.8	6.8
3rd Avenue to Lexington Avenue	507	3.2	3.9	1.5	13.0
Lexington Avenue to Park Avenue	512	18.5	5.3	26.0	10.7
Park Avenue to Madison Avenue	510	6.0	14.1	5.3	10.2
Madison Avenue to 5th Avenue	511	8.3	7.1	6.2	4.1
5th Avenue to Lenox Avenue	1,019	12.9	3.4	22.2	4.6
Lenox Avenue to Adam C. Powell	901	17.5	12.4	8.0	16.4
Adam C Powell to Fr. Douglass Blvd	899	11.6	7.5	6.3	11.3
Fr Douglass Blvd to St. Nicholas Avenue	450	12.1	6.5	9.1	5.8
St Nicholas Avenue to Morningside Avenue	450	16.4	10.8	19.5	20.6
Morningside Avenue to Amsterdam Avenue	983	15.1	10.8	13.3	8.8
Amsterdan Avenue to Old Broadway	779	13.7	13.3	13.2	15.6
Old Broadway to Broadway	232	16.5	19.3	23.2	18.0
Broadway to Riverside Rd	1,031	25.2	33.7	15.8	24.4
Riverside Dr to Marginal Street	258	4.5	7.1	14.3	13.2
Tot Dist & Westbound Average Travel Speed	**10,506**	**12.8**	**11.2**	**13.6**	**12.3**

Table 4-3
CORRIDOR TRAVEL SPEEDS

3rd Avenue-Corridor 2
(from E 116th Street to E 128th Street)

Direction-Norhtbound	Speed (MPH)				
Links	Dist. (ft.)	AM	MD	PM	Sat MD
E 116 ST to E 117 ST	262	12.5	5.8	9.0	6.0
E 117 ST to E 118 ST	262	17.1	16.4	17.9	18.1
E 118 ST to E 119 ST	262	33.6	21.8	27.7	19.9
E 119 ST to E 120 ST	262	15.6	19.4	12.9	23.1
E 120 ST to E 121 ST	262	12.9	20.9	13.4	24.9
E 121 ST to E 122 ST	262	19.9	24.5	9.0	17.4
E 122 ST to E 123 ST	262	17.1	26.5	11.4	25.6
E 123 ST to E 124 ST	262	14.9	26.5	14.9	20.3
E 124 ST to E 125 ST	282	14.3	24.4	25.7	25.7
E 125 ST to E 126 ST	280	20.2	22.9	27.9	27..4
E 126 ST to E 127 ST	260	9.4	20.6	29.6	20.0
E 127 ST to E 128 ST	260	14.8	19.8	27.5	20.1
Tot Dist & Northbound Average Travel Speed	**3,176**	**16.8**	**20.8**	**18.9**	**18.4**

Table 4-3
CORRIDOR TRAVEL SPEEDS

Lenox Avenue-Corridor 3
(from W 116th Street to W 135th Street)

Direction-Northbound	Speed (MPH)				
Links	Dist. (ft.)	AM	MD	PM	Sat MD
W 116 St to W 117 ST	261.83	15.8	15.5	14.7	17.9
W 117 ST to W 118 ST	261.84	18.8	24.9	27.0	23.5
W 118 ST to W 119 ST	261.83	29.0	25.6	33.8	26.0
W 119 ST to W 120 ST	261.84	31.9	14.9	29.9	25.9
W 120 ST to W 121 ST	261.83	30.4	24.9	28.4	31.9
W 121 ST to W 122 ST	261.83	12.8	27.7	31.9	23.5
W 122 ST to W 123 ST	261.84	23.0	30.7	11.6	29.4
W 123 ST to W 124 ST	261.83	25.4	17.6	20.6	15..2
W 124 ST to W 125 ST	281.83	19.9	3.2	8.5	9.5
W 125 ST to W 126 ST	279.83	25.1	21.5	9.9	11.3
W 126 ST to W 127 ST	259.83	21.4	20.7	15.5	19.4
W 127 ST to W 128 ST	259.84	18.0	14.2	19.5	24.3
W 128 ST to W 129 ST	259.83	33.2	32.6	24.9	24.9
W 129 ST to W 130 ST	259.84	31.6	16.6	17.6	33.6
W 130 ST to W 131 ST	259.84	33.6	27.5	21.9	23.1
W 131 ST to W 132 ST	259.83	26.8	27.5	17.8	24.9
W 132 ST to W 133 ST	259.84	33.6	35.6	17.1	23.9
W 133 ST to W 134 ST	259.84	19.6	32.6	27.2	11.5
W 134 ST to W 135 ST	259.83	17.1	11.5	17.2	15.4
Tot Dist & Northbound Average Travel Speed	**4,995**	**24.6**	**22.4**	**20.8**	**21**

Direction-Southbound	Speed (MPH)				
Links	Dist. (ft.)	AM	MD	PM	Sat MD
W 135 ST to W 134 ST	259.83	13.7	22.2	20.0	13.2
W 134 ST to W 133 ST	259.84	25.2	25.9	23.8	23.8
W 133 ST to W 132 ST	259.84	28.2	32.6	29.6	14.7
W 132 ST to W 131 ST	259.83	35.6	32.6	19.8	26.0
W 131 ST to W 130 ST	259.84	12.5	16.8	14.6	25.9
W 130 ST to W 129 ST	259.84	13.2	14.4	20.1	16.5
W 129 ST to W 128 ST	259.83	25.8	25.9	17.9	23.8
W 128 ST to W 127 ST	259.84	27.2	20.1	9.5	23.8
W 127 ST to W 126 ST	259.83	18.2	29.6	4.5	12.8
W 126 ST to W 125 ST	279.83	23.1	17.5	9.7	21.0
W 125 ST to W 124 ST	281.83	27.9	29.9	23.4	20.2
W 124 ST to W 123 ST	261.83	30.4	35.8	27.7	17.4
W 123 ST to W 122 ST	261.84	23.3	35.8	32.9	13.2
W 122 ST to W 121 ST	261.83	20.9	35.8	26.1	13.3
W 121 ST to W 120 ST	261.83	26.0	35.8	32.9	26.1
W 120 ST to W 119 ST	261.84	25.1	17.3	24.5	25.6
W 119 ST to W 118 ST	261.83	29.3	30.7	25.4	27.7
W 118 ST to W 117 ST	261.84	21.9	32.9	30.7	35.2
W 117 ST to W 116 ST	261.83	22.0	13.3	27.9	20.9
Tot Dist & Southbound Average Travel Speed	**4,995**	**23.6**	**26.6**	**22.2**	**21.1**

Table 4-3
CORRIDOR TRAVEL SPEEDS

St Nicholas Avenue-Corridor 4
(from W 116th to W 135th Street)

Direction-Northbound		Speed (MPH)			
Links	Dist. (ft.)	AM	MD	PM	Sat MD
W 117 ST to W 118 ST	261.83	11.3	13.8	8.2	9.8
W 118 ST to W 119 ST	261.84	22.0	22.4	17.5	21.6
W 119 ST to W 120 ST	261.83	22.0	23.5	21.6	21.1
W 120 ST to W 121 ST	261.84	3.3	1.6	3.1	17.6
W 121 ST to W 122 ST	261.83	10.1	22.0	15.6	21.0
W 122 ST to W 123 ST	261.83	19.2	20.9	15.5	22.6
W 123 ST to W 124 ST	261.84	10.9	3.4	2.6	3.9
W 124ST to W 125 ST	261.83	8.5	10.7	7.7	9.7
W 125 ST to W 126 ST	281.83	20.2	22.6	13.0	16.1
W 126 ST to W 127 ST	279.83	26.8	26.8	24.3	27.7
W 127 ST to W 128 ST	259.83	23.3	24.3	28.2	30.2
W 128 ST to W 129 ST	259.84	24.9	15.5	29.1	26.8
W 129 ST to W 130 ST	259.83	31.1	23.1	33.6	23.3
W 130 ST to W 133 ST	979.33	26.0	26.4	23.8	15.7
W 133 ST to W 134 ST	259.83	20.9	28.2	23.1	25.4
W 134 ST to W 135 ST	259.84	19.8	25.4	21.8	19.7
Tot Dist & Northbound Average Travel Speed	**4,935**	**18.8**	**19.4**	**18.1**	**19.5**

Direction-Southbound		Speed (MPH)			
Links	Dist. (ft.)	AM	MD	PM	Sat MD
W 135 ST to W 134 ST	259.83	9.9	12.9	6.4	8.4
W 134 ST to W 133 ST	259.84	20.8	25.4	23.3	23.3
W 133 ST to W 130 ST	979.33	39.2	40.2	36.7	32.9
W 130 ST to W 129 ST	259.84	33.3	33.6	36.6	29.1
W 129 ST to W 128 ST	259.84	22.5	31.6	25.8	33.2
W 128 ST to W 127 ST	259.83	12.4	24.9	17.1	24.6
W 127 ST to W 126 ST	259.84	13.2	7.0	9.8	6.5
W 126 ST to W 125 ST	259.83	18.3	18.6	15.7	11.6
W 125 ST to W 124 ST	279.83	17.8	22.3	18.8	20.9
W 124 ST to W 123 ST	281.83	15.1	19.8	22.4	20.4
W 123 ST to W 122 ST	261.83	13.2	22.0	15.1	26.0
W 122 ST to W 121 ST	261.84	4.7	1.6	4.3	11.0
W 121 ST to W 120 ST	261.83	7.0	9.8	9.4	17.5
W 120 ST to W 119 ST	261.83	17.4	13.4	18.4	24.5
W 119 ST to W 118 ST	261.84	18.3	20.7	19.4	20.4
W 118 ST to W 117 ST	261.83	22.6	14.9	23.5	17.6
W 117 ST to W 116 ST	261.83	14.9	9.1	11.3	12.2
Tot Dist & Southbound Average Travel Speed	**5,193**	**17.6**	**19.3**	**18.5**	**20.0**

Table 4-3
CORRIDOR TRAVEL SPEEDS

Broadway-Corridor 5
(from W 116th Street to W 135th Street)

Direction-Northbound	Speed (MPH)				
Links	Dist. (ft.)	AM	MD	PM	Sat MD
W 116 ST to W 117 ST	276.83	8.7	9.3	7.8	21.5
W 117 ST to W 118 ST	276.83	26.3	30.1	30.1	44.2
W 118 ST to W 119 ST	276.83	30.1	26.6	27.4	24.8
W 119 ST to W 120 ST	276.83	28.7	37.4	28.9	33.2
W 120 ST to W 121 ST	276.83	28.6	22.2	27.4	26.7
W 121 ST to W 122 ST	261.83	25.9	20.6	27.4	28.4
W 122 ST to Lasalle ST	805.5	9.8	13.0	10.6	24.2
Lasalle ST to Tiemann Pl	559.67	8.1	15.9	12.5	17.4
Tiemann Pl to W 125 ST	275.21	3.9	1.0	4.2	1.6
W 125 ST to W 126 ST	300.25	4.3	10.2	2.4	3.9
W 126 ST to W 130 ST	259.83	19.8	23.8	19.4	26.8
W 130 ST to W 131 ST	259.83	22.4	17.1	23.5	28.2
W 131 ST to W 132 ST	259.83	21.0	23.5	17.4	23.3
W 132 ST to W 133 ST	259.83	20.0	21.4	18.8	31.6
W 133 ST to W 135 ST	259.83	9.1	9.8	6.8	12.5
Tot Dist & Northbound Average Travel Speed	**5,186**	**18.1**	**19.5**	**17.8**	**17.8**

Direction-Southbound	Speed (MPH)				
Links	Dist. (ft.)	AM	MD	PM	Sat MD
W 135 ST to W 133 ST	259.83	10.6	10.4	5.4	6.9
W 133 ST to W 132 ST	259.83	26.9	23.9	20.6	32.1
W 132 ST to W 131 ST	259.83	26.8	22.9	23.5	27.2
W 131 ST to W 130 ST	259.83	25.4	12.0	22.3	28.2
W 130 ST to W 129 ST	259.83	4.4	4.9	9.1	3.1
W 129 ST to W 125 ST	300.25	18.8	6.4	7.9	23.5
W 125 ST to Tiemann Pl	275.21	14.7	19.5	18.8	19.7
Tiemann Pl to Lasalle ST	559.67	19.2	21.1	19.9	22.2
Lasalle ST to W 122 ST	805.5	13.0	7.7	8.8	17.3
W 122 ST to W 121 ST	261.83	13.4	20.1	22.6	17.4
W 121 ST to W 120 ST	276.83	26.3	21.9	21.1	25.9
W 120 ST to W 119 ST	276.83	34.3	24.8	28.6	36.8
W 119 ST to W 118 ST	276.83	24.8	22.8	19.8	35.8
W 118 ST to W 117 ST	276.83	26.6	33.7	33.7	37.4
W 117 ST to W 116 ST	276.83	21.0	8.9	4.1	30.1
Tot Dist & Southbound Average Travel Speed	**5,186**	**21.3**	**18.7**	**19.2**	**25.4**

Table 4-4
Corridor Travel Speeds Summary

No	Corridors	Time	Direction	Existing Conditions
				Average Speed (mph)
1	**125th Street** (Marginal St to 1st Avenue)	AM	EB	10.6
			WB	12.8
		MD	EB	10.2
			WB	11.2
		PM	EB	10.7
			WB	13.6
		Sat MD	EB	12.8
			WB	12.3
2	**Third Avenue** (E 116 St to E 128 St)	AM	NB	16.8
		MD	NB	20.8
		PM	NB	18.9
		Sat MD	NB	18.4
3	**Lenox Avenue** (W 116 St to W 135 St)	AM	NB	24.6
			SB	23.6
		MD	NB	22.4
			SB	26.6
		PM	NB	20.8
			SB	22.2
		Sat MD	NB	21
			SB	21.1
4	**St Nicholas Avenue** (W 117 St to W 135 St)	AM	NB	18.8
			SB	17.6
		MD	NB	19.4
			SB	19.3
		PM	NB	18.1
			SB	18.5
		Sat MD	NB	19.5
			SB	20
5	**Broadway** (W 116 St to W 135 St)	AM	NB	18.1
			SB	21.3
		MD	NB	19.5
			SB	18.7
		PM	NB	17.8
			SB	19.2
		Sat MD	NB	17.8
			SB	25.4