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Chapter 19: Traffic and Parking

A. INTRODUCTION

The objective of the Traffic and Parking analysis is to determine whether the Proposed Action would have significant adverse impacts on street and roadway conditions and on parking facilities in the future. This chapter describes existing (2003) and projected (2010, 2025) traffic and parking conditions in the vicinity of the Project Area, with and without the Proposed Action. Traffic operations on streets used to access the Project Area are also evaluated. These analyses reflect traffic and parking data collected for the DGEIS and FGEIS, including recent changes in traffic conditions around the Lincoln Tunnel, roadway operations (specifically along Eleventh Avenue), and signal timings along Twelfth Avenue, as well as data previously collected and documented in the Department of City Planning's *Far West Midtown Transportation Study Final Report* (*Transportation Study*), *Sustainable Development Traffic Study*, *Algin Rezoning Traffic Study*, *Fordham University Lincoln Center Campus Expansion Traffic Study*, and *West 72nd Street Ramp Closure Study*. The traffic data collection efforts are described in Section C.4 of this chapter. Temporary impacts and street and roadway conditions that could occur during construction resulting from the Proposed Action are presented in Chapter 23, "Construction Impacts."

B. PRINCIPAL CONCLUSIONS

The Proposed Action would result in significant commercial and residential development, resulting in an increase in the number of trips into and out of the Project Area every day. These additional trips, as well as those generated by the proposed Multi-Use Facility and the expanded Convention Center, form the basis of the traffic and parking impact evaluations. The traffic impact analysis was conducted using an extensive network that included 229 signalized intersections in 2010 and 238 signalized intersections in 2025, and five unsignalized intersections, each in five separate peak hours (weekday AM, Midday, PM, weeknight Special Event, and Sunday Special Event). The analysis indicates that increases in trips during weekday peak hours would be generated for the most part by the rezoning and redevelopment action, while increases in trips during the Special Event peak hours (approximately 19 times per year) are related to the proposed Multi-Use Facility, and to a lesser extent, the expanded Convention Center during the Sunday Special Event peak hour, as well as the rezoning, and the relocation and expansion of Madison Square Garden (MSG).

Highly conservative combinations of events and vehicular trip assumptions were factored into the analysis methodology to ensure the analysis determined potential impacts of the reasonable worst-case scenario. Examples of the combination of conservative assumptions included simultaneous high-attendance events at the Convention Center (except the weeknight Special Event peak hour when travel to a ballroom event would not coincide with this peak), Multi-Use Facility, and MSG; full development of the commercial and residential uses contemplated by the Proposed Action; and an annual increase in background traffic of 0.5 percent for each year through 2025 (a cumulative background increase of approximately 11 percent).

1. 2010 Future With the Proposed Action

In the 2010 Future With the Proposed Action, the Proposed Action is expected to have significant adverse traffic impacts at 33 intersections in the weekday AM peak hour, 35 intersections in the weekday Midday peak hour, and 39 intersections in the weekday PM peak hour. All of these impacts could be mitigated through the implementation of traffic engineering improvements, including traffic signal timing changes, lane channelization improvements, the elimination of on-street parking on intersection approaches, and prohibition of turn movements. Upon implementation of the proposed

mitigation measures, no unmitigated significant adverse impacts would occur in the weekday AM, Midday, or PM peak hours (see Figure 19-101 through Figure 19-103).

Of the 51 signalized intersections studied for the Special Event peak hours for 2010, 22 intersections would have significant adverse impacts in the weeknight Special Event peak hour (which would occur approximately 10 to 11 times per year) and 26 intersections would have significant adverse impacts in the Sunday Special Event peak hour (which would occur approximately eight to nine times per year between August and January). Most of these impacts could be mitigated through the implementation of traffic engineering improvements, including traffic signal timing/phasing changes, lane channelization improvements, the elimination of on-street parking on intersection approaches, and prohibition of turn movements. However, four intersections would continue to have unmitigated significant adverse impacts during both the weeknight and Sunday Special Event peak hours. The intersections with significant adverse impacts that could not be mitigated during the Special Event peak hours would be West 34th Street at Eleventh, Tenth, Ninth and Eighth Avenues. (see Figure 19-122 and Figure 19-123).

Of the four unsignalized intersections remaining in the 2010 Future With the Proposed Action compared to the 2010 Future Without the Proposed Action, none would have significant adverse impacts in the weekday AM and Midday peak hours, and one, Twelfth Avenue at West 47th Street, would have such an impact in the weekday PM peak hour. This intersection would be mitigated through installation of a traffic signal (if determined to be warranted).

In 2010, the Proposed Action would not have any significant impacts to river crossing during the weekday AM, Midday or PM peak hours. One facility, the Lincoln Tunnel, would be impacted in the westbound direction during the Sunday Special Event peak hour.

As part of the anticipated office and residential developments included in the Future Without the Proposed Action, off-street parking is anticipated to be more highly utilized in the future. Sufficient parking is anticipated to be available during all peak periods.

2. 2025 Future With the Proposed Action

In the 2025 Future With the Proposed Action, the Proposed Action is expected to have significant adverse impacts at 122 intersections in the weekday AM peak hour; 99 intersections in the weekday Midday peak hour; and 134 intersections in the weekday PM peak hour. Most of these impacts could be mitigated through the implementation of traffic engineering improvements, including traffic signal timing changes, lane channelization improvements, the elimination of on-street parking on intersection approaches, and prohibition of turn movements. However, six intersections would have unmitigated significant adverse impacts during the weekday AM peak hour, two intersections would have unmitigated significant adverse impacts during the weekday Midday peak hour, and seven intersections would have unmitigated significant adverse impacts during the weekday PM peak hour (see Figure 19-194 through Figure 19-196).

Of the 60 signalized intersections studied for the Special Event peak hours for the 2025 Future With the Proposed Action, 26 intersections would have significant adverse impacts in the weeknight Special Event peak hour and 34 intersections would have significant adverse impacts in the Sunday Special Event peak hour. As with the 2010 Future With the Proposed Action, these conditions would occur approximately 19 times per year (10 PM to 11 PM weeknights, and 8 PM to 9 PM Sunday afternoons). Most of these impacts could be mitigated through the implementation of traffic engineering improvements, including traffic signal timing/phasing changes, lane channelization improvements, the elimination of on-street parking on intersection approaches, and prohibition of turn movements. However, four intersections would still have unmitigated significant adverse impacts during both the weeknight and Sunday Special Event peak hours. (The unmitigated impacts that could occur during the Special Event peak hours are illustrated in Figure 19-215 and Figure 19-216.)

Of the four unsignalized intersections remaining in the 2025 Future With the Proposed Action compared to the 2025 Future Without the Proposed Action, none would have a significant adverse impact in the weekday AM peak, one intersection would have a significant adverse impact in the weekday Midday peak hour (Twelfth Avenue at West 47th Street), and one intersection would have a significant adverse impact in the weekday PM peak hour (Twelfth Avenue at West 45th Street). Installation of a traffic signal at each location would mitigate each of these projected impacts (if determined to be warranted).

While these would be significant impacts at six river crossings in 2025, and the Queens Midtown Tunnel would be over capacity outbound in the weekday PM peak hour, it is likely that these facilities would be less congested than projected because the crossings serve a regional function and many drivers associated here with the Proposed Action would likely use these facilities for other Manhattan destinations even in the absence of the Proposed Action.

As part of the anticipated office and residential developments included in the Future Without the Proposed Action, off-street parking is anticipated to be more highly utilized in the future. Demand for parking in the 2025 Future With the Proposed Action would be the result of the new office and residential development and the demand generated by parking displaced as existing parking facilities are redeveloped. Sufficient parking is anticipated to be available during all peak periods, except the weekday Midday peak period, when a shortfall of approximately 52 parking spaces in the study area is anticipated due to demand generated by a combination of office and residential uses, and convention events. The projected shortfall would be relatively insignificant when compared to the total capacity during this time period (i.e., a shortfall of 52 out of a total capacity of 31,067 spaces in the study area, which would be less than ½ of one percent of the total and distributed over numerous parking facilities).

C. METHODOLOGY

According to the *CEQR Technical Manual*, actions proposed below 60th Street in Manhattan that would result in more than 240 residential dwelling units or 115,000 gross square feet (gsf) of office development require a traffic analysis. As the Proposed Action includes development above these thresholds, a complete traffic analysis has been prepared. This section describes the traffic and parking analysis methodologies employed, including selection of analysis hours and locations, data collection, and assumptions.

1. Peak Traffic Hours

The anticipated scale and nature of the mixed-use development expected to result from the Proposed Action require an analysis of three standard weekday peak hours for traffic conditions. These are 8 – 9 AM, 12 – 1 PM, and 5 – 6 PM.

A weeknight Special Event peak hour of 8:00 PM – 9:00 PM was also analyzed to project the potential impacts of a Monday night football game, representing the worst-case weeknight major event, at the Multi-Use Facility held concurrently with a concert at MSG. (No Convention Center events are expected to occur at that time.) As described in Chapter 2, "Description of the Proposed Action," these types of major events are anticipated to occur approximately 10 to 11 times per year. A Monday night football game with a seating capacity of 75,000 is likely to occur no more than once every other year; other events that might occur on a weeknight, such as a concert or other major sporting event, would have an attendance considerably below maximum capacity. Seating capacity is projected to be 55,000 for a stadium concert. The analysis of a peak hour immediately following a weeknight event at the Multi-Use Facility was not necessary, because future ambient traffic volumes are expected to be significantly lower during the late night period.

In addition, a Sunday afternoon Special Event peak hour was evaluated to determine the effects of a football game at the Multi-Use Facility and a public show at the Convention Center. The greatest potential for transportation-related impacts resulting from events at these venues would be in the hour immediately following an early afternoon game, as post-game departures are more significantly peaked than pre-game arrivals, and this would coincide with the peak hour of activity at the Convention Center. Therefore, the Sunday afternoon Special Event peak hour selected for traffic analysis was 4:00 PM – 5:00 PM. This combination of events is not anticipated to occur more than once per year. (See trip generation assumptions in Appendix S.1).

2. Traffic Study Areas

The size of the proposed rezoning area, the magnitude of its projected development sites, and its location in the Midtown area of Manhattan (Figure 19-1) required the selection of a large study area for the weekday AM, Midday, and PM peak hours. However, the traffic analyses for the weeknight and Sunday Special Event peak hours focused on trips generated at two specific sites (i.e., the Multi-Use Facility and Convention Center) and utilized a more targeted study area.

a) Weekday AM, Midday, and PM Peak Hours

The primary and secondary traffic study areas were defined to include areas of potentially significant traffic impacts. Traffic operations were evaluated for 229 individual intersections in 2010 and 238 individual intersections in 2025. (The nine additional intersections analyzed for 2025 would be located along the proposed Midblock Boulevard, which would not be completed until after 2010.)

Primary Study Area

As shown in Figure 19-2, the primary traffic study area is generally bounded by West 57th Street, West 47th Street, and West 42nd Street on the north, West 28th Street on the south, Sixth Avenue on the east, and Route 9A (Twelfth Avenue) on the west. It encompasses major roadways serving the area, including Sixth through Twelfth Avenues (the primary north-south routes) and West 34th and West 42nd Streets (the primary east-west routes). The primary study area encompasses approximately 180 signalized and five unsignalized intersections, which are listed in Appendix S.2. These intersections are expected to receive the highest incremental traffic volumes as a result of the redevelopment of the Project Area.

Secondary Study Area

A secondary study area was defined to include major approach routes to the primary study area. As shown in Figure 19-2, the secondary study area is generally bounded by West 72nd Street on the north, Chambers Street on the south, Second Avenue on the east, and Route 9A on the west. It includes 65 critical intersections along major approach routes that lead to/from the proposed development sites. All intersections within the secondary study area are listed in Appendix S.2.

Additional Intersections

In the Future With the Proposed Action, proposed modifications to the roadway network would also be applicable, requiring changes to the set of intersections for analysis. The following changes to the roadway networks are more fully described in Section 5.b:

- ***Midblock Park and Boulevard System:*** This would consist of a broad open space and boulevard system in the midblocks between Tenth and Eleventh Avenues, extending from West 33rd Street to West 42nd Street. New intersections would be created along the new boulevard at West 33rd, West 34th, West 35th, West 36th, West 37th, and West 38th Streets.
- ***Street Closings:*** The following existing streets would be closed to through traffic:
  - West 33rd Street between Eleventh and Twelfth Avenues;

- West 39th Street between Eleventh and Twelfth Avenues; and
- West 40th Street between Eleventh and Twelfth Avenues.

In addition, West 41st Street between Eleventh and Twelfth Avenues would be reconfigured and effectively closed to through traffic.

An east-west pedestrian corridor, in alignment with West 40th Street, would maintain public access to Twelfth Avenue. However, public access along West 39th and West 41st Streets, between Eleventh and Twelfth Avenues, would be eliminated.

b) Special Event Peak Hours (Weeknight and Sunday Afternoon)

The study area for the weeknight and Sunday Special Event peak hours included critical intersections in the immediate vicinity of, and along key approach routes to, the Multi-Use Facility and the Convention Center (including Route 9A (Twelfth Avenue), Eleventh Avenue, Tenth Avenue, West 34th Street, and West 42nd Street). As shown in Figure 19-3 and listed in Appendix S.2, 50 intersections were selected for analysis of these time periods. The study area for the weeknight and Sunday Special Event peak hours did not include any unsignalized intersections.

3. Traffic Capacity Analysis Methodology

a) Level of Service Analysis

The traffic operations analysis was undertaken utilizing the methodology of the Transportation Research Board's *Highway Capacity Manual 2000*, which is the industry standard and state-of-the-art method cited in the *CEQR Technical Manual* for analyzing urban traffic congestion.

Traffic operations are generally described by "Level of Service" (LOS) measures. LOS describes the quality of traffic flow and is defined as a measure describing operational conditions on a given freeway, arterial, or intersection. LOS is a function of Delay (the amount of time a vehicle must wait to travel through an intersection) and Volume/Capacity or v/c Ratio (the number of vehicles which travel through an intersection compared to that intersection's capacity). LOS measures are reported using letter designations from A to F. As shown in Table 19-1 and Table 19-2, LOS A represents the best operating condition (free traffic flow), and LOS F designates the worst operating condition for both signalized and unsignalized intersections. A facility operating at LOS A through mid-D (less than 45.0 seconds of delay) is considered to be operating at an acceptable condition, while a facility operating at LOS mid-D (45.0 seconds of delay or more), E, or F is considered to be operating at a deficient LOS. (Delay calculated at greater than 300 seconds is considered unreliable, though the congestion at this level is considered an impact). For this traffic analysis, each intersection was evaluated by overall intersection, by each approach (northbound, southbound, eastbound, and westbound) to the intersection, and by movement along each approach (through, left turn, right turn, and de facto turn, if a lane is not exclusively designated for turns).

TABLE 19-1
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Flow Quality
A	Less than 10.0	Very low delay. Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all.
B	10.1 to 20.0	Good progression. However, higher levels of average delay indicate that more vehicles stop than for LOS A.
C	20.1 to 35.0	Higher delays resulting from fair progression. The number of vehicles stopping is significant at this level, although some may still pass through the intersection without stopping.
D	35.1 to 55.0	At this level, the influence of congestion becomes more noticeable. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 to 80.0	Individual cycle failures are frequent occurrences. This level of service is considered to be the limit of acceptable delay.
F	Greater than 80.0	This condition occurs with saturation (i.e., when arrival flow rates exceed the capacity of the intersection). This level of service is considered to be unacceptable to most drivers.

Source: CEQR Technical Manual, page 3O-37

TABLE 19-2
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Average Delay per Vehicle (sec/veh)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Source: CEQR Technical Manual, page 3O-37

b) Traffic Volumes

The analysis of peak hour traffic volumes at intersections under existing conditions was performed using turning movement volumes for each intersection approach. Existing turning movements were obtained though a detailed traffic counting program, including 24-hour directional machine counts, manual turning movement counts, vehicle classification counts for eight vehicle classes, and field confirmation of signal timing plans and the number of moving traffic lanes on critical roadways. Traffic volumes for the intersections at West End Avenue at West 72nd Street, Amsterdam Avenue at West 65th Street, and Columbus Avenue/Broadway at West 65th Street were obtained from the DCP's *Sustainable Development Traffic Study, Algin Rezoning Traffic Study, Fordham University Lincoln Center Campus Expansion Traffic Study,* and *West 72nd Street Ramp Closure Study*.

c) Trip Generation

In order to determine whether the Proposed Action would result in significant adverse impacts to traffic conditions, it was necessary to identify the additional vehicular, transit, and pedestrian trips that would be generated by the proposed developments. Relevant sources were utilized to prepare specific estimates of the number of people that would be traveling to and from the various land uses envisioned under the Proposed Action, such as Pushkarev and Zupan's *Urban Space for Pedestrians*, the DCP's *Far West Midtown Transportation Study*, and previously certified environmental review documents. A combination of standard references, observed data collected specifically for the DGEIS and FGEIS, and other planning assumptions were used to forecast travel demand. Future conditions were modeled to account for both land uses which are not anticipated to remain in the future (existing trips subtracted from the total trip calculations) and land uses which do not currently exist today which are projected to be present in the future (additional trips).

The total number of daily person-trips (the number of people entering and exiting) was calculated by multiplying the daily trip generation rate of each project component by its associated size; this result was then converted into peak hour trips by applying the percent of the daily total occurring in individual hours of the days (known as temporal distribution) and their associated directional distributions ("ins" versus "outs"). The temporal distribution for each land use was then further sorted by the various means of transportation available to people accessing the site (i.e., the separation of person-trips into auto, taxi, bus, subway, commuter railroad, walk-only, and other modes). This distribution is referred to as the modal split. For people expected to use auto or taxi modes, person-trip estimates were subsequently converted into vehicle trips by applying average vehicle occupancy rates in order to determine vehicle trips generated by each land use type. A similar methodology was used to calculate the total number of daily truck trips associated with individual project components. The trip generation rates, temporal distributions, in/out splits, modal splits, vehicle occupancy rates, and truck trip generation rates for all standard land uses are presented in

Table 19-3, and are briefly described further below. A series of detailed technical memoranda detailing the process used to select trip generation rates for each land use analyzed in the study area is included in Appendix S.1. Due to the multiple applicable factors for the proposed Multi-Use Facility, expanded Convention Center, and relocated MSG, the trip generation rates, temporal distributions, in/out splits, modal splits, vehicle occupancy rates, and truck trip generation rates for these uses are presented in the technical memoranda in Appendix S.1.

TABLE 19-3
TRANSPORTATION PLANNING FACTORS

Land Use:	**Residential**		**Office**		**Local Retail**	
Trip Generation:	*(1)* **Weekday**	*(2)* **Sunday**	*(1)* **Weekday**	*(12)* **Sunday**	*(1,15)* **Weekday**	*(4,15,16)* **Sunday**
Total Daily Person Trips	8.075	7.138	18.0	1.6	205	246
Net Daily Person Trips	8.075	7.138	18.0	1.6	154	185
	per dwelling unit		per 1,000 gsf		per 1,000 gsf	
Temporal Distribution:	*(1,3,4)*		*(1,4,5)*		*(1,3,4)*	
AM (8-9)	9.1%		11.8%		3.1%	
MIDDAY (12-1)	4.7%		15.0%		19.0%	
PM (5-6)	10.7%		13.7%		9.6%	
WEEKNIGHT (7-8)	8.3%		0.9%		3.0%	
WEEKNIGHT (8-9)	3.6%		0.3%		1.1%	
SUN (4-5)	7.2%		8.5%		13.9%	
In/Out Splits:	*(1,3,5,6)*		*(1,3,4,5,10)*		*(1)*	
	In	**Out**	**In**	**Out**	**In**	**Out**
AM (8-9)	15%	85%	96%	4%	50%	50%
MIDDAY (12-1)	50%	50%	48%	52%	50%	50%
PM (5-6)	70%	30%	5%	95%	50%	50%
WEEKNIGHT (7-8)	65%	35%	20%	80%	50%	50%
WEEKNIGHT (8-9)	65%	35%	20%	80%	50%	50%
SUN (4-5)	70%	30%	14%	86%	50%	50%

TABLE 19-3 (CONTINUED)
TRANSPORTATION PLANNING FACTORS

Modal Splits:	Without No. 7 Subway Extension *(7)*	With No. 7 Subway Extension *(8)*	Without No. 7 Subway Extension		With No. 7 Subway Extension		With or Without No. 7 Subway Extension *(1)*
			(13) AM/PM /WEEKNIGHT /SUN	*(1)* MIDDAY ONLY	*(14)* AM/PM /WEEKNIGHT /SUN	*(1)* MIDDAY ONLY	
	ALL	ALL					ALL
Auto	6%	7%	16%	2%	11%	2%	2%
Taxi	7%	7%	2%	3%	3%	3%	3%
Bus	11%	6%	14%	6%	16%	6%	6%
Subway	36%	38%	51%	6%	48%	6%	6%
Railroad	1%	2%	11%	0%	17%	0%	0%
Walk	36%	40%	5%	83%	5%	83%	83%
Other	2%	1%	1%	0%	1%	0%	0%
	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy:	*(1)*		*(1)*				*(1)*
Auto	1.65		1.65				1.65
Taxi	1.40		1.40				1.40
Truck Trip Generation:	*(1,9,10)* **Weekday**	*(11)* **Sunday**	*(1)* **Weekday**		*(11)* **Sunday**		*(1)* **Weekday** / *(11)* **Sunday**
	0.03 per dwelling unit	0.00	0.15 per 1,000 gsf		0.01		0.35 per 1,000 gsf / 0.02
	(1,5,9)		*(1,5,9)*				*(1,5,9)*
AM (8-9)	12.2%		9.6%				7.7%
MIDDAY (12-1)	8.7%		11.0%				11.0%
PM (5-6)	1.0%		1.0%				1.0%
WEEKNIGHT (7-8)	0.0%		0.0%				0.0%
WEEKNIGHT (8-9)	0.0%		0.0%				0.0%
SUN (4-5)	2.0%		1.0%				1.0%
	In	**Out**	**In**		**Out**		**In** / **Out**
	50%	50%	50%		50%		50% / 50%

TABLE 19-3 (CONTINUED)
TRANSPORTATION PLANNING FACTORS

Land Use: Trip Generation:	Light Industrial		Manufacturing		Hotel	
	(10) **Weekday**	*(17)* **Sunday**	*(19)* **Weekday**	*(19)* **Sunday**	*(1,21)* **Weekday**	*(21,22)* **Sunday**
Total Daily Person Trips	11.5	1.1	5.0	0.8	9.4	6.8
Net Daily Person Trips	11.5	1.1	5.0	0.8	9.4	6.8
	per 1,000 gsf		per 1,000 gsf		per room	
Temporal Distribution:	*(5,10,18)*		*(5,18,19)*		*(1,5,23)*	
AM (8-9)	13.0%		19.0%		7.5%	
MIDDAY (12-1)	10.0%		13.0%		14.4%	
PM (5-6)	14.0%		19.0%		12.8%	
WEEKNIGHT (7-8)	0.7%		1.0%		9.5%	
WEEKNIGHT (8-9)	0.3%		0.4%		3.8%	
SUN (4-5)	8.4%		11.4%		7.7%	
In/Out Splits:	*(5,10,18)*		*(5,18,19)*		*(1,5,23)*	
	In	**Out**	**In**	**Out**	**In**	**Out**
AM (8-9)	88%	12%	77%	23%	39%	61%
MIDDAY (12-1)	50%	50%	50%	50%	54%	46%
PM (5-6)	12%	88%	36%	64%	65%	35%
WEEKNIGHT (7-8)	20%	80%	20%	80%	56%	44%
WEEKNIGHT (8-9)	20%	80%	20%	80%	56%	44%
SUN (4-5)	15%	85%	36%	64%	55%	45%

Modal Splits:	Without No. 7 Subway Extension *(13)*		With No. 7 Subway Extension *(14)*		Without No. 7 Subway Extension *(13)* *(20)*		With No. 7 Subway Extension *(14)* *(20)*		With or Without No. 7 Subway Extension *(1)*	
	AM/PM /WEEK NIGHT /SUN	**MIDDAY ONLY**	**AM/PM /WEEK NIGHT /SUN**	**MIDDAY ONLY**	**AM/PM /WEEK NIGHT /SUN**	**MIDDAY ONLY**	**AM/PM /WEEK NIGHT /SUN**	**MIDDAY ONLY**	**AM/PM/ WEEK NIGHT /SUN**	**MIDDAY ONLY**
Auto	16%	2%	11%	2%	16%	2%	11%	2%	9%	8%
Taxi	2%	3%	3%	3%	2%	3%	3%	3%	18%	15%
Bus	14%	6%	16%	6%	14%	6%	16%	6%	3%	3%
Subway	51%	6%	48%	6%	51%	6%	48%	6%	24%	13%
Railroad	11%	0%	17%	0%	11%	0%	17%	0%	0%	0%
Walk	5%	83%	5%	83%	5%	83%	5%	83%	46%	61%
Other	1%	0%	1%	0%	1%	0%	1%	0%		
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Vehicle Occupancy:	*(10)*	*(20)*	*(1)*
Auto	1.65	1.65	1.40
Taxi	1.40	1.40	1.80

Truck Trip Generation:	*(10)* **Weekday**	*(11)* **Sunday**	*(20)* **Weekday**	*(11)* **Sunday**	*(1)* **Weekday**	*(11)* **Sunday**
	0.52	0.03	0.52	0.03	0.06	0.00
	per 1,000 gsf		per 1,000 gsf		per room	
	(1,5,9)		*(1,5,9)*		*(1,5,9)*	
AM (8-9)	14.0%		14.0%		12.2%	
MIDDAY (12-1)	8.6%		8.6%		8.7%	
PM (5-6)	1.0%		1.0%		1.0%	
WEEKNIGHT (7-8)	0.0%		0.0%		0.0%	
WEEKNIGHT (8-9)	0.0%		0.0%		0.0%	
SUN (4-5)	1.0%		1.0%		2.0%	
	In	**Out**	**In**	**Out**	**In**	**Out**
	50%	50%	50%	50%	50%	50%

TABLE 19-3 (CONTINUED)
TRANSPORTATION PLANNING FACTORS

Land Use:	Auto Showroom		Church		Covenant House	
Trip Generation:	*(24)* Weekday	*(2)* Sunday	*(25)* Weekday	*(25)* Sunday	*(10)* Weekday	*(2)* Sunday
Total Daily Person Trips	2.63	0.0	13.4	54.0	4.75	4.20
Net Daily Person Trips	2.63	0.0	13.4	54.0	4.75	4.20
	per 1,000 gsf		per 1,000 gsf		per bed	
Temporal Distribution:	(24)		(20,25,26)		(5,27)	
AM (8-9)	12.0%		7.9%		7.0%	
MIDDAY (12-1)	12.0%		14.1%		3.0%	
PM (5-6)	9.0%		7.2%		10.0%	
WEEKNIGHT (7-8)	0.0%		3.0%		9.0%	
WEEKNIGHT (8-9)	0.0%		2.0%		8.0%	
SUN (4-5)	0.0%		5.2%		9.0%	
In/Out Splits:	*(24)*		*(20,25,26)*		*(6)*	
	In	**Out**	**In**	**Out**	**In**	**Out**
AM (8-9)	67%	33%	54%	46%	15%	85%
MIDDAY (12-1)	50%	50%	54%	46%	50%	50%
PM (5-6)	15%	85%	54%	46%	70%	30%
WEEKNIGHT (7-8)	50%	50%	50%	50%	65%	35%
WEEKNIGHT (8-9)	50%	50%	40%	60%	65%	35%
SUN (4-5)	50%	50%	100%	0%	70%	30%

Modal Splits:	With or Without No. 7 Subway Extension *(24)* ALL	With or Without No. 7 Subway Extension *(20)* ALL	With or Without No. 7 Subway Extension *(10)* ALL
Auto	100%	4%	2%
Taxi	0%	9%	1%
Bus	0%	5%	1%
Subway	0%	12%	2%
Railroad	0%	0%	0%
Walk	0%	70%	94%
Other			
	100%	100%	100%
Vehicle Occupancy:	*(24)*	*(25)*	*(10)*
Auto	1.0	1.4	1.5
Taxi	1.0	1.4	1.5

Truck Trip Generation:						
	(24) Weekday	*(8)* Sunday	*(9)* Weekday	*(11)* Sunday	*(9,10)* Weekday	*(11)* Sunday
	0.15	0.01	0.15	0.01	0.06	0.00
	per 1,000 gsf		per 1,000 gsf		per 1,000 gsf	
	(1,4,9)		*(5,9)*		*(5,9,10)*	
AM (8-9)	9.6%		9.6%		12.2%	
MIDDAY (12-1)	11.0%		11.0%		8.7%	
PM (5-6)	1.0%		1.0%		1.0%	
WEEKNIGHT (7-8)	0.0%		0.0%		0.0%	
WEEKNIGHT (8-9)	0.0%		0.0%		0.0%	
SUN (4-5)	0.0%		1.0%		2.0%	
	In	**Out**	**In**	**Out**	**In**	**Out**
	50%	50%	50%	50%	50%	50%

TABLE 19-3 (CONTINUED)
TRANSPORTATION PLANNING FACTORS

Land Use:	Day Care Center		Elementary School (Students)		Elementary School (Staff)	
Trip Generation:	*(28,29)*	*(28,29)*	*(20,32)*		*(20)*	
	Weekday	**Sunday**	**Weekday**		**Weekday**	
Total Daily Person Trips	138	10	3.6		2.0	
Net Daily Person Trips	33	2	3.6		2.0	
	per 1,000 gsf		per student		per employee	
Temporal Distribution:	*(5,29)*		*(20,33,34)*		*(20,33)*	
AM (8-9)	16.0%		50.0%		5.0%	
MIDDAY (12-1)	5.0%		0.0%		0.0%	
PM (5-6)	19.0%		2.5%		2.5%	
WEEKNIGHT (7-8)	0.0%		0.0%		0.0%	
WEEKNIGHT (8-9)	0.0%		0.0%		0.0%	
SUN (4-5)	12.0%		0.0%		0.0%	
In/Out Splits:	*(5,20,30)*		*(20,32)*		*(20)*	
	In	**Out**	**In**	**Out**	**In**	**Out**
AM (8-9)	53%	47%	78%	22%	100%	0%
MIDDAY (12-1)	50%	50%	50%	50%	50%	50%
PM (5-6)	47%	53%	22%	78%	0%	100%
WEEKNIGHT (7-8)	50%	50%	50%	50%	50%	50%
WEEKNIGHT (8-9)	50%	50%	50%	50%	50%	50%
SUN (4-5)	47%	53%	0%	0%	0%	0%
Modal Splits:	**With or Without No. 7 Subway Extension**		**With or Without No. 7 Subway Extension**		**With or Without No. 7 Subway Extension**	
	(20)		*(20,35,36)*		*(14)*	
	ALL		**ALL**		**ALL**	
Auto	10%		0%		11%	
Taxi	30%		5%		3%	
Bus	10%		0%		16%	
Subway	20%		0%		48%	
Railroad	0%		0%		17%	
Walk	30%		70%		6%	
Other			25%			
	100%		100%		100%	
Vehicle Occupancy:	*(20)*		*(32)*		*(20)*	
Auto	1.65		2.5		1.65	
Taxi	1.40		2.5		1.40	
Truck Trip Generation:	*(31)*	*(11)*	*(35)*		*Not Applicable*	
	Weekday	**Sunday**	**Weekday**			
	0.07	0.00	0.03			
	per 1,000 gsf		per 1,000 gsf			
	(5,9)		*(9)*			
AM (8-9)	9.6%		9.6%			
MIDDAY (12-1)	11.0%		11.0%			
PM (5-6)	1.0%		1.0%			
WEEKNIGHT (7-8)	0.0%		0.0%			
WEEKNIGHT (8-9)	0.0%		0.0%			
SUN (4-5)	1.0%		0.0%			
	In	**Out**	**In**	**Out**		
	50%	50%	50%	50%		

TABLE 19-3 (CONTINUED)
TRANSPORTATION PLANNING FACTORS

Land Use:	Recreation Center		Mini-Storage		Museum	
Trip Generation:	*(1)*	*(37)*	*(24)*	*(40)*	*(41)*	*(41,42)*
	Weekday	**Sunday**	**Weekday**	**Sunday**	**Weekday**	**Sunday**
Total Daily Person Trips	44.7	26.6	4.97	3.54	27.4	20.6
Net Daily Person Trips	44.7	26.6	4.97	3.54	27.4	20.6
	per 1,000 gsf		per 1,000 gsf		per 1,000 gsf	
Temporal Distribution:	*(5,37,38)*		*(24)*		*(41,42)*	
AM (8-9)	5.8%		10.7%		0.0%	
MIDDAY (12-1)	7.4%		11.0%		7.2%	
PM (5-6)	7.6%		11.2%		14.4%	
WEEKNIGHT (7-8)	5.6%		0.0%		12.4%	
WEEKNIGHT (8-9)	4.4%		0.0%		6.7%	
SUN (4-5)	10.0%		0.0%		16.8%	
In/Out Splits:	*(5,37,38)*		*(20)*		*(41,42)*	
	In	**Out**	**In**	**Out**	**In**	**Out**
AM (8-9)	66%	34%	50%	50%	50%	50%
MIDDAY (12-1)	58%	42%	50%	50%	63%	37%
PM (5-6)	34%	66%	50%	50%	52%	48%
WEEKNIGHT (7-8)	47%	53%	50%	50%	34%	66%
WEEKNIGHT (8-9)	39%	61%	50%	50%	9%	91%
SUN (4-5)	42%	58%	50%	50%	36%	64%

Modal Splits:	With or Without No. 7 Subway Extension *(1)*	With or Without No. 7 Subway Extension *(24)*	With or Without No. 7 Subway Extension *(41,42)*	
	ALL	**ALL**	**Weekday**	**Sunday**
Auto	4%	95%	12%	14%
Taxi	9%	0%	10%	10%
Bus	5%	0%	7%	7%
Subway	12%	0%	29%	29%
Railroad	0%	0%	0%	0%
Walk	70%	5%	39%	37%
Other			3%	3%
	100%	100%	100%	100%
Vehicle Occupancy:	*(1)*	*(24)*	*(41)*	
Auto	1.4	2.0	2.34	
Taxi	1.4	2.0	1.90	
Truck Trip Generation:	*(39)*	*(11)*	*Not Applicable*	*(41)*	*(11)*
	Weekday	**Sunday**		**Weekday**	**Sunday**
	0.04	0.00		0.05	0.00
	per 1,000 gsf			per 1,000 gsf	
	(5,9)			*(59)*	
AM (8-9)	7.7%			9.6%	
MIDDAY (12-1)	11.0%			11.0%	
PM (5-6)	1.0%			1.0%	
WEEKNIGHT (7-8)	0.0%			0.0%	
WEEKNIGHT (8-9)	0.0%			0.0%	
SUN (4-5)	1.0%			1.0%	
	In	**Out**		**In**	**Out**
	50%	50%		50%	50%

TABLE 19-3 (CONTINUED)
TRANSPORTATION PLANNING FACTORS

Land Use:	Post Office	Theater	Destination Retail	
Trip Generation:	*(15,47)*	*(3,42)*	*(15,49)*	*(15,16)*
	Weekday	**Weekday/Sunday**	**Weekday**	**Sunday**
Total Daily Person Trips	130.0	2.68	159	191
Net Daily Person Trips	98.0	2.68	119	143
	per 1,000 gsf	per seat	per 1,000 gsf	
Temporal Distribution:	*(1,3,4)*	*(48)*	*(50)*	
AM (8-9)	7.4%	0.0%	0.0%	
MIDDAY (12-1)	12.0%	0.0%	9.5%	
PM (5-6)	10.0%	0.0%	9.8%	
WEEKNIGHT (7-8)	1.0%	25.0%	8.4%	
WEEKNIGHT (8-9)	0.0%	0.0%	6.8%	
SUN (4-5)	0.0%	25.0%	13.9%	
In/Out Splits:	*(20,47)*	*(48)*	*(50)*	
	In / **Out**	**In** / **Out**	**In** / **Out**	
AM (8-9)	50% / 50%	50% / 50%	50% / 50%	
MIDDAY (12-1)	50% / 50%	50% / 50%	55% / 45%	
PM (5-6)	50% / 50%	50% / 50%	48% / 52%	
WEEKNIGHT (7-8)	50% / 50%	100% / 0%	55% / 45%	
WEEKNIGHT (8-9)	50% / 50%	50% / 50%	42% / 58%	
SUN (4-5)	50% / 50%	0% / 100%	37% / 63%	

Modal Splits:	With or Without No. 7 Subway Extension *(1)*	With or Without No. 7 Subway Extension *(3)*		With or Without No. 7 Subway Extension *(49)*
	ALL	**AM/MIDDAY/PM/SUN**	**WEEKNIGHT**	**ALL**
Auto	2%	20%	33%	9%
Taxi	3%	10%	33%	4%
Bus	6%	33%	3%	8%
Subway	6%	8%	6%	20%
Railroad	0%	20%	2%	0%
Walk	83%	9%	23%	59%
Other				
	100%	100%	100%	100%
Vehicle Occupancy:	*(1)*	*(3)*		*(49)*
Auto	1.65	3.10	2.30	2.00
Taxi	1.40	2.20	2.30	2.00
Truck Trip Generation:	*(1)*	*(3)*	*(11)*	*(1)* / *(11)*
	Weekday	**Weekday**	**Sunday**	**Weekday** / **Sunday**
	0.15	0.01	0.00	0.35 / 0.02
	per 1,000 gsf	per seat		per 1,000 gsf
	(9)	*(9)*		*(1,5,9)*
AM (8-9)	9.6%	9.6%		7.7%
MIDDAY (12-1)	11.0%	11.0%		11.0%
PM (5-6)	1.0%	1.0%		1.0%
WEEKNIGHT (7-8)	0.0%	0.0%		0.0%
WEEKNIGHT (8-9)	0.0%	0.0%		0.0%
SUN (4-5)	0.0%	1.0%		1.0%
	In / **Out**	**In** / **Out**		**In** / **Out**
	50% / 50%	50% / 50%		50% / 50%

TABLE 19-3 (FOOTNOTES)
TRANSPORTATION PLANNING FACTORS

(1) Coliseum Redevelopment FSEIS, 1997, Table 12-15.
(2) Based on ratio between Sunday and weekday rates for ITE Land Use 220: Apartment.
(3) 770-780 Eighth Avenue EAS, 2001, Table E-9.
(4) Pushkarev & Zupan, "Urban Space for Pedestrians," 1975, Table 2.7.
(5) Sunday temporal distributions and in/out splits based on weekday patterns.
(6) Regent Tower EAS, 2000, Attachment D.
(7) 2000 US Census Journey-to-Work Data for Tracts 99, 103, 111, 115, 117, and 129.
(8) 2000 US Census Journey-to-Work Data for Tracts between 23rd Street, 59th Street, Third Avenue, and Eighth Avenue.
(9) Federal Highway Administration, "Curbside Pickup and Delivery and Arterial Traffic Impacts," 1981.
(10) Hudson Square Rezoning DEIS, 2002, Table XIII-6.
(11) Assumes 5% of weekday trip generation rates.
(12) ITE Trip Generation, 6th Edition, Land Use 710: General Office Building. Based on ratio between Sunday and weekday rates.
(13) 1990 US Census Reverse Journey-to-Work Data for Tracts 99, 103, 111, 115, 117, and 129.
(14) 1990 US Census Reverse Journey-to-Work Data for Tracts between 23rd Street, 59th Street, Third Avenue, and Eighth Avenue.
(15) Assumes 25% linked trips for retail land uses.
(16) Based on Saturday daily trip generation rate of 488 person trips per 1,000 gsf from Urban Space for Pedestrians and ratio between Sunday and Saturday rates for ITE Land Use 820: Shopping Center.
(17) ITE Trip Generation, 6th Edition, Land Use 110: General Light Industrial. Based on ratio between Sunday and weekday rates.
(18) Weekday evening temporal distributions and in/out splits based on PB Team assumptions.
(19) ITE Trip Generation, 6th Edition, Land Use 140: Manufacturing. Daily trip generation rates calculated based on auto occupancy of 1.25 and auto modal split of 95%.
(20) PB Team assumption.
(21) For proposed hotels adjacent to the Jacob K. Javits Convention Center, some trips are assumed to be linked between the sites. For these trips, 2.0 daily trips per room were assumed, based on the methodology used in the Coliseum Redevelopment FSEIS.
(22) ITE Trip Generation, 6th Edition, Land Use 110: General Light Industrial, Land Use 310: Hotel. Based on ratio between Sunday and weekday rates.
(23) 42nd Street Development Project General Plan Amendment FSEIS, 1994, Tables II.1-28 and 11.1-29.
(24) West 57th Street Rezoning FSEIS, 2001, Table 11-10.
(25) ITE Trip Generation, 6th Edition, Land Use 560: Church. Daily trip generation rates calculated based on assumed auto occupancy of 1.4 and auto modal split of 95%.
(26) Korean Presbyterian Church Traffic Study, 1995, Table 3.
(27) PB Team assumptions based on discussions with Covenant House, July 2003.
(28) ITE Trip Generation, 6th Edition, Land Use 565: Day Care Center. Daily trip generation rates based on an assumed auto occupancy of 1.65 and an auto modal split of 95%.
(29) ITE 1990 Compendium of Technical Papers, "Trip Generation of Day Care Centers," p. 360. Pass-by and diverted-link trips assumed to be 76%.
(30) In/out splits for weekday AM and PM peak hours based on ITE Land Use 565: Day Care Center.
(31) Hudson River Park FEIS, 1998, Table 11-25 (Cultural Land Use).
(32) Includes adults accompanying children to/from school.
(33) Queens Vocational High School Addition Environmental Assessment Form and Supplemental Environmental Studies, 2002, Table 10.
(34) 5% of students conservatively assumed to depart school during 5-6 pm hour due to after-school activities.
(35) I.S. 137Q Environmental Assessment Form and Supplemental Report, 2000.
(36) Auto/taxi trips would involve drop-offs/pick-ups; bus trips would involve school buses/other transit.
(37) ITE Trip Generation, 6th Edition, Land Use 495: Recreational Community Center. Based on ratio between Sunday and weekday rates.
(38) Alamo YMCA DEIR, 2002, Attachment B.
(39) 42nd Street Development Project General Plan Amendment FSEIS, 1994, Tables II.1-32.
(40) ITE Trip Generation, 6th Edition, Land Use 151: Mini-Warehouse. Based on ratio between Sunday and weekday rates.
(41) Museum of Modern Art Expansion FEIS, 2000, Tables 12-5 through 12-6.
(42) Sunday travel characteristics assumed to be similar to weekday patterns.
(43) ITE Trip Generation, 6th Edition, Land Use 845: Gasoline/Service Station with Convenience Market.
(44) Pass-by trips assumed to be 45% based on ITE Trip Generation Handbook (1998).
(45) PB Team assumptions based on screenline traffic volumes.
(46) ITE Journal, "Trip Generation Studies of Gas/Convenience Stores," January 1981.
(47) ITE Trip Generation, 6th Edition, Land Use 732: Post Office. Daily trip generation rates calculated based on auto occupancy of 1.14 and auto modal split of 95%.
(48) PB Team assumptions assuming 2 pm and 8 pm performances each having a run time of 2 hours.
(49) Proposed Sale of Con Edison First Avenue Properties to FSM East River Associates LLC DGEIS, 2002, Table 12-7.
(50) ITE Trip Generation, 6th Edition, Land Use 820: Shopping Center.

Standard Projected Land Uses

The total daily person-trip generation rates selected for office, residential, local retail, and hotel uses are consistent with those outlined in Appendix 3 of the *CEQR Technical Manual*. For local retail trips (street-level retail that draws shoppers from the immediate area), a 25 percent reduction was applied to the total trip generation rate to account for the occurrence of linked trips (i.e., some of trips to these establishments are made along the way to or from the principal destination). A related type of trip linkage is anticipated for proposed hotels located adjacent to the expanded Convention Center; this occurrence was accounted for by assigning a fraction of the total daily person-trip generation rates as walk-only trips between the hotels and Convention Center. Because CEQR reviews for the standard projected land uses are not typically performed for Sundays, daily person-trip generation rates for Manhattan land uses were applied to the ratio between Sunday and weekday rates (from the ITE *Trip Generation Manual*) to the standard weekday rates used in New York City to determine a New York City-based Sunday rate.

Modal split information for office uses was based on 1990 Census reverse-journey-to-work data and modal splits for residential uses were based on 2000 Census journey-to-work data. (2000 Census reverse journey-to-work data have not yet been validated by the U.S. Department of Commerce, and so have not been incorporated into this methodology.) Because the Proposed Action would include an extension of the No. 7 Subway line and alter modes of transportation available to people accessing the area, a methodology was developed to forecast projected modal splits by using data from Census Tracts in Midtown Manhattan (defined as the area bordered by 59th Street on the north, 23rd Street on the south, Third Avenue on the east, and Eighth Avenue on the west). As shown in Table 19-3, this distribution reflects a combined auto/taxi share of approximately 14 percent, a transit (commuter rail, subway, and bus) share of approximately 81 percent, and approximately six percent walk-only trips for proposed office uses during the weekday AM and PM peak hours. Modal splits for existing office and residential uses that are not anticipated to remain in the future were based on data from Census Tracts 99, 103, 111, 115, 117, and 129. The transportation factors in

Table 19-3 present the primary mode of travel to Hudson Yards. While office, light industrial, and manufacturing uses are projected to rely slightly less upon an extended No. 7 Subway line as the primary mode for accessing the Project Area in the weekday AM, Midday, and PM peak hours (48 percent compared to 51 percent), the combination of travelers who ride either the No. 7 Line or the commuter railroads totals 65 percent with the extended No. 7 Subway and 62 percent without it.

The modal splits for a local retail use were based on the *Coliseum Redevelopment FSEIS*, and include two percent of trips by auto, three percent by taxi, six percent by bus, six percent by subway, and 83 percent by walking. This same combination of modal splits was used for office uses during the Midday peak hour to reflect the predominance of walk-only trips during lunchtime. The modal splits and temporal distributions for the hotel use were also based on the *Coliseum Redevelopment FSEIS*, as well as the *42nd Street Development Project: General Plan Amendment FSEIS*.

Average vehicle occupancy rates of 1.65 for autos and 1.40 for taxis were applied for office, residential, and local retail uses, and are consistent with the *CEQR Technical Manual*. Truck trip generation rates for all of these land uses were based on the FHWA's *Curbside Pickup and Delivery Operations and Arterial Traffic Impacts.*

Community Facility Land Uses

Although the Proposed Action includes 336,844 gsf of projected general community facility uses, for trip generation analysis purposes this aggregate was broken down into several land use components, including a museum, a recreation center, an elementary school, a house of worship, and a day care center. Wherever possible, trip generation rates for these land uses were based on previous Manhattan studies such as the *Museum of Modern Art Expansion FEIS,* the *Coliseum Redevelopment*

FSEIS, the *I.S. 137Q Environmental Assessment Form and Supplemental Report*, and the *Korean Presbyterian Church Traffic Study*. In other instances, daily person-trip generation rates were derived from the ITE *Trip Generation Manual* by dividing the average rate of vehicle trip ends by an assumed auto modal split of 95 percent and multiplying by the average vehicle occupancy. As shown in Table 19-3, the trip generation rates for these community facility uses are highly varied, given their diverse natures.

Other Types of Land Uses

Trip generation rates for other types of land uses presented in Table 19-3 (auto showroom, day care center, schools, museums, Covenant House, destination retail, gas station, light industrial, manufacturing, mini-storage, post office, and theater) were prepared to account for land uses which are not anticipated to remain in the Future With the Proposed Action or for projects included in the Future Without the Proposed Action for which no specific environmental studies were available. A series of detailed technical memoranda detailing trip generation rates for each land use analyzed in the study area is included in Appendix S.1.

Convention Use

The process of determining trip generation rates for convention events (at both the expanded Convention Center and the convention/exposition configuration in the Multi-Use Facility) required the collection of current survey data, as previous sources of researched trip generation rates are not readily available, the additional convention events would draw variable amounts of incremental attendees over existing attendance patterns, and all projected trips (including existing and incremental) would be expected to have different modal splits compared to existing patterns (because of the proposed extension of the No. 7 Subway line). For these reasons, original surveys of Convention Center attendees, exhibitors, and employees were conducted to provide an accurate measure of existing modes of travel that could be used as a baseline from which to project future travel patterns.

Surveys were conducted in April and May of 2003 for the two major different types of shows typically held at the Convention Center: a large public show held on a weekend and a combination of separate trade shows held on a weekday. These surveys included interviews that determined modes of travel (including the specific subway lines or bus routes used by transit riders), vehicle occupancies, origins/destinations, and other relevant trip characteristics. Additionally, the number of people entering and exiting the Convention Center was recorded each hour to establish a profile of temporal distributions and in/out splits throughout the day.

The results of these surveys indicated notable differences between travel patterns of attendees at the two types of shows. Approximately half of the visitors to the weekend public show arrived via auto, close to five percent arrived via taxi (Table 19-7), and the remainder arrived via mass transit. Many of these trips were destined to/from homes, and approximately 45 percent of these attendees began their trips from outside the five boroughs of New York City. For the weekday trade shows, a significant amount of trips involved travel between hotels, and approximately 60 percent of all attendee trips stayed within Manhattan. Approximately 15 percent of these visitors arrived via auto, 35 percent arrived via taxi, and the remainder arrived via mass transit. Vehicle occupancy rates for public show attendees were 3.0 for autos and 2.6 for taxis. Vehicle occupancy rates for trade show attendees were nearly the same (1.7) for both autos and taxis. (See Appendix S.1 Transportation–Trip Generation.)

Daily attendance patterns at the existing Convention Center vary by the type of event, ranging from less than 100 (for small seminars and trade shows) to 95,000 for large exhibitions (e.g., the New York International Auto Show). Based on a review of attendance figures, the top four attendance dates in 1999 were all weekend days associated with the New York International Auto Show (attendance on

these four dates ranged from 68,202 to 95,707).[1] Other large public shows at the Convention Center in 1999 included the New York National Boat Show and the PC Expo. With the exception of these large public shows, attendance patterns at the Convention Center are dominated by combinations of trade shows (held on both weekdays and weekends) when more than one event is scheduled simultaneously. These events drew daily attendances in the range of approximately 10,000 to 30,000 attendees. The Convention Center was also dark (held no events) on 129 days throughout 1999; such "dark days" typically coincide with the move-in and move-out periods of shows.

Based on precedent documented in several New York City-certified EISs,[2] for analysis purposes Convention Center attendance was assumed to equal an 85th percentile daily attendance, in order to develop a reasonable worst-case scenario (RWCS) that would occur with enough frequency to warrant consideration for analysis. In 1999, the 85th percentile daily attendance at the Convention Center was 28,205 (excluding dark days), approximately double the average daily attendance of 14,321.

According to interviews with Convention Center management staff, attendance increases due to the proposed expansion would be expected to differ between public and trade shows. Although public shows could expand to fill the larger exhibition area, they are expected to experience only a 15 percent increase in total visitation. The proposed Convention Center expansion would also afford small- and medium-sized trade shows (gift, fashion, and professional associations) the opportunity to expand their scopes, as well as allow the Convention Center to schedule a greater number of simultaneous events. Based on the projections provided by Convention Center management, the visitation for all other shows (including trade shows) is expected to increase by approximately the same factor as the increase in exhibition floor space.

In order to project the future 85th percentile attendance at the expanded Convention Center in the Future With the Proposed Action, the daily attendances at all Convention Center events held in 1999 were increased by the methodologies described above . Table 19-4 presents the existing and projected 85th percentile daily attendance for both weekday and Sunday events.) An 85th percentile weekend event at the Convention Center would only occur on approximately six weekends annually and would be unlikely to coincide with a football game at the Multi-Use Facility. An 85th percentile weekday event at the Convention Center would only occur on approximately 26 weekdays annually.

Two separate RWCS analyses were performed for the expanded Convention Center: one for weekdays and one for weekends (Sunday). In order to analyze the weekday RWCS, concurrent convention events at the expanded Convention Center and proposed Multi-Use Facility were analyzed for the weekday AM, Midday, and PM peak hours at an 85th percentile daily attendance, resulting in a net total weekday convention event attendance at both the expanded Convention Center and Multi-Use Facility of 49,507. The same trip generation rates contained in the technical memoranda in Appendix S.1 were applied to a weekday convention event at the Multi-Use Facility. The Sunday analysis was based on a convention event only at the Convention Center (see discussion of Multi-Use Facility below for sporting event at proposed Multi-Use Facility).

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[1] According to interviews with Convention Center management staff and a review of attendance patterns from 1997-2000, annual attendance data from 1999 indicate a "typical" year for analysis purposes. Attendance data after 2000 were not considered, due to the events of September 11, 2001.

[2] *U.S.T.A. National Tennis Center Project, Final Environmental Impact Statement,* New York City Departments of City Planning and Environmental Protection, July 23, 1993; *34th Street Rezoning, Final Environmental Impact Statement,* Allee King Rosen & Fleming/Vollmer Associates, June 1990; *The Rezoning of the Block Bounded by 42nd Street, 41st Street, Eleventh Avenue and Twelfth Avenue, Final Environmental Impact Statement,* Vollmer Associates, 1989; and *Ninth Avenue and 31st Street Project, Final Environmental Impact Statement,* Allee King Rosen & Fleming/Vollmer Associates, December 1989.

TABLE 19-4
EXISTING AND PROJECTED 85TH PERCENTILE DAILY CONVENTION ATTENDANCES

	Convention Center		Multi-Use Facility	Net Total	Net Increase (Percent)
	Existing	Projected	Projected		
Weekday	28,188	40,882	8,625	49,507	21,319 (+75.6%)
Sunday	38,265	62,684	-*	62,684	24,419 (+63.8%)

**The RWCS has the proposed Multi-Use Facility operating in the stadium, rather than in the Convention Center configuration.*

The variation in modal splits for convention attendees with the proposed extension of the No. 7 Subway line was projected using a methodology similar to that used for office land uses – the ratio of Census auto modal splits for Census Tracts in the Project Area was compared to those within the Midtown Manhattan area. While the number of totals trips attributed to the Convention Center during the peak hours is projected to increase significantly, approximately one-third of existing auto and taxi users are projected to shift to the extended No. 7 Subway line, therefore resulting in a minimal net increment in vehicular trips generated to this facility. It was also assumed that some of the existing transit trips (such as subway, bus, and commuter rail) would also be diverted to the No. 7 Subway line. To calculate the resulting net increment in Convention Center trips across various modes of transportation, the combination of the existing 85th percentile attendance and existing modal splits was subtracted from the combination of the projected 85th percentile attendance and projected modal splits. Although most truck deliveries for conventions would occur on "dark days," the traffic analyses conservatively include an increase of 150 daily truck deliveries.

Multi-Use Facility

Travel projections for attendees at the proposed Multi-Use Facility during the 19 Special Events per year were primarily based on the results of three studies, two of which included in-depth surveys of Jets season ticket holders.[3] It is expected that the location of the proposed Multi-Use Facility would slightly shift the Jets season ticket holder base towards a New York market (paralleling the demographic shift of fans from New York to New Jersey that occurred when the Jets moved from Shea Stadium to the Meadowlands Sports Complex in 1984). For this reason, projected modal splits were formulated on a regional basis and were then applied to the Jets' projected season ticket holder base to obtain an overall weighted average of modal splits.

Based on the 2001 and 2003 studies, modal splits were calculated to represent the primary and secondary modes of transportation that would be used to access the proposed Multi-Use Facility (e.g., auto users from New Jersey that could switch to ferries and Metro-North riders that could switch to the proposed extension of the No. 7 Subway line at Grand Central Terminal). The primary modal share of attendees anticipated to drive to a Sunday afternoon football game at the proposed Multi-Use Facility in the Future With the Proposed Action is approximately 32 percent (which includes both autos and taxis), while approximately 68 percent of attendees would utilize transit. The 2004 survey again questioned Jets season ticket holders about their likely modal choices in attending football games at the Multi-Use Facility. The results of this survey supported the original projected modal splits: approximately 67 percent of attendees would utilize transit without extension of the No. 7 subway line; an additional eight percent of attendees, or total of 75 percent, would likely use transit with the proposed No. 7 Subway Extension.

[3] West Side Sports and Exhibition Center Feasibility Study – Transportation Study Report, STV Incorporated and Eng-Wong Taub & Associates, January 2001; West Midtown Manhattan Football Stadium Surveys and Recommendations, Eng-Wong Taub & Associates, February 2003; Modal Split Survey - Jets Season Ticket Holders, Schulman, Ronca & Bucuvalas, Inc., May 2004 (sponsored by co-Lead Agencies).

The trip generation analysis also reviewed travel modes to MSG. Both MSG and the proposed Multi-Use Facility are situated within walking distance to Penn Station (served by Amtrak, New Jersey Transit, and all branches of the LIRR), numerous subway and bus lines, the Port Authority Bus Terminal (PABT), the Pier 78 Ferry Terminal, and PATH trains. Surveys of arriving attendees at several MSG events in Fall 1987 showed auto modal splits of 32 percent for a weeknight concert, 28 percent for a weeknight Knicks game, and 36 percent for a weeknight Rangers game.[4] Although the projected auto modal split of approximately 32 percent (including both autos and taxis) for the Multi-Use Facility would be slightly lower than some of the auto modal splits exhibited at MSG, a 75,000-seat stadium would draw approximately four times as many patrons as MSG events (its seating capacities range from 18,295 for hockey games to 20,629 for concerts). This level of attendance would be expected to be a major deterrent to driving to the proposed Multi-Use Facility. Additionally, the proposed Multi-Use Facility would be located in close proximity to the proposed No. 7 Subway Extension (which would provide a direct connection to Grand Central Terminal), as well as ferry service from New Jersey. Each of these factors is anticipated to reduce the population group driving to the site.

Temporal distributions for attendees were based on projections by the New York Jets and observations at several downtown NFL stadiums across the country (in Baltimore, Cincinnati, Cleveland, Pittsburgh, and Seattle). It is estimated that 75 percent of all attendees would arrive in the peak hour immediately preceding kickoff and that 85 percent of all attendees would depart in the hour immediately following the end of a game. The analysis conservatively assumes a sell-out crowd of 75,000 attendees and does not account for the fact that approximately 8-12 percent of the seats at a typical Jets game are empty due to no-shows. An average auto occupancy rate of 3.0 persons per vehicle was projected for the proposed Multi-Use Facility. Although this is slightly higher than the existing rate of 2.8 at games at the Meadowlands, tolls for crossings into Manhattan and parking fees would be expected to provide a pricing disincentive to single occupancy auto-based trips, as indicated in the Spring 2004 survey, which indicated an expected occupancy rate of 3.2 persons per vehicle.

While departures from a Sunday afternoon football game would represent the worst-case scenario for traffic from a weekend event (when combined with trips from a public show at the adjacent Convention Center, a combination which would occur perhaps once a year, if at all), several combinations of weeknight events at the proposed Multi-Use Facility and MSG were also analyzed to compare the total generated traffic volumes. It was determined that a football game at the proposed Multi-Use Facility and a simultaneous concert at MSG would have the greatest potential for traffic implications, and therefore this particular scenario was utilized for analysis purposes. Anticipated variations in travel patterns to a weeknight football game at the proposed Multi-Use Facility were made based on a review of travel surveys between weekday and weekend sports events at MSG. These variations too were consistent with the results of the Spring 2004 survey of Jets season ticket holders.

Madison Square Garden (MSG)

The process of calculating trip generation rates for MSG included assumptions that in the Future With the Proposed Action there would be an expansion (an increase in capacity from approximately 19,500 to 23,000 seats) as well as a relocation of the arena (to the eastern portion of the block bounded on the north by West 33rd Street, on the south by West 31st Street, on the east by Ninth Avenue, and on the west by Tenth Avenue).

Two sets of surveys were utilized to establish travel patterns of MSG attendees. These included interviews at three weeknight events in Fall 1987 (including a concert, a Knicks game, and a Rangers

[4] *Technical Memorandum A-4*, MSG Attendance Profile, Vollmer Associates, 1987.

game) that were used to establish trip assignments specific to each mode of travel. Temporal distributions, vehicle occupancies, and variations between weeknight and weekend travel patterns were based on surveys from six events in Spring 2003 (these included a weeknight concert, two weeknight Knicks games, a Sunday night Knicks game, and two weeknight Rangers games).

Subsequent to a review of all events held at MSG in 2002, 85th percentile existing attendances were obtained for concerts, Knicks games, and Rangers games (the most frequent types of events). An 85th percentile attendance event is the equivalent of 95% of the total seats being occupied at any individual Rangers or Knicks game; 95% occupancy at these events is also the equivalent of a sell-out for these events, with a no-show rate of five percent.

These values were increased by 18 percent – the same proportion as the proposed increase in arena capacity – to obtain projected attendance figures. In order to account for the relocation of MSG to a location one and a half blocks to the west of its existing location, auto and taxi modal splits were increased by approximately 8 percent and five percent, respectively, to account for the reduced proximity to transit services at Penn Station. To calculate the resulting net increment in MSG attendee trips across various modes of transportation, the combination of the existing 85th percentile attendance and existing modal splits was subtracted from the combination of the projected 85th percentile attendance and projected modal splits.

Total Vehicle Trip Generation

The total volume of peak hour vehicle trips generated by land uses projected in the Proposed Action is shown in Table 19-5 and Table 19-6. Existing trips associated with land uses expected to be replaced by the Proposed Action were subtracted from these total trip calculations.

Table 19-7 presents a more detailed breakdown of the incremental trips generated by convention events in the future (all convention event trips generated by the proposed Multi-Use Facility were considered incremental, as the facility does not currently exist).

TABLE 19-5
FUTURE PEAK HOURS : VEHICULAR TRIPS GENERATED BETWEEN 2003 AND 2010 BY NEW PROJECTED LAND USES, CONVENTION CENTER, AND MULTI-USE FACILITY

Analysis Hours	Office 2,189,315 gsf (total new sf)		Residential† 2,680 dwelling units (total new units)		Local Retail 85,477 gsf (total new sf)		Hotel (Convention Center) 1,500 rooms (all new rooms)	
Weekday AM	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	289	12	12	67	2	2	21	33
Taxi*	92	4	14	78	4	4	32	49
Truck	16	16	5	5	1	1	5	5
Weekday Midday	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	34	37	20	20	15	15	50	43
Taxi*	61	66	24	24	27	27	71	61
Truck	18	18	3	3	2	2	4	4
Weekday PM	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	18	333	65	28	8	8	60	32
Taxi*	6	106	75	32	14	14	90	48
Truck	2	2	0	0	0	0	0	0
Weeknight Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	2	6	20	11	1	1	15	12
Taxi*	0	2	24	13	2	2	23	18
Truck	0	0	0	0	0	0	0	0
Sunday Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	3	17	39	17	13	13	20	16
Taxi*	1	5	45	19	24	24	30	24
Truck	1	0	0	0	0	0	0	0

Analysis Hours	Convention Center (net incremental trips)** (See Table 19-7 for detailed breakdown)		Multi-Use Facility (all new trips)		Total Net Incremental Trips***	
Weekday AM	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	-12	-1	63	0	308	41
Taxi*	-39	0	143	1	236	111
Truck	12	12	5	5	42	42
Weekday Midday	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	-9	-3	51	18	113	84
Taxi*	-21	-7	116	43	256	192
Truck	22	22	9	9	55	55
Weekday PM	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	-1	-28	59	141	138	424
Taxi*	-2	-72	8	298	164	407
Truck	2	2	1	1	4	4
Weeknight Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	0	1	3,470	0	3,478	2
Taxi*	0	0	732	0	773	30
Truck	0	0	0	0	0	0
Sunday Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	78	62	0	6,259	102	6,303
Taxi*	7	10	0	533	84	549
Truck	2	2	0	0	2	2

Notes:
† These numbers exceed the actual number of units proposed in the Proposed Action (see Chapter 3).
* Net unbalanced taxi trips are listed for all components; total taxi trips were balanced on a site-by-site basis.
** Net incremental vehicle trips resulting from expanded Convention Center and No. 7 Subway Extension.
*** Net total incremental vehicle trips (includes credit for land uses that are not anticipated to remain in the future).

TABLE 19-6
FUTURE PEAK HOURS : VEHICULAR TRIPS GENERATED BETWEEN 2003 AND 2025 BY NEW PROJECTED LAND USES, CONVENTION CENTER, AND MULTI-USE FACILITY

Analysis Hours	Office 27,835,556 gsf (total new sf)		Residential 12,561 dwelling units (total new units)		Local Retail 1,072,544 gsf (total new sf)		2 Hotels[1] 3,000 rooms (total new rooms)		Hotel (Convention Center) 1,500 rooms (total new rooms)	
Weekday AM	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	3,681	153	55	314	31	31	50	78	21	33
Taxi*	1,176	49	64	364	55	55	74	117	32	49
Truck	200	200	23	23	14	14	11	11	5	5
Weekday Midday	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	437	474	95	95	190	190	118	100	50	43
Taxi*	773	837	111	111	336	336	169	144	71	61
Truck	230	230	16	16	21	21	8	8	4	4
Weekday PM	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	223	4,229	304	130	96	96	142	77	60	32
Taxi*	71	1,351	353	151	170	170	212	114	90	48
Truck	21	21	2	2	2	2	1	1	0	0
Weeknight Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	19	78	95	51	11	11	36	28	15	12
Taxi*	6	25	110	59	19	19	54	43	23	18
Truck	0	0	0	0	0	0	0	0	0	0
Sunday Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	34	211	181	77	167	167	50	42	20	16
Taxi*	11	68	210	90	296	296	76	62	30	24
Truck	1	1	0	0	0	0	0	0	0	0

Analysis Hours	MSG (net incremental trips)**		Community Facilities (total new trips)2									
			Museum 100,000 gsf		Recreation Center 96,444 gsf		Elementary School 500 students/ 56,800 gsf		House of Worship 43,000 gsf		Day Care Center 40,600 gsf	
Weekday AM	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	0	0	0	0	5	2	0	0	1	1	7	6
Taxi*	0	0	0	0	11	5	14	4	2	1	24	22
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Weekday Midday	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	0	0	6	4	5	4	0	0	1	1	2	2
Taxi*	0	0	7	4	12	9	0	0	3	2	7	7
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Weekday PM	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	0	0	11	10	3	6	0	0	1	1	7	8
Taxi*	0	0	11	10	7	14	0	1	1	1	26	29
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Weeknight Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	311	0	1	9	2	3	0	0	0	0	0	0
Taxi*	82	0	1	9	5	7	0	0	0	0	0	0
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Sunday Special Event	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Auto	603	0	7	13	3	4	0	0	3	0	0	0
Taxi*	112	0	7	12	7	10	0	0	8	0	1	1
Truck	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

* Net unbalanced taxi trips are listed for all components; total taxi trips were balanced on a site-by-site basis.

** Net incremental vehicle trips resulting from the relocation and expansion of MSG.

*** Net incremental vehicle trips resulting from expanded Convention Center and No. 7 Subway Extension.

**** Net total incremental vehicle trips (includes credit for land uses that are not anticipated to remain in the future).

[1] Projected development Site 1 is assumed to include 1,000 rooms; Projected Development Site 45 is assumed to include 2,000 rooms

[2] Museum, recreation center, elementary school, day care center, and house of worship are anticipated community facility uses by 2025. Refer to Appendix S.1 for a more detailed identification of development assumptions.

TABLE 19-6 (CONTINUED)
FUTURE PEAK PERIOD: VEHICULAR TRIPS GENERATED BETWEEN 2003 AND 2025 BY NEW PROJECTED LAND USES, CONVENTION CENTER AND MULTI-USE FACILITY

Analysis Hours	Convention Center (net incremental trips)*** See Table 19-7 for detailed breakdown		Multi-Use Facility (total new trips)		Total Net Incremental Trips****	
Weekday AM	In	Out	In	Out	In	Out
Auto	-12	-1	63	0	3,482	337
Taxi*	-39	0	143	1	1,444	593
Truck	12	12	5	5	222	222
Weekday Midday	In	Out	In	Out	In	Out
Auto	-9	-3	51	18	713	693
Taxi*	-21	-7	116	43	1,421	1,382
Truck	22	22	9	9	269	269
Weekday PM	In	Out	In	Out	In	Out
Auto	-1	-28	59	141	614	4,168
Taxi*	-2	-72	8	298	840	1,952
Truck	2	2	1	1	25	25
Weeknight Special Event	In	Out	In	Out	In	Out
Auto	0	1	3,470	0	3,870	102
Taxi*	0	0	732	0	1,012	166
Truck	0	0	0	0	0	0
Sunday Special Event	In	Out	In	Out	In	Out
Auto	78	62	0	6,259	972	6,635
Taxi*	7	10	0	533	662	956
Truck	2	2	0	0	3	3

Notes:
* Net unbalanced taxi trips are listed for all components; total taxi trips were balanced on a site-by-site basis.
** Net incremental vehicle trips resulting from the relocation and expansion of MSG.
*** Net incremental vehicle trips resulting from expanded Convention Center and No. 7 Subway Extension.
**** Net total incremental vehicle trips (includes credit for land uses that are not anticipated to remain in the future).

TABLE 19-7
FUTURE PEAK HOURS : BREAKDOWN OF PERSON AND VEHICULAR TRIPS GENERATED BY CONVENTION EVENTS

Total Trips		Convention Center		Multi-Use Facility		Net Incremental Trips	
		2025 Projected Trips	2003 Existing Trips	2025 Projected Trips			
Weekday AM		6,875	4,709	1,107		3,273	
Weekday Midday		5,259	3,586	1,239		2,912	
Weekday PM		14,015	9,618	2,813		7,210	
Weeknight		277	180	0		97	
Sunday		17,740	10,845	0		6,895	
Person Trips:		**Convention Center**		**Multi-Use Facility**		**Net Incremental Trips**	
		2025 Projected Trips	**2003 Existing Trips**	**2025 Projected Trips**			
		In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Weekday AM	Auto	609	12	631	12	103	1	81	1
	Taxi	1,844	33	1,918	34	273	2	199	1
	Bus	1,032	24	843	17	168	1	357	8
	Subway	2,191	31	333	2	380	2	2,238	31
	Railroad	282	5	355	6	47	0	-26	-1
	Walk	607	16	417	11	100	1	290	6
	Other	188	2	129	1	30	0	89	1
	Total	6,754	121	4,627	82	1,101	6	3,228	45
Weekday Midday	Auto	360	128	375	133	86	30	71	25
	Taxi	904	336	937	347	213	78	180	67
	Bus	577	260	516	219	138	61	199	102
	Subway	1,332	425	243	59	320	101	1,409	467
	Railroad	166	53	227	68	40	12	-21	-3
	Walk	365	209	236	127	82	44	211	126
	Other	103	39	71	27	25	9	57	21
	Total	3,808	1,451	2,606	980	904	335	2,106	806
Weekday PM	Auto	76	1,245	77	1,294	72	228	71	179
	Taxi	63	3,324	65	3,452	15	566	13	438
	Bus	89	2,511	85	2,010	72	447	76	948
	Subway	215	3,841	58	457	179	735	336	4,119
	Railroad	21	510	26	634	14	91	9	-33
	Walk	31	1,754	21	1,208	15	311	25	857
	Other	7	328	5	226	2	65	4	167
	Total	502	13,513	337	9,281	370	2,443	535	6,675
Weeknight	Auto	0	26	0	26	0	0	0	0
	Taxi	0	72	0	72	0	0	0	0
	Bus	0	53	0	37	0	0	0	16
	Subway	0	73	0	6	0	0	0	67
	Railroad	0	10	0	12	0	0	0	-2
	Walk	0	36	0	24	0	0	0	12
	Other	0	6	0	4	0	0	0	2
	Total	0	277	0	180	0	0	0	97
Sunday	Auto	3,130	2,514	2,895	2,328	0	0	235	186
	Taxi	258	352	238	325	0	0	20	27
	Bus	225	328	181	295	0	0	44	33
	Subway	4,212	3,265	1,104	798	0	0	3,108	2,467
	Railroad	585	352	715	428	0	0	-130	-76
	Walk	240	1,742	146	1,064	0	0	94	678
	Other	322	213	197	130	0	0	125	83
	Total	8,973	8,767	5,477	5,368	0	0	3,496	3,399

* Net unbalanced taxi trips are listed for all components; total taxi trips were balanced on a site-by-site basis.

TABLE 19-7 (CONTINUED)
FUTURE PEAK PERIOD: BREAKDOWN OF PERSON AND VEHICULAR TRIPS GENERATED BY CONVENTION EVENTS

Net Total Vehicle Trips		Convention Center				Multi-Use Facility		Net Incremental Trips (with unbalanced taxis*)	
		2025 Projected Trips		2003 Existing Trips		2025 Projected Trips			
		In	Out	In	Out	In	Out	In	Out
AM	Auto	351	6	363	7	60	0	48	-1
	Taxi	883	14	922	14	142	1	103	1
	Truck	-	-	-	-	4	4	16	16
	Total	1,234	20	1,285	21	206	5	167	16
Midday	Auto	211	75	220	78	51	18	42	15
	Taxi	485	179	506	186	115	42	94	35
	Truck	-	-	-	-	7	7	29	29
	Total	696	254	726	265	173	67	165	79
PM	Auto	57	720	58	748	59	137	58	109
	Taxi	34	1,635	36	1,707	8	297	6	225
	Truck	-	-	-	-	1	1	2	2
	Total	91	2,355	93	2,455	68	435	66	336
Weeknight	Auto	0	15	0	14	0	0	0	1
	Taxi	0	32	0	32	0	0	0	0
	Truck	-	-	-	-	0	0	0	0
	Total	0	47	0	46	0	0	0	1
Sunday	Auto	1,043	863	965	801	0	0	78	62
	Taxi	99	135	92	125	0	0	7	10
	Truck	0	-	-	-	0	0	2	2
	Total	1,142	998	1,057	925	0	0	87	74

* Net unbalanced taxi trips are listed for all components; total taxi trips were balanced on a site-by-site basis.

d) Traffic Assignment

1990 Census reverse journey-to-work data were used to develop trip origin land destination patterns for office and uses. (2000 Census reverse journey-to-work data have not yet been validated by the U.S. Department of Commerce, and so have not been incorporated into this methodology.) 2000 Census journey-to-work data were used to develop trip origin and destination patterns for residential uses. Survey data (see Appendix S.2) were used to identify travel patterns for the Convention Center, Multi-Use Facility, and MSG, as well as the number of truck trips serving these facilities. Trips entering and leaving Manhattan and the Project Area were then assigned to travel routes, which were prepared separately for cars, taxis, and trucks for each of the development sites. These routes varied to reflect peak hour operations at the Lincoln Tunnel, Queens Midtown Tunnel, and Queensboro Bridge portals. They also varied by analysis year and condition, to account for the different land uses projected to be present in the 2010 and 2025 Future With and Future Without the Proposed Action. A final balancing of the vehicle trips was completed by assigning cars to parking facilities at or near their destinations, trucks to truck routes, and an equivalent number of taxis entering and exiting the study area during each hour.

e) Determination of Significant Traffic Impacts

Signalized Intersections

Based on the thresholds established in the *CEQR Technical Manual*, if a signalized intersection lane group with LOS of A, B, or C in the Future Without the Proposed Action deteriorates to a deficient LOS (mid-level D, E, or F) in the Future With the Proposed Action, a significant adverse impact is deemed to have occurred (Table 19-8). Any LOS change to an existing delay of less than 45.0 seconds (mid-LOS D) is not considered an impact for the purposes of this traffic analysis. For a mid-LOS D in the Future Without the Proposed Action, an increase of delay by five or more seconds is considered a significant adverse impact. For a LOS E in the Future Without the Proposed Action, the threshold is a 4-second increase in delay, and for a LOS F in the Future Without the Proposed Action, a 3-second increase in delay is considered significant. However, if an intersection with LOS F in the Future Without the Proposed Action has a delay in excess of 120 seconds, an increase in the Future

With the Proposed Action delay of more than one second is considered significant, unless the Proposed Action would generate fewer than five vehicles through that intersection in the peak hour.

TABLE 19-8
SUMMARY OF CRITERIA FOR DETERMINATION OF SIGNIFICANT ADVERSE IMPACTS AND MITIGATION MEASURES: SIGNALIZED INTERSECTIONS

Level of Service/Significant Adverse Impact		Improvement Required
Future Without the Proposed Action	**Future With the Proposed Action**	
A-C	Mid-Level D (with 45 seconds of delay or more), E, F	Reduce delay to less than 45 seconds.
Mid-Level D (with delay of 45 seconds or more)	Increase of 5 or more seconds of delay	Return delay to Future Without the Proposed Action levels.
E	Increase of 4 or more seconds of delay	
F (with delay of 120 seconds or less)	Increase of 3 or more seconds of delay	
F (with delay of 120 seconds or more)	Increase of 1 or more seconds of delay and generation of five or more vehicles in peak hour	

Source: CEQR Technical Manual.

Unsignalized Intersections

The criteria applied for unsignalized intersections are similar to those for signalized intersections, except for the criteria for mid-LOS D. Any LOS change for an unsignalized intersection under the Future With the Proposed Action to a level with a delay of 30.0 seconds (mid-LOS D) or less was not considered an impact for the purposes of this traffic analysis. However, for traffic from a minor street to cause significant adverse impacts, 90 passenger-car equivalents must be identified in the Future With the Proposed Action in any peak hour (Table 19-9).

TABLE 19-9
SUMMARY OF CRITERIA FOR DETERMINATION OF SIGNIFICANT ADVERSE IMPACTS AND MITIGATION MEASURES: UNSIGNALIZED INTERSECTIONS

Level of Service/Significant Adverse Impact		Improvement Required
Future Without the Proposed Action	**Future With the Proposed Action**	
A-C	Mid-Level D (with 30 seconds of delay or more), E, F	Improve delay to 30 seconds or less.
Mid-Level D (with delay of 30 seconds or more)	Increase of 5 or more seconds of delay	Return delay to Future Without the Proposed Action levels.
E	Increase of 4 or more seconds of delay	
F (with delay of 120 seconds or less)	Increase of 3 or more seconds of delay	
F (with delay of 120 seconds or more)	Increase of 1 or more seconds of delay and generation of five or more vehicles in peak hour	

Reasonable Worst-Case Scenario

Multiple conservative assumptions were factored into the analysis methodology which included:

- For 2010:
  - The Sunday Special Event peak hour analysis assumes an 85th percentile event at the expanded Convention Center, a New York Jets game at the Multi-Use Facility, and an event at MSG. This scenario would occur no more than once a year.
  - The weeknight and Sunday Special Event peak hour analyses assume 100 percent attendance (75,000) at the Multi-Use Facility. Typically, approximately 10 percent of the ticket buyers are "no shows."
  - Background traffic during pre- and post-game times within the Project Area is anticipated to occur earlier or later as drivers choose to avoid the peak arrival and departure hours at the

proposed Multi-Use Facility, or use other roadways which avoid the Project Area. These choices were not assumed in either the weeknight or Sunday Special Event analyses.

- The weekday Midday peak hour includes concurrent 85th percentile convention events at both the expanded Convention Center and the Multi-Use Facility.

- For 2025:
  - The assumptions noted above for 2010.
  - For both weeknight and Sunday Special Event peak hours, the analysis not only assumes a simultaneous event at the expanded MSG (with more than 15 percent greater capacity than MSG's current facility), but also assumes that there would be a significant increase in MSG's auto share. While expansion is anticipated to increase the overall number of auto trips, it would not be likely to significantly alter auto and taxi modal shares for all MSG attendees.
  - The weekday AM, Midday, and PM analyses (as well as the weeknight and Sunday Special Event analyses) all assumed full development of the commercial and residential uses contemplated by the Proposed Action, together with a continuing annual increase of background traffic of 0.5 percent for each year through 2025 (that is, a cumulative background increase of approximately 11 percent) throughout the study area.

For both 2010 and 2025, these are highly conservative combinations of events and vehicular trip assumptions that would rarely occur.

4. Traffic Data Collection

a) Utilization of Existing Data

The analyses of traffic and transportation impacts for this FGEIS incorporate data collected for Midtown Manhattan and methodologies utilized in the DCP's *Far West Midtown Transportation Study*. However, a number of changes have occurred since the finalization of that report, requiring the modification, replacement, or expansion of much of those data. The data collected for the *Transportation Study* have therefore been updated to reflect existing (2003) conditions and expanded to include peak hours not previously analyzed. In addition, traffic volumes for Upper West Side intersections were obtained from the DCP's *Sustainable Development Traffic Study, Algin Rezoning Traffic Study, Fordham University Lincoln Center Campus Expansion Traffic Study,* and *West 72nd Street Ramp Closure Study*.

The data collected for this analysis have also been calibrated to reflect changes in the study area after completion of the DGEIS, including NYCDOT's redesignation of Eleventh Avenue for one-way operations southbound between West 42nd and West 44th Streets, implementation of the Port Authority of New York & New Jersey's (PANYNJ) Lincoln Tunnel Access project, the effects of recent Holland Tunnel truck restrictions, and the implementation of Midtown *THRU* street restrictions. In order to model the RWCS, comparison of existing to future conditions did not take credit for current attendees at New York Jets games who drive through the Project Area en route to the Meadowlands. Future attendees at Jets games at the proposed Multi-Use Facility were considered new drivers to the area, resulting in additional traffic volumes in the Special Event peak hours.

b) Automatic Traffic Recorder (ATR) Counts

Continuous, 24-hour, directional ATR machine counts were collected at 100 locations in May 2003. The data collection period included counts on five consecutive weekdays and two consecutive weekend days. The locations selected for ATR counts are shown in Figure 19-4 and listed in Appendix S.2. The majority of ATRs within the primary study area were placed in the same locations as those used for the *Transportation Study* for comparison purposes between 2000 and 2003

conditions; changes between 2000 and 2003 include increased Midtown volumes. The updated volumes were compared to and balanced with traffic studies performed within the study area for other environmental review documents. These balanced vehicle volumes were used in the analysis.

The remaining ATR locations were along major approach routes in the secondary study area. Recent ATR data for approaches to the Lincoln Tunnel were also provided by PANYNJ.

c) Manual Turning Movement Counts

Approximately 40 critical intersections (Figure 19-5, Figure 19-6, and Appendix S.2) were selected for manual turning movement counts during the weekday AM, Midday, and PM peak hours. Manual counts are recorded after human observation of a location and offer more detailed data than ATR counts. Manual turning movements were counted during the peak hours at these 40 intersections on two sets of three consecutive days (May 13 – 15, 2003 and May 20 – 22, 2003). Each of the approximately 50 intersections selected for analysis during the weeknight and Sunday hours was manually counted on June 1, 2003. These locations are listed in Appendix S.2.

The manual turning movement counts have also been adjusted based on the balanced traffic networks in the *Transportation Study*. This adjustment accounted for operational changes that have occurred since the 2000 counts, such as multiple modifications to traffic operations on Eleventh Avenue, the effects of recent Holland Tunnel truck and Lincoln Tunnel operational changes, and the implementation of *THRU* street restrictions. Because of the recent operational changes, the movements at Eleventh Avenue were manually counted between West 30th Street and West 42nd Street during the weekday AM, Midday, and PM peak hours.

d) Vehicle Classification Counts

Vehicle classification counts were conducted at 13 intersections (Figure 19-7 and Appendix S.2) concurrently to provide input for the traffic, air quality, and noise analyses. Eight vehicular classes were counted at each of these intersection approaches, including:

- Automobiles
- Sports Utility Vehicles
- Medallion Taxis
- Light Duty Trucks (up to 2 axles and 6 tires)
- Medium Duty Trucks (3 axles)
- Heavy Duty Trucks (4 or more axles and 6 or more tires)
- Heavy Duty Diesel Trucks (4 or more axles and 6 or more tires with vertical exhaust pipe)
- Buses

e) River Crossings

In order to describe impacts to Manhattan river crossings and their approaches in the surrounding boroughs, existing vehicular volumes on the East, Hudson, and Harlem Rivers bridges and tunnels were collected and summarized. Data for the following river crossings were extracted from *New York City Bridge Traffic Volumes 2003* [5] for the weekday AM, Midday, PM, and weeknight Special Event peak hours:

- Brooklyn-Battery Tunnel

[5] New York City Department of Transportation, 1998

- Brooklyn Bridge
- Manhattan Bridge
- Williamsburg Bridge
- Queens Midtown Tunnel
- Queensboro Bridge
- Alexander Hamilton Bridge
- University Heights/Broadway Bridges
- Madison Avenue/145th Street/Macombs Dam Bridges
- Willis Avenue/Third Avenue Bridges
- Triborough Bridge (Manhattan span)
- Washington Bridge
- Henry Hudson Bridge
- George Washington Bridge
- Lincoln Tunnel
- Holland Tunnel

With the exception of the inbound Hudson River crossings, where 2004 Sunday data was available, bridge and tunnel traffic volumes were not available for the Sunday analysis hour. However, an analysis of available Lincoln Tunnel Sunday volume counts, and Sunday traffic counts conducted at the approaches to the Queensboro Bridge and Queens Midtown Tunnel, revealed that Sunday 4-5 PM peak hour traffic volumes are between eight and nine percent higher than weekday Midday (12-1 PM) traffic counts at these facilities. For the purposes of this analysis, it was assumed that this relationship is true for all of the Manhattan river crossings.

2010 and 2025 traffic volumes were projected for each of these river crossings utilizing background traffic growth rates and traffic assignments for other developments consistent with the development of local traffic volumes throughout this chapter. With the exception of the Brooklyn Bridge, Manhattan Bridge, Queensboro Bridge and certain Harlem River crossings, direct access from the regional highway network is generally available to the above river crossings in the boroughs outside Manhattan. Multiple local roadway routes provide access to those bridges without direct highway connections.

Toll plazas meter the flow of traffic at the Brooklyn-Battery Tunnel, Queens Midtown Tunnel, Triborough Bridge, Henry Hudson Bridge, George Washington Bridge, Lincoln Tunnel, and Holland Tunnel. Tolls are collected entering Manhattan on the George Washington Bridge, Lincoln Tunnel, and Holland Tunnel. All other tolls are collected in both directions. All toll plazas are located outside Manhattan.

While the *CEQR Technical Manual* does not provide analysis methodology for these portals, an analysis of future conditions has been conducted, and increases have been disclosed.

f) Additional Data

The physical and operational data collected for and documented within the *Transportation Study, Sustainable Development Traffic Study, Algin Rezoning Traffic Study, Fordham University Lincoln Center Campus Expansion Traffic Study,* and *West 72nd Street Ramp Closure Study,* including the

number of moving lanes, were utilized as appropriate. Signal timing plans for each intersection, parking restrictions, and expanded turn restrictions are based on New York City Department of Transportation (NYCDOT) records and were verified with field surveys. Updated Route 9A signal timings were provided by the NYCDOT in Spring 2004; analysis of these modified signal timings is included in this FGEIS.

5. Conditions for Analysis

a) Future Without the Proposed Action

Between 2003 and 2025, transportation demands in the study area are anticipated to increase due to known development projects in the area and background growth. In order to project traffic and transportation conditions for future years, it is necessary to account for all changes to the built environment anticipated between current and future years that would be realized independent of the Proposed Action. To forecast demands under the Future Without the Proposed Action, the development projects listed in Chapter 3, "Analytical Framework," were compiled (along with mitigation) in addition to an annual background growth rate; the result was then applied to existing conditions.

For the 2010 Future Without the Proposed Action, a cumulative background growth rate of approximately four percent was applied to 2003 conditions to represent background growth occurring over the 2010 period (also using an annual background growth rate of 0.5 percent per year), in addition to the known developments within the study area. The 2025 Future Without the Proposed Action adds additional background growth at the same 0.5 percent growth rate, producing a cumulative background growth rate of approximately 12 percent, in addition to the developments through 2010. There are no projects currently determined for development between 2010 and 2025.

Traffic analysis methodologies for trip generation rates, modal splits, temporal distributions, and assignments to the roadway networks for anticipated types of land uses are provided in Appendix S.1.

b) Future With the Proposed Action

To project traffic and parking conditions for future years (2010 and 2025), it is necessary to account for all changes to the built environment anticipated between existing and future conditions which would be realized only with the Proposed Action. The elements included in the Future With the Proposed Action are described below. Detailed traffic analysis methodologies for trip generation rates, modal splits, temporal distributions, and assignments to the roadway networks are described in a series of technical memoranda provided in Appendices S.1 and S.2.

Rezoning and Related Land Use Actions

The reasonable worst-case development scenario is based on a long-term forecast for development potential that can reasonably be expected to occur within the Rezoning Area with the Proposed Action, projected to be approximately 43 million square feet.

(a) Commercial Office and Retail Development

The long-term development projections — over 28 million square feet of office use and approximately one million square feet of retail use — represent the market study's estimate of growth in the foreseeable "long-term" future. It is likely that some of this development would not materialize until after 2025, which is the ultimate future analysis year for the Proposed Action. However, given the margin of error inherent in any long-term projection, and to be conservative for purposes of this FGEIS, the 2025 scenario assumes that up to 29 million square feet of office and up to 1.1 million square feet of retail development would be in place by 2025.

By the 2010 analysis year, the No. 7 Subway Extension, the Multi-Use Facility, and the Convention Center Expansion would be completed. Based on historical average absorption rates in Midtown

Manhattan, the study area would absorb about one million square feet per year of commercial development, and allowing for time to construct office buildings, the area is projected to receive a total of 2.2 million square feet of office space and 91,500 square feet of retail space by 2010.

In order to model the reasonable worst-case scenario, relocation of MSG has been included in the evaluation because a relocated MSG would be larger, generating more trips than those to the current site. As a conservative measure, since the relocated site would no longer be located above Penn Station, the percentage of attendees driving as opposed to using transit is assumed to increase. With more trips and a greater percentage by automobile, relocation of MSG is anticipated to result in more significant adverse impacts to the roadway network than maintaining MSG at its current site.

(b) Residential Use

The residential market study determined that the Rezoning Area could see an additional 12,600 housing units by 2025, 10,600 more than in the 2025 Future Without the Proposed Action. Given the strong current market for residential development, the market study estimated that 2.7 million square feet (approximately 2,700 units) would be constructed by 2010.

No. 7 Subway Extension

The Proposed Action would include the extension of the No. 7 Subway west from its current terminus at Times Square, approximately one mile. The line would extend west under West 41st Street and curve to the south along a 500-foot radius into Eleventh Avenue. A new Terminal Station would be located at West 34th Street and Eleventh Avenue by 2010. An Intermediate Station at West 41st Street and Tenth Avenue would be opened by 2025.

Convention Center

Preliminary plans call for the proposed expansion of the Convention Center by 2010 to include additional exhibition halls, meeting rooms, and ballroom space contiguous to the existing building and development of a 1,500-room hotel that would be linked to the Convention Center. Additional space within the Convention Center would be utilized for secondary support, pre-function, food court, and retail facilities. These secondary areas have not been considered in terms of trip generation, as they would not be expected to attract additional travel demand.

In the Future With the Proposed Action, vehicles would be able to access the Convention Center at Eleventh Avenue at West 41st Street, while pedestrians would be able to enter the Convention Center from multiple points along Eleventh Avenue, as well as from West 34th Street and West 42nd Street, between Eleventh and Twelfth Avenues.

In the Future With the Proposed Action, expanded truck marshalling[6] would be available below-grade between West 33rd and West 34th Streets from Eleventh to Twelfth Avenues. The truck marshalling area would accommodate the estimated 600 trucks during peak operations at the expanded Convention Center. Trucks would access the marshalling yard from an entrance on Twelfth Avenue. These trucks would not use the street to access the Convention Center; instead, they would make use of an existing, unused below-grade rail right-of-way, which extends from the marshalling area northward beneath Eleventh Avenue and westward between West 40th and West 41st Streets under the proposed Convention Center Expansion. In the event that this unused right-of-way is not available for use as a truck access connection between the Convention Center and the marshalling yards, Twelfth Avenue would be used as the alternative access. A targeted analysis of the

[6] In addition, other transportation functions could also be located within the block between West 33rd and West 34th Streets and Eleventh and Twelfth Avenues, including LIRR train storage. These uses would only be implemented upon consideration of the marshalling, parking, and other needs of the Convention Center and subject to additional future environmental reviews if necessary.

intersections that would be utilized based on this alternate route has been conducted. While five additional intersections along Twelfth Avenue would receive additional traffic volume, no additional significant adverse impacts are projected based on this scenario, compared to the Proposed Action.

Multi-Use Facility

The Convention Corridor created as a result of the Proposed Action would include a new Multi-Use Facility, with approximately 18,000 square feet of permanent meeting room space and the capacity to convert into a number of different uses and configurations, including a stadium configuration with a seating capacity of approximately 75,000, an exhibition configuration including 180,000 square feet of exhibition floor space, or a plenary hall configuration that provides a seating capacity of up to approximately 40,000.

Vehicular and pedestrian access to the Multi-Use Facility is proposed to be located on the north and south sides above street level (accessed by ramps, steps, and/or escalators), and an entrance for attendees with suites or club memberships would be located on the east side facing Eleventh Avenue. A loading dock would be located on the south side. Vehicular access to these areas would be from Eleventh Avenue.

A north entry would be located along the entire frontage of West 33rd Street, serving patrons arriving from the ferry terminal at West 39th Street and Twelfth Avenue, the No. 7 Subway Extension, and points north. A south entry would be located along the entire West 30th Street frontage above street level, with access from the High Line on West 30th Street. An east entry would be located along the centerline of the building between West 31st and West 32nd Streets on Eleventh Avenue. An underground pedestrian connection would also be provided between the Multi-Use Facility and the Convention Center.

Street Closings

To accommodate the proposed Convention Center Expansion, the following existing streets would be closed by 2010 to through traffic:

- West 33rd Street between Eleventh and Twelfth Avenues (Multi-Use Facility);
- West 39th Street between Eleventh and Twelfth Avenues (Convention Center Expansion); and
- West 40th Street between Eleventh and Twelfth Avenues (Convention Center Expansion).

In addition, West 41st Street between Eleventh and Twelfth Avenues would be reconfigured and effectively closed to through traffic.

While these blocks would be closed to vehicular traffic, a through-block pedestrian passageway would be provided in place of West 40th Street.

Midblock Park and Boulevard System

The Proposed Action includes a Midblock Park and Boulevard System between Tenth and Eleventh Avenues, extending from West 33rd Street to West 39th Street. At West 39th Street, the open space would connect via a pedestrian bridge to West 42nd Street. The boulevard would lie on the east and west sides of the open space, with new intersections at West 33rd, West 34th, West 35th, West 36th, West 37th, and West 38th Streets. Only the portion from West 33rd Street to West 34th Street would be completed by 2010, with the remainder from West 34th Street to West 42nd Street to be completed by 2025.

The midblock boulevard would include a one-way northbound segment from West 33rd Street to West 38th Street and a one-way southbound segment from West 38th Street to West 35th Street. Each segment would include two 11-foot through lanes (with one permitting turns) and an 8-foot

parking lane. Each new intersection would be directed by a traffic signal, except for West 38th Street at the midblock boulevard (southbound), since this location would have no conflicting movements.

Below the boulevard, from West 34th Street to West 36th Street, a 950-space public parking garage would be constructed by 2025 to accommodate a portion of the parking demand generated throughout the Rezoning Area. Vehicular ingress and egress to the parking garage would be provided at midblock ramps from both West 35th and West 36th Streets.

Relocation of DSNY Facility and NYPD Tow Pound

This FGEIS analyzes the relocation of two facilities (currently outside the Project Area) – the Department of Sanitation of the City of New York (DSNY) District 6 (Gansevoort peninsula facility) and District 5 (Midtown facility), and the Manhattan Vehicle Tow Pound operated by the New York City Police Department (NYPD) located on Pier 76 – into one combined municipal facility between West 29th and 30th Streets from Eleventh to Twelfth Avenues (Block 675) by 2010. A full-block, publicly accessible open space (approximately 3.6 acres) for active recreation would be developed on the roof. The NYPD and DSNY are also considering other locations. If Block 675 is not developed as relocation space for the DSNY and/or the NYPD Tow Pound, the publicly accessible open space would be developed at-grade.

Since the peak hours for this facility would vary with the peak traffic hour for the Proposed Action;[7] traffic generated by this facility would be minimal during applicable project-related peak hours. Therefore, no additional traffic volumes or traffic-related impacts are associated with this element.

PANYNJ Bus Garage

Because the Proposed Action would provide significant development opportunities, it is anticipated that the PANYNJ would, over time, consolidate its bus parking in the one location. Currently, the PANYNJ stores buses on several lots throughout the study area. For analysis purposes, it was assumed that a new garage would occupy Projected Development Site 21 (between West 38th and West 39th Streets, Ninth to Tenth Avenues) within a 450,000-square-foot structure. The planned PANYNJ Bus Garage would accommodate the need for additional capacity within the Project Area, and particularly in the area surrounding the PABT. Therefore, it is conservatively assumed, for analytical purposes, in the 2025 Future With the Proposed Action; however, it is not an element of the Proposed Action. The garage is anticipated to include a direct ramp connection to the PABT.

6. Parking Impact Analysis Methodology

On-street parking regulations were identified throughout the rezoning area by confirming the data presented in the *Transportation Study* and by performing a visual sampling of on-street parking utilization (see Figure 19-8 and Figure 19-9).

Off-street parking utilization data were collected for defined study areas through manual site counts during four analysis periods. These data were utilized to update off-street parking utilization information documented in the *Transportation Study*.

The parking analysis included a location, capacity, and general utilization survey of all public off-street parking facilities in the study area that are open during the analysis periods. Off-street public parking facilities were assessed for capacities and approximate utilization during the following four periods:

- Weekday Midday (12:00 PM – 2:00 PM);

[7] New York City Economic Development Corporation, *Technical Memorandum—Preliminary Assessment of Relocation Scenarios in West Side Garage Study – Draft Report*; Parsons Brinckerhoff Quade & Douglas, Inc., September 2002.

- Weekday overnight (12:00 AM – 5:00 AM);
- Sunday afternoon Special Event (1:00 PM – 4:00 PM); and
- Weeknight Special Event (6:00 PM – 9:00 PM).

Visual inspection and interviews with parking facility operators were conducted in May and June 2003. Parking utilization data were adjusted based on surveys collected on the following dates in May 2000, October 2000, October 2003, and November 2003 to reflect demand associated with concurrent events at Madison Square Garden and the Convention Center:

- Weekday Midday/weeknight Special Event Periods: Monday, October 16, 2000, which included a sporting event at Madison Square Garden (Mighty Ducks of Anaheim vs. New York Rangers at 7 PM) and events at the Convention Center (International Fashion Boutique Show, International Kids Fashion Show, and the New York Menswear Show) and Wednesday, October 29, 2003, which included a sporting event at Madison Square Garden (Orlando Magic vs. New York Knicks at 8 PM) and events at the Convention Center (Maritime Security Expo, KosherFest 2003, and the ING New York City Marathon Expo)
- Weekday Overnight Period: Thursday, October 30, 2003, which included a sporting event at Madison Square Garden (Carolina Hurricanes vs. New York Rangers at 7 PM)
- Sunday Afternoon Period: Sunday, May 21, 2000, which included events at the Convention Center (National Stationery Show, Surtex Expo, and International Contemporary Furniture Fair), Sunday, October 15, 2000, which included events at the Convention Center (International Fashion Boutique Show, International Kids Fashion Show, and the New York Menswear Show), and Sunday, November 2, 2003, which included a sporting event at Madison Square Garden (Colorado Avalanche vs. New York Rangers at 5 PM).

The weekday overnight period was analyzed to project the changes in off-street parking resulting from the rezoning elements of the Proposed Action. For the weekday overnight period, the off-street parking study area comprised the area within a ¼-mile radius extended from the boundaries of the rezoning area (the maximum distance a driver is generally willing to walk for parking).

Significant residential development throughout the study area is anticipated for the 2010 and 2025 Future Without the Proposed Action conditions. To account for this development, parking provisions as specified in environmental review documents for other previously approved projects were utilized. Where parking provisions were not available, a typical rate for accessory parking of one space per five dwelling units was assumed.[8]

According to the *CEQR Technical Manual*,[9] "The extent of the parking study area corresponds to the maximum distance that someone driving to the site is willing to walk." In the Future With the Proposed Action, attendees of football games, Convention Center events, and other events at the proposed Multi-Use Facility and expanded Convention Center are expected to be willing to walk farther than the standard ¼-mile. To account for the more extensive supply of parking available to drivers willing to park farther from their destination, study areas were assigned which range from ¼–mile for demand generated by the proposed rezoning to ½-mile for demand generated by the Multi-Use Facility, Convention Center, or MSG.

[8] Parking rate based on New York City Zoning Resolution for C6-2 and C6-4 zones and *220 West 26th Street Garage EAS* (1999).

[9] Page 3-5, Section 312.

The weekday Midday period was analyzed to determine off-street parking conditions resulting from the rezoning elements of the Proposed Action in conjunction with trade shows in the Convention Corridor. The off-street parking study area for this period was defined as the area within a ¼-mile radius extended from the boundaries of the rezoning, and also within a ½-mile radius of the Convention Center and Multi-Use Facility. The ½-mile radius is consistent with the distance that attendees currently walk to reach the football stadium in the Meadowlands.

The Sunday afternoon period was analyzed to determine off-street parking conditions prior to a football game at the Multi-Use Facility in conjunction with a public show at the Convention Center and an event at MSG. The off-street parking study area for this period is defined as within ½-mile of these three facilities.

The weeknight period was analyzed to determine parking conditions prior to a football game at the Multi-Use Facility. The off-street parking study area for the weeknight period is defined as within a ½-mile radius.

Demand for future parking was projected based upon other development projects in the area and an annual growth rate for demand for new parking. Residential auto ownership for the study area in the Future With the Proposed Action is primarily based upon 2000 Census auto ownership data for residential uses on the Upper East Side (roughly bounded by Central Park, the East River, East 59th Street, and East 96th Street), as this area has a high rate of auto ownership compared to the rest of Manhattan. The project-related demand for new parking accounts for displacement of existing parking facilities and land uses as a result of the Proposed Action, as well as the development of new facilities and uses which would be located in Hudson Yards. Rather than using the 0.5 percent annual background growth rate recommended by the *CEQR Technical Manual* for parking analysis, the analysis used a background rate of 0.125 percent, because demand for parking is projected to grow at a lower rate than background vehicular traffic in the study area, as this growth primarily reflects through traffic, while the Proposed Action will cause most of the future growth in parking demand.

Daily off-street parking accumulation profiles were prepared for each of the illustrative development scenarios in the 2010 and 2025 Future With the Proposed Action. The amount of off-street parking proposed to be developed as part of each projected development was compared to the projected demand to determine sufficiency in the study area.

D. EXISTING CONDITIONS

This section describes the existing roadway system that currently serves the study area and its regional accessways. Significant vehicular infrastructure and the existing on- and off-street parking inventory within the area are also described in this section.

1. Roadway Network

a) Grid System

The street network throughout most of Midtown Manhattan, and specifically throughout the study area, is a grid composed primarily of one-way streets and avenues. The primary vehicular routes to and from the Project Area are the five north-south avenues (Twelfth Avenue (Route 9A)), Eleventh Avenue, Tenth Avenue, Ninth Avenue, and Eighth Avenue), and the three bi-directional crosstown streets (23rd Street, 34th Street, and 42nd Street).

Streets

Streets run east-west (crosstown), with curb-to-curb widths varying from 30 to 34 feet. The exceptions to this rule are 34th and 42nd Streets (two of the major east-west streets within the study area), where curb-to-curb widths vary from 53 to 60 feet. Sidewalk widths on the minor crosstown

streets vary from about 11 to 15 feet; sidewalk widths on major crosstown streets vary from about 20 to 23.5 feet.

Even-numbered streets generally serve eastbound traffic, while odd-numbered streets generally serve westbound traffic. Two-way traffic is permitted on 23rd Street (two moving lanes plus a curb lane in each direction), 34th Street (two or more travel lanes plus curb lanes in each direction), and 42nd Street (two moving lanes plus a curb lane in each direction).

After completion of the DGEIS, PANYNJ modified certain street operations for security of the Lincoln Tunnel and the PABT. The following PANYNJ modifications which have occurred since completion of the DGEIS have been incorporated into the revised traffic analysis in this FGEIS:

- Closure of West 41st Street between Eighth and Ninth Avenues;
- No right turn from Ninth Avenue to West 41st Street (except for buses) between 4:00 PM and 7:00 PM, weeknights;
- No left turn from 41st Street to Galvin Avenue (except for buses) between 4:00 PM and 7:00 PM, weeknights;
- Closure of West 39th Street between Ninth and Eleventh Avenues between 4:00 PM and 7:00 PM, weeknights;
- Closure of the West 39th Street entrance to the Lincoln Tunnel between 4:00 PM and 7:00 PM, weeknights;
- Closure of the West 39th Street underpass between 4:00 PM and 7:00 PM, weeknights; and
- Closure of the West 33rd Street entrance to the Lincoln Tunnel Expressway between 4:00 PM and 7:00 PM, weeknights.

Avenues

Avenues run north-south (uptown/downtown) and are typically 60 to 70 feet wide from curb to curb, with sidewalks widths ranging from 15 to 20 feet.

Sixth, Eighth, and Tenth Avenues are each six lanes, one-way northbound. Seventh and Ninth Avenues flow one-way southbound with six lanes each. Seventh and Eighth Avenues and Ninth and Tenth Avenues each form one-way north-south arterial pairs.

Broadway, varying from four to five lanes, runs south-southeast, cutting a diagonal route through the eastern portion of the study area and creating unique intersections at locations.

Prior to 2001, the six lanes of Eleventh Avenue ran one-way, southbound only. In response to the events of September 11, 2001, the NYCDOT and the NYPD converted Eleventh Avenue between West 27th and West 40th Streets to two-way traffic. This modification provides a location for security inspection of trucks with more than three axles entering the Lincoln Tunnel. Signs are posted throughout the roadway network directing trucks to use this approach. As of June 2003, the NYCDOT converted Eleventh Avenue to one-way southbound operation south of West 34th Street. Eleventh Avenue between West 42nd and West 44th Streets has since been converted from two-way to one-way southbound operation; these conditions have been incorporated into the analysis for the FGEIS.

Route 9A (Twelfth Avenue within the study area) runs two-way (north- and southbound) along the Hudson River waterfront from the Henry Hudson Bridge to South Ferry and the Brooklyn Battery Tunnel. This roadway, the westernmost arterial in Manhattan, serves as a principal route through the study area and connects with the Henry Hudson Parkway to the north. Twelfth Avenue recently underwent a significant reconstruction from Battery Place to West 59th Street. The reconstruction

created an at-grade arterial with a landscaped median, turning bays, and generally, seven travel lanes (four northbound and three southbound) with on-street parking along the northbound side. Buffered jogging and biking trails run along the western edge of Twelfth Avenue, where Hudson River Park is currently being implemented. Updated signal timings for Route 9A provided by the NYCDOT have been incorporated into the analysis in this FGEIS.

Dyer Avenue is located between Ninth and Tenth Avenues. It operates at-grade from West 34th to West 38th Streets and from West 39th to West 42nd Streets, providing egress from the Lincoln Tunnel's middle and southern tubes between West 38th and West 39th Streets.

The Lincoln Tunnel Expressway is located between Ninth and Tenth Avenues. It operates at grade from West 30th to West 33rd Streets, both northbound and southbound from West 30th to West 31st Streets, and southbound only from West 31st to West 33rd Streets. The roadway operates below grade from West 33rd Street and serves as an access/egress route to the Lincoln Tunnel's middle and southern tubes at West 38th and West 39th Streets.

Cardinal Stepinac Place/Galvin Plaza is located between Tenth and Eleventh Avenues, operating northbound only from West 39th Street to West 40th Street and southbound only from West 40th Street to West 41st Street. This roadway serves as access to the Lincoln Tunnel's northern tube.

Exceptions to the Grid System

The regular Manhattan street grid is interrupted by the following facilities, which span across more than one square block and interrupt the standard street grid:

- PABT (between West 40th and West 42nd Streets, from Eighth to Tenth Avenues);
- Convention Center (between West 34th and West 39th Streets, from Eleventh to Twelfth Avenues);
- Penn Station/MSG (between West 31st and West 33rd Streets, from Seventh to Eighth Avenues);
- James A. Farley U.S. Post Office Building (between West 31st and West 33rd Streets, from Eighth to Ninth Avenues);
- Caemmerer Yard (between West 30th and West 33rd Streets, from Tenth to Twelfth Avenues);
- U.S. Post Office Vehicle Maintenance Facility (between West 23rd and West 25th Streets from Eleventh to Twelfth); and
- Penn South Housing Project (various blocks between West 26th and West 29th Streets, from Eighth to Ninth Avenues).

Due to these structures and a variety of grid deviations, the following streets and avenues are not continuous:

- West 27th Street between Eighth and Tenth Avenues;
- West 31st Street between Tenth and Twelfth Avenues;
- West 32nd Street between Seventh and Twelfth Avenues; and
- West 23rd, West 25th, West 35th, West 36th, West 37th, and West 38th Streets between Eleventh and Twelfth Avenues.

b) Signalization

Most intersections in the study area are controlled by traffic signals on a 90-second cycle; the major exception to this rule is Twelfth Avenue, which is on a 120-second cycle. The allocation of green and amber time is generally 60 percent (54/72 seconds) to the avenues, 35 percent to the streets (31.5/42

seconds), and 5 percent for clearance intervals (4.5/6 seconds). Pedestrian signal heads (directing with "Walk" or "Don't Walk" symbols) are present at nearly all intersections throughout the area. In addition, certain intersections have separate pedestrian phases, including Eleventh Avenue at West 36th Street, Tenth Avenue at West 42nd Street, Seventh Avenue at West 32nd Street, and Sixth Avenue and West 33rd Street.

Throughout the study area, there are five unsignalized intersections. These intersections are primarily located along Twelfth Avenue.

c) Truck Routes

The City of New York has implemented regulations for truck movements along local and through truck routes. The City defines a truck as "a vehicle which is designed for transportation of property, which has either of the following characteristics: two axles and six tires; or three or more axles."[10] Trucks having an overall length of 33 feet or more are prohibited from all roadways within the study area, except for designated through and local truck routes.

Through trucks are defined as having "neither an origin nor a destination within the Borough of Manhattan."[11] Through trucks traveling through the study area are restricted to the following routes:

- Eleventh Avenue from West 34th Street to West 42nd Street;
- Twelfth Avenue from West 22nd Street to West 34th Street;
- West 40th Street from the Lincoln Tunnel entrance to Eleventh Avenue; and
- West 42nd Street from Dyer Avenue to Eleventh Avenue.

Through trucks are also permitted on West 34th Street between Sixth and Dyer Avenues before 11:00 AM and after 6:00 PM, daily.

Local truck routes are designated routes for trucks that are "intended for the purpose of delivery, loading, or providing service within the Borough of Manhattan."[12] Local truck operations through the study area are restricted to the following routes:

- Eighth Avenue
- Ninth Avenue
- Tenth Avenue
- Eleventh Avenue
- Twelfth Avenue
- 23rd Street from First Avenue to Twelfth Avenue
- West 30th Street from Broadway to Eleventh Avenue
- 31st Street from Third Avenue to Tenth Avenue
- 34th Street from First Avenue to Twelfth Avenue
- West 40th Street from the Lincoln Tunnel entrance to Eleventh Avenue
- West 41st Street from Ninth Avenue to the Lincoln Tunnel entrance
- 42nd Street from First Avenue to Twelfth Avenue

[10] City of New York, *Rules of the City of New York, Traffic Rules and Regulations*, Volume II, Chapter 4-13.
[11] ibid.
[12] ibid.

d) Vehicular Infrastructure

Lincoln Tunnel

The Lincoln Tunnel and its access ramps are located within the study area. As the major gateway to Midtown Manhattan from New Jersey and points west, the Lincoln Tunnel is characterized by traffic congestion, which acutely affects the Project Area, especially westbound in the weeknight.

The Lincoln Tunnel, which is operated by the PANYNJ, consists of three two-lane tubes. The northern tube, which is located at West 39th Street and Eleventh Avenue, always operates in a westbound direction. The southern tube, located at West 38th Street and Tenth Avenue, operates in an eastbound direction only. The center tube, at West 39th Street and Tenth Avenue, is configured to allow each lane to operate in either a westbound or eastbound direction. The center tube currently operates with the following characteristics:

- Weekday AM peak hour: two lanes eastbound;
- Weekday MD peak hour: one lane in each direction; and
- Weekday PM peak hour: two lanes westbound.

During off-peak hours, the Lincoln Tunnel operates with three lanes in each direction, while during weekday commuting peak hours, the tubes are configured with four lanes in the peak direction and two lanes in the non-peak direction. During the weekday AM peak hour, the PANYNJ operates a 2½-mile exclusive bus lane (XBL) on Route 495 from the New Jersey Turnpike to the Lincoln Tunnel. Utilizing the XBL, commuter buses operate on a dedicated route to the Tunnel, avoiding regular rush hour traffic and significantly reducing travel time. The Lincoln Tunnel also provides direct access to the PABT via a series of above- and below-grade ramps and tunnels.

Changes to the roadways accessing the Lincoln Tunnel which have been implemented since completion of the DGEIS and incorporated into the analysis for this FGEIS are discussed above in Section D.1.a–Streets.

Port Authority Bus Terminal (PABT)

The PABT is located between Eighth and Ninth Avenues, from West 40th to West 42nd Streets. The terminal is located above the 42nd Street Station for the Eighth Avenue Subway Line (A, C, and E trains), which is connected by a below-grade passageway to the Times Square station at Seventh Avenue and Broadway. The PABT is operated by the PANYNJ and serves as the City's primary bus depot for many suburban and inter-city bus lines, providing commuter access to upstate New York, New Jersey, and Pennsylvania. Regional service to an extended area (including connections to routes across the country) is also provided at the PABT. Twenty-seven bus carriers serve the PABT, with over 6,600 buses and 176,500 passengers per weekday. The PABT also includes a series of above- and below-grade ramps and tunnels that provide direct access to the Lincoln Tunnel.[13]

2. Signalized Intersections LOS Analysis

a) Weekday AM, Midday, and PM Peak Hours

Figure 19-10 through Figure 19-28 present the year 2003 existing balanced traffic volumes and intersection LOS for the weekday AM, Midday, and PM peak hours, respectively. Table 19-10 presents all intersection approach movements currently operating under LOS mid-D, E, or F in the AM, Midday and PM peak hours. Of the 229 intersections studied for the AM, Midday, and PM peak hours, 55 intersections have at least one approach movement which operates at LOS mid-D, E, or F in

[13] *Transportation Study*, p. I-9.

the AM peak hour, 47 intersections have at least one approach movement which operates at LOS mid-D, E, or F in the Midday peak hour, and 48 intersections have at least one approach movement which operates at LOS mid-D, E, or F only during the PM peak hour. Intersections with deficient approach movements in multiple hours are generally located along Twelfth Avenue and major crosstown streets (West 23rd, West 34th, and West 57th Streets).

b) Special Event Peak Hours

Figure 19-29 through Figure 19-33 present the year 2003 existing balanced traffic volumes and intersection LOS for the weeknight and Sunday Special Event peak hours, respectively. Table 19-11 presents all intersection approach movements currently operating under LOS mid-D, E, or F in the Special Event peak hours.

Of the 51 signalized intersections studied for the weeknight and Sunday Special Event peak hours, 16 intersections currently operate with at least one approach movement at LOS mid-D, E, or F during one of the peak hours. Of these, 13 intersections have movements that operate at LOS mid-D, E, or F only during the weeknight Special Event peak hour and 12 intersections have approach movements that operate at LOS mid-D, E, or F only during the Sunday Special Event peak hour.

TABLE 19-10
EXISTING CONDITIONS: INTERSECTION APPROACHES MOVEMENTS AT LOS MID-D, E, OR F (WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-10 (CONTINUED)
EXISTING CONDITIONS: INTERSECTION APPROACHES MOVEMENTS AT LOS MID-D, E, OR F
(AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-10 (CONTINUED)
EXISTING CONDITIONS: INTERSECTION APPROACHES MOVEMENTS AT LOS MID-D, E, OR F
(AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-11
EXISTING CONDITIONS: INTERSECTION APPROACH MOVEMENTS OPERATING AT LOS MID-D, E, OR F
(WEEKNIGHT AND SUNDAY SPECIAL EVENT PEAK HOURS)

3. Unsignalized Intersections Level of Service Analysis

Of the five unsignalized intersections studied for the existing condition, only the westbound approach at Twelfth Avenue and West 45th Street in the weekday AM peak hour operates at LOS mid-D, E, or F (Table 19-12). All other movements at the five unsignalized intersections currently operate at LOS mid-D or better.

TABLE 19-12
EXISTING CONDITIONS: UNSIGNALIZED INTERSECTION APPROACH MOVEMENTS

Intersection	Movement	AM Peak Hour		Midday Peak Hour		PM Peak Hour	
		Delay (Veh/sec)	LOS	Delay	Delay (Veh/sec)	Delay	Delay (Veh/sec)
Twelfth Avenue @ 47th Street	WB	16.7	C	16.4	C	24.2	C
Twelfth Avenue @ 45th Street	WB	**38.1**	**E**	21.4	C	20.9	C
Twelfth Avenue @ 33rd Street	WB	18.8	C	16.3	C	28.0	D
Lincoln Tunnel Approach @ 33rd Street	SB	9.3	A	9.0	A	9.0	A
Twelfth Avenue @ Spring Street	WB	19.1	C	17.8	C	16.8	C

Intersection movements operating at LOS mid-D, E, or F denoted in bold.

4. River Crossings

Table 19-13 presents the existing (2003) vehicular volumes on bridges and tunnels crossing the East, Hudson, and Harlem Rivers during the weekdayAM, Midday, PM, weeknight Special Event, and Sunday Special Event peak hours. Sunday Special Event peak hour volumes for non-Hudson River crossings were estimated based on weekday Midday traffic volumes. The regional and local roadways which provide access to these crossings are generally congested during the weekday AM and PM peak commuting hours, with low vehicular speeds and queues at tolls.

Bridge and tunnel mainline vehicular capacities were estimated based on facility-specific geometric data (e.g., lane widths, lateral clearances), vehicle mix (i.e., percentage buses and large trucks), and operational policies (i.e., peak hour lane/tube reversals). Facility-specific mainline capacities were estimated by direction and time of day to reflect operational differences . Estimated facility mainline capacities are shown in Table 19-14. Higher Sunday capacities reflect lower truck and bus usage.

Volume-capacity ratios provide a measure of capacity utilization and permit a comparison of peak period utilization rates. A minimum peak hour capacity utilization of 90 percent (i.e., v/c greater than 0.90) was used to identify facilities which might be approaching their estimated mainline capacity. Table 19-15 summarizes existing mainline volume-capacity ratios. While weekday AM and PM peak hour congestion is common on most portal approaches under existing conditions, these facilities possess sufficient mainline capacity to accommodate additional traffic.

TABLE 19-13
EXISTING CONDITIONS: PEAK HOUR TRAFFIC VOLUMES BY RIVER CROSSING

TABLE 19-14
ESTIMATED BRIDGE AND TUNNEL MAINLINE VEHICULAR CAPACITIES

TABLE 19-15
ESTIMATED BRIDGE AND TUNNEL MAINLINE VOLUME – CAPACITY RATIOS

5. Off-Street Parking

Surveys of off-street commercial parking facilities, which included visual inspection and interviews with site operators, were conducted in May, June, October, and November 2003 (Table 19-16 and Figure 19-34). The results of these surveys indicate that there are 158 off-street parking facilities with a total capacity of 24,254 spaces during the weekday Midday period and 11,694 spaces in the weeknight overnight period. The difference in the number of parking spaces between the two study periods is attributed to the 94 facilities that close during the overnight period. Utilization of the existing parking supply during the weekday Midday and weekday overnight periods is approximately 80 percent and 36 percent, respectively.

TABLE 19-16
EXISTING CONDITIONS: OFF-STREET PARKING CAPACITY AND UTILIZATION

Analysis Period	Total Capacity	Demand	Utilization Rate	Available Spaces
Weekday Midday (12PM -2PM)	24,254	19,474	80%	4,780
Weekday Overnight (12AM – 5AM)	11,694	4,172	36%	7,522
Weekday Evening (6PM – 9PM)	22,676	10,319	46%	12,357
Sunday Afternoon (1PM – 4PM)	22,709	13,263	58%	9,446

Source: PB Team Surveys, June 2003

During the weekday evening period, there are 138 facilities in operation with a capacity of 22,676 parking spaces. During the Sunday afternoon period, there are 145 off-street parking facilities in operation with a capacity of 22,709 spaces. The utilization rate within these periods was recorded at 46 percent for a weekday evening and 58 percent for the Sunday afternoon (both periods include a concurrent event at MSG).

6. On-Street Parking

On-street parking regulations were also verified via field surveys during June and July 2003. One- and two-hour, individually metered parking spaces are generally clustered along Tenth and Eleventh Avenues, north of West 44th Street, and on Eighth, Ninth, and Tenth Avenues, south of West 29th Street. Muni-meters, which provide metering along entire blocks, are also located along West 45th, West 46th, and West 47th Streets, between Eighth and Ninth Avenues.

Based upon a 2003 survey, a significant portion of the on-street parking within the study area is utilized during permitted times.

E. 2010 FUTURE WITHOUT THE PROPOSED ACTION

This section presents the projected traffic and parking conditions in 2010, assuming that the Proposed Action is not implemented and that all other development projects within the study area are completed.

1. Signalized Intersection LOS Analysis

a) Weekday AM, Midday, and PM Peak Hours

Figure 19-35 through Figure 19-52 present the 2010 Future Without the Proposed Action traffic volumes for the weekday AM, Midday, and PM peak hours, respectively. Peak hour LOS, v/c ratios, and delay are presented in Table 19-17 for all intersection movements projected to operate at LOS mid-D, E, or F in the weekday AM, Midday, and PM peak hours of the 2010 Future Without the Proposed Action. During these peak hours, the most common impacts would occur at left turn approach movements, where many are projected to operate at LOS E.

During the weekday AM, Midday, and PM peak hours, 229 signalized intersections were studied. In the weekday AM peak hour, 71 intersections would have at least one approach movement which would operate at LOS mid-D, E, or F; in the weekday Midday peak hour, 59 intersections would have at least one approach movement which would operate at LOS mid-D, E, or F; 66 intersections would have at least one approach movement during the weekday PM peak hour which would operate at LOS mid-D, E, or F (primarily along Tenth and Eleventh Avenues).

TABLE 19-17
2010 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-17 (CONTINUED)
2010 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-17 (CONTINUED)
2010 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-17 (CONTINUED)
2010 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(AM, MIDDAY, AND PM PEAK HOURS)

b) Special Event Peak Hours

Figure 19-53 through Figure 19-56 present the 2010 Future Without the Proposed Action for the weeknight and Sunday Special Event peak hours, respectively. Peak hour LOS, v/c ratios, and delay are presented in Table 19-18 for all intersection movements projected to operate at LOS mid-D, E, or F in the 2010 Future Without the Proposed Action. During these peak hours, the most common impacts would occur at left turn approach movements, where many are projected to operate at LOS E.

Of the 51 signalized intersections studied for the weeknight and Sunday Special Event peak hours, 15 intersections would have at least one approach movement which would operate at LOS mid-D, E, or F during the weeknight Special Event peak hour, and 16 intersections would have at least one approach movement would operate at LOS mid-D, E, or F during the Sunday Special Event peak hour.

TABLE 19-18
2010 FUTURE WITHOUT THE PROPOSED ACTION: PEAK HOUR LOS AND V/C RATIOS
(WEEKNIGHT AND SUNDAY SPECIAL EVENT PEAK HOURS)

2. Unsignalized Intersection Level of Service Analysis

Of the five unsignalized intersections studied for the 2010 Future Without the Proposed Action, one in the weekday AM peak hour (Twelfth Avenue and West 45th Street) and one in the weekday PM peak hour (Twelfth Avenue and West 47th Street) are projected to operate with approach movements at LOS mid-D, E, or F (Table 19-19). All other unsignalized approach movements are projected to operate at LOS mid-D or better.

TABLE 19-19
2010 FUTURE WITHOUT THE PROPOSED ACTION: UNSIGNALIZED INTERSECTION APPROACH MOVEMENTS PROJECTED TO OPERATE AT MID-LOS D, E, OR F

Intersection	Movement	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		Delay (Veh/sec)	LOS	Delay	Delay (Veh/sec)	Delay	Delay (Veh/sec)
Twelfth Avenue @ 47th Street	WB					72.1	F
Twelfth Avenue @ 45th Street	WB	39.5	E				

3. River Crossings

Table 19-20 presents the projected vehicular volumes on bridges and tunnels crossing the East, Hudson, and Harlem Rivers during the AM, Midday, PM peak hours; and weeknight and Sunday Special Event peak hours in the 2010 Future Without the Proposed Action. These traffic volumes reflect projected growth in traffic volumes without the Hudson Yards development.

As shown in Table 19-21, volume-capacity ratios in the Future without the Proposed Action. would not exceed 0.90 at any facility. While most portal approaches would be relatively congested during the weekday AM and weekday PM peak commuting hours, these facilities possess sufficient mainline capacity to accommodate additional traffic.

TABLE 19-20
2010 FUTURE WITHOUT THE PROPOSED ACTION: PROJECTED TRAFFIC VOLUMES BY RIVER CROSSING

TABLE 19-21
2010 FUTURE WITHOUT THE PROPOSED ACTION: PROJECTED MAINLINE VOLUME-CAPACITY RATIOS

4. Off-Street Parking

As part of the anticipated office and residential developments included in the 2010 Future Without the Proposed Action, off-street parking is anticipated to be more highly utilized in the future. Table 19-22 presents the anticipated increases in off-street parking capacity and utilization for the four analysis periods.[14] As indicated in the table, parking during the weekday Midday period and weekday overnight period is anticipated to increase to approximately 88 and 43 percent, respectively, in 2010. Parking is anticipated to increase to 51 and 63 percent, respectively, during the weekday evening and Sunday afternoon periods.

TABLE 19-22
2010 FUTURE WITHOUT THE PROPOSED ACTION: OFF-STREET PARKING CAPACITY AND UTILIZATION

	Existing Conditions		Change In Capacity	Change In Demand	2010 Future Without the Proposed Action			
	Total Capacity	Demand			Total Capacity	Demand	Utilization Rate	Available Spaces
Weekday Midday	24,254	19,474	(515)	1,385	23,739	20,860	88%	2,879
Weekday Overnight	11,694	4,172	(160)	805	11,534	4,978	43%	6,556
Weekday Evening	22,676	10,319	(485)	895	22,191	11,214	51%	10,977
Sunday Afternoon	22,709	13,263	(515)	897	22,194	14,160	64%	8,034

5. On-Street Parking

The NYCDOT is currently expanding its commercial on-street parking program to cover the area bounded by 60th Street on the north, 33rd Street on the south, Second Avenue on the east, and Ninth Avenue on the west. The program allows trucks making deliveries to pay in advance for parking; the rate structure is geared towards staying for one hour or less. According to the NYCDOT, no additional changes to on-street parking regulations are anticipated.

In the Future Without the Proposed Action, the supply of on-street parking is anticipated to remain consistent with the current inventory. Anticipated increases in background traffic and the related parking demand are expected to increase the utilization of the existing supply and reduce or eliminate any surplus.

F. 2010 FUTURE WITH THE PROPOSED ACTION

This section presents the projected traffic and parking conditions in 2010 assuming the Proposed Action and all other development projects within the study areas are completed.

The 2010 Future With the Proposed Action would include approximately 2.2 million square feet of commercial space and 2.7 million square feet of residential space based upon the Zoning Amendment, extension of the No. 7 Subway line, expansion of the Convention Center, construction of the Multi-Use-Facility, the closings of West 33rd Street, West 39th Street, and West 40th Street between Eleventh and Twelfth Avenues, the effective closing of West 41st Street, construction of the southern portion of the Midblock Park and Boulevard, the full-block open space between West 33rd and West 34th Streets and Eleventh and Twelfth Avenues, the open space on the eastern portion of Caemmerer Yard, and construction of a new DSNY and NYPD Tow Pound facility at block 675.

[14] Parking capacities during different analysis periods in the future would vary from existing capacities due to replacement of existing parking facilities with alternate uses, construction of new facilities, and varying hours of operation.

1. Signalized Intersections

a) Significant Adverse Impact Criteria

Based on the thresholds established in the *CEQR Technical Manual,* if any signalized intersection lane group with LOS of A, B, or C in the Future Without the Proposed Action deteriorates to a deficient LOS (mid-level D, E, or F) in the Future With the Proposed Action, a significant adverse impact is deemed to have occurred. The *CEQR Technical Manual* further recommends mitigation for a LOS A, B, or C in the Future Without the Proposed Action that operates at LOS D in the Future With the Proposed Action. Therefore, any LOS change with a delay of less than 45.0 seconds (mid-LOS D) was not considered an impact for the purposes of this traffic analysis. For a LOS D in the Future Without the Proposed Action, an increase of delay by five or more seconds was considered a significant adverse impact. For a LOS E in the Future Without the Proposed Action, the threshold was a 4-second increase in delay, and for a LOS F in the Future Without the Proposed Action, a 3-second increase in delay was considered significant. However, if an intersection with LOS F in the Future Without the Proposed Action would have a delay in excess of 120 seconds, an increase in the Future With the Proposed Action delay of more than one second was considered significant, unless the Proposed Action would generate fewer than five vehicles through that intersection lane group in the peak hour.

b) LOS Analysis

Weekday AM, Midday, and PM Peak Hours

Figure 19-57 through Figure 19-74 present the incremental traffic volumes for the weekday AM, Midday, and PM peak hours, respectively, for the 2010 Future With the Proposed Action. (Incremental traffic volumes represent the additional volumes anticipated in the Future With the Proposed Action compared to the Future Without the Proposed Action.) Figure 19-79 through Figure 19-96 present the total traffic volumes for the weekday AM, Midday, and PM peak hours, respectively, for the 2010 Future With the Proposed Action. Peak hour LOS, delay, and v/c ratios are presented in Table 19-23 through Table 19-25 for all intersections with approach movements that would have impacts in the 2010 Future With the Proposed Action and for any approach movements which would operate with 45.0 seconds of delay or more.

Of the 229 signalized intersections studied for the 2010 Future With the Proposed Action compared to the 2010 Future Without the Proposed Action, 33 intersections would have significant adverse impacts in the weekday AM peak hour, 35 intersections would have significant adverse impacts in the weekday Midday peak hour, and 39 intersections would have significant adverse impacts in the weekday PM peak hour as a result of the Proposed Action. Significant adverse impacts are generally anticipated to be located along Eleventh Avenue and Twelfth Avenues, and along major east-west cross-streets (specifically, West 34th Street).

TABLE 19-23
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKDAY AM PEAK HOUR

TABLE 19-23 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – AM PEAK HOUR

TABLE 19-23 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – AM PEAK HOUR

TABLE 19-24
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKDAY MIDDAY PEAK HOUR

TABLE 19-24 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – MIDDAY PEAK HOUR

TABLE 19-25
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKDAY PM PEAK HOUR

TABLE 19-25 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – PM PEAK HOUR

TABLE 19-25 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – PM PEAK HOUR

Special Event Peak Hours

Figure 19-75 through Figure 19-78 present the incremental traffic volumes for the weeknight and Sunday Special Event peak hours, respectively, for the 2010 Future with the Proposed Action. Figure 19-97 through Figure 19-100 present the total traffic volumes for weeknight and Sunday Special Event peak hours for the 2010 Future With the Proposed Action. Table 19-26 and Table 19-27 present the peak hour LOS, delay, and v/c ratios for all intersections with approach movements that would have impacts in the 2010 Future With the Proposed Action and for any approach movements which would operate with 45.0 seconds of delay or more.

Of the 51 signalized intersections studied for the 2010 Future With the Proposed Action compared to the 2010 Future Without the Proposed Action, 22 intersections would have significant adverse impacts in the weeknight Special Event peak hour and 26 intersections would have significant adverse impacts in the Sunday Special Event peak hour. Significant adverse impacts projected for the Special Event peak hours would be concentrated at locations around the proposed Multi-Use Facility along Twelfth and Eleventh Avenues. A significant portion of the projected vehicular delay is anticipated to result from the high pedestrian volume of event attendees entering/exiting from the proposed Multi-Use Facility during a short time period preceding/following an event. As noted previously, the analysis for the approximately 19 Special Event peak hours occurring in any year is based on a number of highly conservative assumptions, each of which are unlikely to occur, and which are highly unlikely to occur in combination.

TABLE 19-26
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKNIGHT SPECIAL EVENT PEAK HOUR

TABLE 19-27
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – SUNDAY SPECIAL EVENT PEAK HOUR

TABLE 19-27 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – SUNDAY SPECIAL EVENT PEAK HOUR

2. Unsignalized Intersections

a) Significant Adverse Impact Criteria

Based on the thresholds established in the *CEQR Technical Manual*,[15] if any unsignalized intersection lane group with LOS of A, B, or C in the Future Without the Proposed Action deteriorates to a deficient LOS (mid-level D, E, or F) in the Future With the Proposed Action with 90 passenger car equivalents in the peak hour, a significant adverse impact is deemed to have occurred. The *CEQR Technical Manual* further recommends mitigation for a LOS A, B, or C in the Future Without the Proposed Action that operates at LOS D in the Future With the Proposed Action. Therefore, any LOS change with a delay of 30.0 seconds (mid-LOS D) or less was not considered an impact for the purposes of this traffic analysis. For a LOS D in the Future Without the Proposed Action, an increase of delay by five or more seconds was considered a significant adverse impact. For a LOS E in the Future Without the Proposed Action, the threshold was a 4-second increase in delay, and for a LOS F in the Future Without the Proposed Action, a 3-second increase in delay was considered significant. However, if an intersection with LOS F in the Future Without the Proposed Action would have a delay in excess of 120 seconds, an increase in the Future With the Proposed Action delay of more than one second was considered significant, unless the Proposed Action would generate fewer than five vehicles through that intersection lane group in the peak hour.

b) LOS Analysis

In the 2010 Future with the Proposed Action, one of the approach movements (Twelfth Avenue at West 33rd Street) would be closed. Of the four remaining unsignalized intersections studied for the 2010 Future With the Proposed Action compared to the 2010 Future Without the Proposed Action, none would have significant adverse impacts in the AM and Midday peak hours, and one, Twelfth Avenue at 47th Street, would have a significant adverse impact in the PM peak hour (Table 19-28). No other unsignalized movements would have significant adverse impacts in the 2010 Future With the Proposed Action, compared to the 2010 Future Without the Proposed Action.

TABLE 19-28
2010 FUTURE WITH THE PROPOSED ACTION: UNSIGNALIZED INTERSECTION APPROACH MOVEMENTS WITH SIGNIFICANT ADVERSE IMPACTS (WEEKDAY PM PEAK HOUR)

Intersection	2010 Future Without the Proposed Action			2010 Future With the Proposed Action		
	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS
12th Ave. @ 47th St.	WB	72.1	F	WB	88.2	F

3. River Crossings

Table 19-29 presents projected increases in traffic volumes on bridges and tunnels crossing the East, Hudson, and Harlem Rivers during the weekday AM, Midday, and PM peak hours, weeknight Special Event, and Sunday Special Event hours, in the 2010 Future with the Proposed Action. Table 19-30 presents projected 2010 bridge and tunnel traffic volumes including Proposed Action increments.

The largest traffic volume increases are projected to occur during the weeknight and Sunday Special Event peak hours, but total traffic would remain lower than or equal to projected weekday AM, Midday, and PM peak hour traffic volumes at all portals.

Volume-capacity ratios provide a measure of capacity utilization and permit a comparison of peak period facility utilization rates. A minimum peak hour capacity utilization of 90 percent (i.e., v/c greater than 0.90) was used to identify facilities which may be approaching their estimated capacities.

[15] *CEQR Technical Manual*, December 2001.

By this definition, only the Lincoln Tunnel would exceed the capacity threshold on Sunday in the westbound direction, with a volume/capacity ratio of 0.93 during the Special Event hour (see Table 19-31).

Significant project impacts were defined as volume/capacity ratio increases of 0.02 or more for facilities with a projected volume/capacity ratio greater than 0.90. Comparison of the 2010 Future With the Proposed Action to the 2010 Future Without the Proposed Action indicated that the Lincoln Tunnel would have significant adverse impacts from the Proposed Action in the westbound direction during the Sunday Special Event period. This impact could not be mitigated.

As in the Future without the Proposed Action, with the Proposed Action, most portal approaches would be congested during the weekday AM and PM peak commuting hours, but these facilities possess sufficient mainline capacity to accommodate additional traffic projected under the 2010 Future With the Proposed Action.

TABLE 19-29
2010 FUTURE WITH THE PROPOSED ACTION: INCREMENTAL TRAFFIC VOLUMES BY RIVER CROSSING

TABLE 19-30
2010 FUTURE WITH THE PROPOSED ACTION: PROJECTED TRAFFIC VOLUMES BY RIVER CROSSING

TABLE 19-31
2010 FUTURE WITH THE PROPOSED ACTION: PROJECTED MAINLINE VOLUME-CAPACITY RATIOS

4. Off-Street Parking

As part of the anticipated office and residential developments included in the 2010 Future Without the Proposed Action, off-street parking is anticipated to be more highly utilized in the future. Demand for parking in the 2010 Future With the Proposed Action would be primarily generated by the Convention Center, Multi-Use Facility, some development due to the rezoning action, and the existing demand generated by Midtown Manhattan. Table 19-32 presents the anticipated increases in off-street parking capacity and utilization rates for the four analysis periods. As indicated in the table, utilization during the weekday Midday and weekday overnight periods is anticipated to be 90 and 47 percent, respectively. During the weekday evening and Sunday afternoon periods, utilization is anticipated to increase to 73 and 97 percent, respectively.

TABLE 19-32
2010 FUTURE WITH THE PROPOSED ACTION: OFF-STREET PARKING CAPACITY AND UTILIZATION

	2010 Future Without the Proposed Action		Change In Capacity	Change In Demand	2010 Future With the Proposed Action			
	Total Capacity	Demand			Total Capacity	Demand	Utilization Rate	Available Spaces
Weekday Midday	23,739	20,860	780	1,268	24,519	22,128	90%	2,391
Weekday Overnight	11,534	4,978	780	810	12,314	5,788	47%	6,526
Weekday Evening	22,191	11,214	780	5,469	22,971	16,882	73%	6,089
Sunday Afternoon	22,194	14,160	780	7,974	22,974	22,334	97%	640

5. On-Street Parking

According to the NYCDOT, no changes to the on-street parking regulations are anticipated in the future. Implementation of daylighting (described below) as mitigation measures would reduce the number of parking spaces; however, only within the peak direction in the peak hour. Existing regulations, which currently provide sufficient on-street parking within the study area, are anticipated to remain effective in the 2010 Future With the Proposed Action.

G. 2010 PROPOSED MITIGATION

1. Mitigation Measures

Implementation of the Proposed Action would result in significant adverse peak hour traffic impacts at a number of study area locations. As demonstrated below, most of these impacts could be mitigated through the implementation of traffic engineering improvements, including traffic signal timing changes, lane channelization improvements, and the elimination of on-street parking on intersection approaches. Additional mitigation measures, including restrictions on turn movements, have been identified for the FGEIS; implementation of these measures would reduce the number of unmitigated significant impacts. The mitigated traffic operations described in this chapter reflect the implementation of all of these proposed traffic improvements, as well as the resulting diversion in traffic, and proposed transit and pedestrian mitigation measures recommended in Chapter 20. Where measures are not practicable or financially feasible, impacts would not be mitigated.

a) Commuter Peak Hours

Residential and commercial land uses affect traffic operations primarily during the weekday morning, Midday and evening peak hours. The following traffic engineering improvements could be utilized to mitigate significant traffic impacts associated with the Proposed Action during these periods:

- Modification of signal phasing and/or timing;
- Elimination of on-street parking within 150 feet of intersections to add a limited travel lane (known as "daylighting");

- Enforcement of existing parking restrictions to ensure traffic lanes are available to moving traffic;
- Channelization and lane designation changes to make more efficient use of available street widths;
- Restriction of turn movements;
- Elimination of sidewalk bulbouts along Route 9A at West 42nd, West 46th, and West 50th Streets; and
- Installation of traffic signals at appropriate unsignalized intersections (if warranted).

b) Special Event Peak Hours

Special events held at the Multi-Use Facility would produce relatively brief periods of significant traffic and pedestrian congestion in the immediate vicinity of the Multi-Use Facility. This congestion would occur on weeknights 10 to 11 times per year, and on Sunday afternoons eight to nine times per year. In addition to the mitigation measures listed above, the following measures would be required during Special Events:

- In order to accommodate pedestrian volumes between the Multi-Use Facility and Penn Station, traffic would be restricted to a single lane serving only parking garages on West 33rd Street between Eighth and Eleventh Avenues and West 30th Street between Tenth and Twelfth Avenues. By limiting the capacity of the roadway, changes to the travel patterns before and after events at the Multi-Use Facility are anticipated. This would spread out the temporal distribution and relieve traffic at certain points;
- Traffic enforcement agents would be utilized to manage traffic and pedestrian flows along the perimeter of the Multi-Use Facility;
- Installation of a mid-block pedestrian crossing at Eleventh Avenue between West 30th and West 33rd Streets would relieve pedestrian volumes crossing to the Multi-Use Facility;
- Elimination of sidewalk bulbouts along Route 9A at West 42nd and West 50th Streets; and
- Installation of pedestrian overpasses over Route 9A at West 33rd Street and between West 39th and West 40th Streets.

At intersections with calculated delays of 300 seconds or more, the potential for "spillback conditions" (where drivers enter an intersection without sufficient room to exit before the end of their green time) would increase. These conditions currently occur throughout New York City (e.g., Canal Street. Installation of "Don't Block the Box" pavement markings and vigorous enforcement by NYPD Traffic Control Officers has proven effective to significantly reduce the extent of delays. These measures could also be applied where these impacts are projected to occur within the study area (West 34th Street at Ninth, Tenth, and Eleventh Avenues in the weekday PM peak hour).

2. Implementation of Mitigation Measures

Application and implementation of the engineering improvements described above would require the approval of various agencies, depending upon the jurisdiction and type of mitigation proposed. Approval and/or implementation by the following State and City agencies would be required for each proposed measure:

- Route 9A mitigation measures, including signal phasing and/or timing changes, lane re-striping and lane designation changes, relocating pedestrian crosswalks, installation of pedestrian overpasses, and removal of pedestrian bulb-outs: NYCDOT and NYSDOT

- Local routes (all locations not along Route 9A) mitigation measures, including signal phasing and/or timing changes, lane re-striping and lane designation changes, relocating pedestrian crosswalks, restricting turn movements, and modification of parking regulations: NYCDOT and/or NYPD
- Enforcement Options: NYPD.

Coordination with each applicable agency would be undertaken in order to implement the proposed mitigation measures. Approval of each proposed mitigation measure would depend upon the applicable agency. In the absence of the implementation of mitigation measures, unmitigated conditions would remain. Estimated capital costs for implementation of the proposed mitigation measures are presented in Chapter 5.

3. Signalized Intersections

a) Weekday AM, Midday, and PM Peak Hours

As summarized in Table 19-33, implementation of the proposed mitigation measures would mitigate all significant adverse impacts during the weekday AM, Midday, and PM peak hours. Upon implementation of mitigation measures, no unmitigated significant adverse impacts would occur during the weekday AM, Midday, or PM peak hours at any of the 229 intersections analyzed.

TABLE 19-33
2010 FUTURE WITH THE PROPOSED ACTION: SUMMARY OF INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS (WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

Analysis Period	Intersections				
	Intersections Analyzed	No Significant Adverse Impacts	Total Impacts	Mitigated Impacts	Unmitigated Impacts
AM	229	196	33	33	0
Midday	229	194	35	35	0
PM	229	190	39	39	0

Table 19-34 through Table 19-39 present movements of signalized intersections with significant adverse impacts, with the mitigated v/c ratio, delay, LOS, and proposed mitigation measures to be applied for the weekday AM, Midday, and PM peak hours in the 2010 Future With the Proposed Action with Mitigation. Analyzed intersections and proposed mitigation for the weekday AM, Midday, and PM peak hours are also presented in Figure 19-101 through Figure 19-103. Potential traffic impacts which would result from the implementation of transit or pedestrian mitigation measures (presented in Chapter 20) would also be mitigated by the traffic mitigation measures recommended in this chapter. Traffic volumes for the 2010 Future With the Proposed Action with Mitigation for the weekday AM, Midday, and PM peak hours are presented in Figure 19-104 through Figure 19-121.

TABLE 19-34
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKDAY AM PEAK HOUR)

TABLE 19-34 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-34 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-34 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-35
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (WEEKDAY AM PEAK HOUR)

TABLE 19-35 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-35 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-35 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-36
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKDAY MIDDAY PEAK HOUR)

TABLE 19-36 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-36 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-36 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-37
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (WEEKDAY MIDDAY PEAK HOUR)

TABLE 19-37 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (MIDDAY PEAK HOUR)

TABLE 19-37 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (MIDDAY PEAK HOUR)

TABLE 19-38
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKDAY PM PEAK HOUR)

TABLE 19-38 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-38 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-38 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-38 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-39
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (WEEKDAY PM PEAK HOUR)

TABLE 19-39 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-39 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

b) Special Event Peak Hours

As summarized in Table 19-40, implementation of the proposed mitigation measures would mitigate nearly all significant adverse impacts during the Special Event peak hours. Of the 51 intersections evaluated for the Special Event peak hours, four intersections would have unmitigated significant adverse impacts in both the weeknight and Sunday Special Event peak hours. The intersections with significant adverse impacts which could not be mitigated during both Special Event peak hours would be West 34th Street at Eleventh, Tenth, Ninth, and Eighth Avenues. However, these would occur only on the limited number of occasions (19-20 per year) anticipated for these Special Events.

Table 19-41 through Table 19-44 present movements of signalized intersections with significant adverse impacts, with the mitigated v/c ratio, delay, LOS, and proposed mitigation measure to be applied for all five analysis hours in the 2010 Future With the Proposed Action with Mitigation. Analyzed intersections and proposed mitigation for the Special Event peak hours are also presented in Figure 19-122 and Figure 19-123. Potential traffic impacts which would result from the implementation of transit or pedestrian mitigation measures (presented in Chapter 20) would also be mitigated by the traffic mitigation measures recommended in this chapter. Traffic volumes for the 2010 Future With the Proposed Action with Mitigation for the Special Event peak hours are presented in Figure 19-124 through Figure 19-127.

TABLE 19-40
2010 FUTURE WITH THE PROPOSED ACTION: SUMMARY OF INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS (SPECIAL EVENT PEAK HOURS)

	Intersections				
Analysis Hour	Intersections Analyzed	No Significant Adverse Impacts	Total Impacts	Mitigated Impacts	Unmitigated Impacts
Weeknight	51	29	22	18	4
Sunday	51	25	26	22	4

TABLE 19-41
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-41 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-41 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-42
2010 FUTURE WITH THE PROPOSED ACTION PROPOSED MITIGATION MEASURES
(WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-42 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION PROPOSED MITIGATION MEASURES
(WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-42 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION PROPOSED MITIGATION MEASURES
(WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-43
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-43 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (SUNDAY PEAK HOUR)

TABLE 19-43 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (SUNDAY PEAK HOUR)

TABLE 19-44
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-44 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-44 (CONTINUED)
2010 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(SUNDAY SPECIAL EVENT PEAK HOUR)

4. Unsignalized Intersections

Table 19-45 presents v/c ratio and delay for the 2010 Future Without the Proposed Action, 2010 Future With the Proposed Action, and 2010 Future With the Proposed Action and Mitigation for the one intersection which would be subject to a significant adverse impact due to the Proposed Action. This intersection, Twelfth Avenue at West 47th Street in the weekday PM peak hour, would be mitigated through installation of a traffic signal (if determined to be warranted).

TABLE 19-45
2010 FUTURE WITH THE PROPOSED ACTION: UNSIGNALIZED APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION
(WEEKDAY PM PEAK HOUR)

	2010 Future Without the Proposed Action			2010 Future With the Proposed Action			2010 Future With the Proposed Action and Mitigation		
Intersection	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS
12th Ave. and 47th St.	WB	72.1	F	WB	88.2	F	WB	39.7	D

H. 2025 FUTURE WITHOUT THE PROPOSED ACTION

This section presents the projected traffic and parking conditions in 2025, assuming that the Proposed Action is not implemented, and that all other development projects within the study area are completed.

1. Signalized Intersection LOS Analysis

a) Weekday AM, Midday, and PM Peak hours

Figure 19-128 through Figure 19-145 present the 2025 Future Without the Proposed Action traffic volumes for the weekday AM, Midday, and PM peak hours, respectively.

Table 19-46 presents all intersections projected to operate with at least one movement under congested operating conditions in the 2025 Future Without the Proposed Action in the weekday AM, Midday, and PM peak hours. Similar to the trend identified in 2010 Future Without the Proposed Action analysis, left turn movements would be particularly susceptible to additional delays. In 2025 Without the Proposed Action, these delays would be realized through a greater number of approach movements operating at LOS F.

Of the 229 signalized intersections studied for the weekday AM, Midday, and PM peak hours, 127 intersections would have at least one movement which would operate at LOS mid-D, E, or F during at least one period. Of the 229 signalized intersections, 89 intersections in the weekday AM peak hour, 75 intersections in the weekday Midday peak hour, and 81 intersections during the weekday PM peak hour would have movements which would operate at LOS mid-D, E, or F.

TABLE 19-46
2025 FUTURE WITHOUT THE PROPOSED ACTION: MOVEMENTS WHICH OPERATE AT LOS MID-D, E, OR F
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-46 (CONTINUED)
2025 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-46 (CONTINUED)
2025 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-46 (CONTINUED)
2025 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-46 (CONTINUED)
2025 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-46 (CONTINUED)
2025 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-46 (CONTINUED)
2025 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

TABLE 19-46 (CONTINUED)
2025 FUTURE WITHOUT THE PROPOSED ACTION: CONGESTED INTERSECTIONS
(WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

b) Special Event Peak Hours

Figure 19-146 through Figure 19-149 present the 2025 Future Without the Proposed Action traffic volumes for the weeknight and Sunday Special Event peak hours, respectively. Table 19-47 presents all intersections projected to operate with at least one movement under congested operating conditions in the 2025 Future Without the Proposed Action in the Special Event peak hours.

Of the 51 signalized intersections studied for the weeknight and Sunday Special Event peak hours, 17 intersections would operate with at least one approach movement at LOS mid-D, E, or F only during the weeknight Special Event peak hour, and 19 intersections would operate with at least one approach movement at LOS mid-D, E, or F only during the Sunday Special Event peak hour.

TABLE 19-47
2025 FUTURE WITHOUT THE PROPOSED ACTION: MOVEMENTS WHICH OPERATE AT LOS MID-D, E, OR F
(WEEKNIGHT AND SUNDAY SPECIAL EVENT PEAK HOURS)

2. Unsignalized Intersection Level of Service Analysis

Of the five unsignalized intersections studied for the 2025 Future Without the Proposed Action, one is projected to operate with an approach movement operating at LOS mid-D, E, or F in the weekday AM peak hour, none in the weekday Midday peak hour, and three in the weekday PM peak hour (see Table 19-48). Twelfth Avenue at West 45th Street is projected to operate with an approach movement at LOS mid-D, E, or F in both the AM and PM peak hours.

TABLE 19-48
2025 FUTURE WITHOUT THE PROPOSED ACTION – UNSIGNALIZED INTERSECTION APPROACH MOVEMENTS PROJECTED TO OPERATE AT MID-LOS D, E, OR F

Intersection	Movement	AM Peak Hour		PM Peak Hour	
		Delay (Veh/sec)	LOS	Delay	Delay (Veh/sec)
Twelfth Avenue and 47th Street	WB			238.0	F
Twelfth Avenue and 45th Street	WB	48.7	E	40.9	E
Twelfth Avenue and 33rd Street	WB			35.2	E

3. River Crossings

Table 19-49 presents the projected vehicular volumes on bridges and tunnels crossing the East, Hudson, and Harlem Rivers during the weekday AM, Midday, PM, weeknight Special Event, and Sunday Special Event peak hours in the 2025 Future Without the Proposed Action.

As shown in Table 19-50, four facilities would operate with travel demands approaching capacity (i.e., volume/capacity ratio above 0.90) during peak hours in the 2025 Future Without the Proposed Action. They are:

- Queens Midtown Tunnel (PM inbound v/c 0.97, PM outbound v/c 0.93)
- Alexander Hamilton Bridge (AM inbound v/c 0.95, AM outbound v/c 0.96)
- George Washington Bridge (PM outbound v/c 0.93)
- Holland Tunnel (PM outbound v/c 0.96)

TABLE 19-49
2025 FUTURE WITHOUT THE PROPOSED ACTION: PROJECTED TRAFFIC VOLUMES BY RIVER CROSSING

TABLE 19-50
2025 FUTURE WITHOUT THE PROPOSED ACTION: PROJECTED MAINLINE VOLUME-CAPACITY RATIOS

4. Off-Street Parking

As part of the anticipated office and residential developments included in the 2025 Future Without the Proposed Action, off-street parking is anticipated to be more highly utilized in the future. Table 19-51 presents the anticipated net changes in off-street parking capacity and utilization for the four analysis periods.[16] As indicated in the table, utilization during the weekday Midday and weeknight overnight period is anticipated to increase to approximately 92 and 45 percent, respectively in 2025. During the weekday evening and Sunday afternoon periods, utilization is anticipated to increase to 52 and 66 percent, respectively.

TABLE 19-51
2025 FUTURE WITHOUT THE PROPOSED ACTION: OFF-STREET PARKING CAPACITY AND UTILIZATION

	Existing Conditions		Change In Capacity	Change In Demand	2025 Future Without the Proposed Action			
	Total Capacity	Demand			Total Capacity	Demand	Utilization Rate	Available Spaces
Weekday Midday	24,254	19,474	(714)	2,269	23,540	21,743	92%	1,797
Weekday Overnight	11,694	4,172	(173)	1,013	11,521	5,185	45%	6,336
Weekday Evening	22,676	10,319	(684)	1,224	21,992	11,542	52%	10,450
Sunday Afternoon	22,709	13,263	(714)	1,301	21,995	14,564	66%	7,431

5. On-Street Parking

The NYCDOT is currently expanding its commercial on-street parking program to cover the area bounded by 60th Street on the north, 33rd Street on the south, Second Avenue on the east, and Ninth Avenue on the west. The program allows trucks making deliveries to pay in advance for parking; the rate structure is geared towards staying for one hour or less. According to the NYCDOT, no additional changes to on-street parking regulations are anticipated.

In the 2025 Future Without the Proposed Action, the supply of on-street parking is anticipated to remain consistent with the current inventory. Anticipated increases in background traffic and its related parking demand are expected to increase the utilization of the existing supply while reducing or eliminating any surplus.

I. 2025 FUTURE WITH THE PROPOSED ACTION

In addition to the changes included in the 2010 Future With the Proposed Action, the 2025 Future With the Proposed Action would include approximately 27 million square feet of commercial space and 10 million square feet of residential space in the Rezoning Area and construction of the remainder of the Midblock Park and Boulevard System from West 34th to West 42nd Streets. In addition, construction of a new PANYNJ bus parking garage was assumed.

1. Signalized Intersections

a) Significant Adverse Impact Criteria

Based on the thresholds established in the *CEQR Technical Manual*, if any signalized intersection lane group with LOS of A, B, or C in the Future Without the Proposed Action deteriorates to a deficient LOS (mid-level D, E, or F) in the Future With the Proposed Action, a significant adverse impact is deemed to have occurred. The *CEQR Technical Manual* further recommends mitigation for a LOS A, B, or C in the Future Without the Proposed Action that operates at LOS D in the Future With the Proposed Action. Therefore, any LOS change with a delay of less than 45.0 seconds (mid-

[16] Parking capacities during different analysis periods in the future would vary from existing capacities due to replacement of existing parking facilities with alternate uses, construction of new facilities, and varying hours of operation.

LOS D) was not considered an impact for the purposes of this traffic analysis. For a LOS D in the Future Without the Proposed Action, an increase of delay by five or more seconds was considered a significant adverse impact. For a LOS E in the Future Without the Proposed Action, the threshold was a 4-second increase in delay, and for a LOS F in the Future Without the Proposed Action, a 3-second increase in delay was considered significant. However, if an intersection with LOS F in the Future Without the Proposed Action would have a delay in excess of 120 seconds, an increase in the Future With the Proposed Action delay of more than one second was considered significant, unless the Proposed Action would generate fewer than five vehicles through that lane group in the peak hour.

b) LOS Analysis

Weekday AM, Midday, and PM Peak Hours

Figure 19-150 through Figure 19-167 present the incremental traffic volumes for the weekday AM, Midday, and PM peak hours, respectively, for the 2025 Future With the Proposed Action. (Incremental traffic volumes are the additional volume anticipated as a result of the Proposed Action, compared to the volumes in the 2025 Future Without the Proposed Action.) Figure 19-172 through Figure 19-189 present the total traffic volumes for weekday AM, Midday, and PM peak hours, respectively, for the 2025 Future With the Proposed Action. Peak hour LOS, delay, and v/c ratios are presented in Table 19-52 through Table 19-56 for all intersections with approach movements that would have impacts in the 2025 Future With the Proposed Action and for any approach movements which would operate with 45.0 seconds of delay or more.

Of the 238 signalized intersections (including nine new signalized intersections at the proposed Midblock Boulevard) studied for the 2025 Future With the Proposed Action compared to the 2025 Future Without the Proposed Action, 122 intersections would have significant adverse impacts in the weekday AM peak hour, 99 intersections would have significant adverse impacts in the weekday Midday peak hour, and 134 intersections would have significant adverse impacts in the weekday PM peak hour. Significant adverse impacts are anticipated to be located throughout the study area, and most heavily concentrated within the West 34th Street corridor from Sixth to Eleventh Avenues.

TABLE 19-52
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNFICANT ADVERSE IMPACTS – WEEKDAY AM PEAK HOUR

TABLE 19-52 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNFICANT ADVERSE IMPACTS – AM PEAK HOUR

TABLE 19-52 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNFICANT ADVERSE IMPACTS – AM PEAK HOUR

TABLE 19-52 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNFICANT ADVERSE IMPACTS – AM PEAK HOUR

TABLE 19-52 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNFICANT ADVERSE IMPACTS – AM PEAK HOUR

TABLE 19-52 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNFICANT ADVERSE IMPACTS – AM PEAK HOUR

TABLE 19-53
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKDAY MIDDAY PEAK HOUR

TABLE 19-53 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – MIDDAY PEAK HOUR

TABLE 19-53 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – MIDDAY PEAK HOUR

TABLE 19-53 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – MIDDAY PEAK HOUR

TABLE 19-53 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – MIDDAY PEAK HOUR

TABLE 19-54
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKDAY PM PEAK HOUR

TABLE 19-54 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – PM PEAK HOUR

TABLE 19-54 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – PM PEAK HOUR

TABLE 19-54 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – PM PEAK HOUR

TABLE 19-54 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – PM PEAK HOUR

TABLE 19-54 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – PM PEAK HOUR

Special Event Peak Hours

Figure 19-168 through Figure 19-171 present the incremental traffic volumes for weeknight and Sunday Special Event peak hours, respectively, for the 2025 Future With the Proposed Action. Figure 19-190 through Figure 19-193 present the total traffic volumes for weeknight and Sunday Special Event peak hours, respectively, for the 2025 Future With the Proposed Action. Peak hour LOS, delay, and v/c ratios are presented in Table 19-55 and Table 19-56 for all intersections with approach movements that would have impacts in the 2025 Future With the Proposed Action and for any approach movements which would operate with 45.0 seconds of delay or more.

Of the 60 signalized intersections studied for the 2025 Future With the Proposed Action compared to the 2025 Future Without the Proposed Action, 26 intersections would have significant adverse impacts in the weeknight Special Event peak hour and 34 intersections would have significant adverse impacts in the Sunday Special Event peak hour. A significant portion of the projected vehicular delay is anticipated to result from the high pedestrian volume of event attendees entering/exiting from the proposed Multi-Use Facility and the relocated MSG during a short time period preceding/following events.

TABLE 19-55
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKNIGHT SPECIAL EVENT PEAK HOUR

TABLE 19-55 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – WEEKNIGHT SPECIAL EVENT PEAK HOUR

TABLE 19-56
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – SUNDAY SPECIAL EVENT PEAK HOUR

TABLE 19-56 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS – SUNDAY SPECIAL EVENT PEAK HOUR

2. Unsignalized Intersections

a) Significant Adverse Impact Criteria

Based on the thresholds established in the *CEQR Technical Manual*, if any unsignalized intersection lane group with LOS of A, B, or C in the Future Without the Proposed Action deteriorates to a deficient LOS (mid-level D, E, or F) in the Future With the Proposed Action with 90 passenger car equivalents in the peak hour, a significant adverse impact is deemed to have occurred. The *CEQR Technical Manual* further recommends mitigation for a LOS A, B, or C in the Future Without the Proposed Action that operates at LOS D in the Future With the Proposed Action. Therefore, any LOS change with a delay of 30.0 seconds (mid-LOS D) or less was not considered an impact for the purposes of this traffic analysis. For a LOS D in the Future Without the Proposed Action, an increase of delay by five or more seconds was considered a significant adverse impact. For a LOS E in the Future Without the Proposed Action, the threshold was a 4-second increase in delay, and for a LOS F in the Future Without the Proposed Action, a 3-second increase in delay was considered significant. However, if an intersection with LOS F in the Future Without the Proposed Action would have a delay in excess of 120 seconds, an increase in the Future With the Proposed Action delay of more than one second was considered significant, unless the Proposed Action would generate fewer than five vehicles through that intersection lane group in the peak hour.

b) Level of Service Analysis

In 2025, one of the unsignalized intersections (Twelfth Avenue at 33rd Street) would be closed. Of the four remaining unsignalized intersections studied for the 2025 Future With the Proposed Action compared to the 2025 Future Without the Proposed Action, one intersection would have a significant adverse impact in each of the weekday Midday and PM peak hours (Table 19-57 and Table 19-58). Twelfth Avenue at West 47th Street would have significant adverse impacts in the weekday Midday peak hour and Twelfth Avenue at 45th Street would have a significant adverse impact in the weekday PM peak hour.

TABLE 19-57
2025 FUTURE WITH THE PROPOSED ACTION: UNSIGNALIZED INTERSECTION APPROACH MOVEMENTS WITH SIGNIFICANT ADVERSE IMPACTS (WEEKDAY MIDDAY PEAK HOUR)

Intersection	2010 Future Without the Proposed Action			2010 Future With the Proposed Action		
	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS
12th Ave. and 47th St.	WB	26.3	D	WB	49.6	E

TABLE 19-58
2025 FUTURE WITH THE PROPOSED ACTION: UNSIGNALIZED INTERSECTION APPROACH MOVEMENTS WITH SIGNIFICANT ADVERSE IMPACTS (WEEKDAY PM PEAK HOUR)

Intersection	2010 Future Without the Proposed Action			2010 Future With the Proposed Action		
	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS
12th Ave. and 45th St.	WB	40.9	E	WB	>300*	F

**Delay calculated at greater than 300 seconds is considered unreliable, though the congestion at this level is considered an impact.*

3. River Crossings

Table 19-59 presents projected increases in traffic volumes on bridges and tunnels crossing the East, Hudson, and Harlem Rivers during the weekday AM, Midday, and PM peak hours, and weeknight and Sunday Special Event hours in 2025 with the Proposed Action.

Four facilities (i.e., Williamsburg Bridge, Queens Midtown Tunnel, Queensboro Bridge and the Triborough Bridge) would register their highest traffic volume increases during the weekday AM or PM peak commuting hours, while the remaining 12 facilities would register their largest traffic volume increases during the weeknight or Sunday Special Event hours.

Table 19-60 summarizes projected traffic volumes in the 2025 Future With the Proposed Action. Weeknight and Sunday Special Event traffic volumes are projected to remain lower than or equal to volumes projected during the weekday AM, Midday, and PM peak hours at all portals.

As shown in Table 19-61, seven facilities would operate with travel demands approaching capacity (i.e. volume/capacity ratio above 0.90) during peak hours in the 2025 Future With the Proposed Action. They are:

- Brooklyn Bridge (AM inbound v/c 0.92)
- Queens Midtown Tunnel (AM inbound v/c 1.00, PM inbound v/c 1.00, PM outbound v/c 1.12)
- Queensboro Bridge (PM outbound v/c 0.92)
- Alexander Hamilton Bridge (AM inbound v/c 0.99, AM outbound v/c 0.96, PM outbound v/c 0.91, Sunday outbound v/c 0.94)
- George Washington Bridge (PM outbound v/c 0.94)
- Lincoln Tunnel (Sunday outbound v/c 0.98)
- Holland Tunnel (PM outbound v/c 1.00)

Significant project impacts are defined as volume/capacity ratio increases of 0.02 or more for facilities with a projected volume/capacity ratio greater than 0.90. Comparison of the 2025 Future with the Proposed Action to the 2025 Future Without the Proposed Action indicates that six of the seven facilities listed above would exceed this threshold. These impacts could not be mitigated. The George Washington Bridge, with an increase of 0.01 during the weekday PM peak hour, would not be considered to have a significant impact. The Queens Midtown Tunnel, with a projected volume/capacity ratio greater than 1.00 outbound during the weekday PM peak hour, is addressed below.

As the Project Area is developed over the next decades, drivers from central Queens and Long Island will choose between the Queensboro Bridge (QBB) and Queens Midtown Tunnel (QMT) for travel to and from Manhattan. Their decision will reflect the relative attractiveness of these facilities in terms of convenience, cost, and levels of congestion. As the QMT becomes relatively more congested, drivers will tend to view the QBB more favorably. This behavior is the basis for most travel assignment models. In addition, there would likely be a net reduction in peak hour travel demand as some drivers change their departure times, while others car pool or change modes to avoid QMT congestion.

In order to provide a conservative analysis, all excess 2025 QMT PM peak hour outbound vehicles, approximately 430 vehicles, were reassigned from the QMT to the QBB. This shift would increase the projected QBB PM peak hour outbound volume-capacity ratio from 0.92 to 0.97. Intersections serving outbound QBB vehicles were analyzed to determine whether the traffic impacts associated with this shift could be mitigated. The following intersections were analyzed:

- First Avenue at East 59th Street
- First Avenue at East 57th Street
- East 58th Street at the QBB Ramp
- Second Avenue at East 57th Street

- QBB ramp at East 57th Street
- Second Avenue at East 58th Street
- Second Avenue at East 59th Street
- Second Avenue at East 60th Street
- Second Avenue at QBB Lower Level Ramp
- Third Avenue at East 57th Street

The analysis indicates that weekday PM peak hour traffic impacts could be mitigated to result in equivalent conditions projected for the 2025 Future Without the Proposed Action at each of these intersections.

While the above analysis indicates that there would be significant impacts at six river crossings in 2025, and that the Queens Midtown Tunnel would be over capacity outbound in the weekday PM peak hour, it is likely that these facilities would be less congested than projected because the crossings serve a regional function and many drivers associated here with the Proposed Action would likely use these facilities for other Manhattan destinations even in the absence of the Proposed Action.

TABLE 19-59
2025 FUTURE WITH THE PROPOSED ACTION: INCREMENTAL TRAFFIC VOLUMES BY RIVER CROSSING

TABLE 19-60
2025 FUTURE WITH THE PROPOSED ACTION: PROJECTED TRAFFIC VOLUMES BY RIVER CROSSING

TABLE 19-61
2025 FUTURE WITH THE PROPOSED ACTION: INCREMENTAL PROJECTED MAINLINE VOLUME-CAPACITY RATIOS

4. Off-Street Parking

Between 2003 and 2025, new demand for off-street parking would result from the following projected development sites generated by the proposed rezoning action: 23 sites with office uses, 36 with residential uses, and two hotel sites. The additional off-street parking supply to meet anticipated demand generated by the office, residential, and hotel uses would primarily be provided by the proposed 950-space public parking garage located below the Midblock Park and Boulevard System between West 34th Street and West 36th Street, and the parking facilities associated with the residential and commercial development. (Parking development rates conform to the DCP's established guidelines: 0.33 spaces provided per dwelling unit and 0.35 spaces provided per 1,000 gross square foot of office space; the residential parking requirements would be waived if fewer than 15 spaces were required on a zoning lot, and the commercial requirements would be waived if fewer than 40 spaces were required.)

Table 19-62 presents the anticipated increases in off-street parking capacity and utilization for the four analysis periods. As indicated in the table, utilization during the weekday Midday period is anticipated to result in a shortfall of 52 parking spaces in 2025. The projected shortfall would only occur for a brief period during the weekday Midday period and would be relatively insignificant when compared to the total capacity during this time period (i.e., a shortfall of 52 out of a total capacity of 31,015 spaces in the study area, which would be less than ½ of one percent of the total and distributed over numerous parking facilities).

Overnight parking utilization is anticipated to be 45 percent. As indicated in the table, utilization during the weekday evening and Sunday afternoon periods is anticipated to be 71 percent and 92 percent, respectively.

TABLE 19-62
2025 FUTURE WITH THE PROPOSED ACTION: OFF-STREET PARKING CAPACITY AND UTILIZATION

	Existing Capacity	2025 Future Without the Proposed Action		2025 Future With the Proposed Action					
		Total Capacity	Demand	Change In Capacity	Change In Demand	Total Capacity	Demand	Utilization Rate	Available Spaces
Weekday Midday	24,254	23,540	21,743	7,475	9,324	31,015	31,067	100%	(52)
Weekday Overnight	11,694	11,521	5,185	9,228	4,233	20,749	9,418	45%	11,331
Weekday Evening	22,676	21,992	11,542	7,863	9,547	29,855	21,289	71%	8,566
Sunday Afternoon	22,709	21,995	14,564	7,321	12,347	29,316	27,111	92%	2,205

5. On-Street Parking

According to the NYCDOT, no changes to the on-street parking regulations are anticipated in the future. Implementation of daylighting as mitigation measures would reduce the number of parking spaces; however, only within the peak direction in the peak hour. Existing regulations, which currently provide sufficient on-street parking within the study area, are anticipated to remain effective in the 2025 Future With the Proposed Action. Parking regulations along the proposed midblock boulevard are anticipated to conform to regulations currently in effect within Midtown Manhattan.

J. 2025 PROPOSED MITIGATION

1. Mitigation Measures

Implementation of the Proposed Action would result in significant adverse peak hour traffic impacts at a number of study area locations. As demonstrated below, most of these impacts could be mitigated through the implementation of traffic engineering improvements, including traffic signal timing changes, lane channelization improvements, and the elimination of on-street parking on

intersection approaches. Additional mitigation measures, including restriction of turn movements, have been evaluated between the DGEIS and the FGEIS; these additional measures would significantly reduce the number of unmitigated impacts. The mitigated traffic operations described in this chapter reflect the implementation of all of these proposed traffic improvements as well as the resulting diversion in traffic, and transit and pedestrian mitigation measures. Where measures are not practicable or feasible, impacts would not be mitigated.

a) Commuter Peak Hours

Residential and commercial land uses affect traffic operations primarily during the weekday morning, Midday and evening peak hours. The following traffic engineering improvements could be utilized to mitigate significant traffic impacts associated with the Proposed Action during these periods:

- Modification of signal phasing and/or timing;
- Elimination of on-street parking within 150 feet of intersections to add a limited travel lane (known as "daylighting");
- Enforcement of existing parking restrictions to ensure that traffic lanes are available to moving traffic;
- Channelization and lane designation changes to make more efficient use of available street widths;
- Restriction on turn movements;
- Elimination of sidewalk bulbouts along Route 9A at West 42nd, West 46th, West 48th, West 49th, West 50th Street, and West 51st Streets; and
- Installation of traffic signals at appropriate unsignalized intersections (if warranted).

At intersections with calculated delays of 300 seconds or more, the potential for "spillback conditions" (where drivers enter an intersection without sufficient room to exit before the end of their green time) would increase. These conditions currently occur throughout New York City (e.g., Canal Street); installation of "Don't Block the Box" pavement markings and vigorous enforcement by NYPD Traffic Control Officers has proven effective to significantly reduce the extent of delays. These measures could also be applied where these impacts are projected to occur within the study area (West 34th Street at Ninth, Tenth, and Eleventh Avenues in the weekday PM peak hour).

b) Special Event Peak Hours

Special events held at the Multi-Use Facility would produce relatively brief periods of significant traffic and pedestrian congestion in the immediate vicinity of the Multi-Use Facility. This congestion would occur on weeknights or Sunday afternoons. In addition to the mitigation measures listed above, the following measures would be required during Special Events:

- In order to accommodate pedestrian volumes between the Multi-Use Facility and Penn Station, traffic would be restricted to a single lane serving only parking garages on West 33rd Street between Eighth and Eleventh Avenues and West 30th Street between Tenth and Twelfth Avenues. By limiting the capacity of the roadway, changes to the travel patterns before and after events at the Multi-Use Facility are anticipated. Attendees are expected to arrive earlier and leave later, to avoid the peak of the traffic. This would spread out the temporal distribution and relieve traffic at certain points;
- Traffic enforcement agents would be required to manage traffic and pedestrian flows along the perimeter of the Multi-Use Facility;

- Installation of a mid-block pedestrian crossing at Eleventh Avenue between West 30th and West 33rd Streets would relieve pedestrian volumes crossing to the Multi-Use Facility;
- Elimination of sidewalk bulbouts along Route 9A at West 42nd, West 49th, and West 50th Streets; and
- Installation of pedestrian overpasses over Route 9A at West 33rd Street and between West 39th and West 40th Streets.

At intersections with calculated delays of 300 seconds or more, the potential for "spillback conditions" (where drivers enter an intersection without sufficient room to exit before the end of their green time) would increase. These conditions currently occur throughout New York City (e.g., Canal Street); installation of "Don't Block the Box" pavement markings and vigorous enforcement by NYPD Traffic Control Officers has proven effective to significantly reduce the extent of delays. These measures could also be applied where these impacts are projected to occur within the study area (West 34th Street at Eighth, Ninth, Tenth, and Eleventh Avenues in the Special Event peak hours).

2. Implementation of Mitigation Measures

Application and implementation of the traffic engineering improvements described above would require the approval of various agencies, depending upon the jurisdiction and type of mitigation proposed. Approval and/or implementation by the following State and City agencies would be required for each proposed measure:

- Route 9A mitigation measures, including signal phasing and/or timing changes, lane re-striping and lane designation changes, installation of pedestrian overpasses, and relocating pedestrian crosswalks: NYCDOT and NYSDOT
- Local routes (all locations not along Route 9A) mitigation measures, including signal phasing and/or timing changes, lane re-striping and lane designation changes, relocating pedestrian crosswalks, restricting turn movements, and modification of parking regulations: NYCDOT and/or New York Police Department (NYPD)
- Enforcement Options: NYPD.

Coordination with each applicable agency would be undertaken in order to implement the proposed mitigation measures. Approval of each proposed mitigation measure would depend upon the applicable agency. In the absence of the application of mitigation measures, the impacts would remain unmitigated. Estimated capital costs for implementation of the proposed mitigation measures are presented in Chapter 5.

3. Signalized Intersections

a) Weekday AM, Midday, and PM Peak Hours

As summarized in Table 19-63, implementation of the proposed mitigation measures would provide mitigation for nearly all of the anticipated impacts in the weekday AM, Midday, and PM peak hours. Of the 238 intersections evaluated, six intersections would have unmitigated significant adverse impacts during the weekday AM peak hour, two intersections would have unmitigated significant adverse impacts during the weekday Midday peak hours, and seven intersections would have unmitigated significant adverse impacts during the weekday PM peak hour. Unmitigated impacts would generally be located along the 34th Street and 42nd Street corridors.

Table 19-64 through Table 19-69 present approach movements with significant adverse impacts, with the mitigated v/c ratio, delay, LOS, and proposed mitigation measure to be applied for the weekday AM, Midday, and PM peak hours in the 2025 Future With the Proposed Action with Mitigation. Analyzed intersections and proposed mitigation for the weekday AM, Midday, and PM peak hours are also presented in Figure 19-194 through Figure 19-196. Potential traffic impacts which would result from the implementation of transit or pedestrian mitigation measures (presented in Chapter 20) would also be mitigated by the traffic mitigation measures recommended in this chapter; these mitigated conditions and mitigation measures are included in

Table 19-64 through Table 19-69 and Figure 19-194 through Figure 19-196. Traffic volumes for the 2025 Future with the Proposed Action with Mitigation for the weekday AM, Midday, and PM peak hours are presented in Figure 19-197 through Figure 19-214.

TABLE 19-63
2025 FUTURE WITH THE PROPOSED ACTION – SUMMARY OF INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS (WEEKDAY AM, MIDDAY, AND PM PEAK HOURS)

Analysis Hour	Intersections				
	Intersections Analyzed	No Significant Adverse Impacts	Total Impacts	Mitigated Impacts	Unmitigated Impacts
AM	238	116	122	116	6
Midday	238	139	99	97	2
PM	238	104	134	127	7

TABLE 19-64
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKDAY AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-64 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (AM PEAK HOUR)

TABLE 19-65
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (WEEKDAY AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-65 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (AM PEAK HOUR)

TABLE 19-66
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKDAY MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-66 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (MIDDAY PEAK HOUR)

TABLE 19-67
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (WEEKDAY MIDDAY PEAK HOUR)

TABLE 19-67 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(MIDDAY PEAK HOUR)

TABLE 19-67 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(MIDDAY PEAK HOUR)

TABLE 19-67 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(MIDDAY PEAK HOUR)

TABLE 19-67 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(MIDDAY PEAK HOUR)

TABLE 19-67 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(MIDDAY PEAK HOUR)

TABLE 19-67 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(MIDDAY PEAK HOUR)

TABLE 19-67 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(MIDDAY PEAK HOUR)

TABLE 19-68
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKDAY PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-68 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (PM PEAK HOUR)

TABLE 19-69
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (WEEKDAY PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

TABLE 19-69 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES (PM PEAK HOUR)

b) Special Event Peak Hours

As summarized in Table 19-70, implementation of the proposed mitigation measures would mitigate nearly all significant adverse impacts during the Special Event peak hours. Of the 60 intersections evaluated for the Special Event peak hours, the same four intersections would have unmitigated significant adverse impacts in both the weeknight and Sunday periods. These four intersections are within the 34th Street corridor, at Eleventh, Tenth, Ninth, and Eighth Avenues. However, these would only occur on the limited number of occasions (19-20 per year) anticipated for these Special Events.

Table 19-71 through Table 19-74 present approach movements with significant adverse impacts, with the mitigated v/c ratio, delay, LOS, and proposed mitigation measure to be applied for the Special Event peak hours in the 2025 Future With the Proposed Action with Mitigation. Analyzed intersections and proposed mitigation for the Special Event peak hours are also presented in Figure 19-215 and Figure 19-216. Potential traffic impacts which would result from the implementation of transit or pedestrian mitigation measures (presented in Chapter 20) would also be mitigated by the traffic mitigation measures recommended in this chapter; these mitigated conditions and mitigation measures are included in Table 19-71 through Table 19-74 and Figure 19-215 and Figure 19-216. Traffic volumes for the 2025 Future with the Proposed Action with Mitigation for the AM, Midday, and PM peak hours are presented in Figure 19-197 through Figure 19-214. Traffic volumes for the 2025 Future with the Proposed Action with Mitigation for the Special Event peak hours are presented in Figure 19-217 through Figure 19-220.

TABLE 19-70
2025 FUTURE WITH THE PROPOSED ACTION – SUMMARY OF INTERSECTIONS WITH SIGNIFICANT ADVERSE IMPACTS (SPECIAL EVENT PEAK HOURS)

	Intersections				
Analysis Hour	Intersections Analyzed	No Significant Adverse Impacts	Total Impacts	Mitigated Impacts	Unmitigated Impacts
Weeknight	60	34	26	22	4
Sunday	60	26	34	30	4

TABLE 19-71
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-71 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-71 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-72
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-72 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-72 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: PROPOSED MITIGATION MEASURES
(WEEKNIGHT SPECIAL EVENT PEAK HOUR)

TABLE 19-73
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-73 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-73 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-73 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION: APPROACH MOVEMENT OPERATIONS WITH AND WITHOUT PROPOSED MITIGATION (SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-74
2025 FUTURE WITH THE PROPOSED ACTION – PROPOSED MITIGATION MEASURES
(SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-74 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION – PROPOSED MITIGATION MEASURES
(SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-74 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION – PROPOSED MITIGATION MEASURES
(SUNDAY SPECIAL EVENT PEAK HOUR)

TABLE 19-74 (CONTINUED)
2025 FUTURE WITH THE PROPOSED ACTION – PROPOSED MITIGATION MEASURES
(SUNDAY SPECIAL EVENT PEAK HOUR)

4. Unsignalized Intersections Level of Service

Table 19-75 through Table 19-76 present movement of unsignalized intersections with significant adverse impacts, with the mitigated v/c ratio, delay, and LOS for the weekday Midday and PM peak hours in the 2025 Future With the Proposed Action with Mitigation. Significant adverse impacts are projected to occur at one intersection each in the weekday Midday and PM peak hours. Installation of a traffic signal at each location could mitigate each of these projected impacts (if determined to be warranted).

TABLE 19-75
2025 FUTURE WITH THE PROPOSED ACTION: UNSIGNALIZED APPROACH MOVEMENT OPERATIONS WITH PROPOSED MITIGATION (WEEKDAY MIDDAY PEAK HOUR)

Intersection	2010 Future Without the Proposed Action			2010 Future With the Proposed Action			2010 Future With the Proposed Action and Mitigation		
	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS
12th Ave. and 47th St.	WB	26.3	D	WB	49.6	E	WB	38.1	D

TABLE 19-76
2025 FUTURE WITH THE PROPOSED ACTION: UNSIGNALIZED APPROACH MOVEMENT OPERATIONS WITH PROPOSED MITIGATION (WEEKDAY PM PEAK HOUR)

Intersection	2010 Future Without the Proposed Action			2010 Future With the Proposed Action			2010 Future With the Proposed Action and Mitigation		
	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS	Approach	Delay Sec/Veh	LOS
12th Ave. and 45th St.	WB	40.9	E	WB	>300*	F	WB	40.4	D

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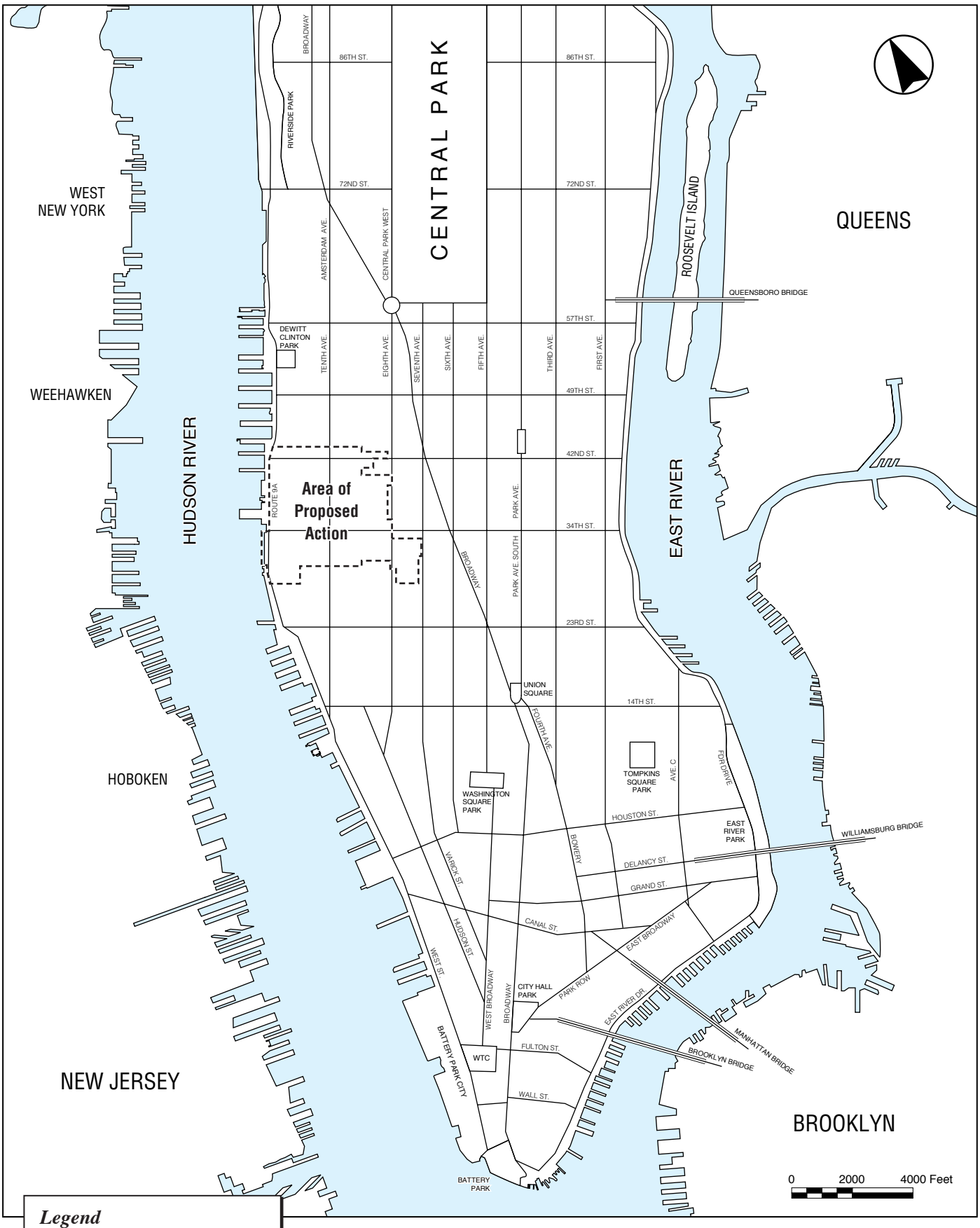
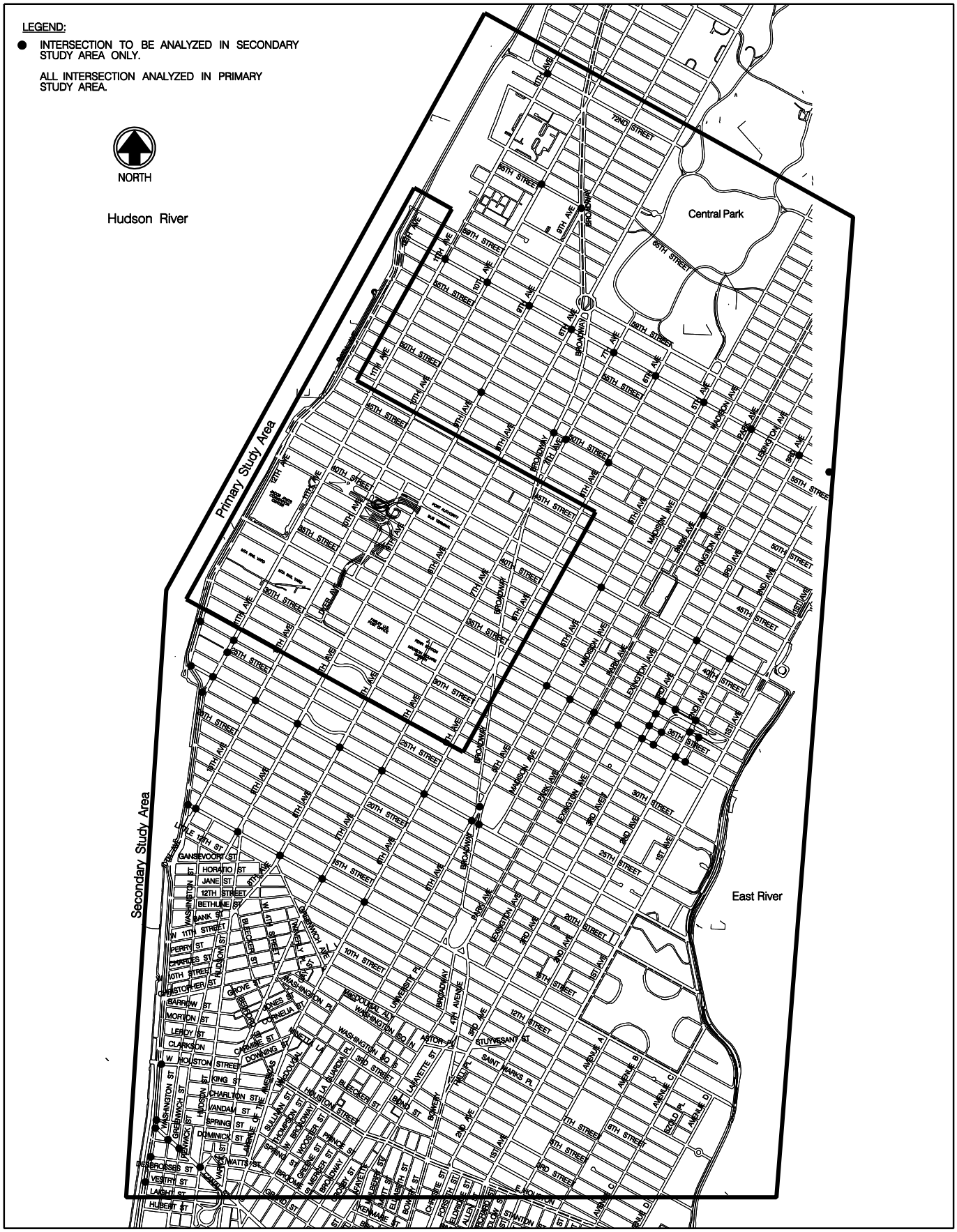


Legend

------ *Project Area Boundary*

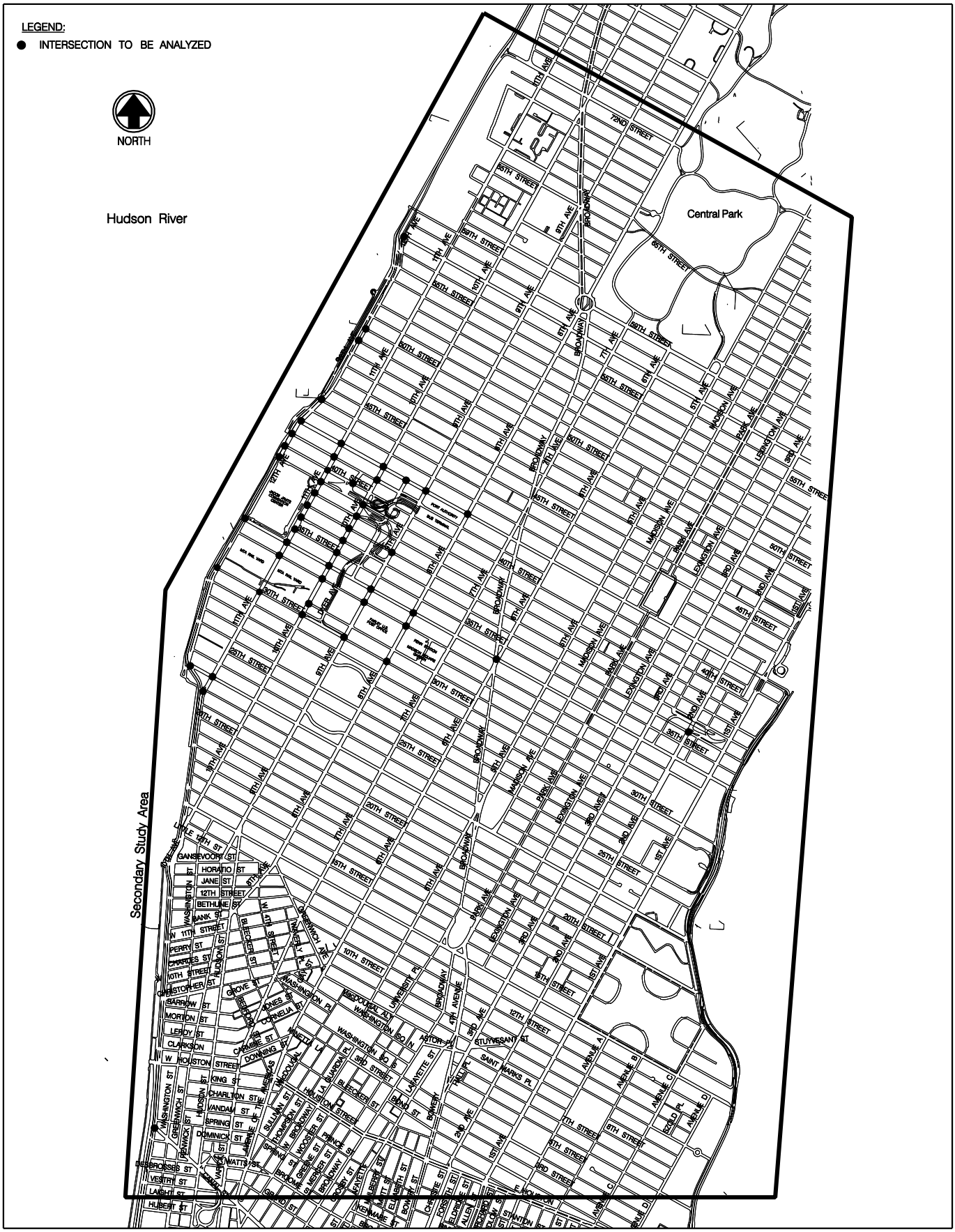
Location of Proposed Action

Figure 19-1



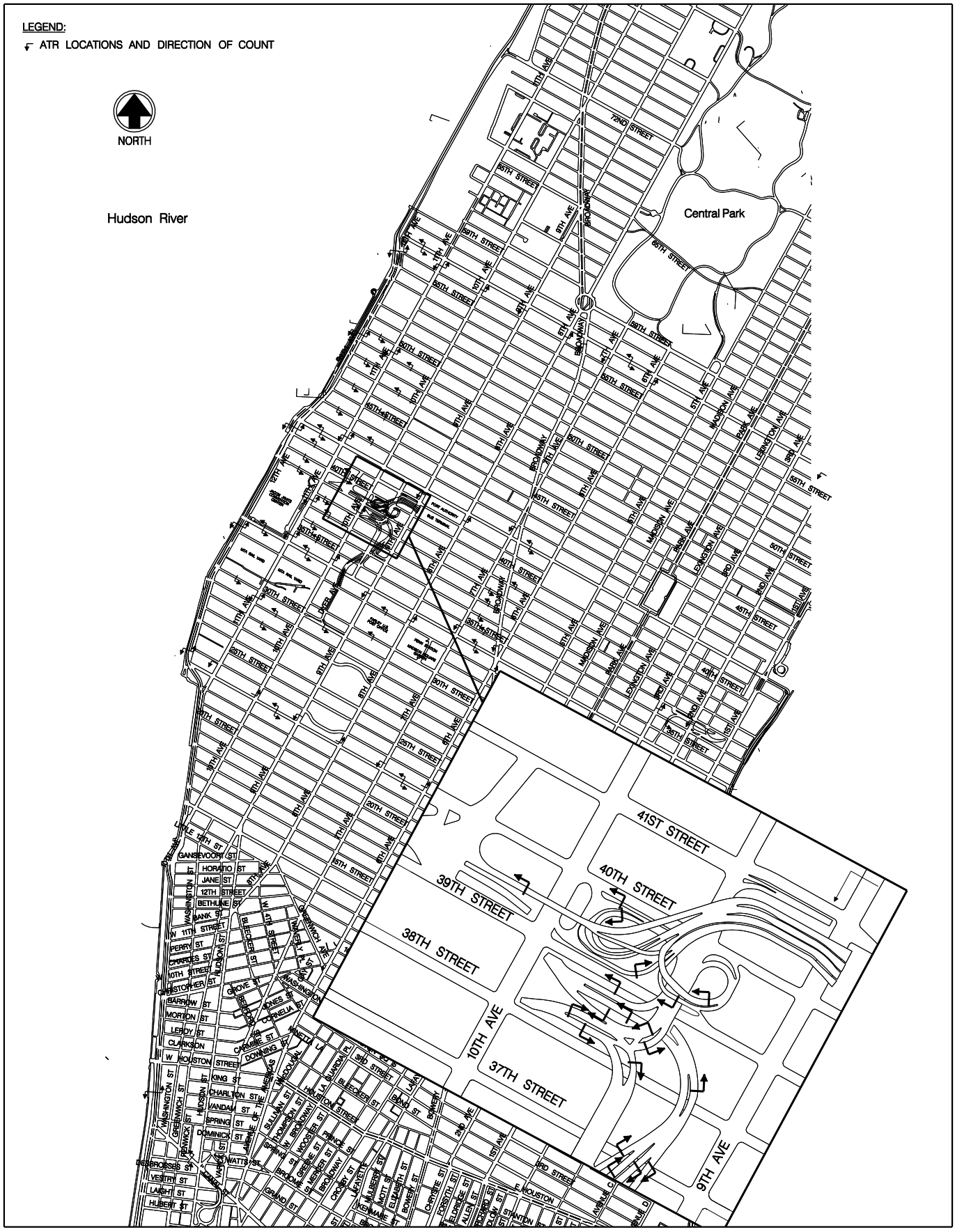
Primary and Secondary Traffic Study Areas

Figure 19-2



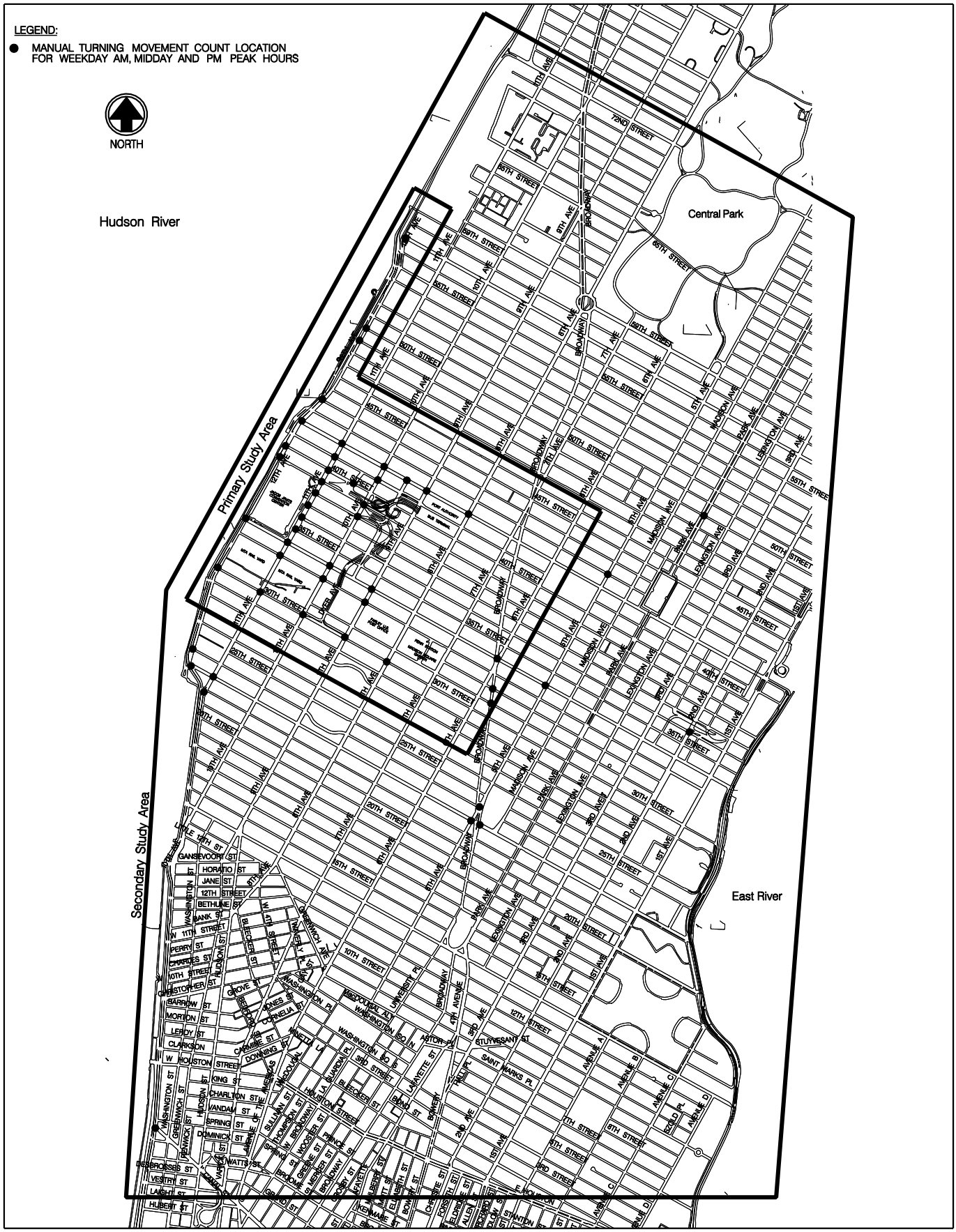
Special Events Study Area

Figure 19-3



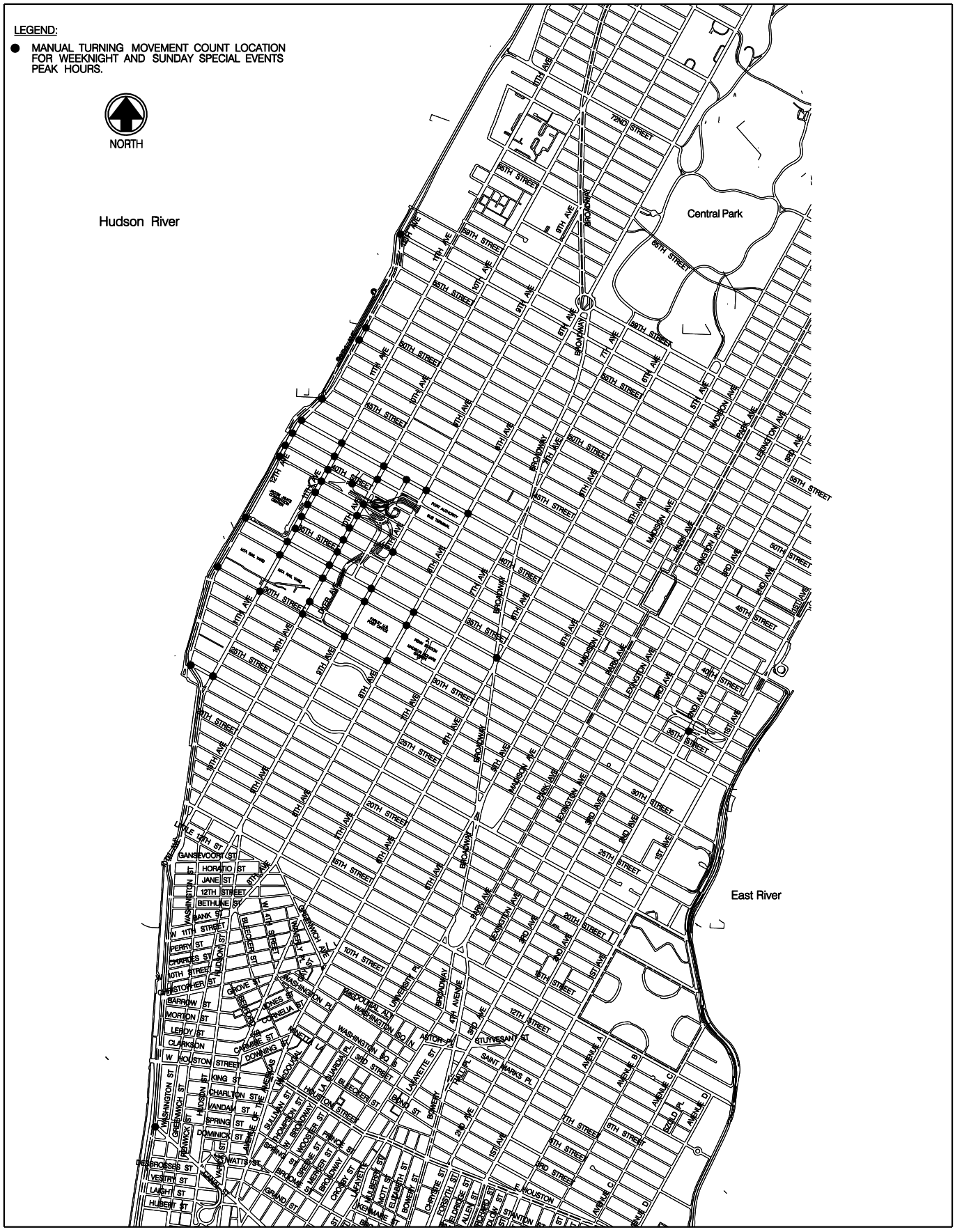
Location of ATR Counts

Figure 19-4



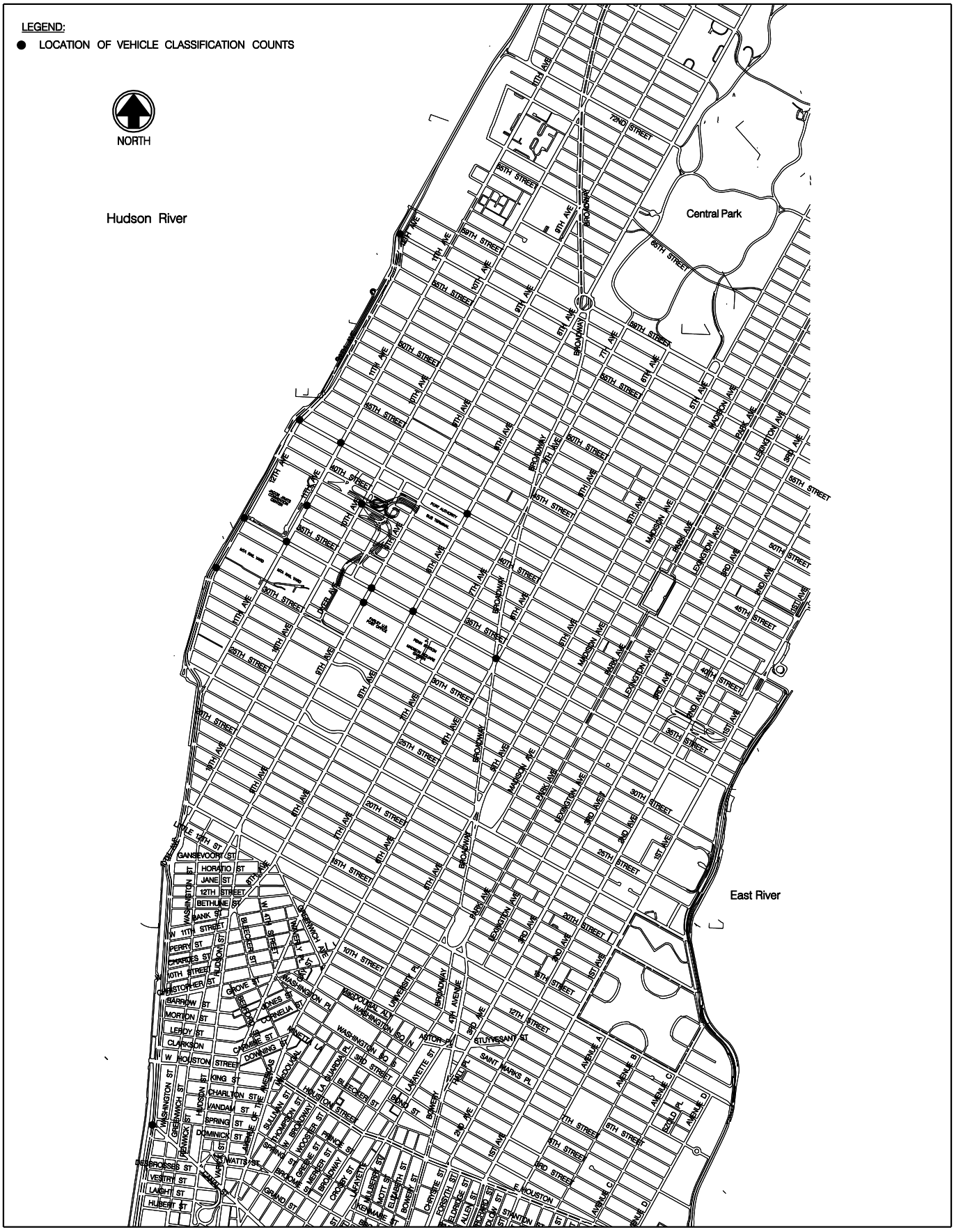
Location of Manual Turning Movement Counts (Weekday AM, Midday and PM Peak Hours)

Figure 19-5



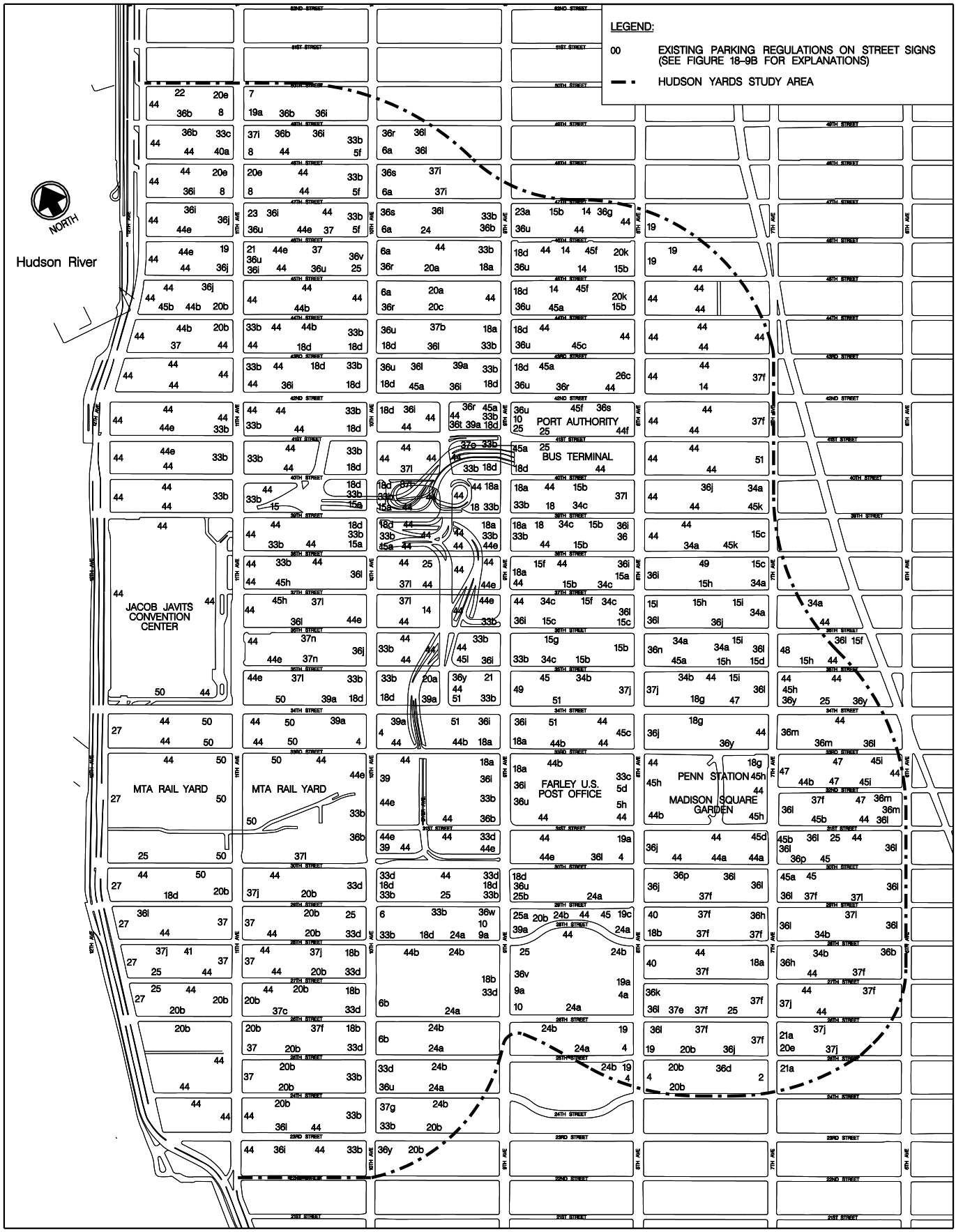
Location of Manual Turning Movement Counts (Weeknight and Sunday Special Events Peak Hours)

Figure 19-6



Location of Vehicle Classification Counts

Figure 19-7



On-Street Parking Regulations Map

Figure 19-8

PERMITTED PARKING

1	1/2 Hour Meter Parking 8am-10pm, Except Sun
2	1 Hour Meter Parking
3	1 Hour Meter Parking 4pm-7pm
4	1 Hour Meter Parking 8am-7pm, Except Sun
4a	1 Hour Meter Parking 8am-7pm, Including Sun
5	1 Hour Meter Parking 9am-4pm, Except Sat
5a	1 Hour Meter Parking 9am-4pm, Except Sun
5b	1 Hour Meter Parking 9am-4pm, Including Sun
5c	1 Hour Meter Parking 9am-4pm Sat
5d	1 Hour Meter Parking 9am-4pm Mon-Fri
5e	1 Hour Meter Parking 9am-4pm Mon-Sat
5f	1 Hour Meter Parking 9am-4pm Mon-Sat, 9am-7pm Sun
5g	1 Hour Meter Parking 9am-7pm, Including Sun
5h	1 Hour Meter Parking 9am-7pm Sat-Sun
6	1 Hour Meter Parking 10am-4pm, Except Sun
6a	1 Hour Meter Parking 10am-4pm Mon-Sat, 9am-7pm Sun
6b	1 Hour Meter Parking 10am-4pm Mon-Fri, 9am-7pm Sun & Sat
6c	1 Hour Meter Parking 10am-7pm, Except Sat
6d	1 Hour Meter Parking 10am-7pm Sat
6e	1 Hour Meter Parking 10am-7pm Mon-Fri, 9am-7pm Sun & Sat
6f	1 Hour Meter Parking 10am-10pm, Including Sun
7	2 Hour Meter Parking 8am-7pm, Including Sun
8	2 Hour Meter Parking 8:30am-7pm, Except Sun
8a	2 Hour Meter Parking 8:30am-7pm, Including Sun
9	2 Hour Meter Parking 9am-7pm, Including Sun
9a	2 Hour Meter Parking 9am-7pm, Except Sun
9b	2 Hour Meter Parking 9am-7pm Sat & Sun
10	2 Hour Meter Parking 10am-7pm, Except Sun
11	6 Hour Meter Parking 6am-Midnight, 8am-Midnight Sun
12	6am-Midnight Meter Parking
12a	6pm-Midnight Meter Parking, Including Sat & Sun
13	8am-Midnight Meter Parking
13a	8am-Midnight Night Meter, Including Sat, Sun
13b	8pm-Midnight Meter Parking, Including Sat & Sun
14	Muni Meter

NO PARKING

15	No Parking 2am-6am Fri
15a	No Parking 2am-6am Mon-Fri
15b	No Parking 2am-6am Mon, Wed, Fri
15c	No Parking 2am-6am Mon, Wed, Sat
15d	No Parking 2am-6am Mon, Thur, Sat
15e	No Parking 2am-6am Mon, Sat
15f	No Parking 2am-6am Tue, Thur, Sat
15g	No Parking 2am-6am Tue, Thurs, Sun
15h	No Parking 2am-6am Sat
15i	No Parking 2am-6am Sun
15j	No Parking 2am-6pm, Including Sat, Except Trucks Loading Unloading, 3 Hour Limit
15k	No Parking 2am-6pm Mon, Wed, Fri
15L	No Parking 2am-6pm Tue, Thur, Sun
15m	No Parking 2am-6pm Sat
15n	No Parking 2am-6pm Sun
16	No Parking 4pm-7pm
16a	No Parking 4pm-7pm Mon-Fri
16b	No Parking 4pm-Midnight, Including Sun
17	No Parking 6pm-Midnight
18	No Parking 7am-4pm
18a	No Parking 7am-4pm, Except Sun
18b	No Parking 7am-4pm Mon-Fri
18c	No Parking 7am-4pm School Days
18d	No Parking 7am-7pm, Except Sun
18e	No Parking 7am-7pm Mon-Fri
18f	No Parking 7am-10am Mon-Fri
18g	No Parking 7am-Midnight
18h	No Parking 7am-Midnight, Except Sun
19	No Parking 7:30-8am
19a	No Parking 7:30-8am, Except Sun
19b	No Parking 7:30am-8am Mon-Fri
19c	No Parking 7:30-8am, Including Sun

NO PARKING (cont.)

20	No Parking 8am-6am Mon-Fri
20a	No Parking 8am-6pm, Except Sun
20b	No Parking 8am-6pm Mon-Fri
20c	No Parking 8am-6pm Tue & Thur
20d	No Parking 8am-7pm Mon, Thurs, Fri
20e	No Parking 8am-8:30am, Except Sun
20f	No Parking 8am-8:30am Mon-Fri, 1 Hour Parking 8:30am-7pm, Including Sun
20g	No Parking 8am-8:30am Tues & Fri
20h	No Parking 8am-9:30am Tues-Fri
20i	No Parking 8am-10pm, 1 Hour Parking 10am-10pm, Except Sun
20j	No Parking 8am-10pm, 1 Hour Parking 10am-10pm, Including Sun
20k	No Parking 8am-Midnight, Except Sun
21	No Parking 8:30am-9am
21a	No Parking 8:30am-9am, Except Sun
22	No Parking 9am-10:30am Mon & Thur
22a	No Parking 9am-10:30am Tues & Fri
23	No Parking 10am-4pm, Except Sun
23a	No Parking 10am-7pm Mon-Fri
24	No Parking 11am-6pm
24a	No Parking 11am-12:30pm Mon & Thur
24b	No Parking 11am-12:30pm Tue & Fri
25	No Parking Anytime
25a	No Parking Anytime, Except Auth. Fire Dept.
25b	No Parking Anytime, Except Taxis
26c	No Parking Anytime, Except Taxis/ FHV's
27	No Parking Midnight-3am Tues & Fri
28	No Parking Truck Waiting Line

NO STANDING

29	No Standing 1am-3am, Except Sun
29a	No Standing 1pm-7pm
30	No Standing 2am-5pm Mon-Fri, Except Trucks Loading or Unloading
30a	No Standing 2pm-5pm Mon-Fri
30b	No Standing 2am-6pm Sat, Except Trucks Loading or Unloading, 3 Hour Limit
31	No Standing 3am-7pm
32	No Standing 4am-Midday
33	No Standing 4pm-6pm
33a	No Standing 4pm-6pm Mon-Fri
33b	No Standing 4pm-7pm, Except Sun
33c	No Standing 4pm-7pm Mon, Thurs, Fri
33d	No Standing 4pm-7pm Mon-Fri
33e	No Standing 4pm-7pm Mon-Fri, Bus Lane
33f	No Standing 4pm-Midnight, Except Sun
34	No Standing 6am-6pm Mon-Fri
34a	No Standing 6am-7pm Mon-Fri, 3 Hour Limit
34b	No Standing 6am-7pm Mon-Fri, Except Trucks Loading & Unloading
34c	No Standing 6am-7pm Mon-Fri, Except Trucks Loading & Unloading, 4 Hour Limit
35	No Standing 6pm-Midnight, Including Sun
35a	No Standing 6pm-Midnight Mon-Fri
36	No Standing 7am-4pm
36a	No Standing 7am-4pm Schools Days, Except M.I.U. Vehicles
36b	No Standing 7am-4pm, Except Trucks Loading & Unloading, Except Sun
36c	No Standing 7am-6pm, Except Commercial Vehicles, 3 Hour Limit
36d	No Standing 7am-6pm, Except Trucks Loading & Unloading
36e	No Standing 7am-6pm Mon-Fri
36f	No Standing 7am-6pm Mon-Sat
36g	No Standing 7am-7pm, Except Commercial Vehicles, Metered Parking 3 Hour Limit Mon-Sat
36h	No Standing 7am-7pm, Except Sun
36i	No Standing 7am-7pm, Except Trucks Loading & Unloading
36j	No Standing 7am-7pm Mon-Fri
36k	No Standing 7am-7pm Mon-Fri, Except Trucks Loading & Unloading
36L	No Standing 7am-7pm Mon-Fri, Except Trucks Loading & Unloading, Except Sun
36m	No Standing 7am-7pm Mon-Sat, Except Trucks Loading & Unloading
36n	No Standing 7am-7pm, Except Trucks Loading or Unloading, 3 Hour Limit
36o	No Standing 7am-7pm, Except Trucks Loading or Unloading, Including Sun

On-Street Parking Regulation Code Explanation

Figure 19-9A

NO STANDING (cont.)

36p No Standing 7am-8pm, Except Trucks Loading or Unloading, Except Sun
36q No Standing 7am-9am, Except Sun
36r No Standing 7am-10am & 4pm-7pm, Except Sun
36s No Standing 7am-10am & 4pm-7pm, Except Sun & 10am-4pm Mon-Sat
36t No Standing 7am-10am & 4pm-10pm, Including Sun
36u No Standing 7am-10am, Except Sun
36v No Standing 7am-10am Mon, Thurs, Fri
36w No Standing 7am-10am Mon-Fri
36x No Standing 7am-10pm, Bus Lane, Including Sun
36y No Standing 7am-Midnight
36z No Standing 7am-Midnight, Except Trucks Loading & Unloading, Mon-Fri
37 No Standing 8am-4pm
37a No Standing 8am-6pm, Except Authorized Vehicles Mon-Fri, Except Board of Education (BOE)
37b No Standing 8am-6pm, Except Sun
37c No Standing 8am-6pm, Except Trucks Loading & Unloading
37d No Standing 8am-6pm, Except Trucks Loading & Unloading, Except Sun
37e No Standing 8am-6pm Mon, Thurs, Fri, Except Auth. Vehicles
37f No Standing 8am-6pm Mon-Fri, Except Trucks Loading or Unloading
37g No Standing 8am-6pm Mon-Fri, Except Authorized Vehicles, U.S. Mail
37h No Standing 8am-7pm
37i No Standing 8am-7pm, Except Sun
37j No Standing 8am-7pm Mon-Fri, Except Trucks Loading or Unloading
37k No Standing 8am-9:30am & 1pm-7pm Mon-Fri
37L No Standing 8am-10pm
37m No Standing 8am-10am, 1 Hour Parking
37n No Standing 8am-10pm, Except Trucks Loading & Unloading, Except Sun
37o No Standing 8am-10pm, Including Sun
37p No Standing 8am-Midnight, Except Sun
37q No Standing 8am-Midnight, Including Sun
37r No Standing 8am-Midnight Sat & Sun
38 No Standing 9am-4pm, Except Sun
38a No Standing 9am-4pm, Including Sun
38b No Standing 9am-9pm Mon, Thur, Fri, Except Trucks Loading & Unloading
39 No Standing 10am-4pm
39a No Standing 10am-4pm, Except Trucks Loading & Unloading, Except Sun
39b No Standing 10am-6pm Mon-Sat, Except Trucks Loading & Unloading, 6 Hour Parking
39c No Standing 10am-10pm Mon-Fri
40 No Standing 11am-2pm, Other Times No Standing, Except Trucks Loading or Unloading
40a No Standing 11am-7pm Mon-Fri, Except Trucks Loading & Unloading
41 No Standing 11pm-6pm, Including Sun
42 No Standing 12am-6am
43 No Standing 12 Noon-6pm
43a No Standing 12 Noon-6pm Wed, Sat, Sun
44 No Standing Anytime
44a No Standing Anytime 7am-7pm Mon-Sat, Except Trucks Loading or Unloading
44b No Standing Anytime, Except Auth. Bus
44c No Standing Anytime, Except Post Office Employees
44d No Standing Anytime, Except Sun
44e No Standing Anytime, Except Trucks Loading & Unloading
44f No Standing Anytime, Taxi Stand
45 No Standing, Except Authorized Police Department
45a No Standing, Except Authorized Vehicles
45b No Standing, Except Authorized Vehicles, Fire Zone
45c No Standing, Except Authorized Vehicles, N.Y. Press License Plates
No Standing, Except Authorized Vehicles, U.S. Senate

NO STANDING (cont.)

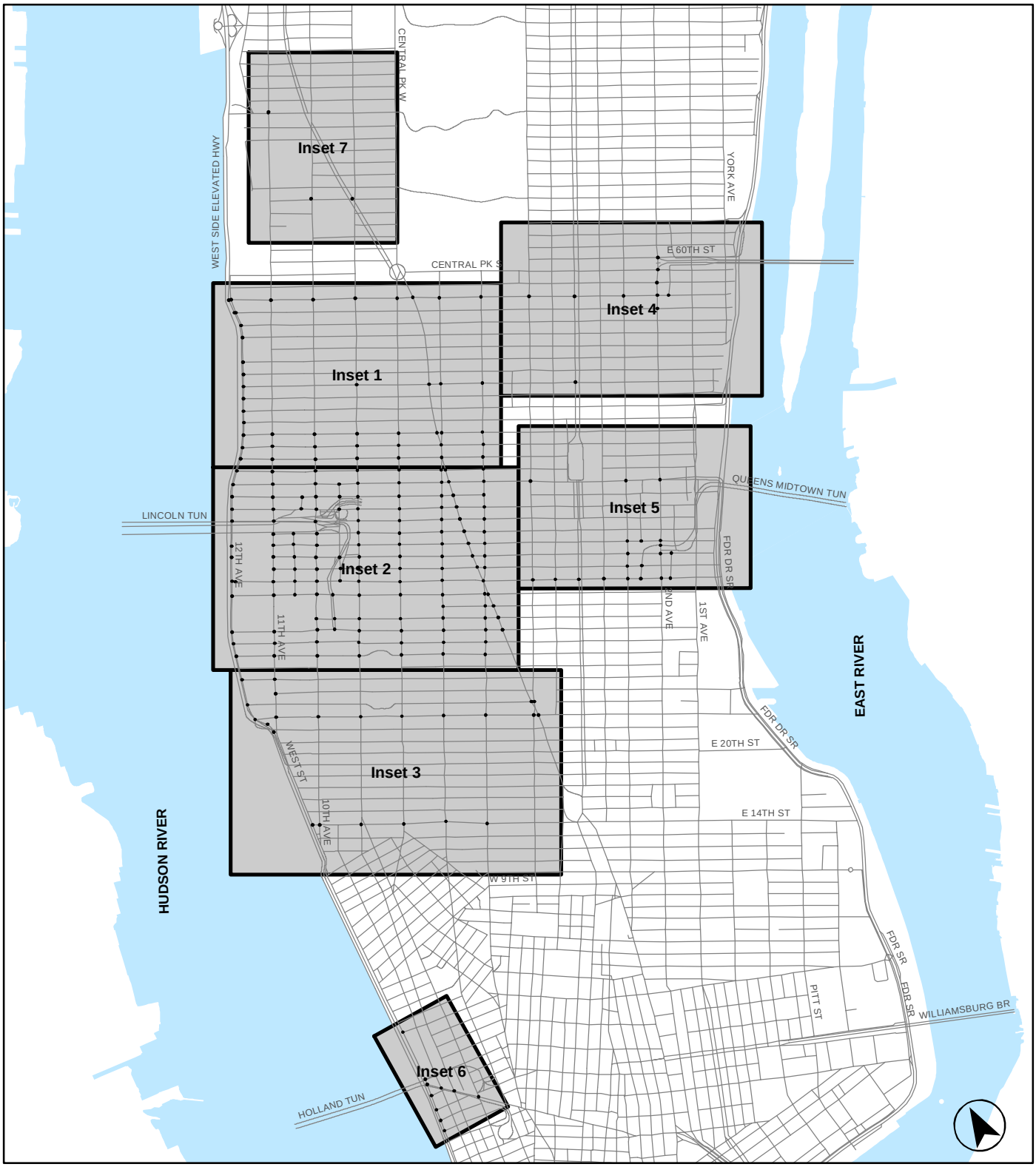
45e No Standing, Except City Authorized Vehicles
45f No Standing, Except Commercial Vehicles, Metered Parking 3 Hour Limit
45g No Standing, Except Diplomats
45h No Standing, Except Taxis
45i No Standing, Except Trucks Loading & Unloading
45j No Standing, Except Trucks Loading & Unloading, Except Sun
45k No Standing, Except Trucks Loading & Unloading, 3 Hour Limit
45L No Standing, Except Trucks Loading & Unloading, 4 Hour Limit
46 No Standing Fire Zone
47 No Standing Hotel Loading Zone
48 No Standing Mon-Fri, Except Trucks Loading & Unloading, 3 Hour Time Limit
49 No Parking Posted
50 Truck Waiting Line

NO STOPPING

51 No Stopping Anytime
52 No Stopping

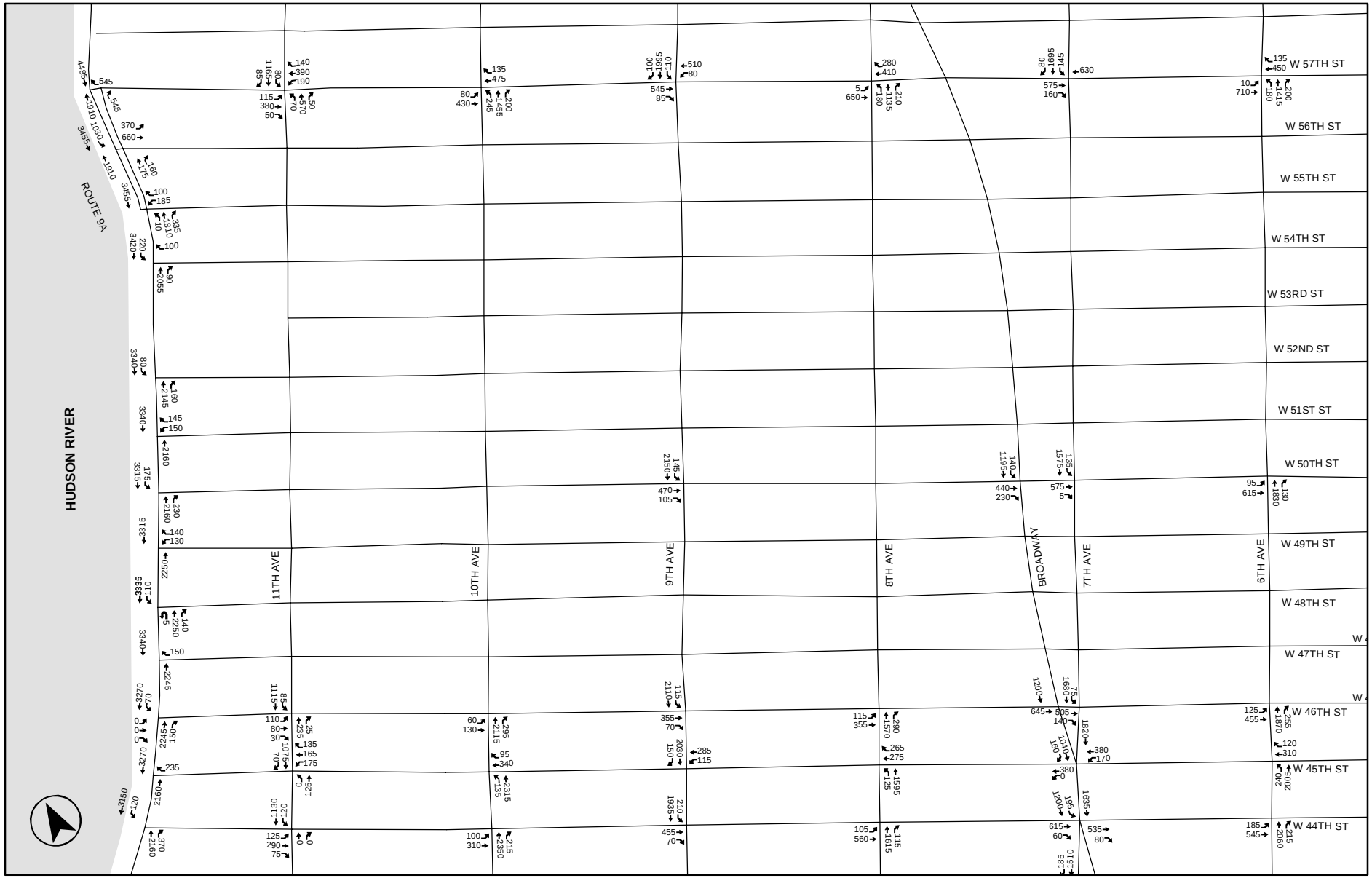
On-Street Parking Regulation Code Explanation (Cont.)

Figure 19-9B



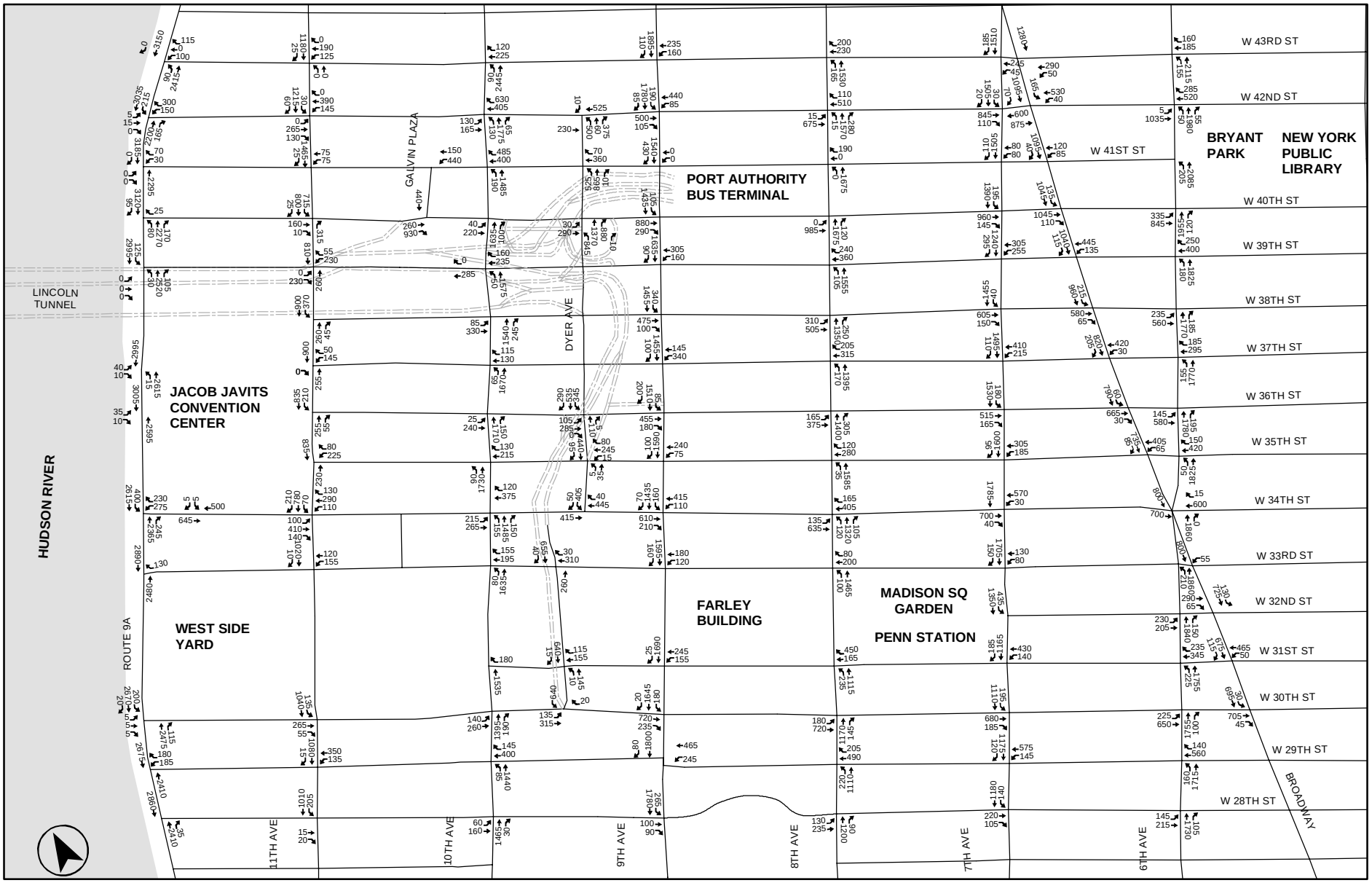
2003 Existing Traffic Volumes: Key Map (Weekday AM, Midday, PM Peak Hours)

Figure 19-10



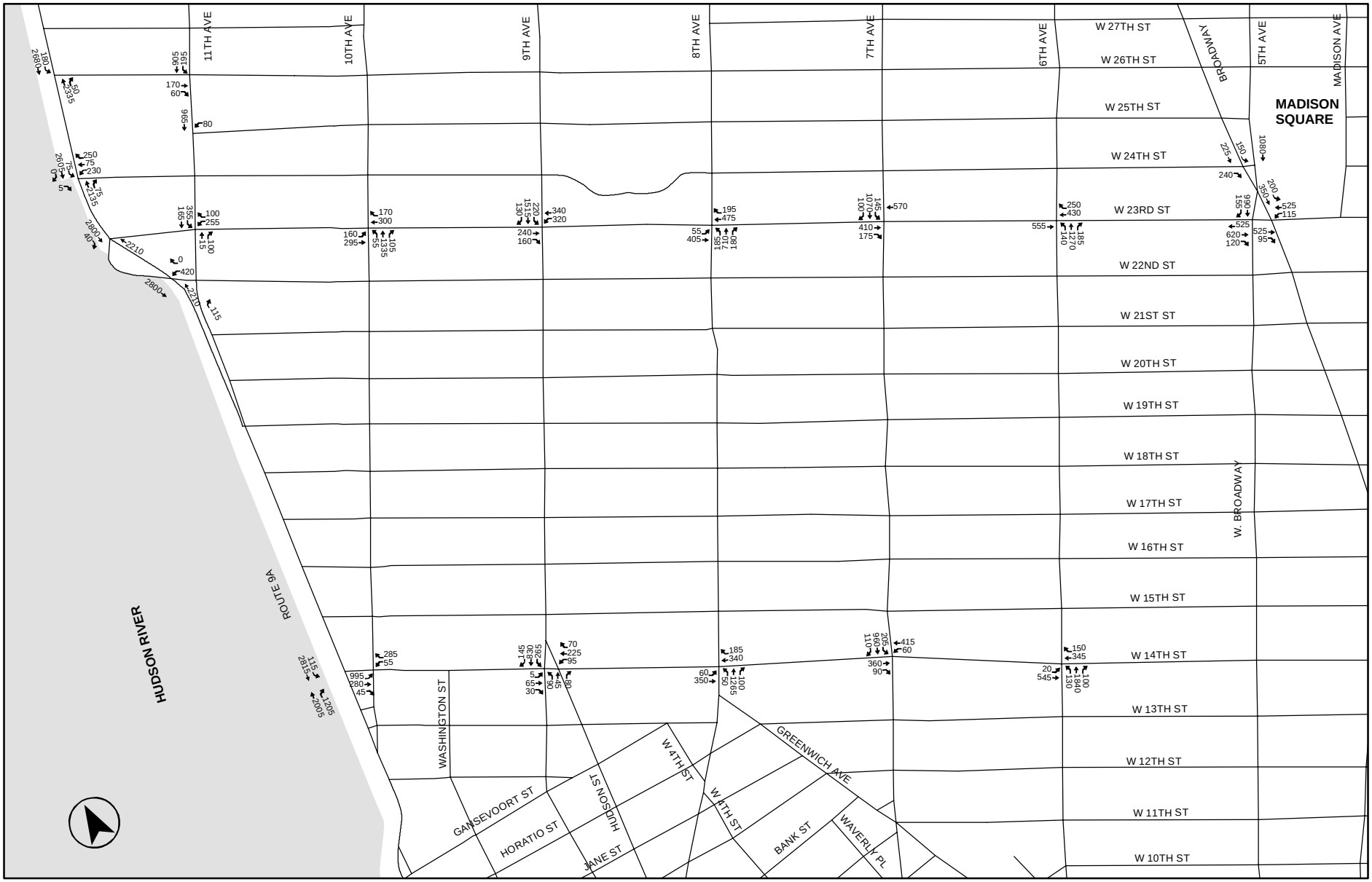
2003 Existing Traffic Volumes-Inset 1 (Weekday AM Peak Hour)

Figure 19-11



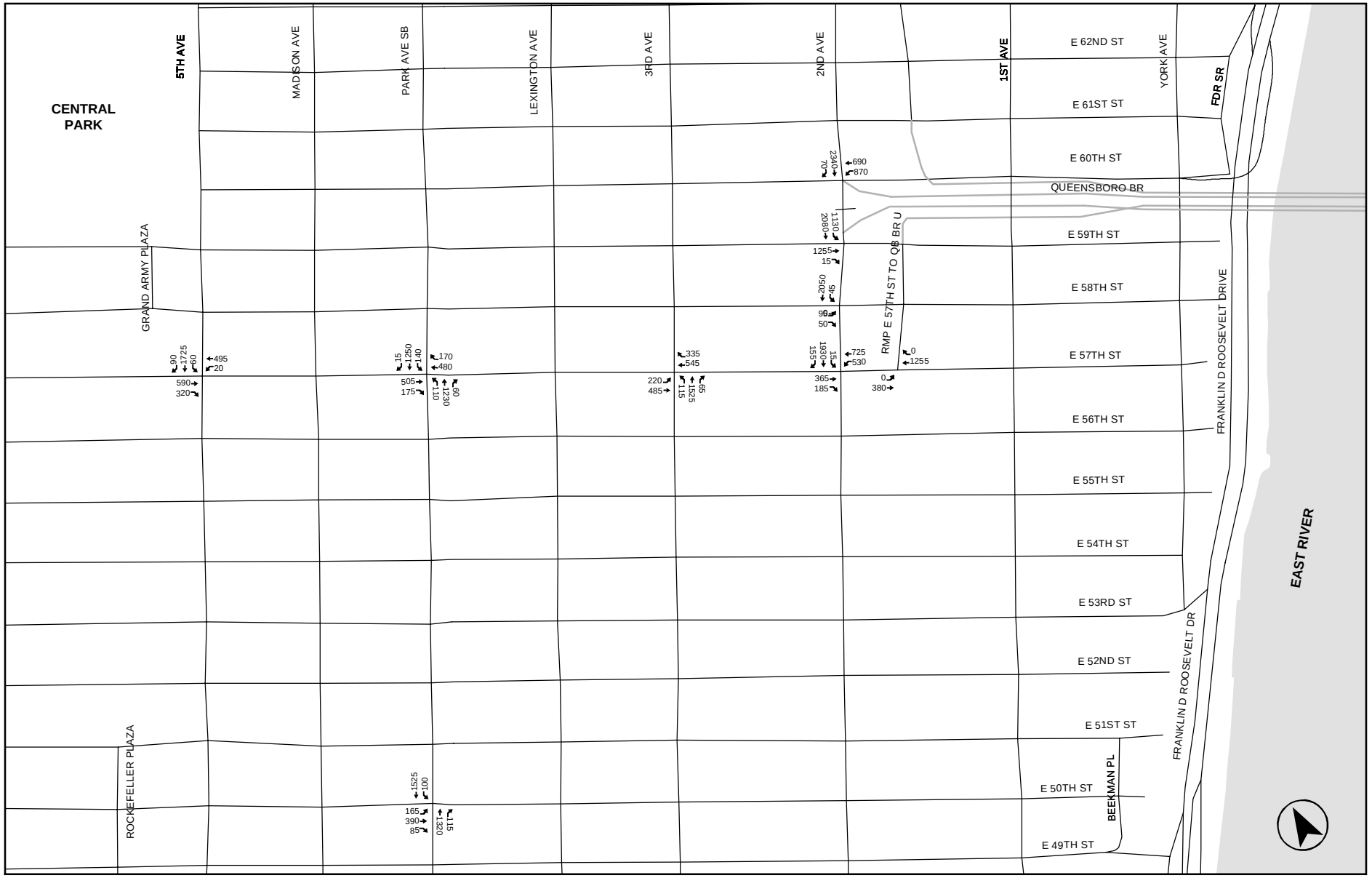
2003 Existing Traffic Volumes- Inset 2 (Weekday AM Peak Hour)

Figure 19-12



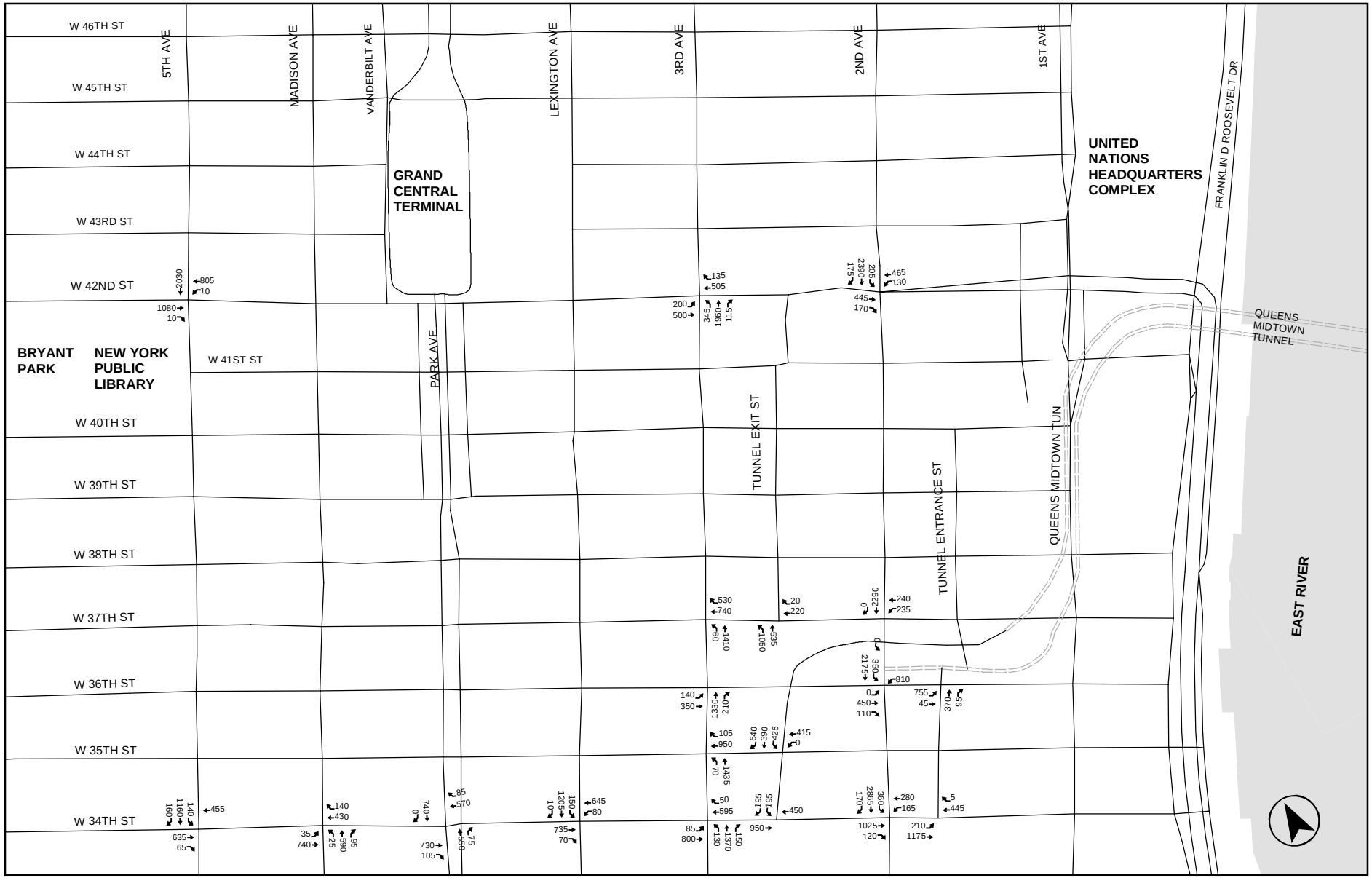
2003 Existing Traffic Volumes- Inset 3 (Weekday AM Peak Hour)

Figure 19-13



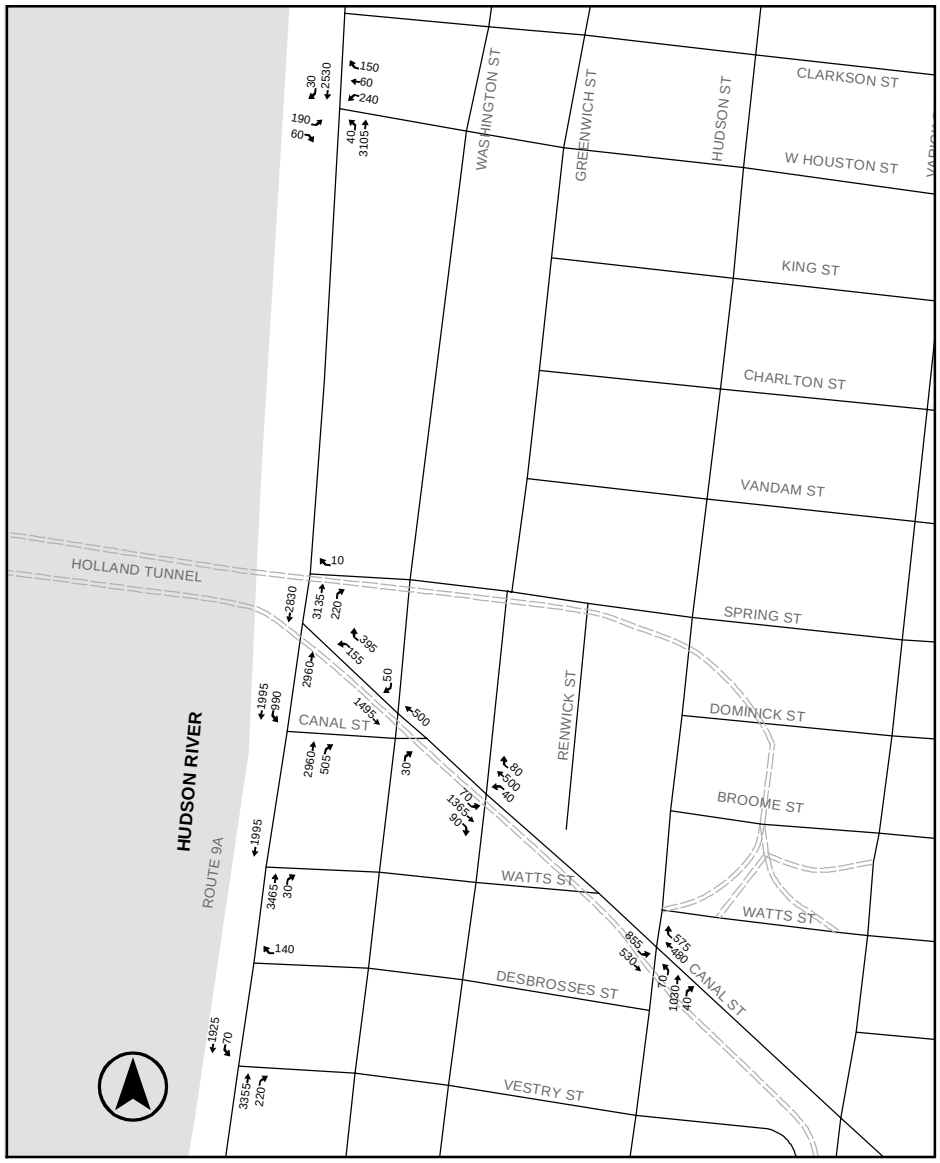
2003 Existing Traffic Volumes-
Inset 4
(Weekday AM Peak Hour)

Figure 19-14

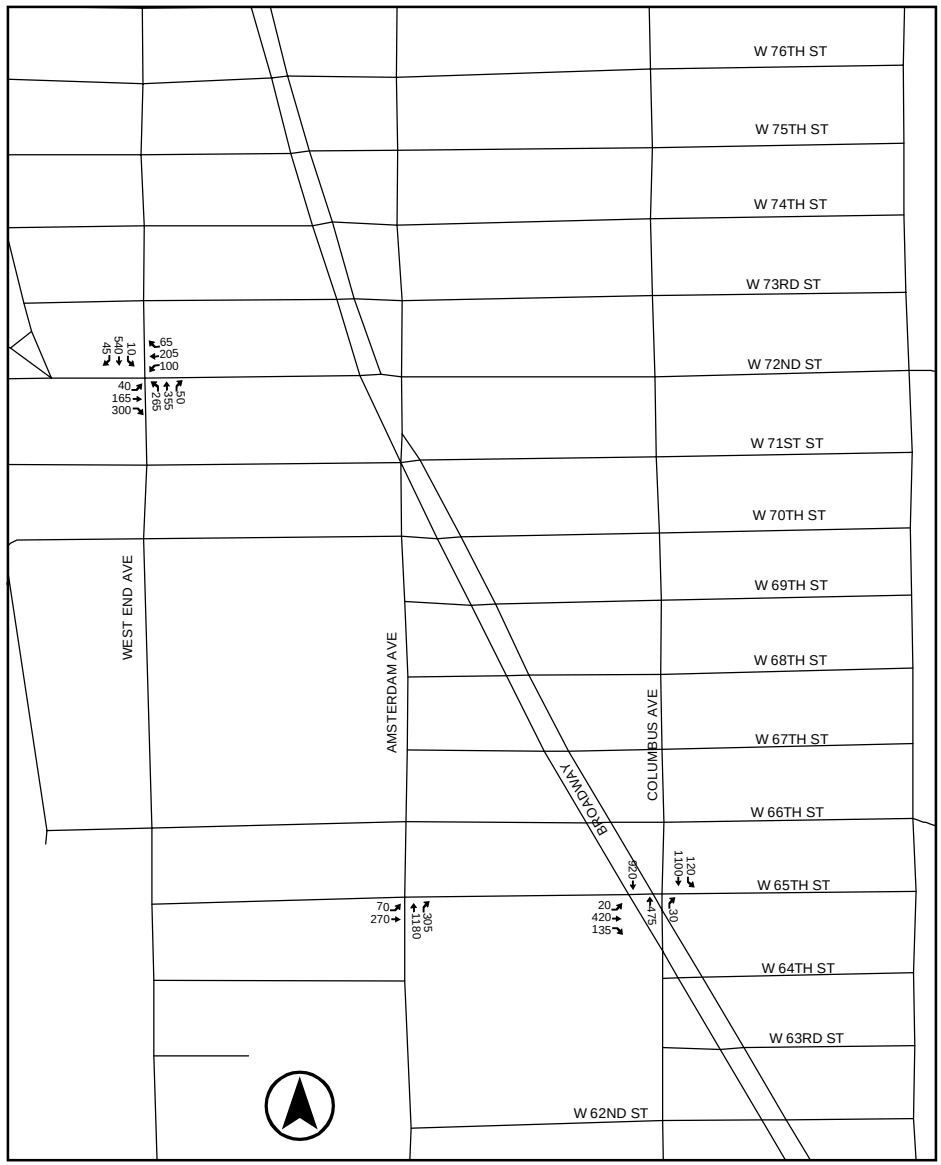


2003 Existing Traffic Volumes- Inset 5 (Weekday AM Peak Hour)

Figure 19-15



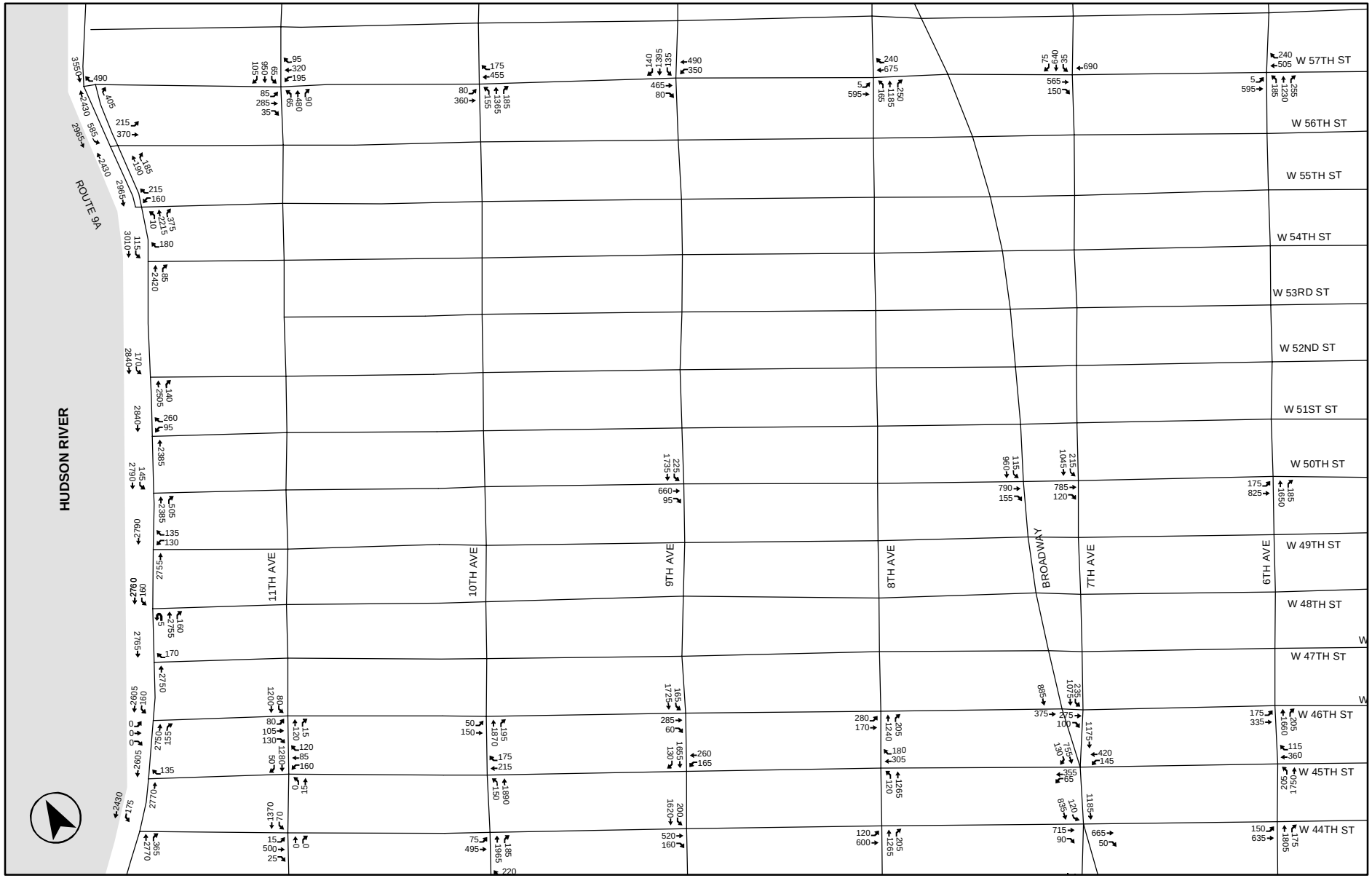
Inset 6



Inset 7

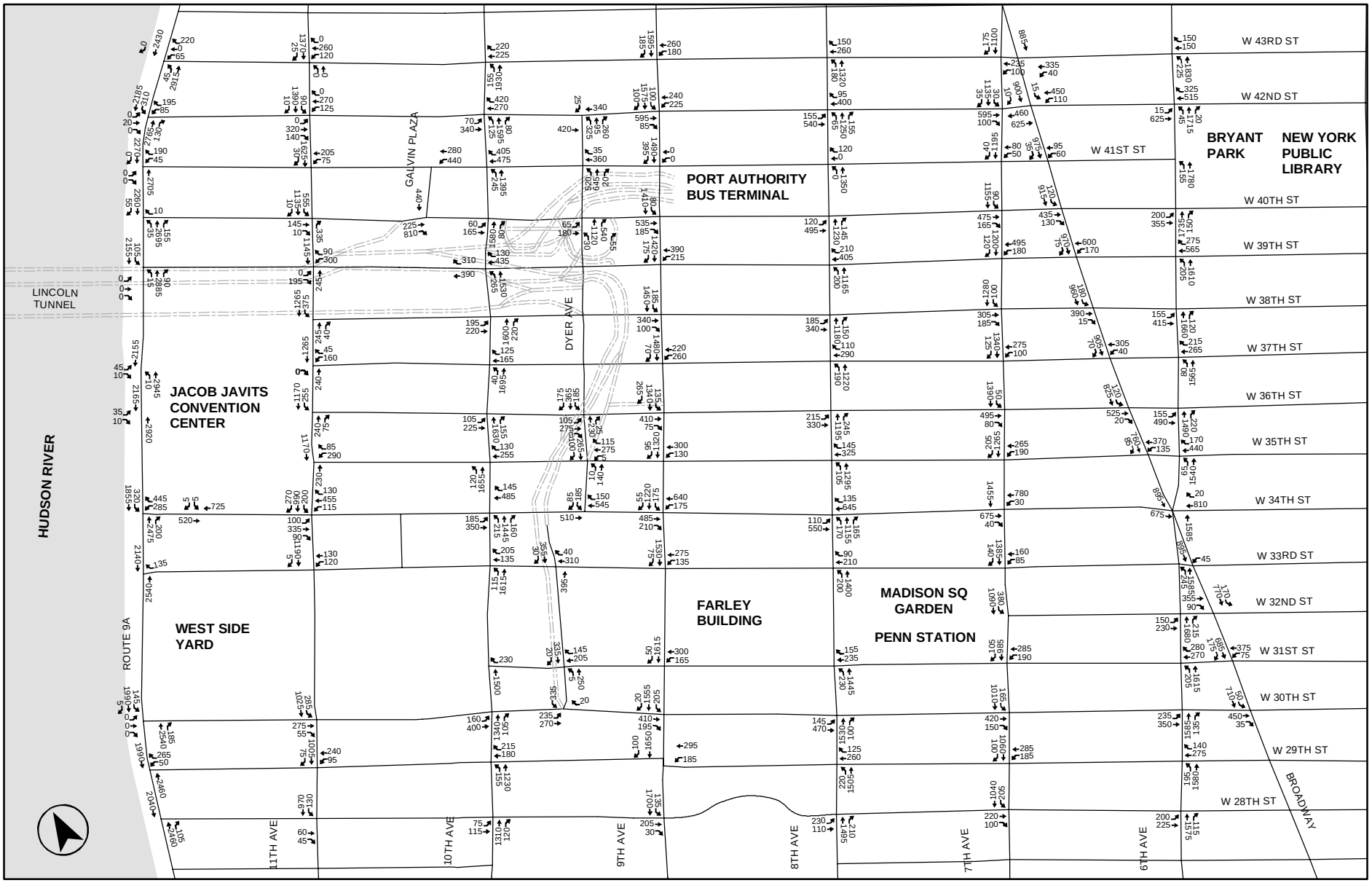
2003 Existing Traffic Volumes- Inset 6 and 7 (Weekday AM Peak Hour)

Figure 19-16



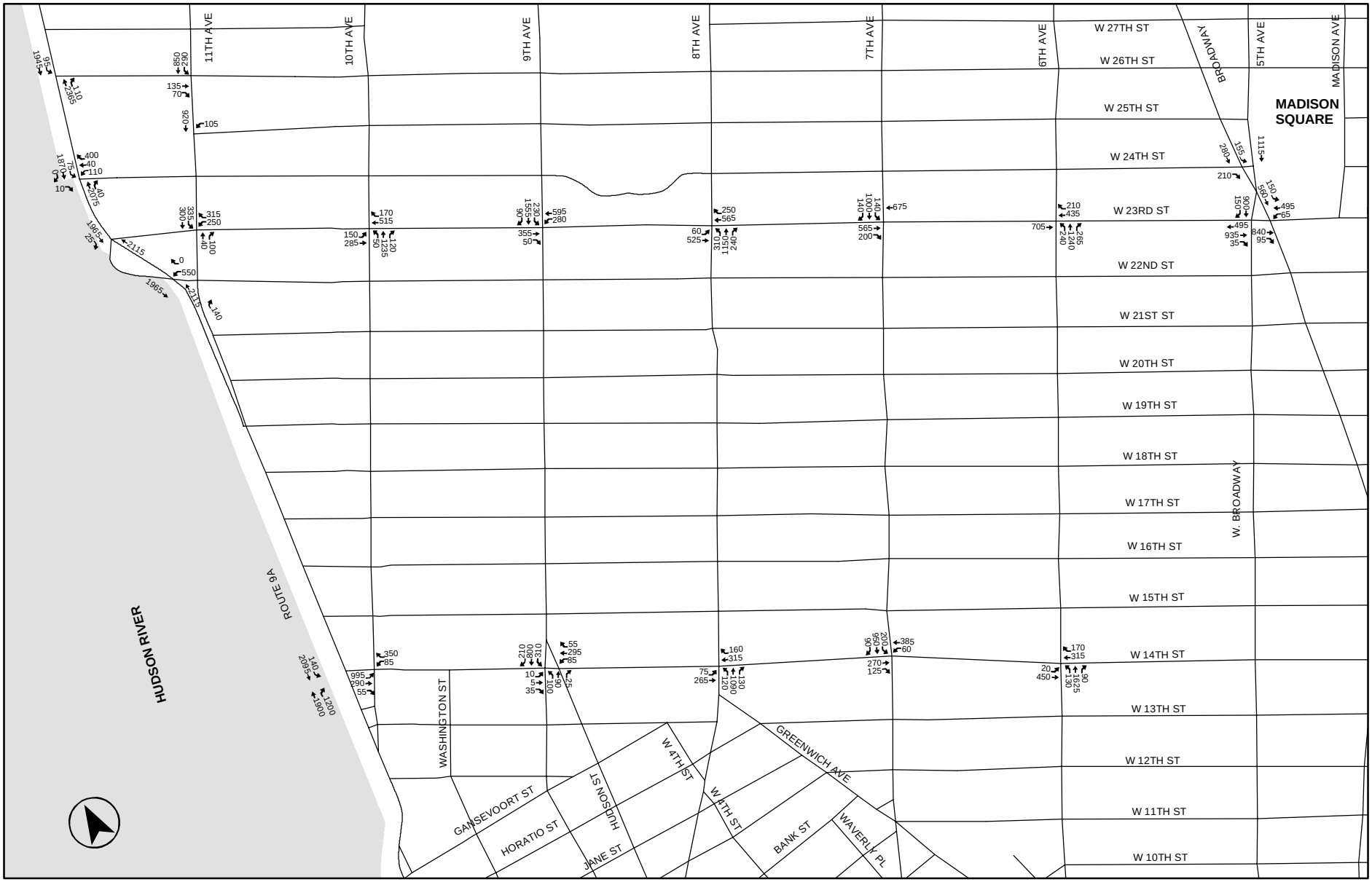
2003 Existing Traffic Volumes- Inset 1 (Weekday Midday Peak Hour)

Figure 19-17



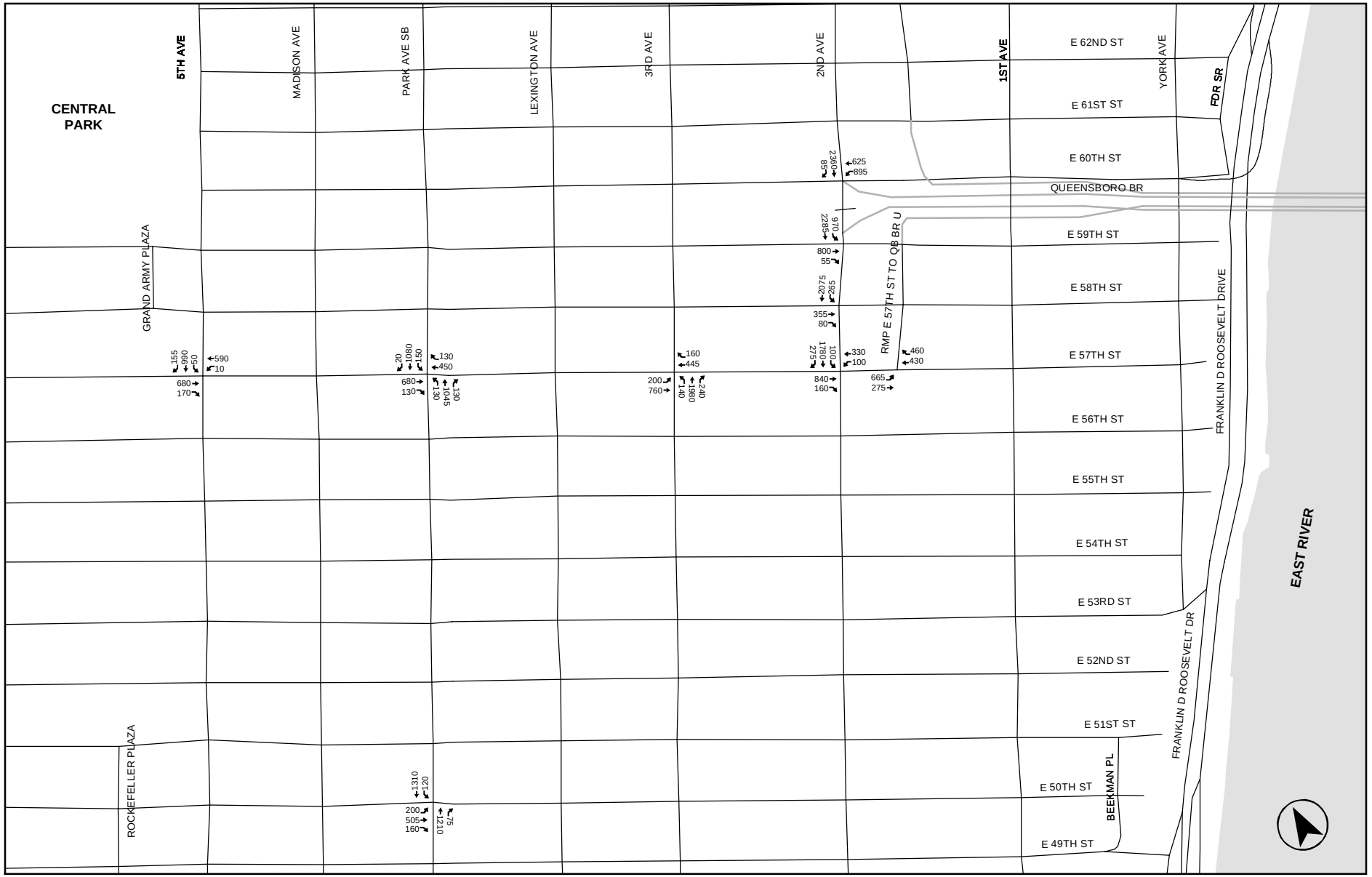
2003 Existing Traffic Volumes-
Inset 2
(Weekday Midday Peak Hour)

Figure 19-18



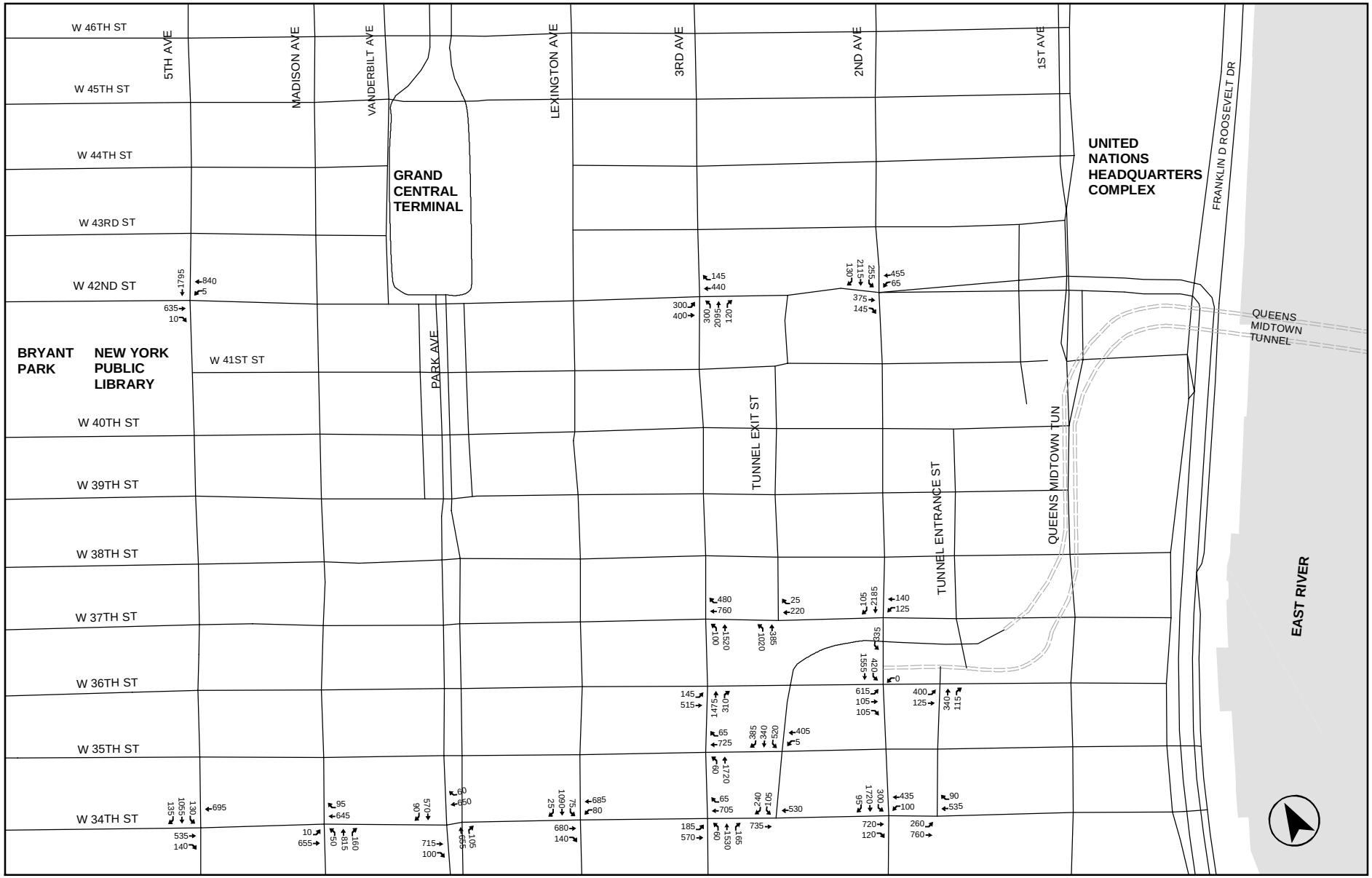
2003 Existing Traffic Volumes-
Inset 3
(Weekday Midday Peak Hour)

Figure 19-19



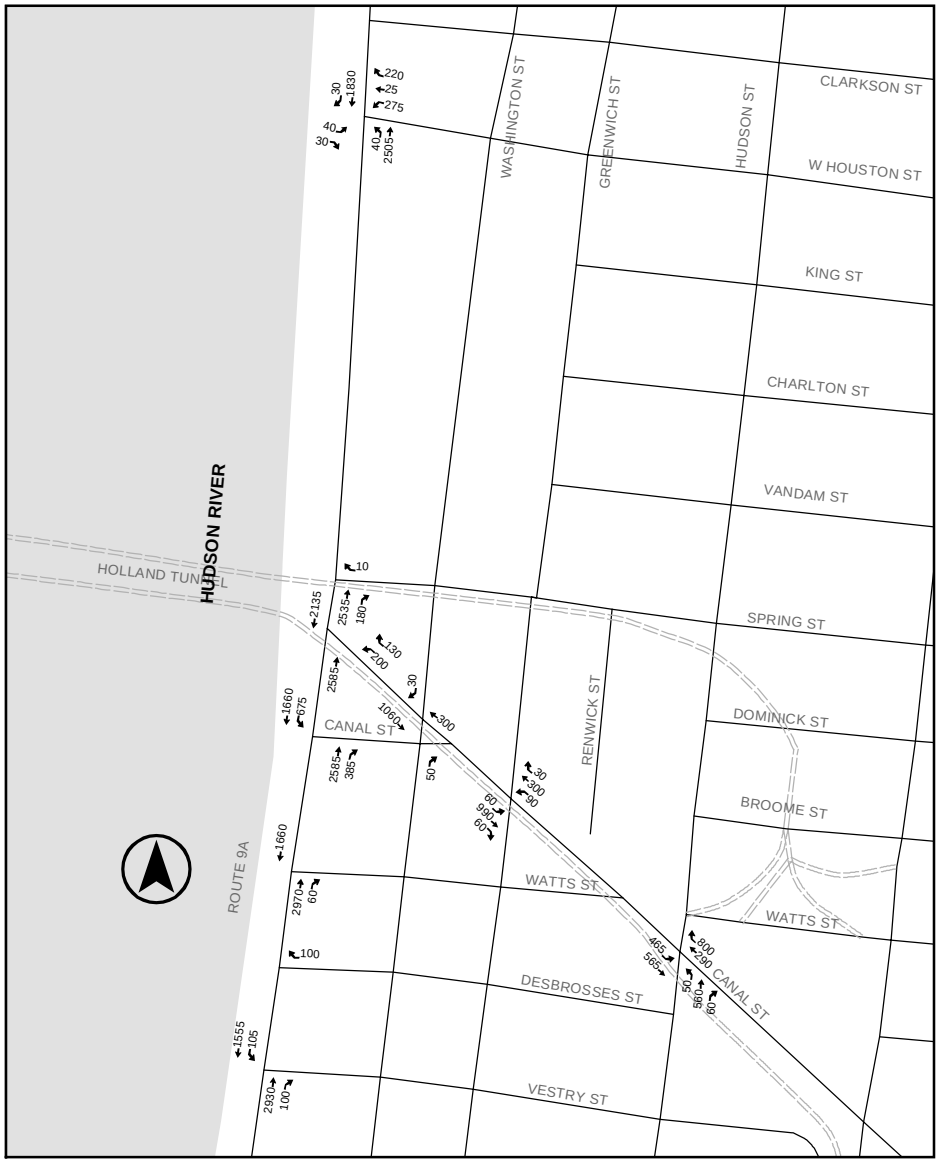
2003 Existing Traffic Volumes-
Inset 4
(Weekday Midday Peak Hour)

Figure 19-20

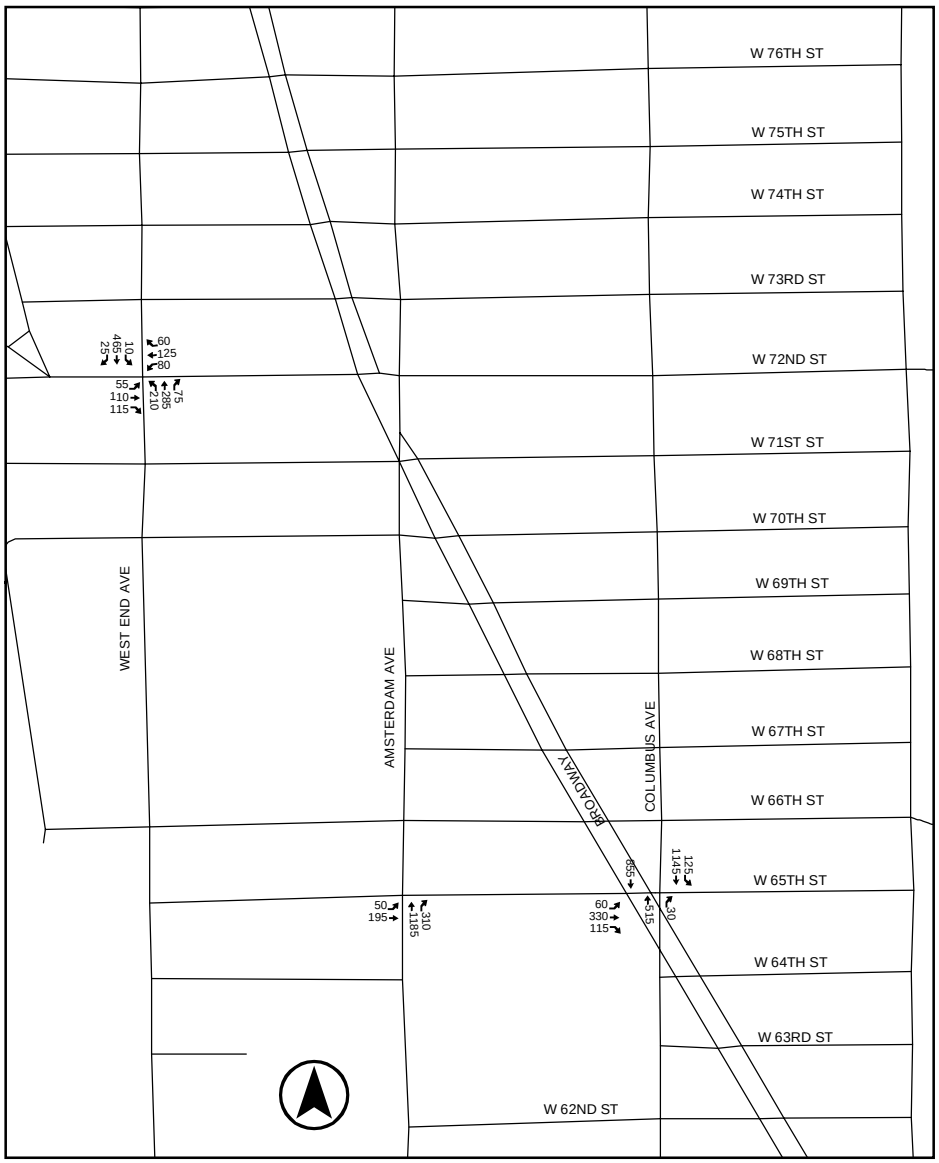


2003 Existing Traffic Volumes-
Inset 5
(Weekday Midday Peak Hour)

Figure 19-21



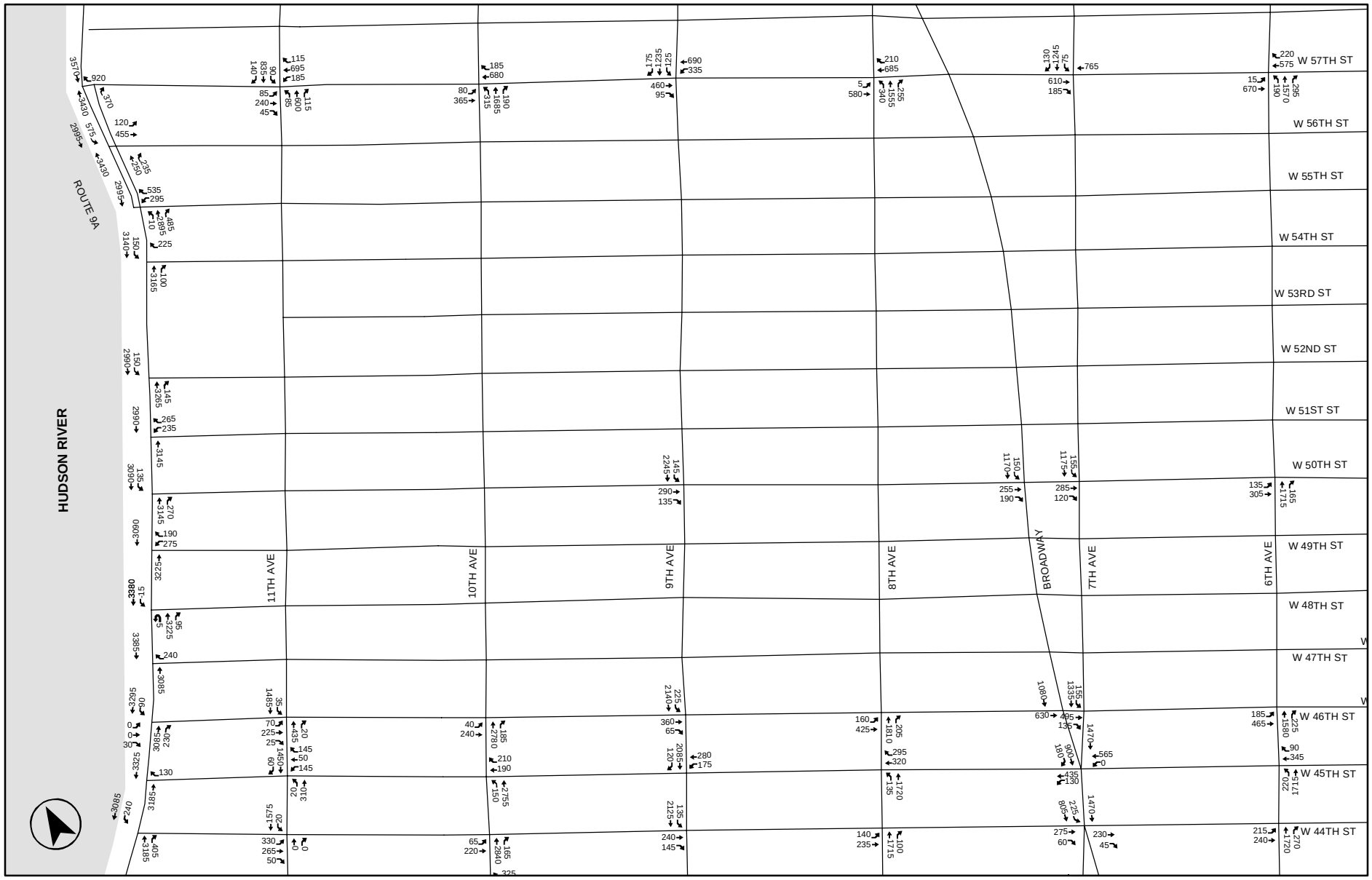
Inset 6



Inset 7

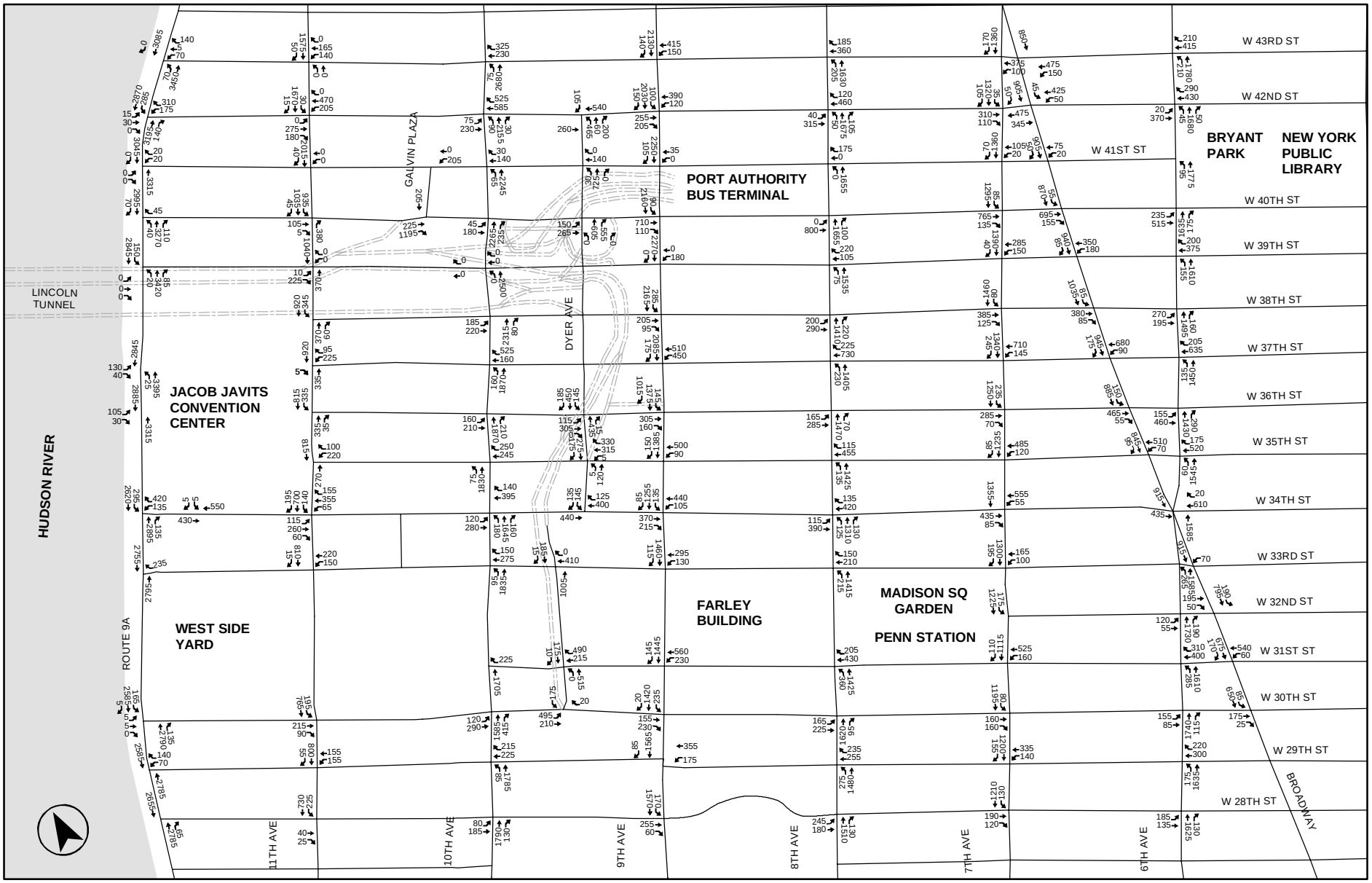
2003 Existing Traffic Volumes-
Insets 6 and 7
(Weekday Midday Peak Hour)

Figure 19-22



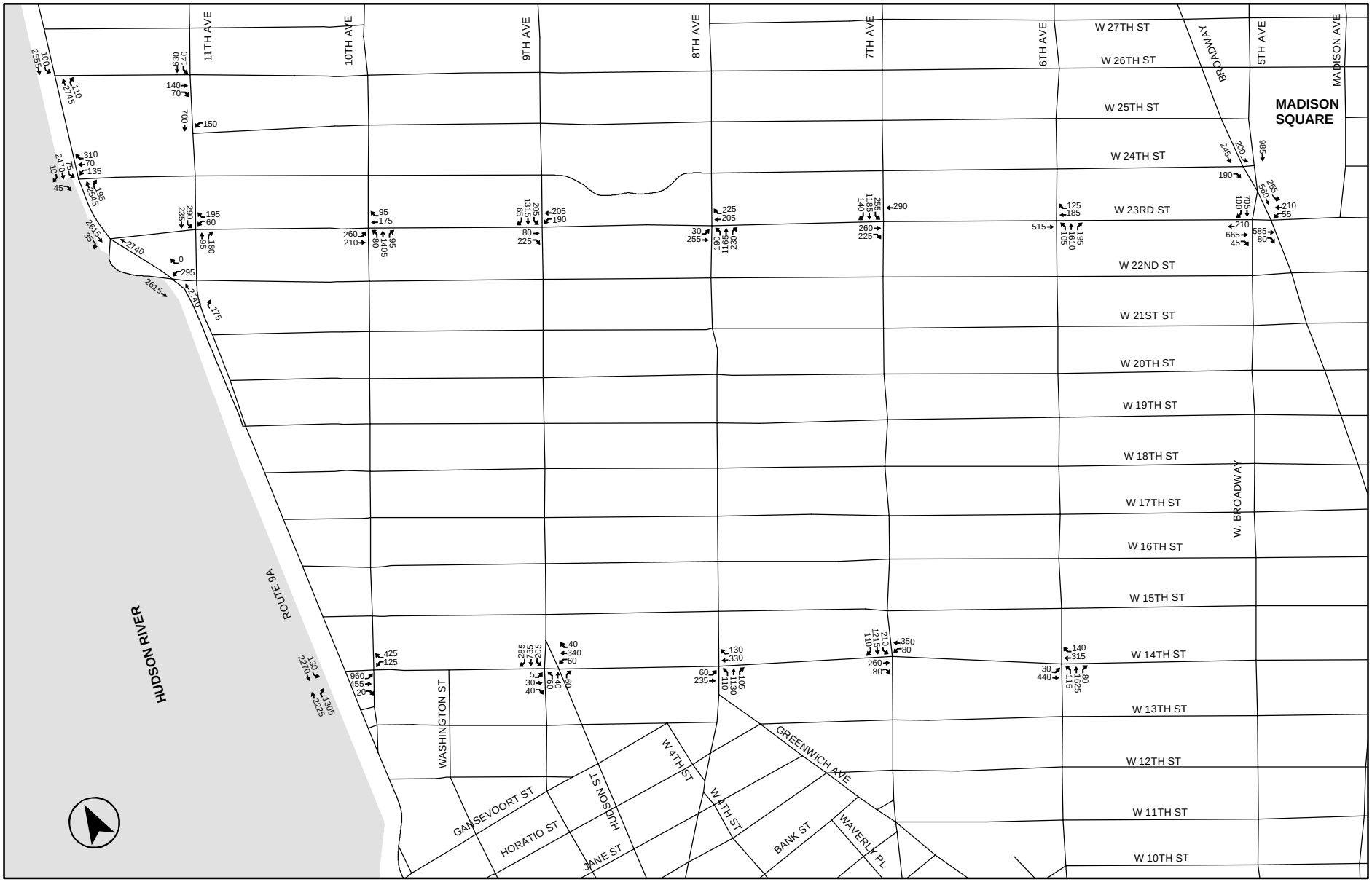
2003 Existing Traffic Volumes- Inset 1 (Weekday PM Peak Hour)

Figure 19-23



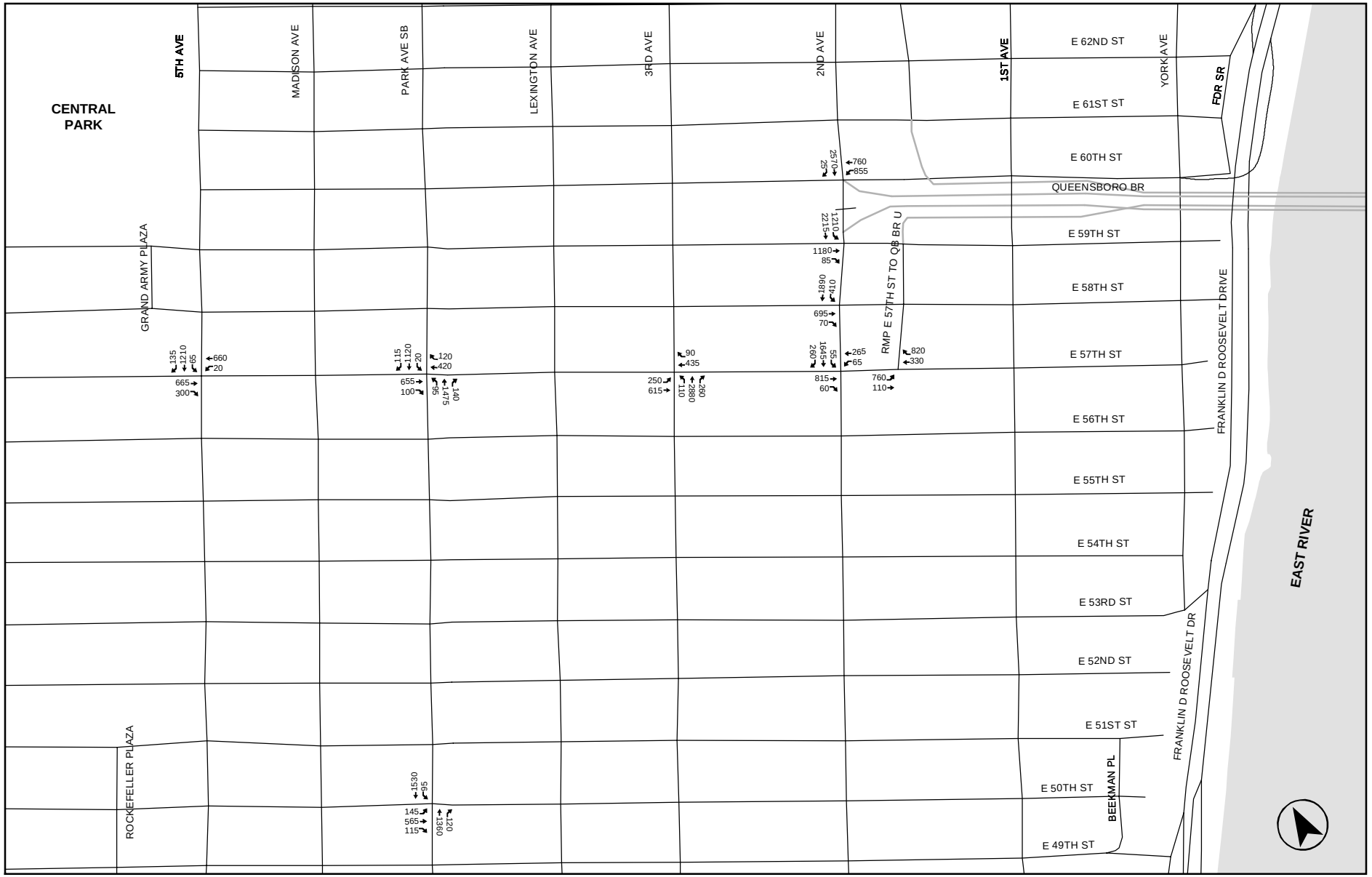
2003 Existing Traffic Volumes- Inset 2 (Weekday PM Peak Hour)

Figure 19-24



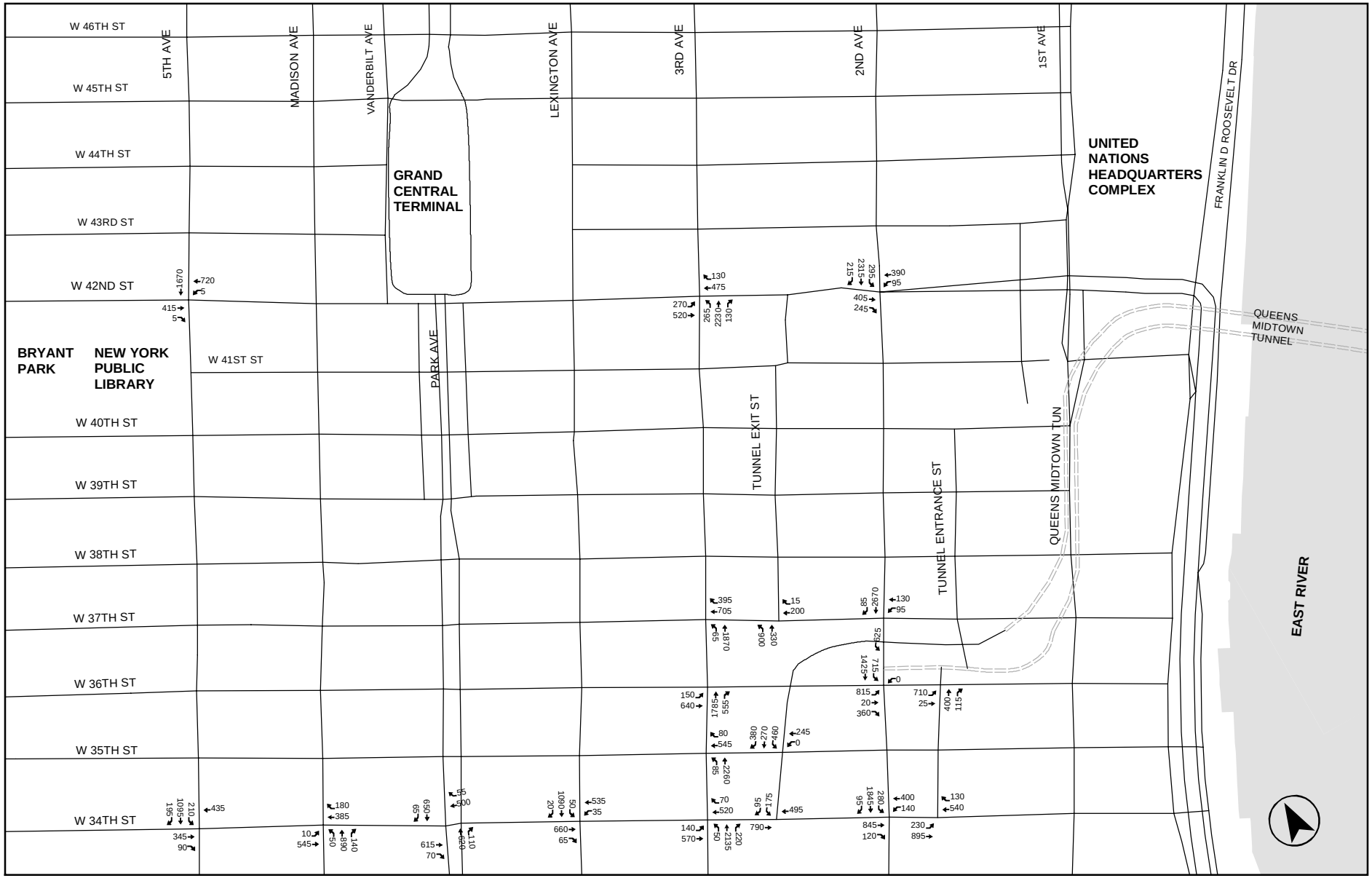
2003 Existing Traffic Volumes-
Inset 3
(Weekday PM Peak Hour)

Figure 19-25



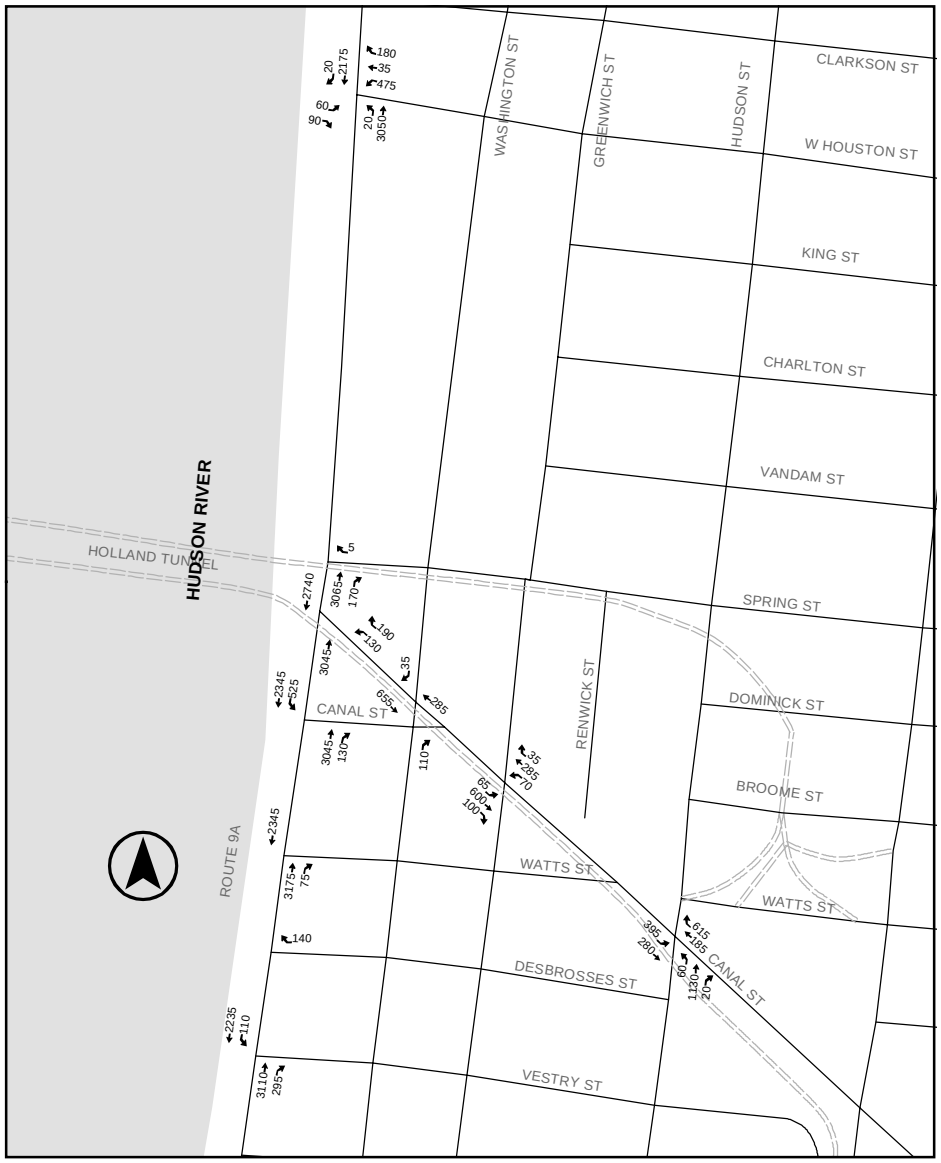
2003 Existing Traffic Volumes-
Inset 4
(Weekday PM Peak Hour)

Figure 19-26

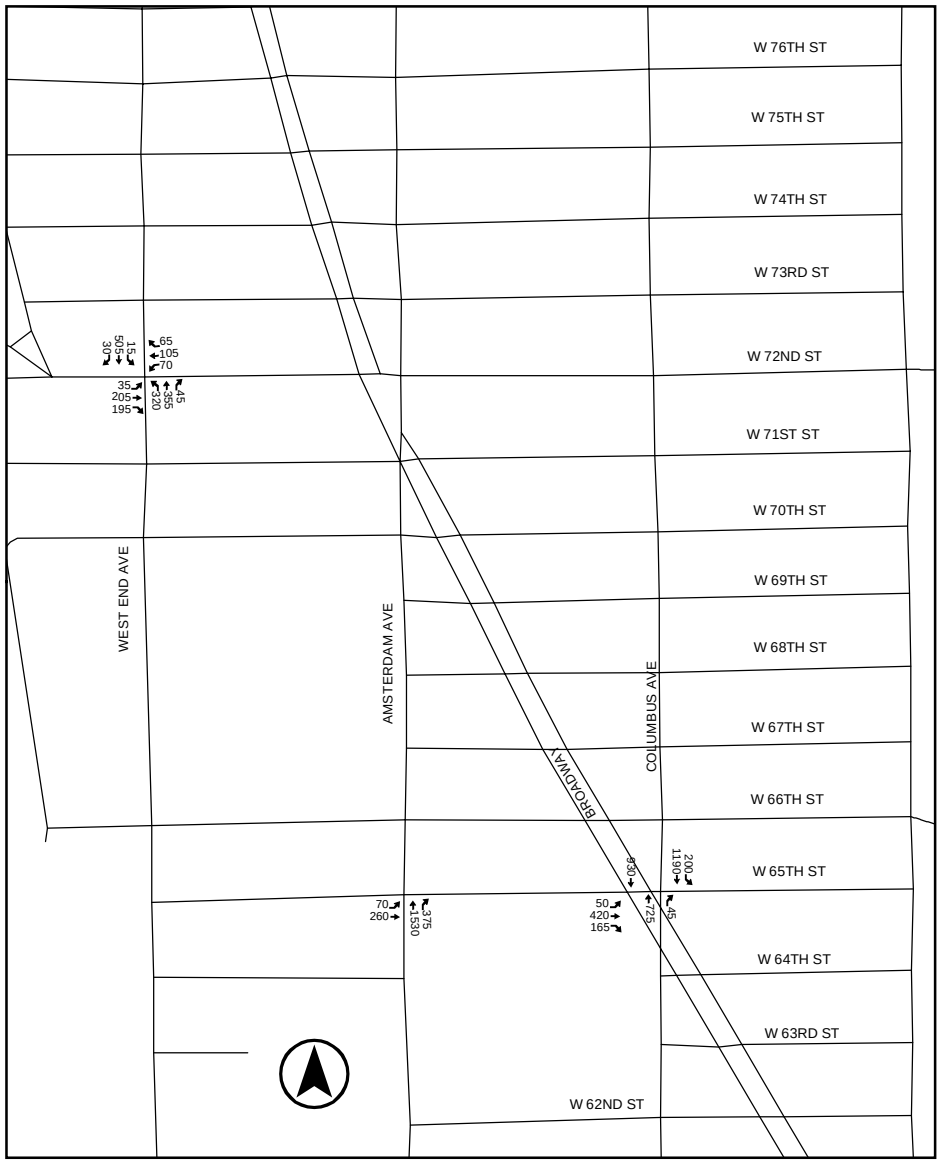


2003 Existing Traffic Volumes- Inset 5 (Weekday PM Peak Hour)

Figure 19-27



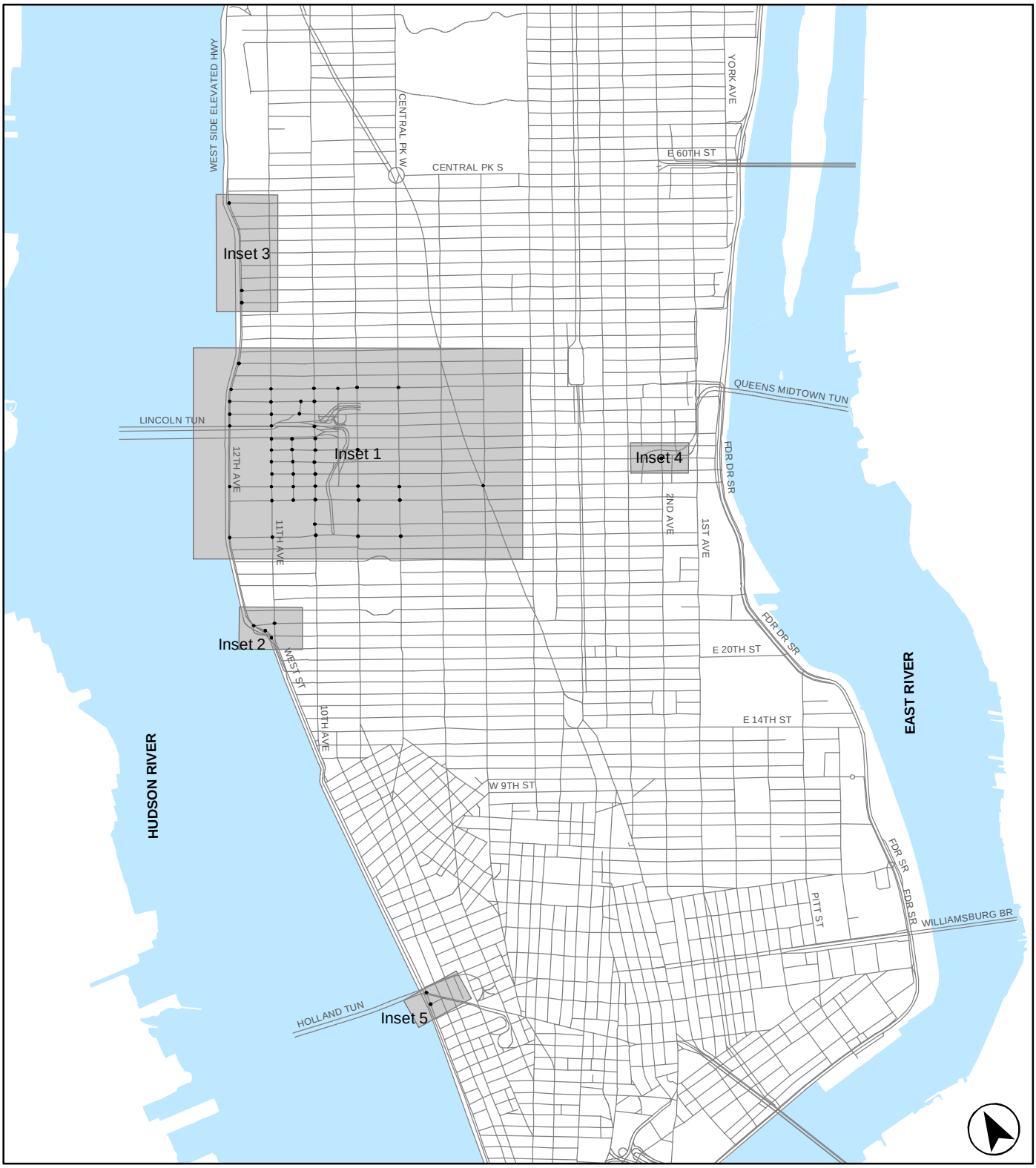
Inset 6



Inset 7

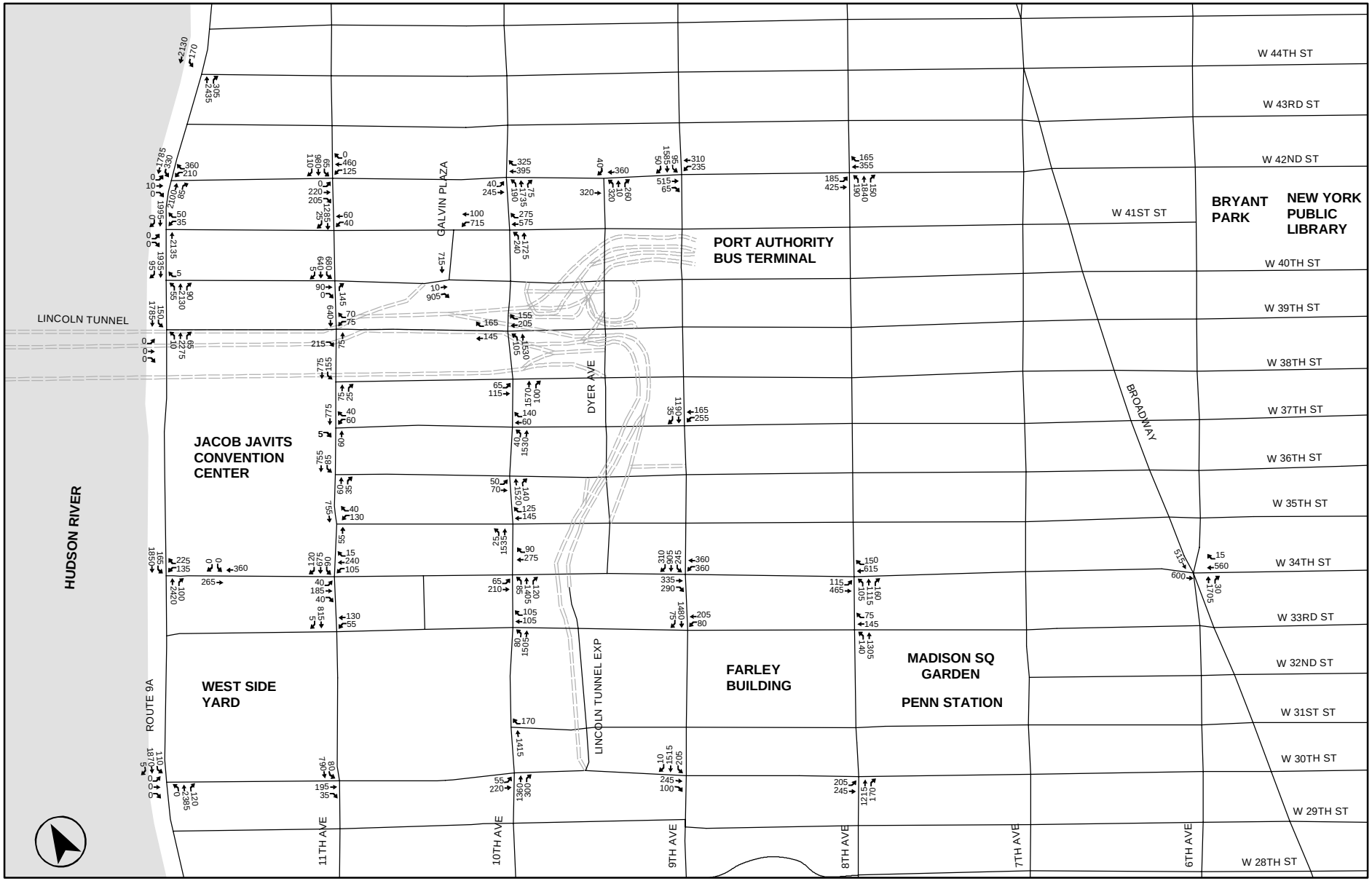
2003 Existing Traffic Volumes- Inset 6 and 7 (Weekday PM Peak Hour)

Figure 19-28



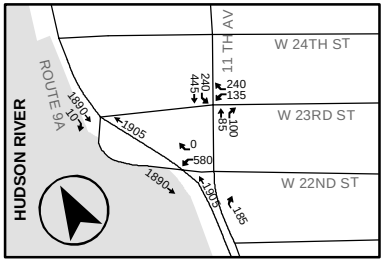
2003 Existing Traffic Volumes: Key Map
(Weeknight and Sunday Special Event Peak Hours)

Figure 19-29

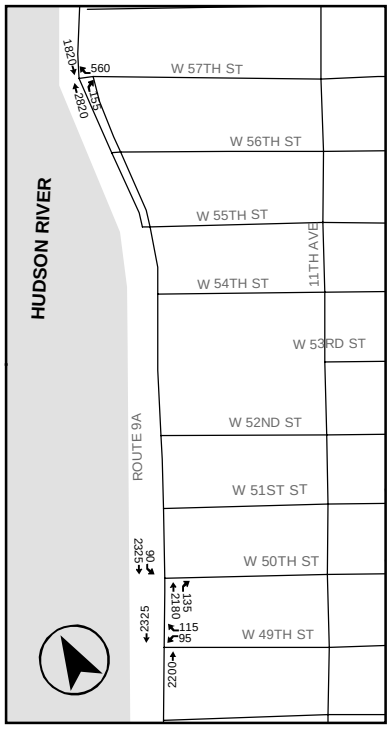


2003 Existing Traffic Volumes- Inset 1 (Weeknight Special Event Peak Hour)

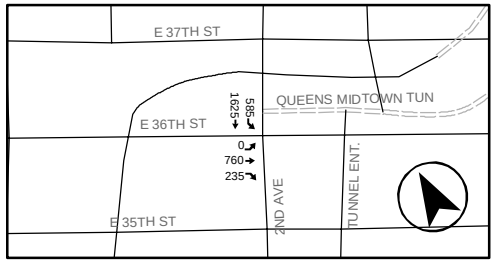
Figure 19-30



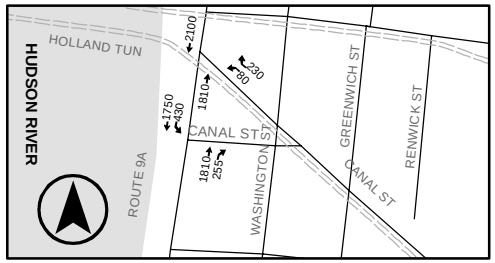
Inset 2



Inset 3



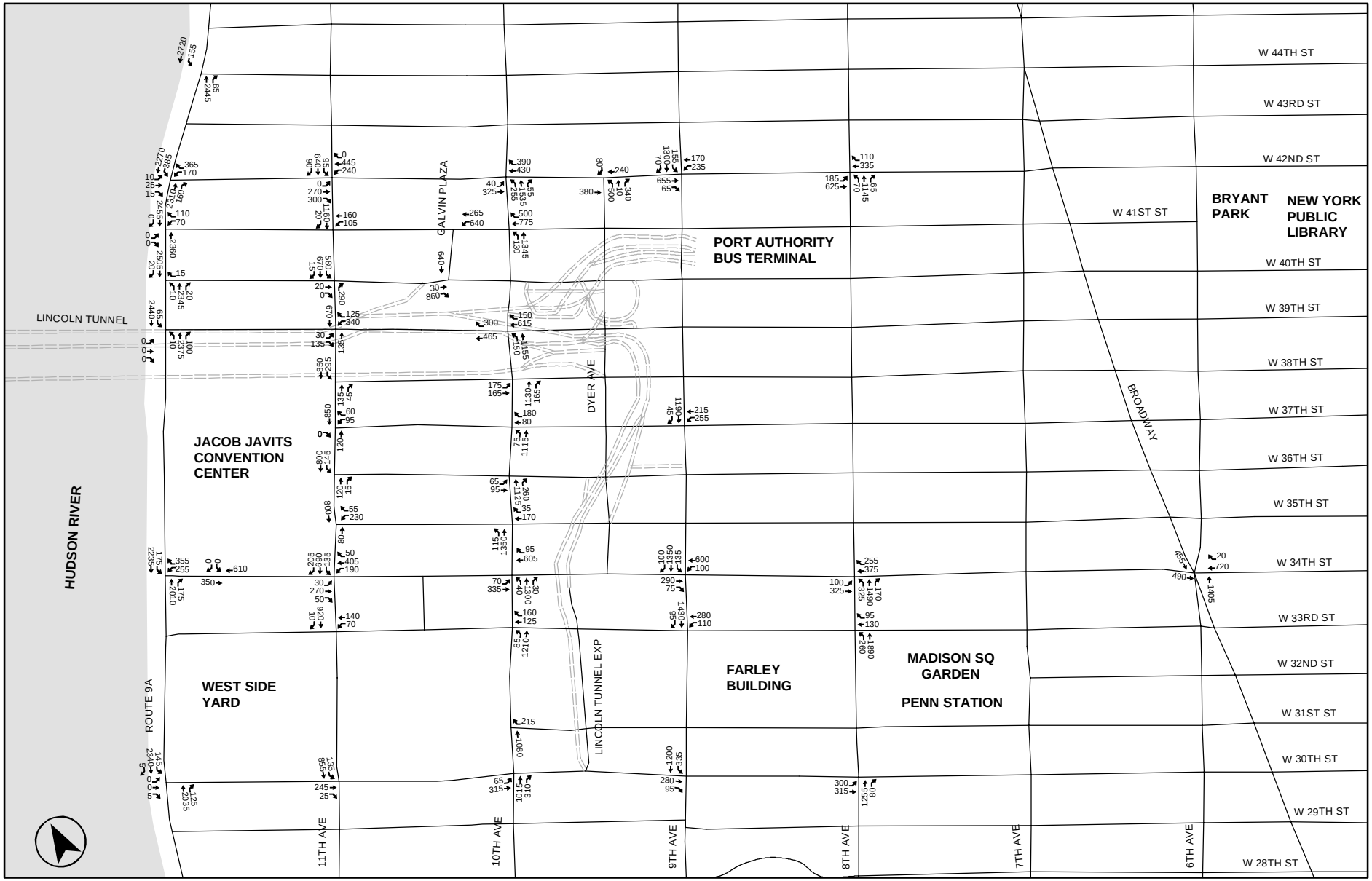
Inset 4



Inset 5

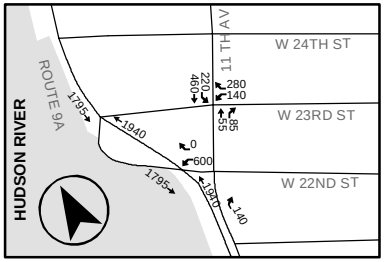
2003 Existing Traffic Volumes- Insets 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-31

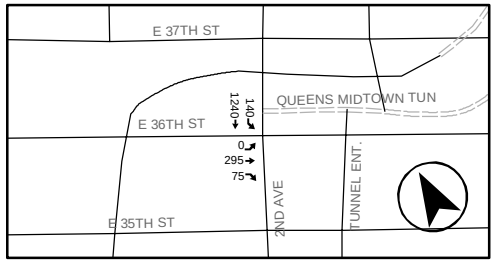


2003 Existing Traffic Volumes- Inset 1 (Sunday Special Event Peak Hour)

Figure 19-32



Inset 2



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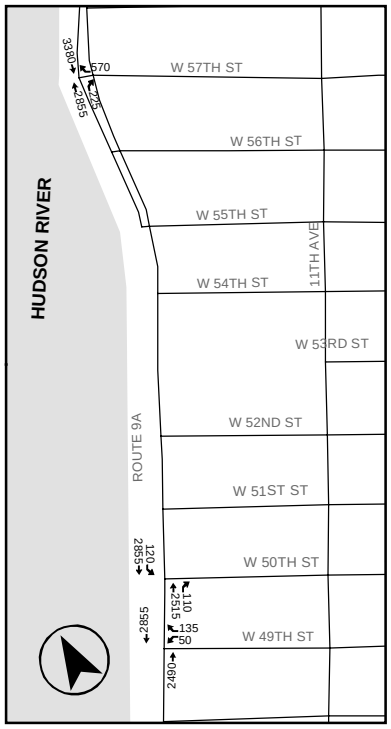
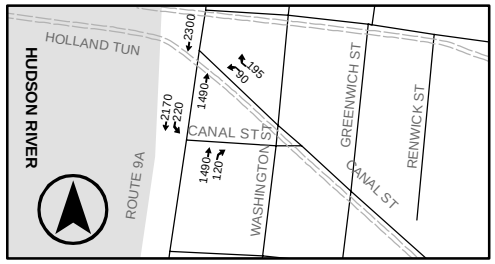


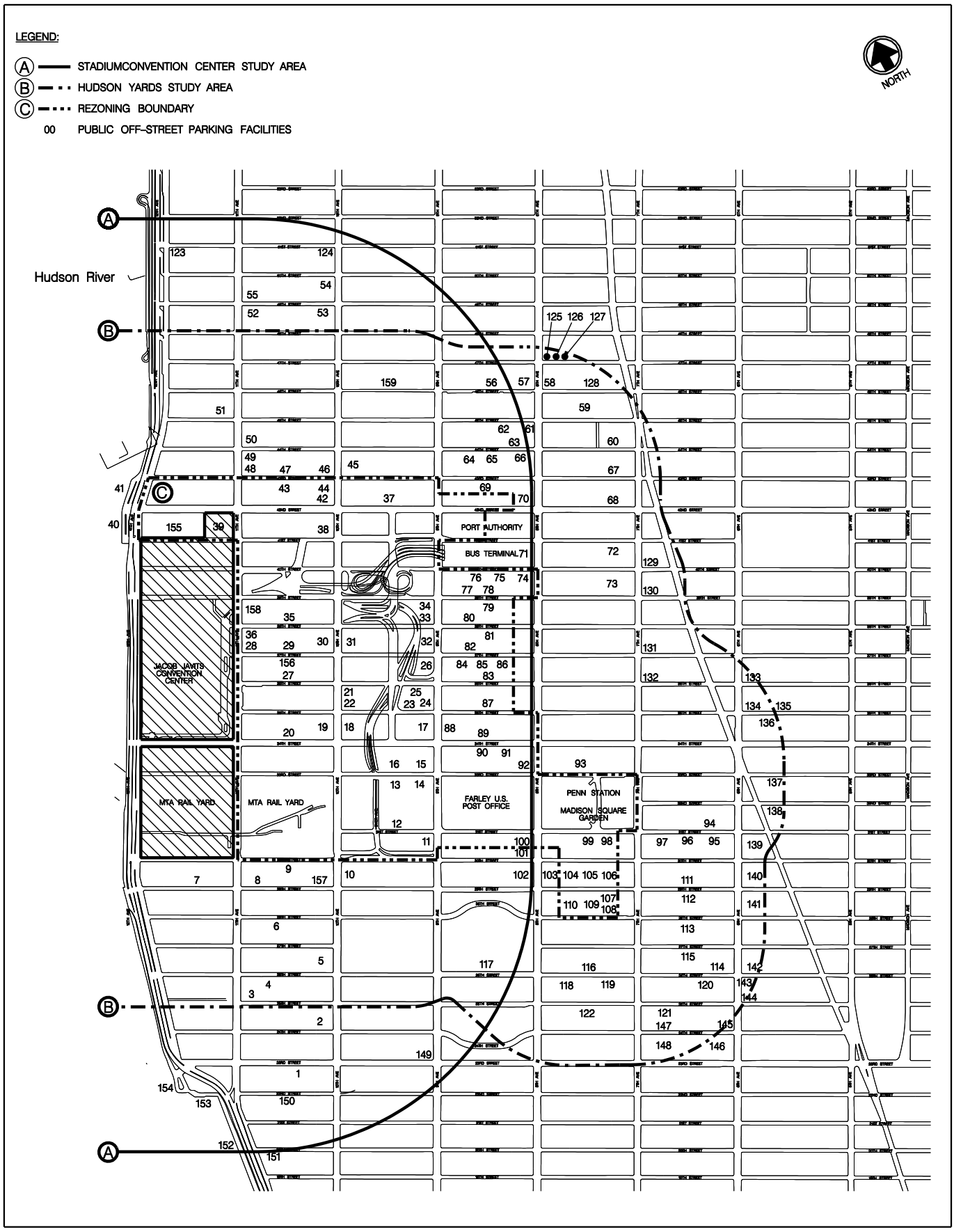
Inset 3



Inset 5

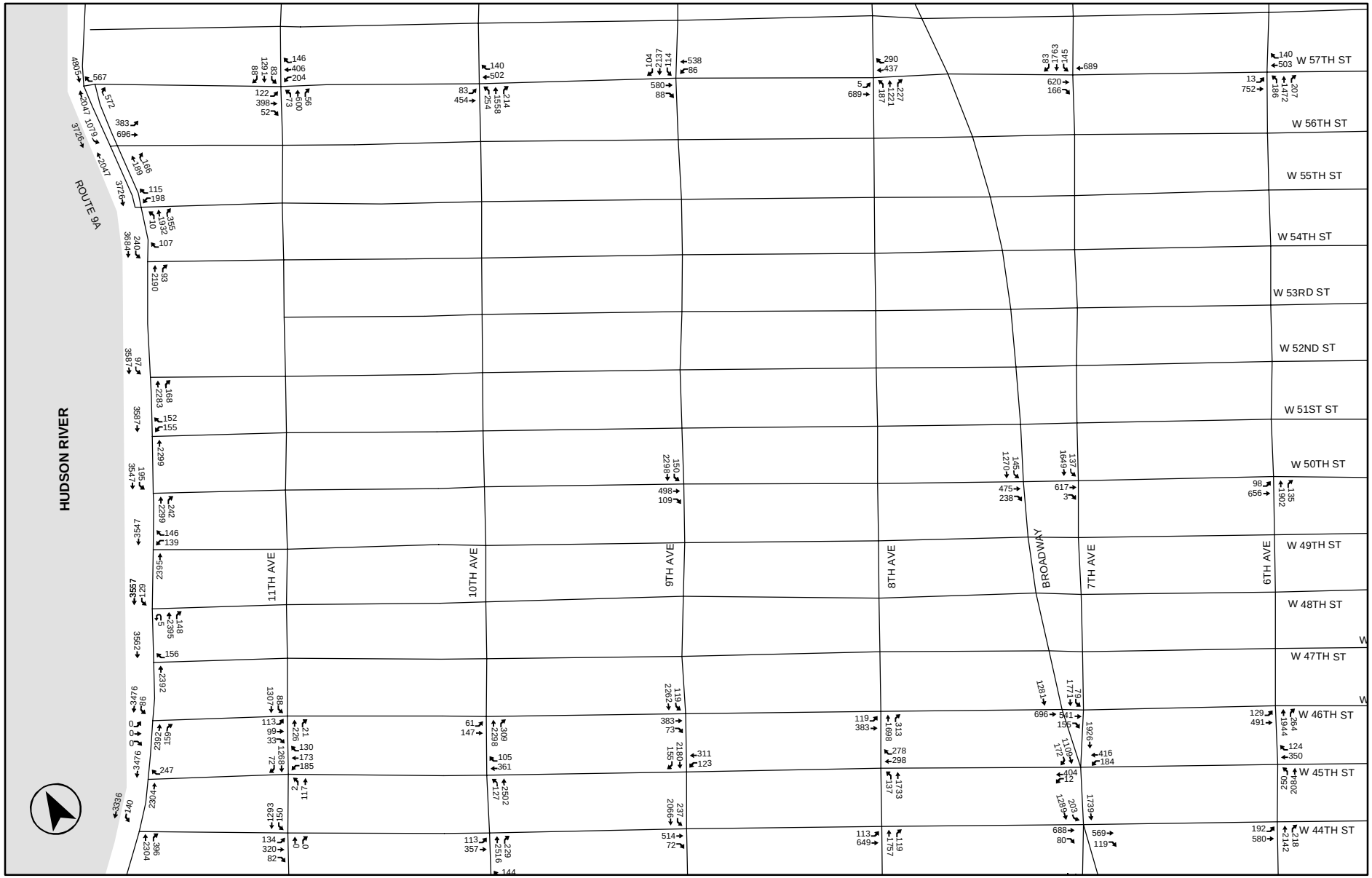
2003 Existing Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-33



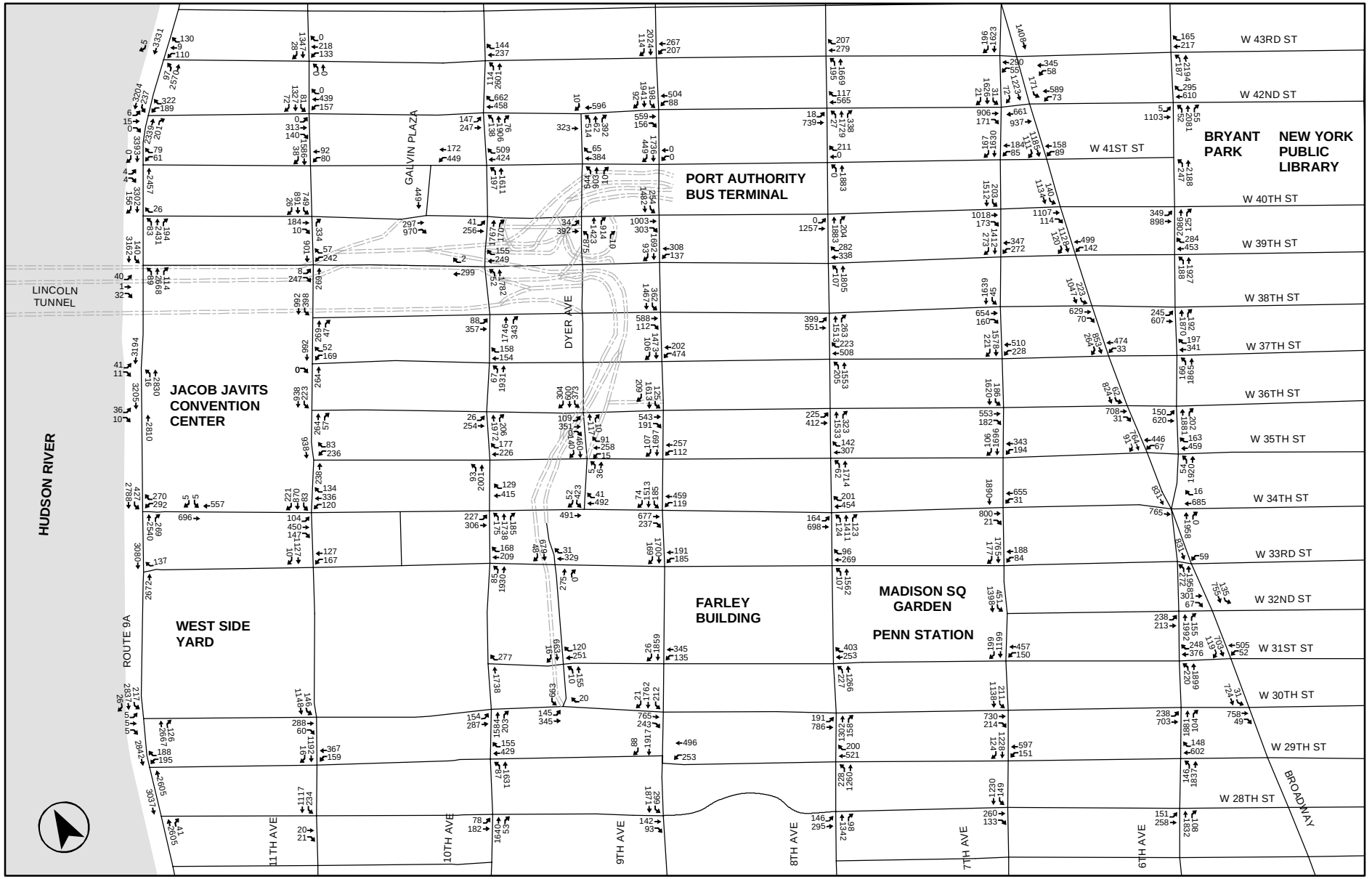
Public Off-Street Parking Facilities

Figure 19-34



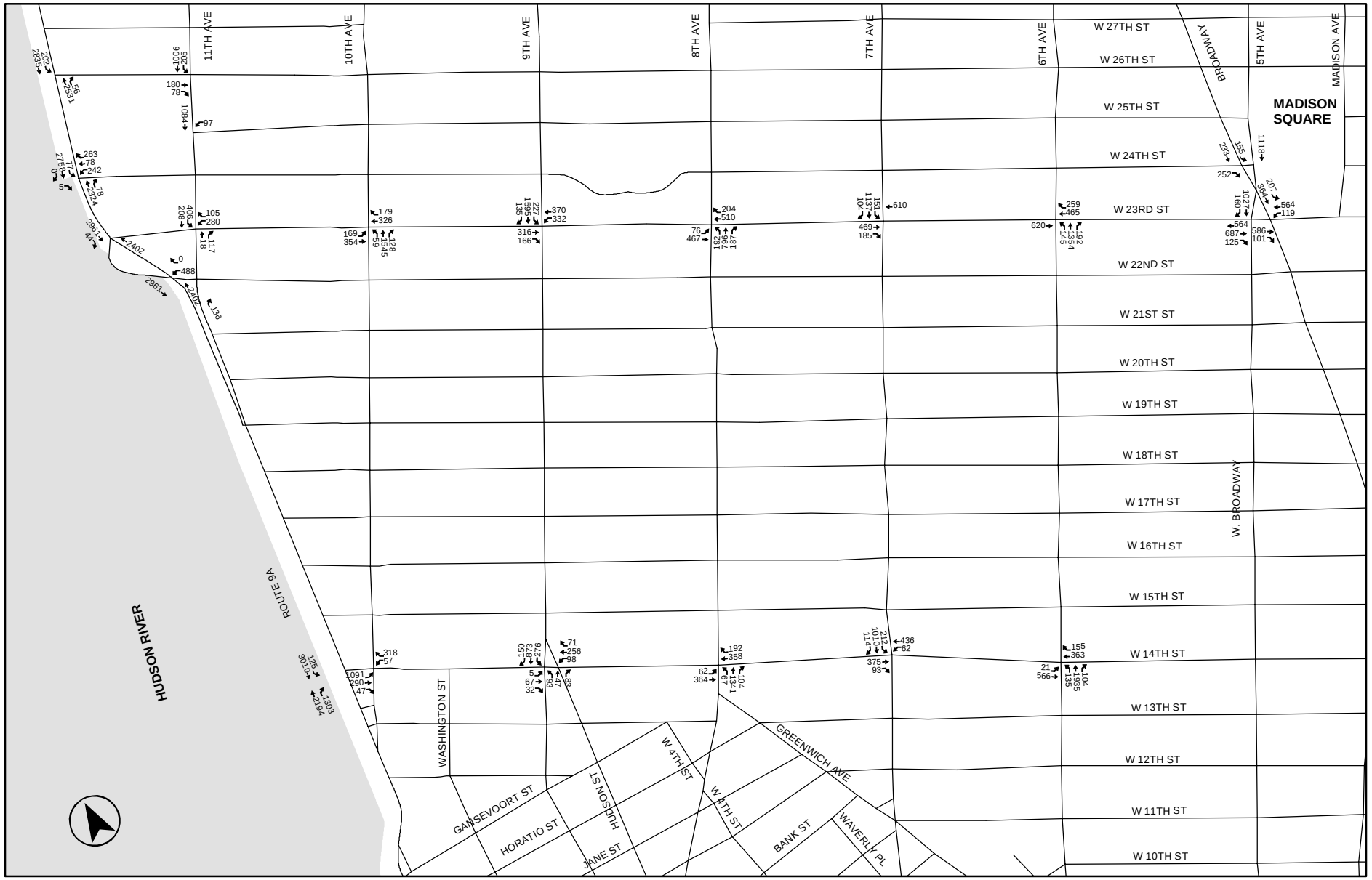
2010 Future Without The Proposed Action Traffic Volumes- Inset 1 (Weekday AM Peak Hour)

Figure 19-35



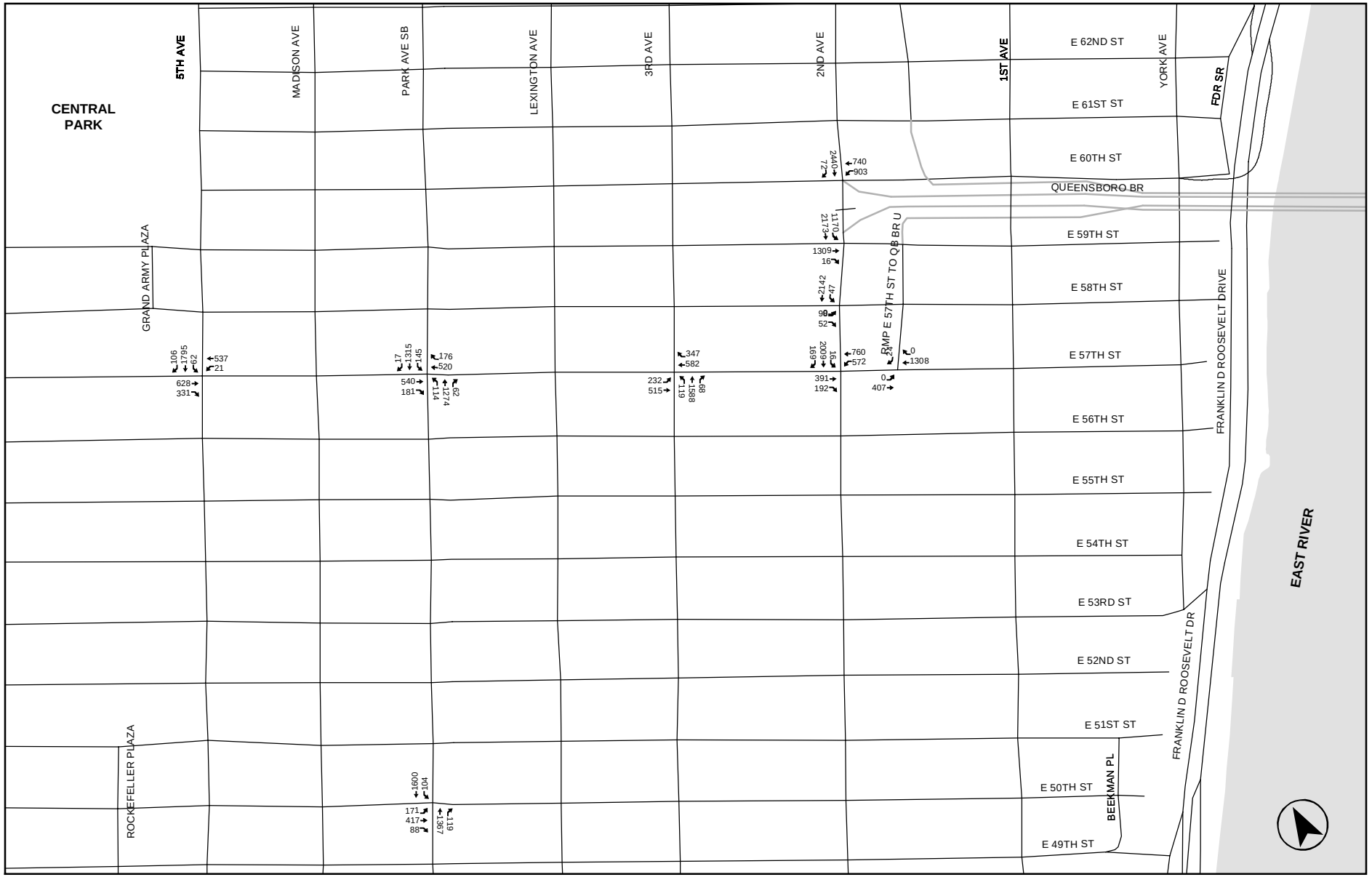
2010 Future Without The Proposed Action Traffic Volumes-
Inset 2
(Weekday AM Peak Hour)

Figure 19-36



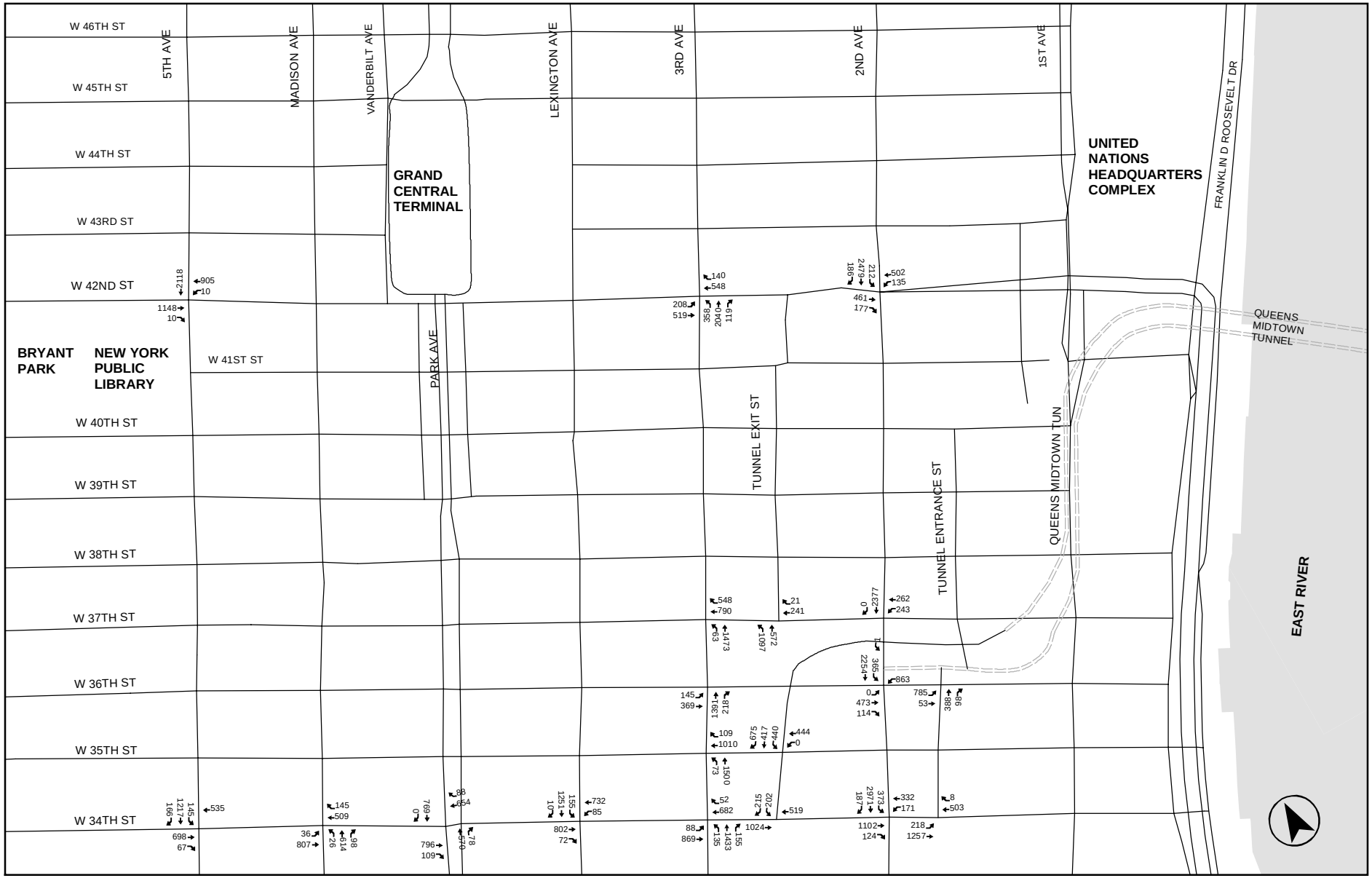
2010 Future Without The Proposed Action Traffic Volumes-
Inset 3
(Weekday AM Peak Hour)

Figure 19-37



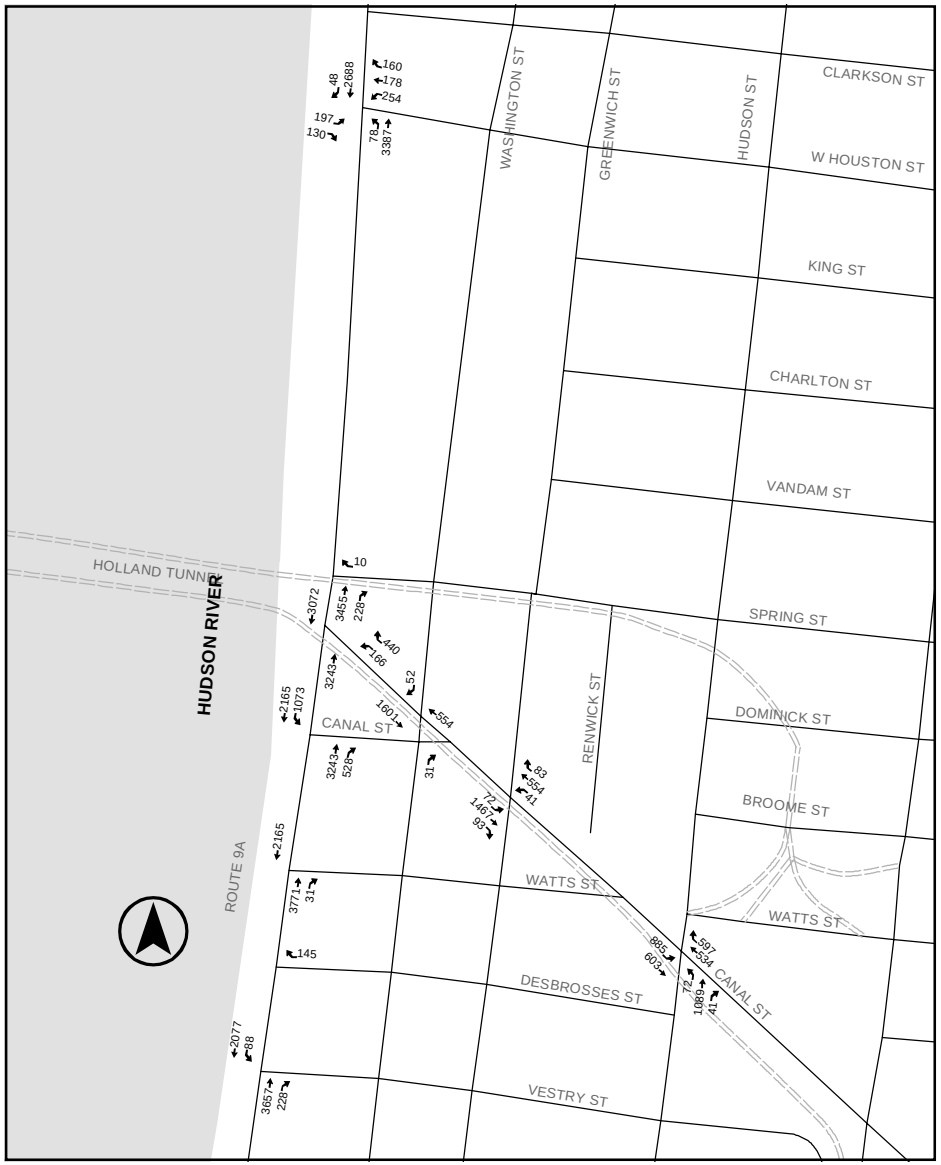
2010 Future Without The Proposed Action Traffic Volumes-Inset 4
(Weekday AM Peak Hour)

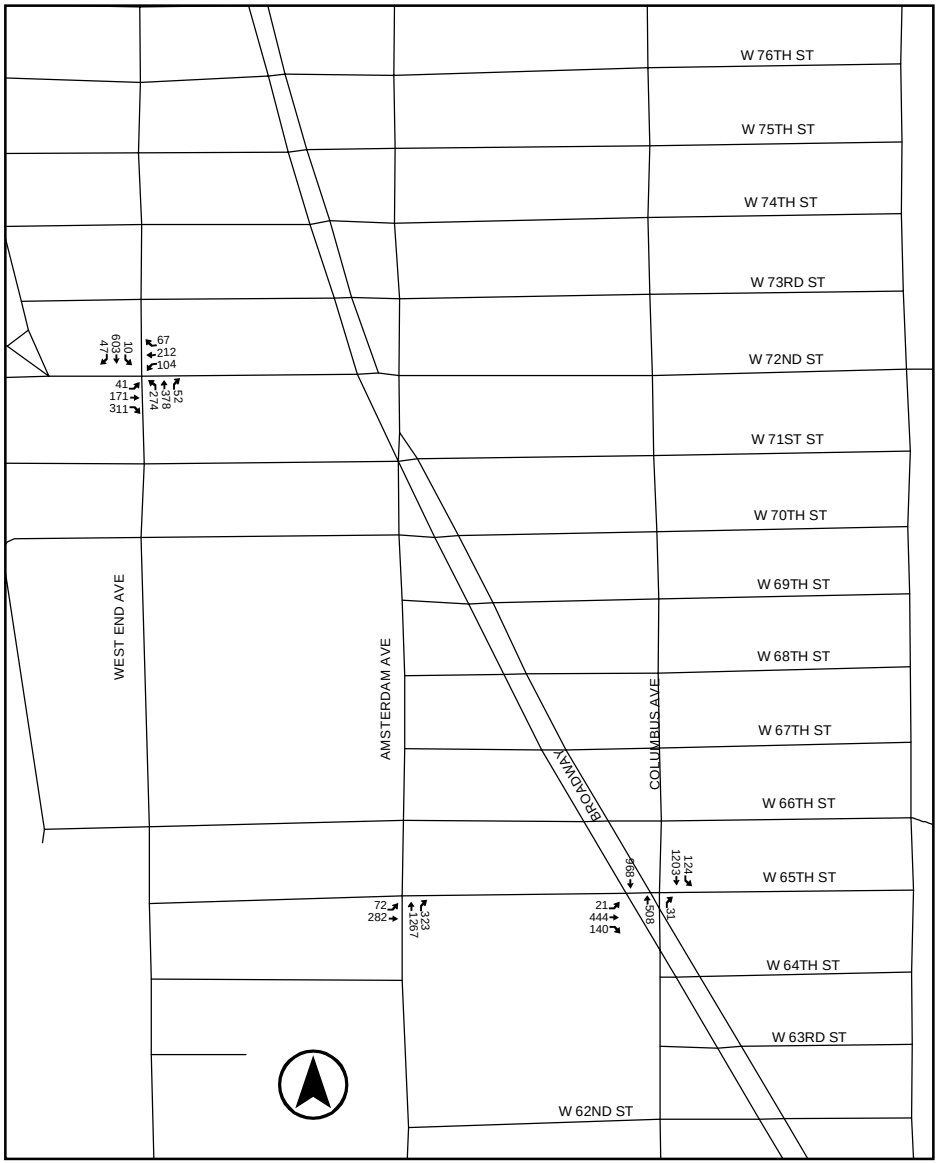
Figure 19-38



2010 Future Without The Proposed Action Traffic Volumes- Inset 5 (Weekday AM Peak Hour)

Figure 19-39



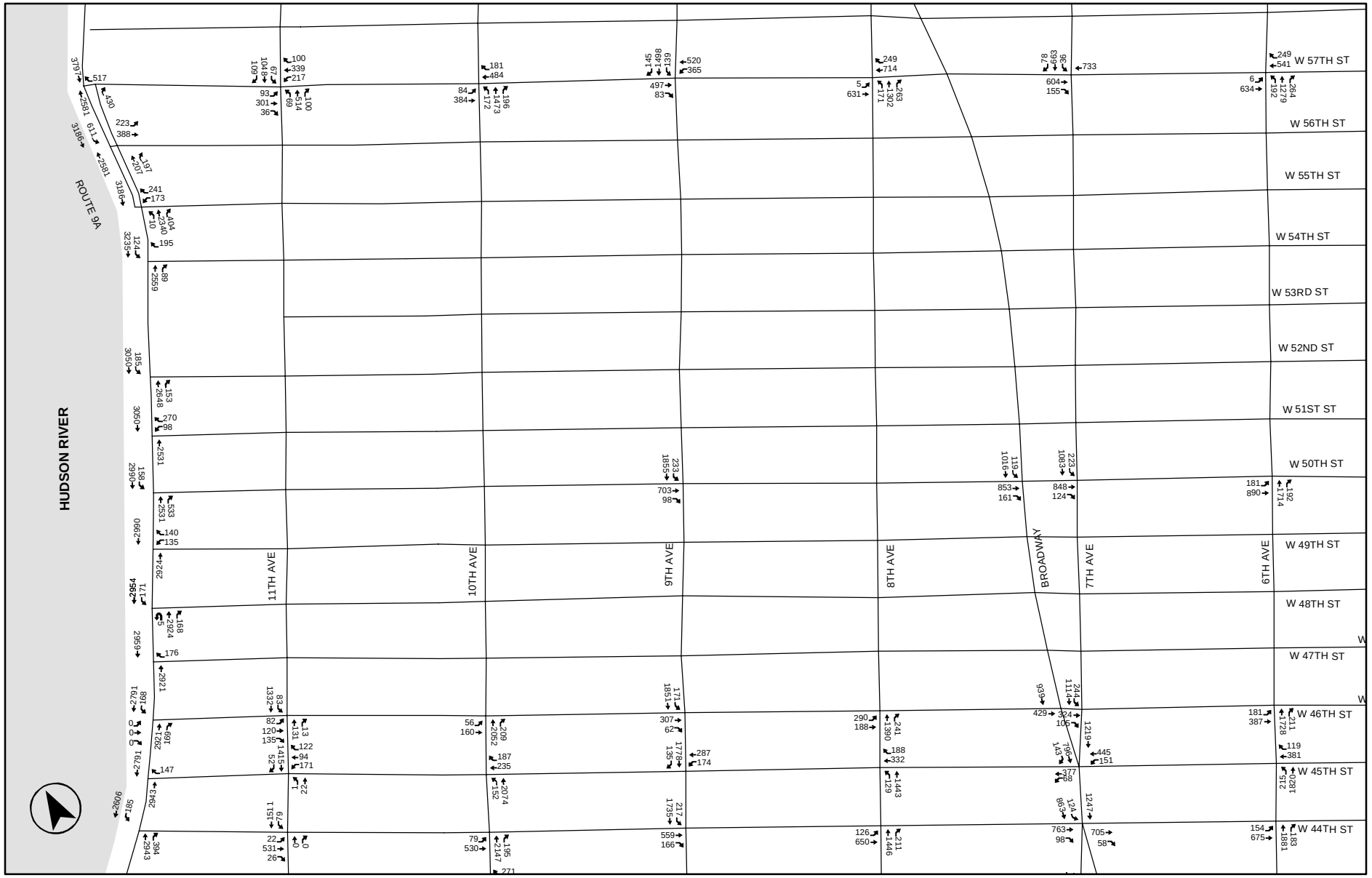


Inset 6

Inset 7

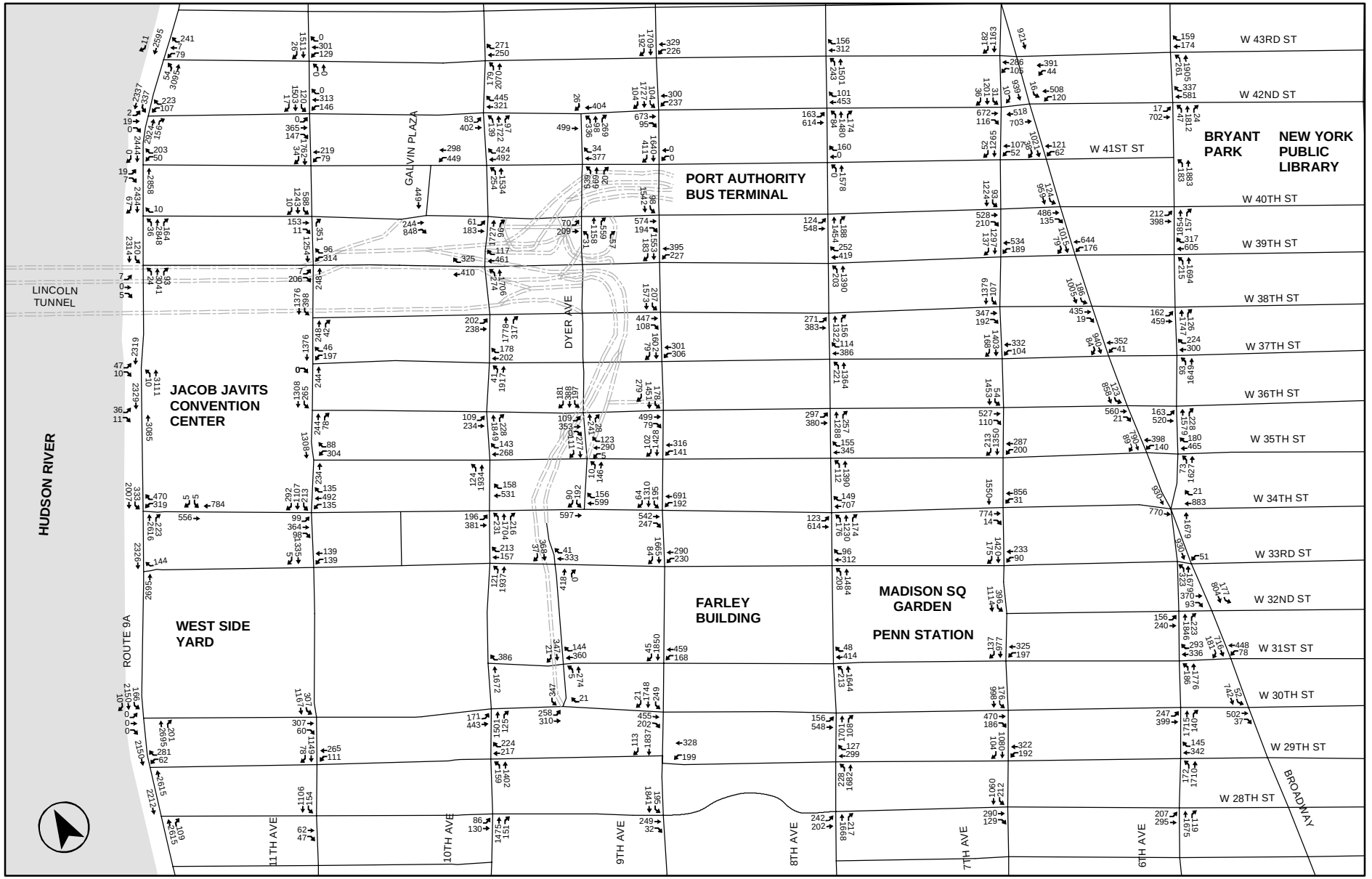
2010 Future Without The Proposed Action Traffic Volumes - Insets 6 and 7 (Weekday AM Peak Hour)

Figure 19-40



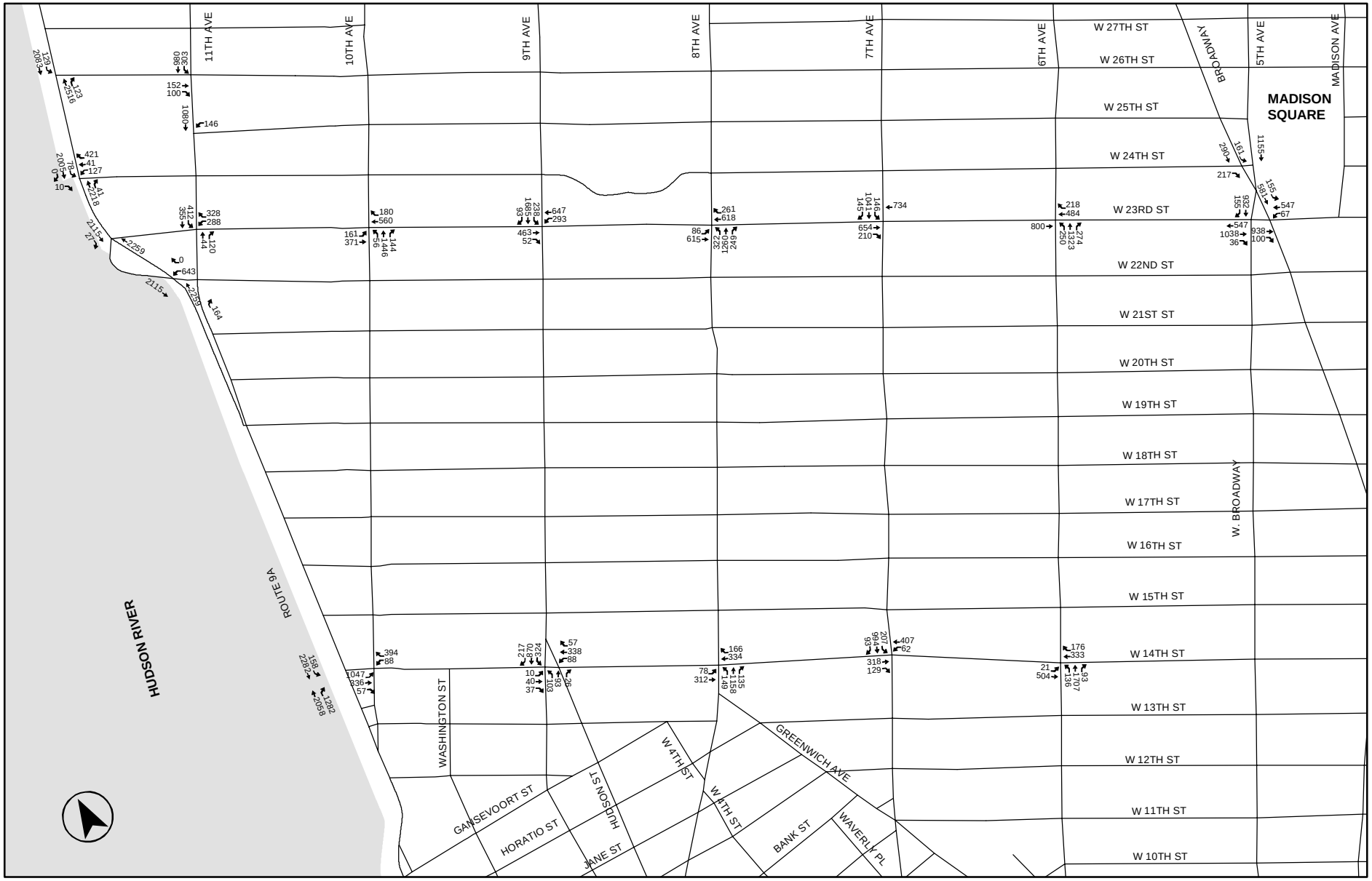
2010 Future Without The Proposed Action Traffic Volumes-Inset 1
(Weekday Midday Peak Hour)

Figure 19-41



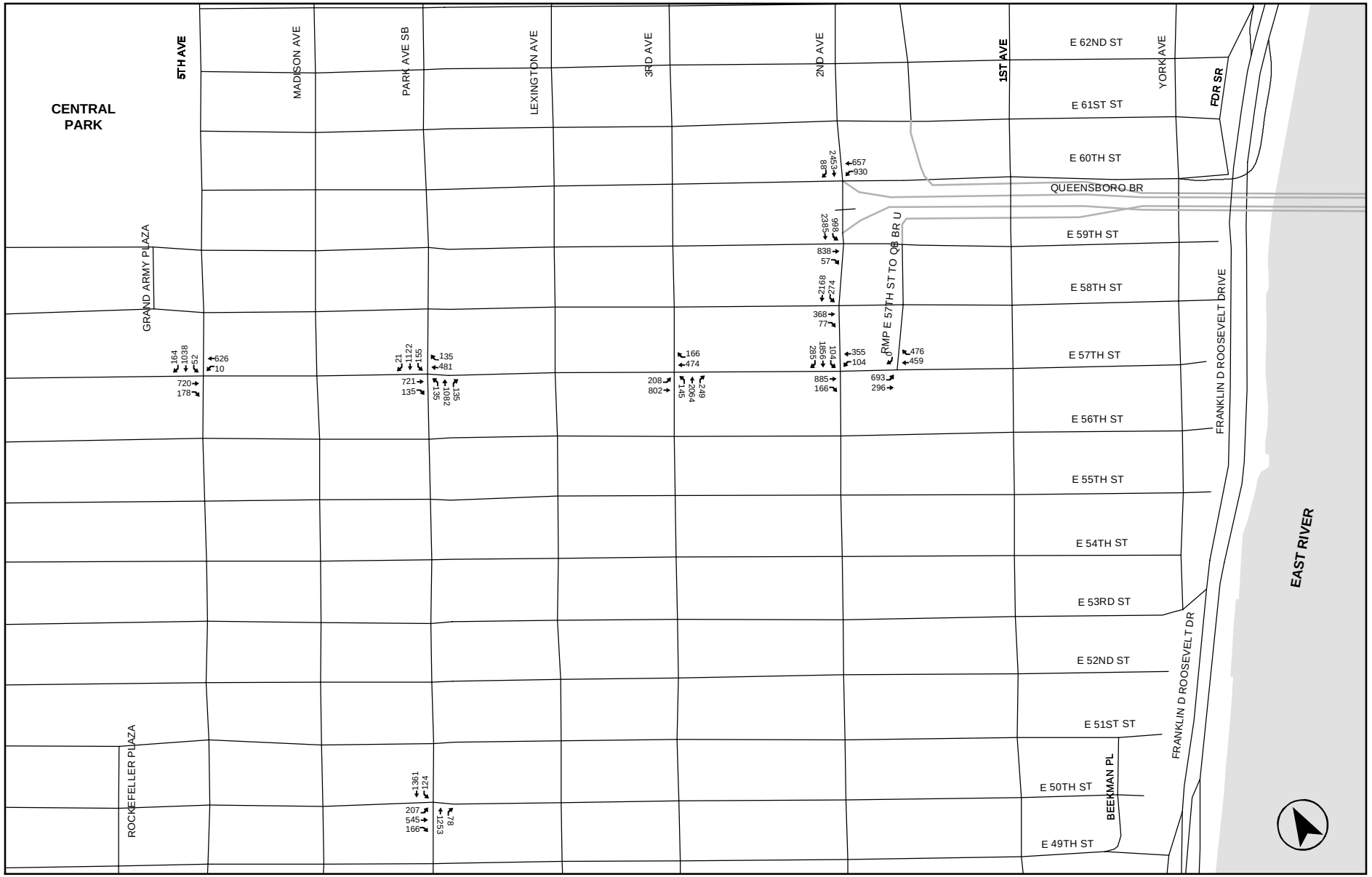
2010 Future Without The Proposed Action Traffic Volumes- Inset 2 (Weekday Midday Peak Hour)

Figure 19-42



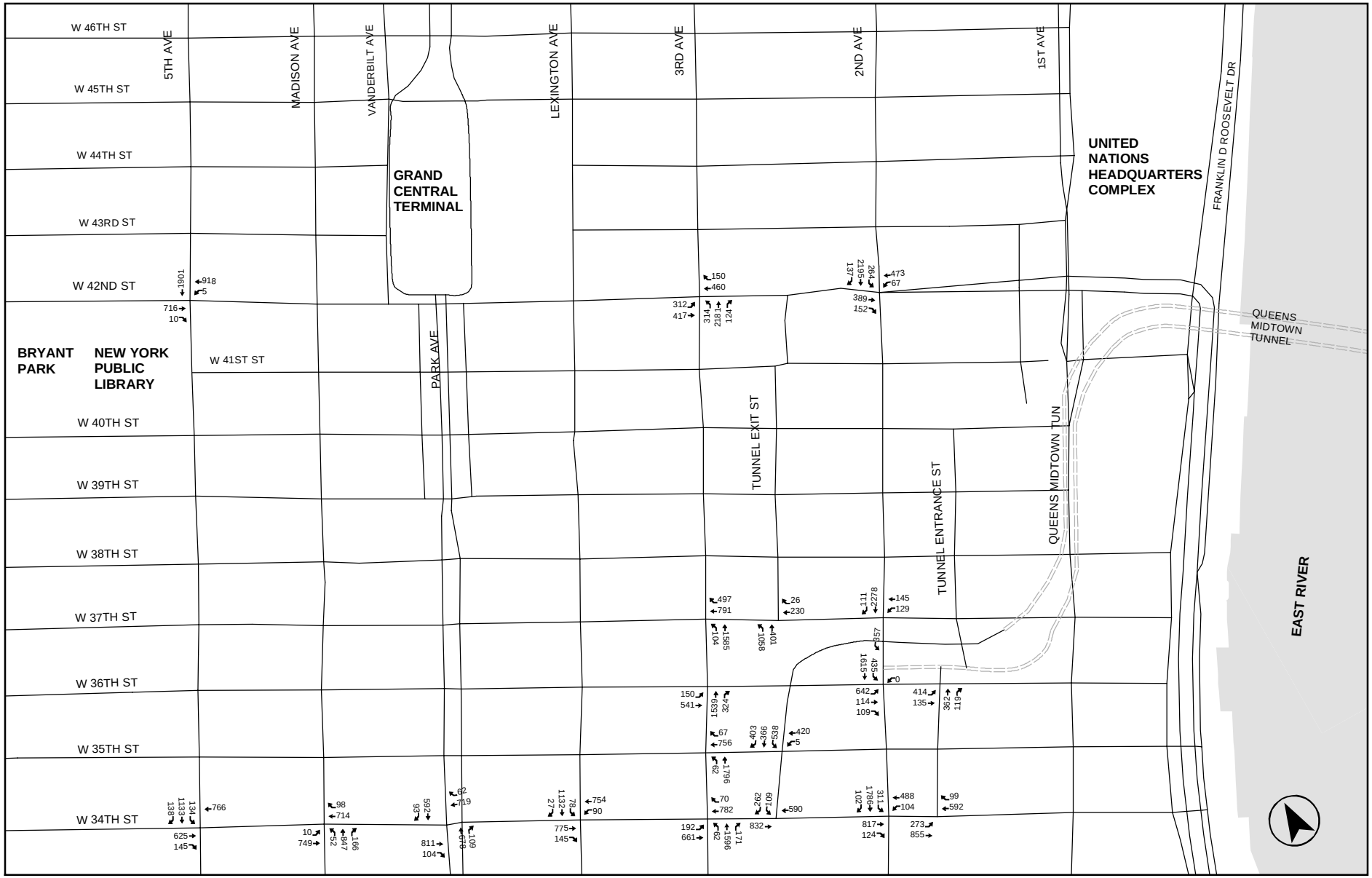
2010 Future Without The Proposed Action Traffic Volumes-
Inset 3
(Weekday Midday Peak Hour)

Figure 19-43



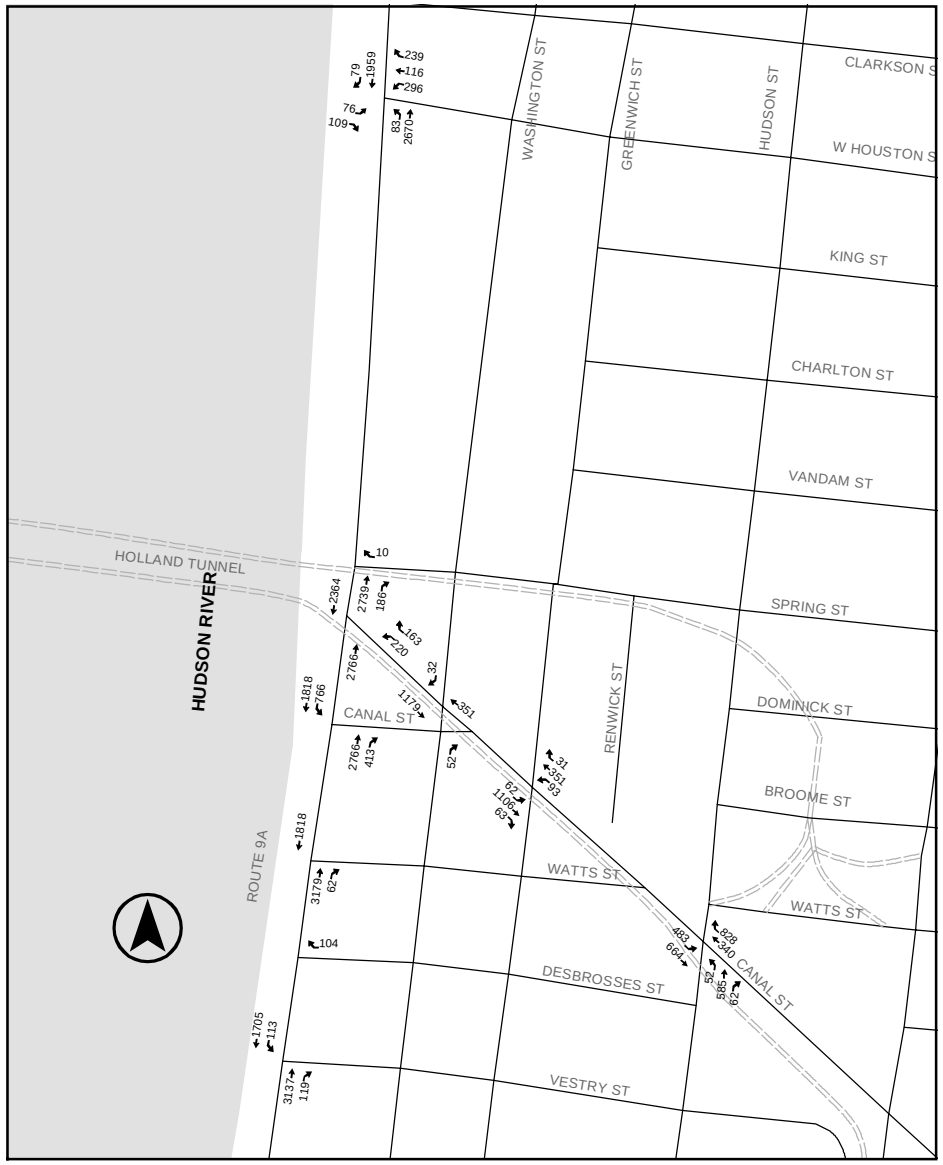
2010 Future Without The Proposed Action Traffic Volumes-Inset 4
(Weekday Midday Peak Hour)

Figure 19-44

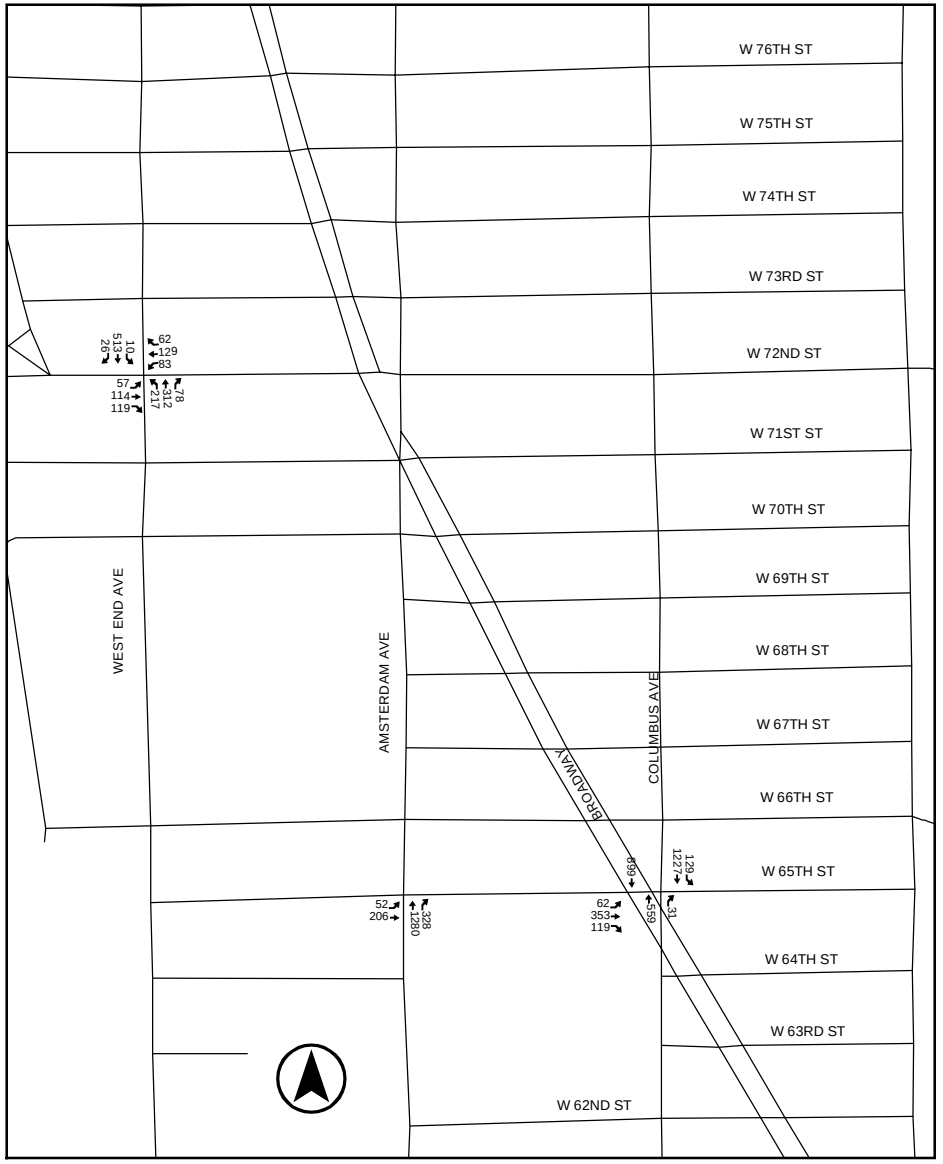


2010 Future Without The Proposed Action Traffic Volumes-Inset 5 (Weekday Midday Peak Hour)

Figure 19-45



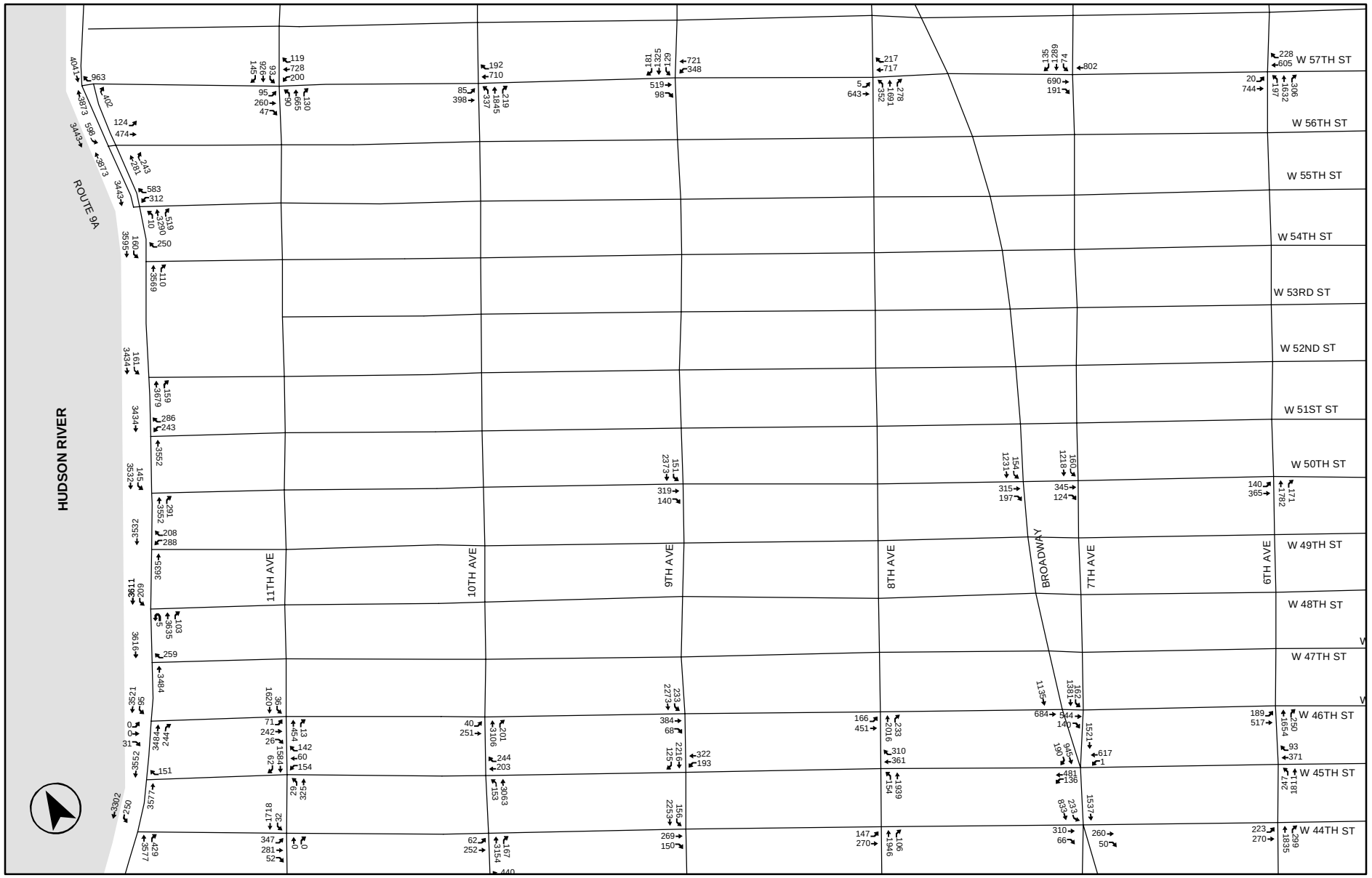
Inset 6



Inset 7

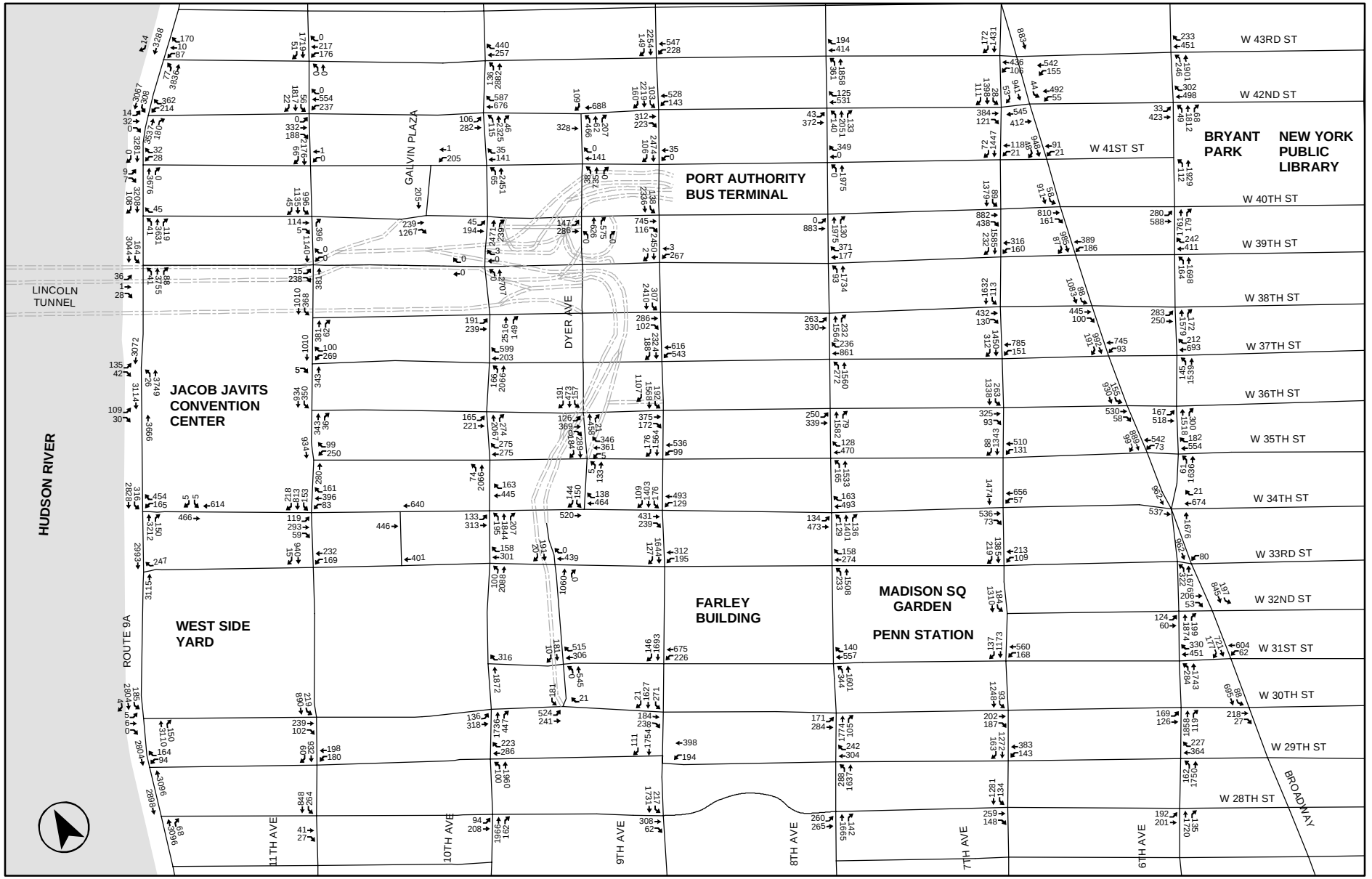
2010 Future Without The Proposed Action Traffic Volumes - Insets 6 and 7 (Weekday Midday Peak Hour)

Figure 19-46



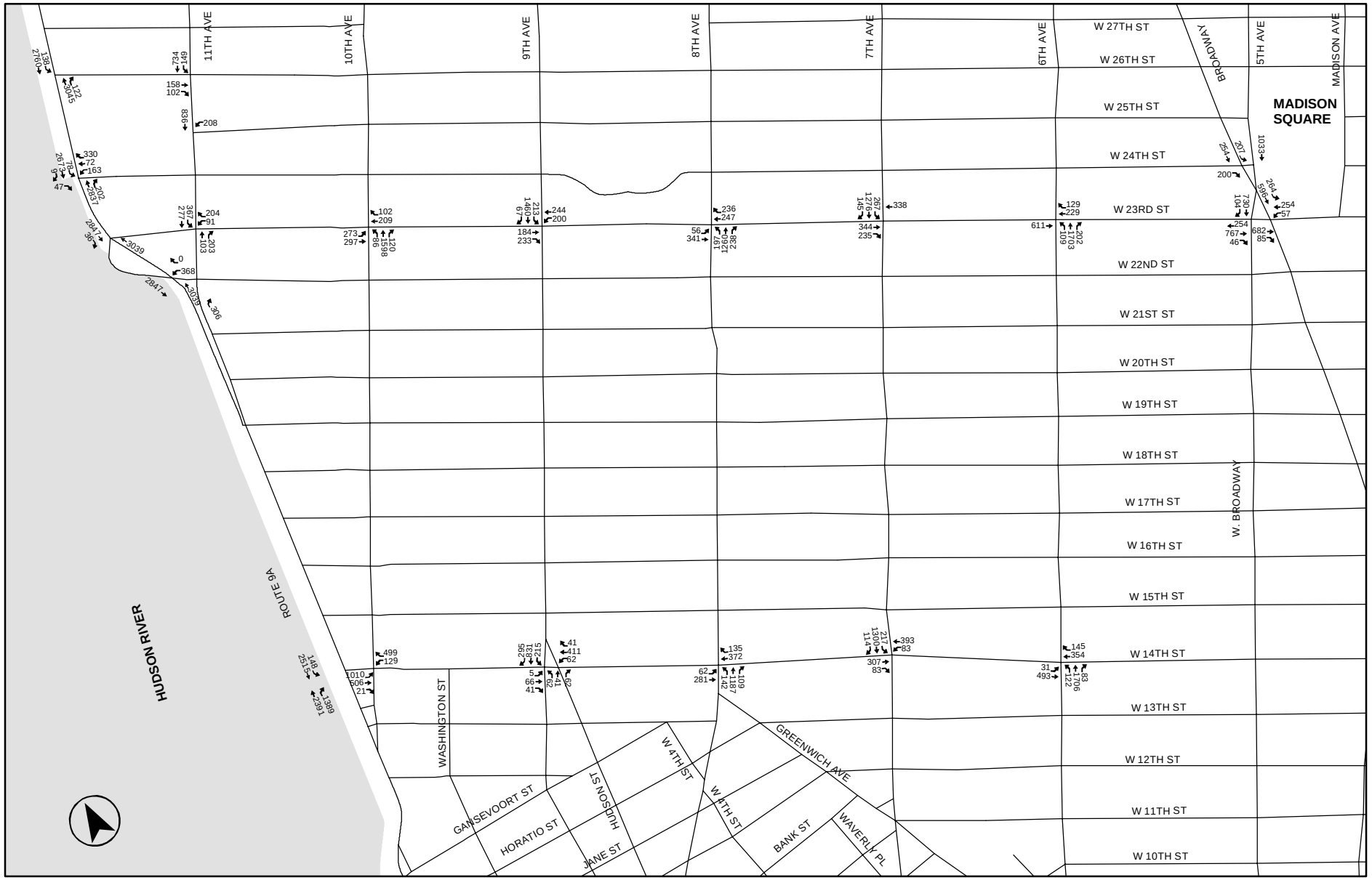
2010 Future Without The Proposed Action Traffic Volumes- Inset 1 (Weekday PM Peak Hour)

Figure 19-47



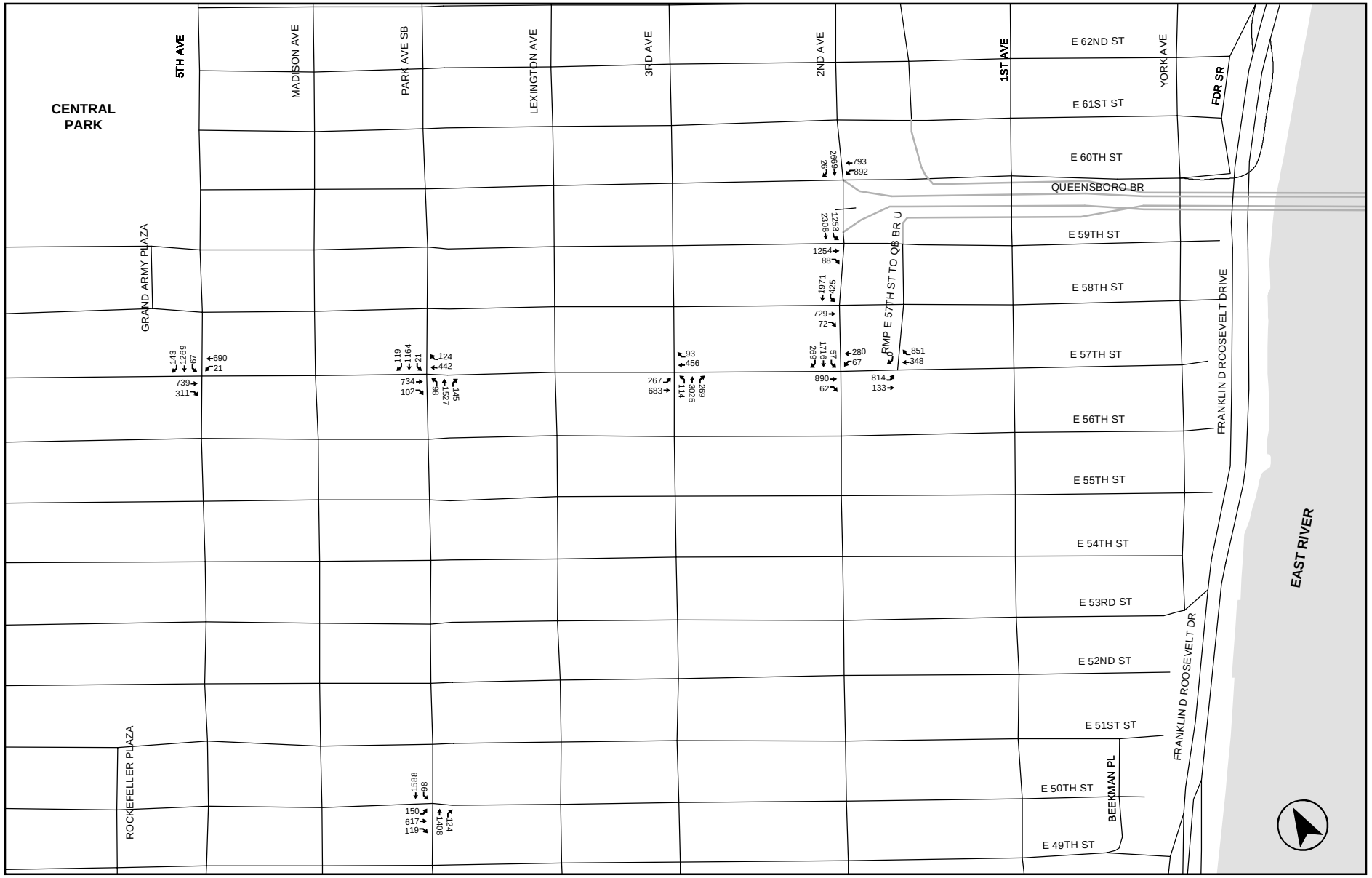
2010 Future Without The Proposed Action Traffic Volumes-Inset 2
(Weekday PM Peak Hour)

Figure 19-48



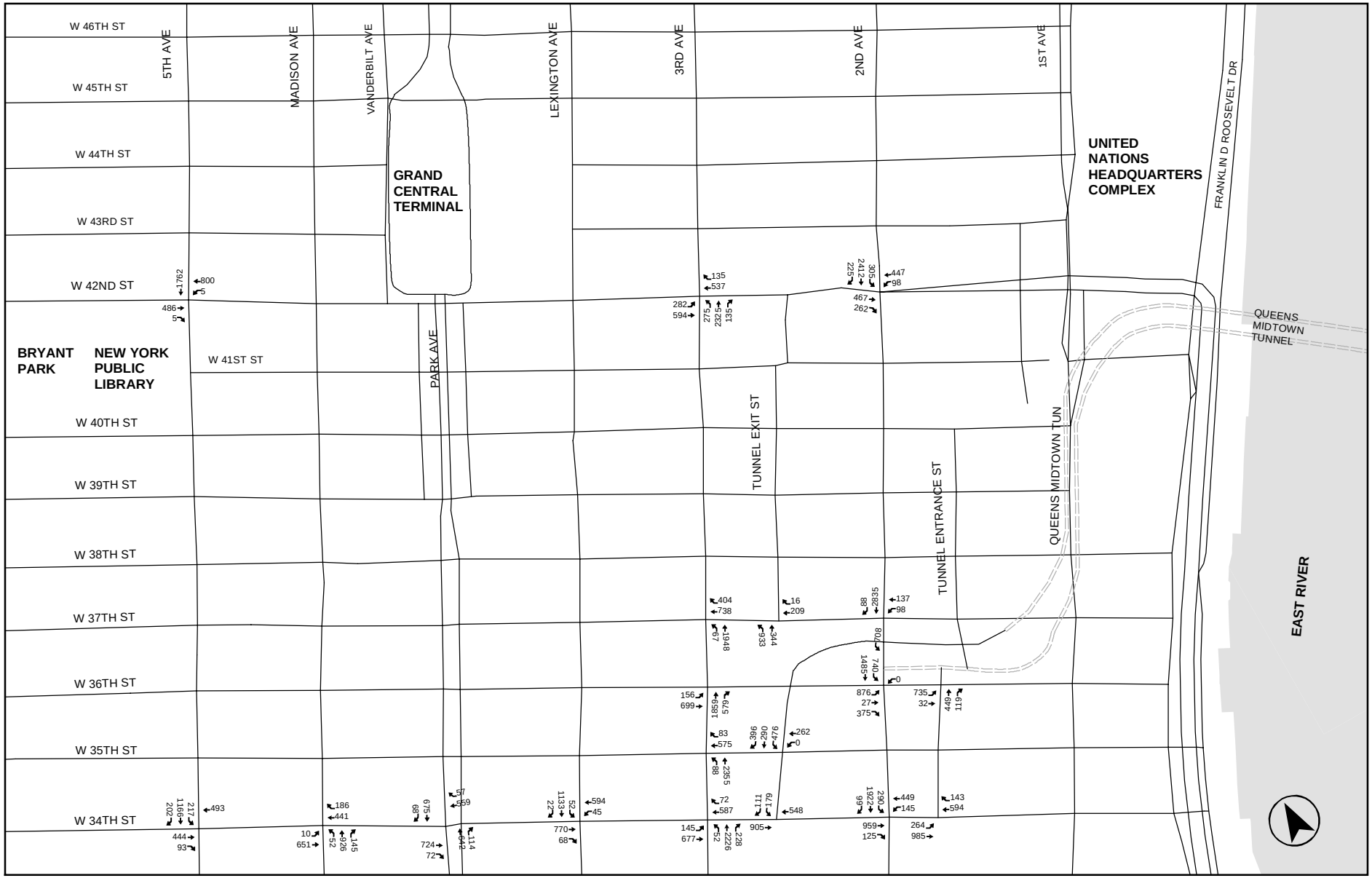
2010 Future Without The Proposed Action Traffic Volumes-Inset 3
(Weekday PM Peak Hour)

Figure 19-49



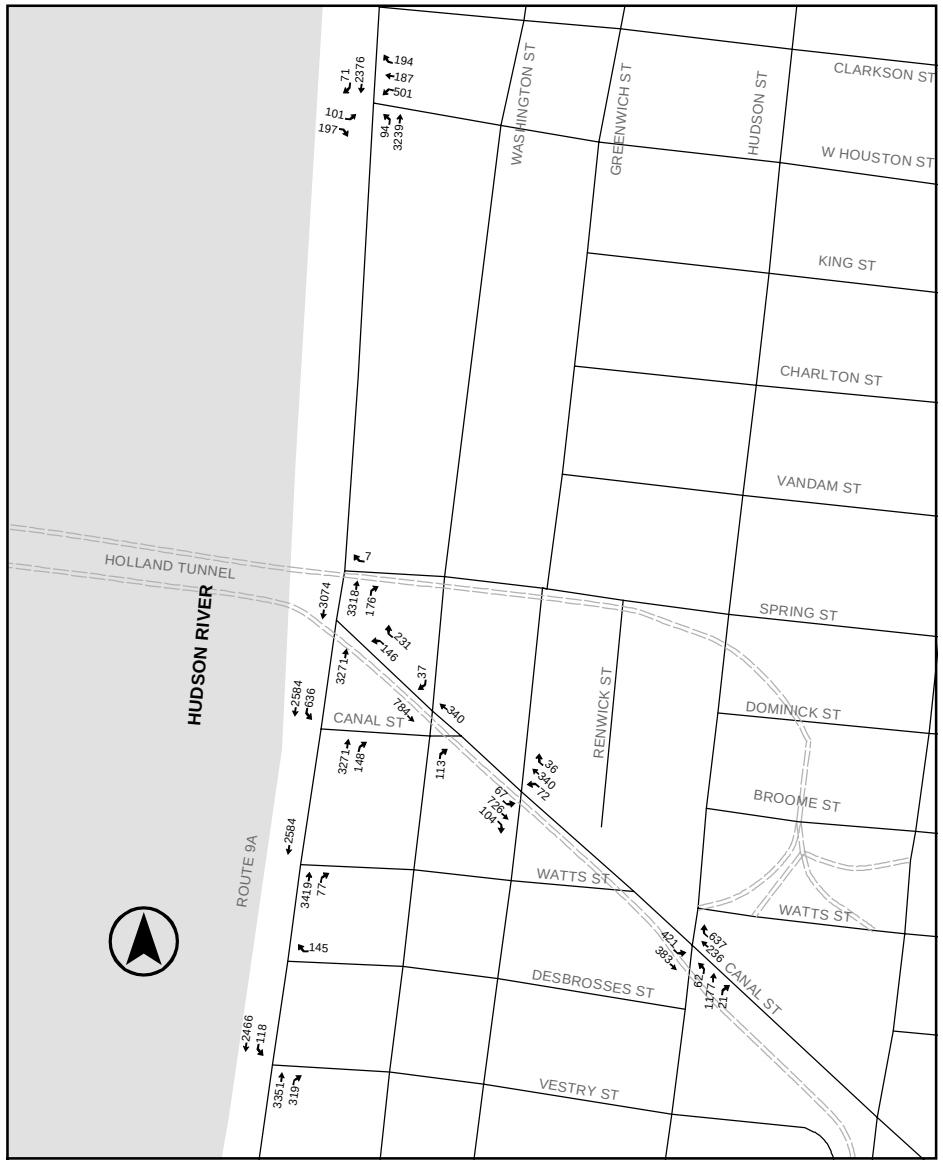
2010 Future Without The Proposed Action Traffic Volumes-Inset 4
(Weekday PM Peak Hour)

Figure 19-50



2010 Future Without The Proposed Action Traffic Volumes-
Inset 5
(Weekday PM Peak Hour)

Figure 19-51

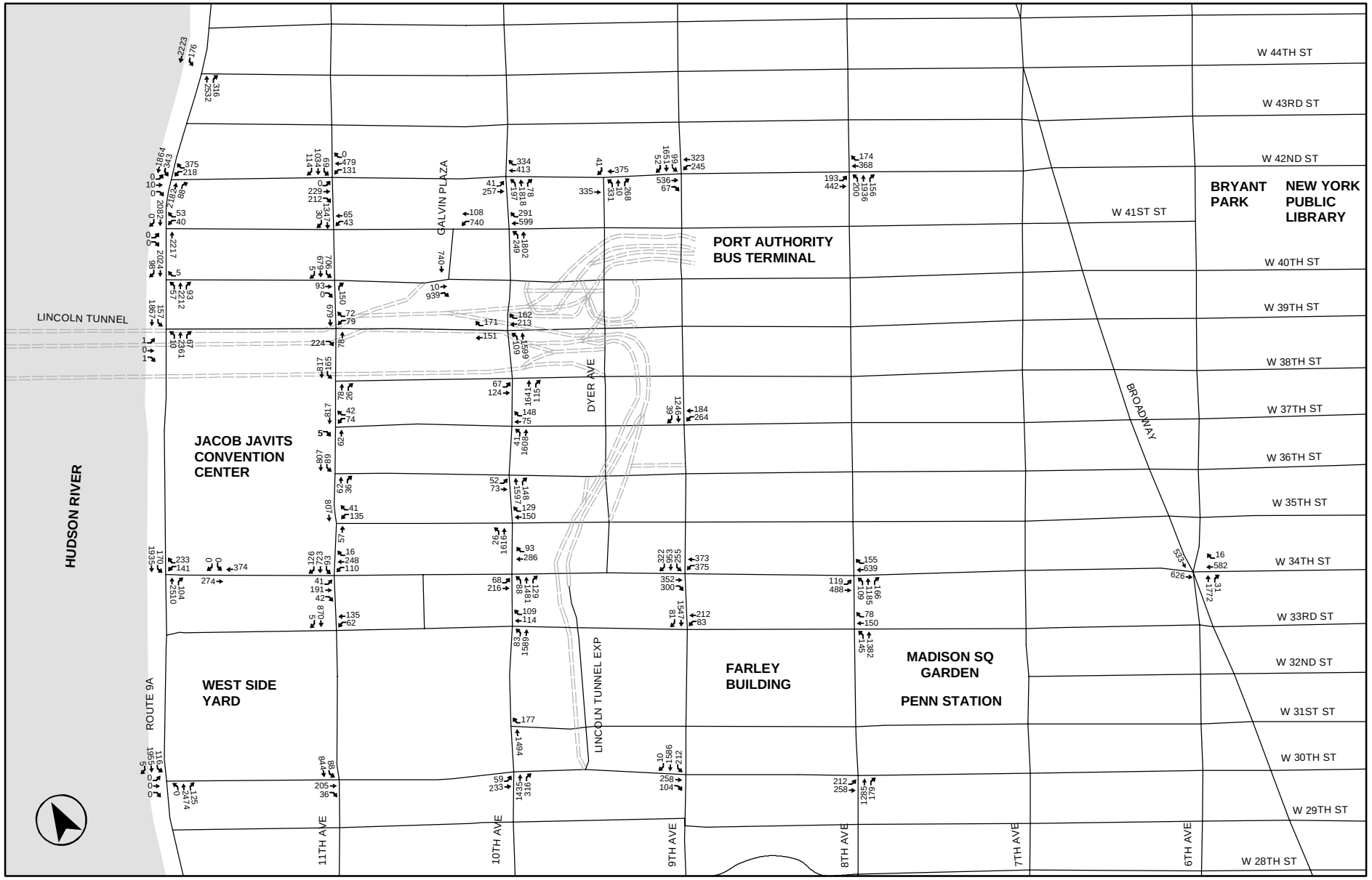


Inset 6

Inset 7

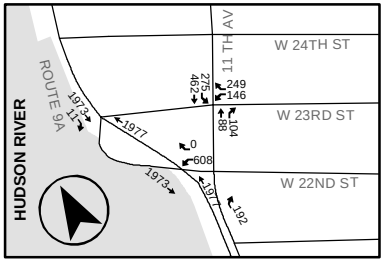
2010 Future Without The Proposed Action Traffic Volumes - Insets 6 and 7 (Weekday PM Peak Hour)

Figure 19-52

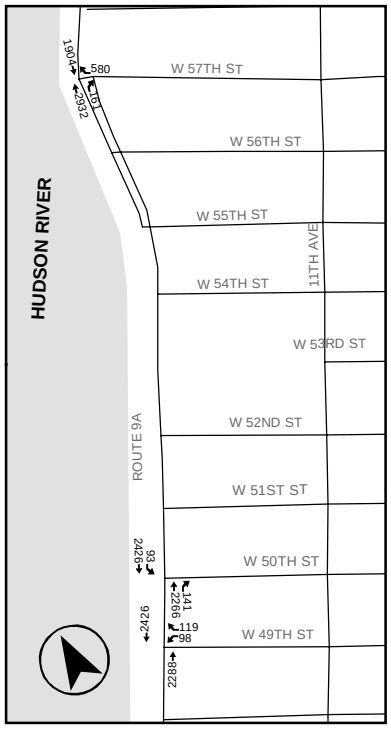


2010 Future Without The Proposed Action Traffic Volumes-
Inset 1
(Weeknight Special Event Peak Hour)

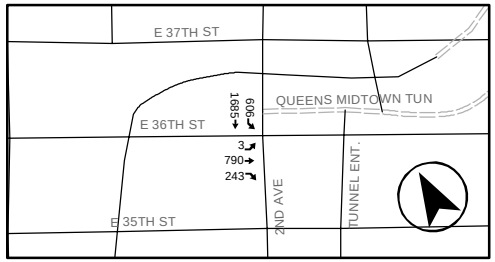
Figure 19-53



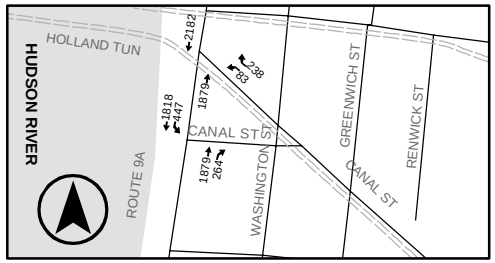
Inset 2



Inset 3



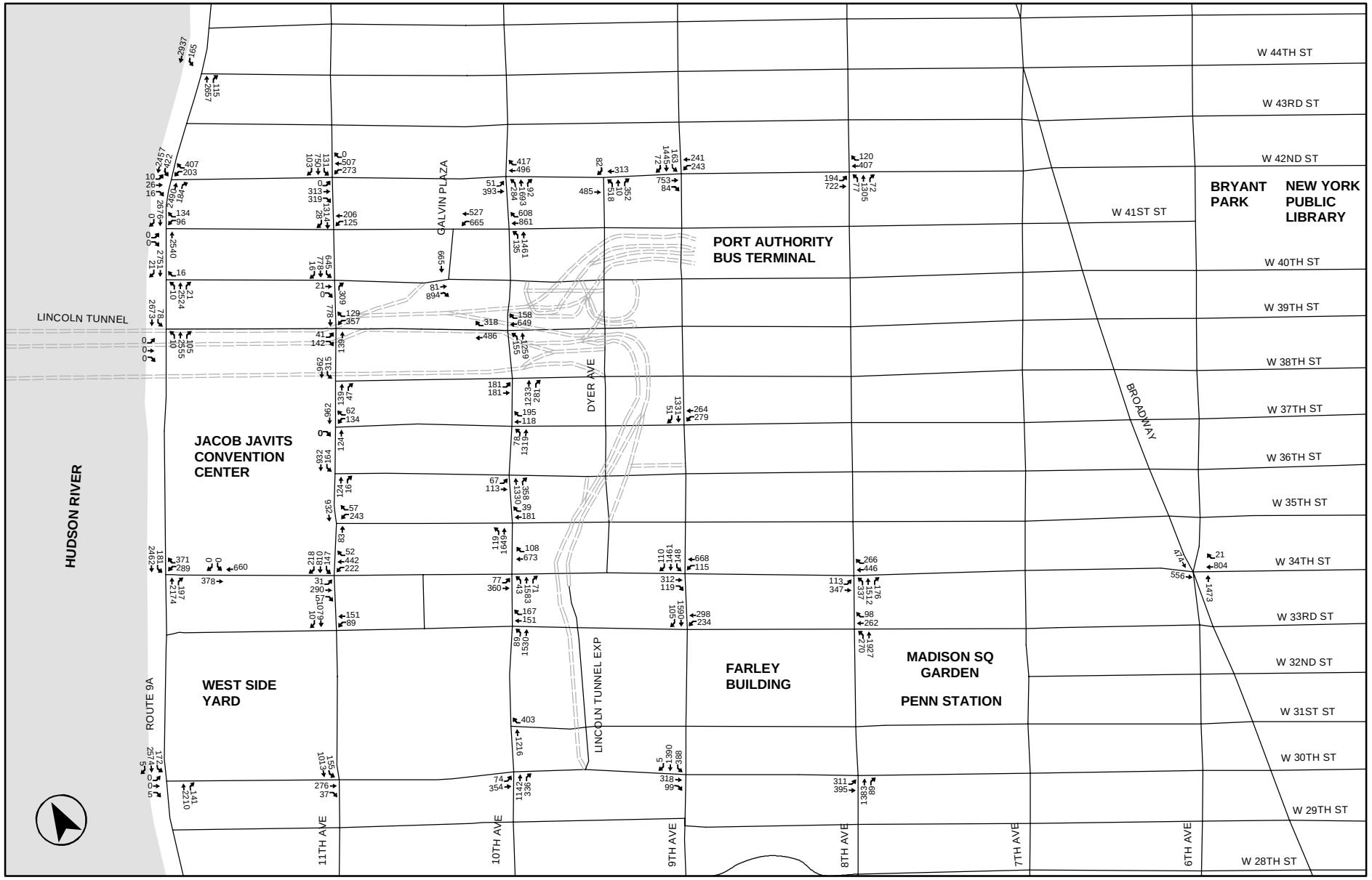
Inset 4



Inset 5

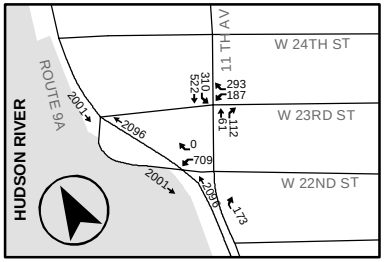
2010 Future Without The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-54

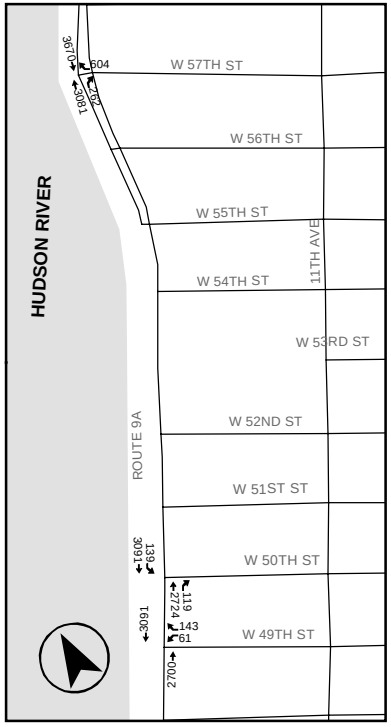


2010 Future Without The Proposed Action Traffic Volumes-Inset 1
(Sunday Special Event Peak Hour)

Figure 19-55



Inset 2



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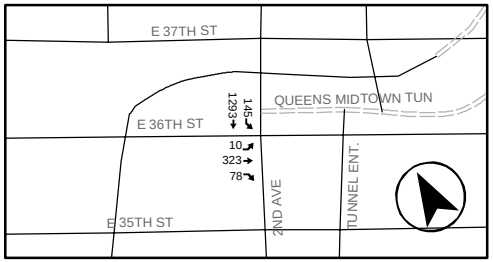
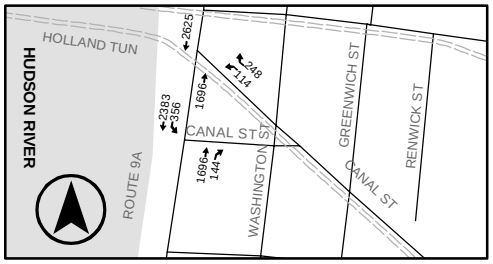


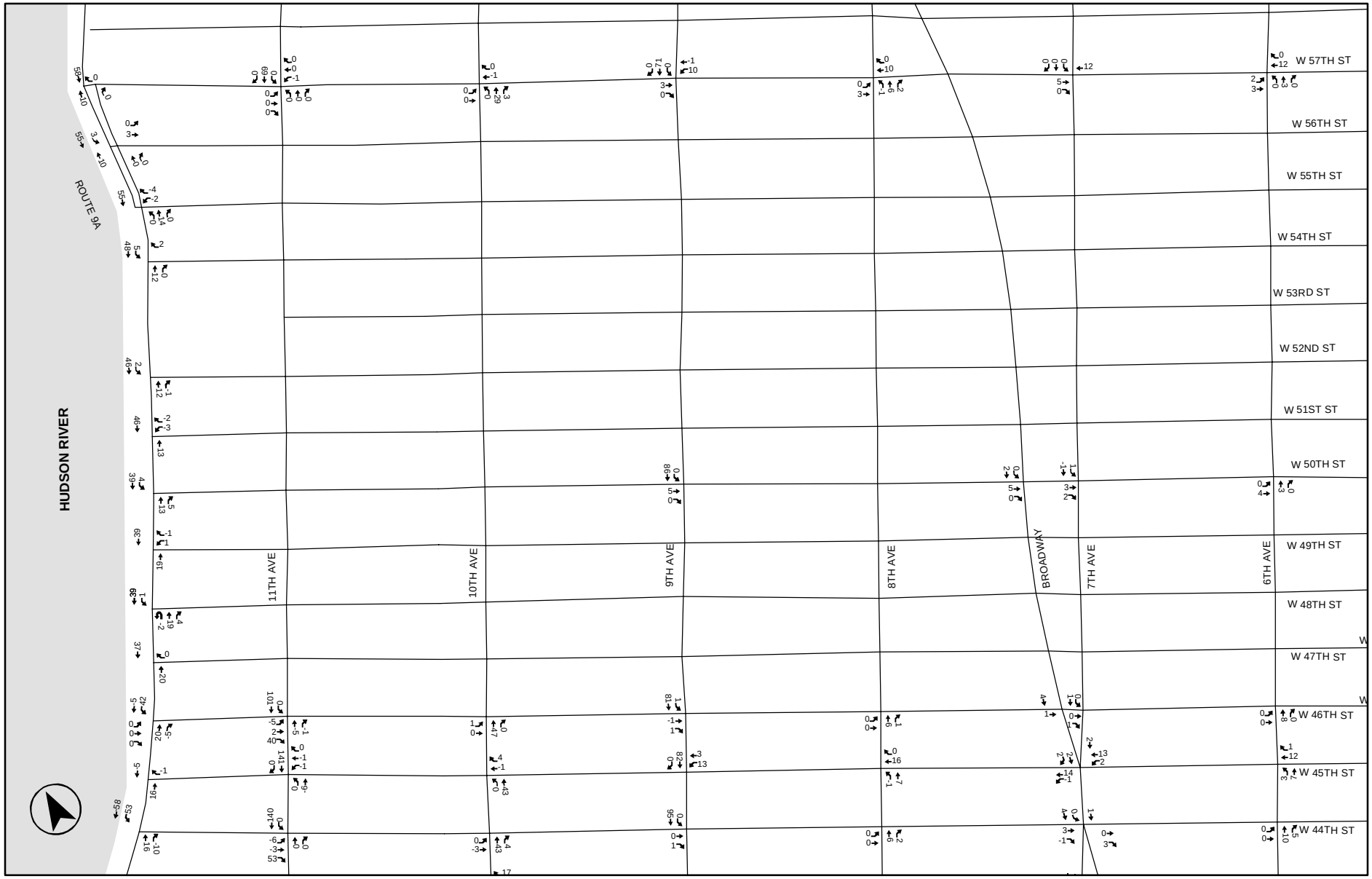
Inset 4



Inset 5

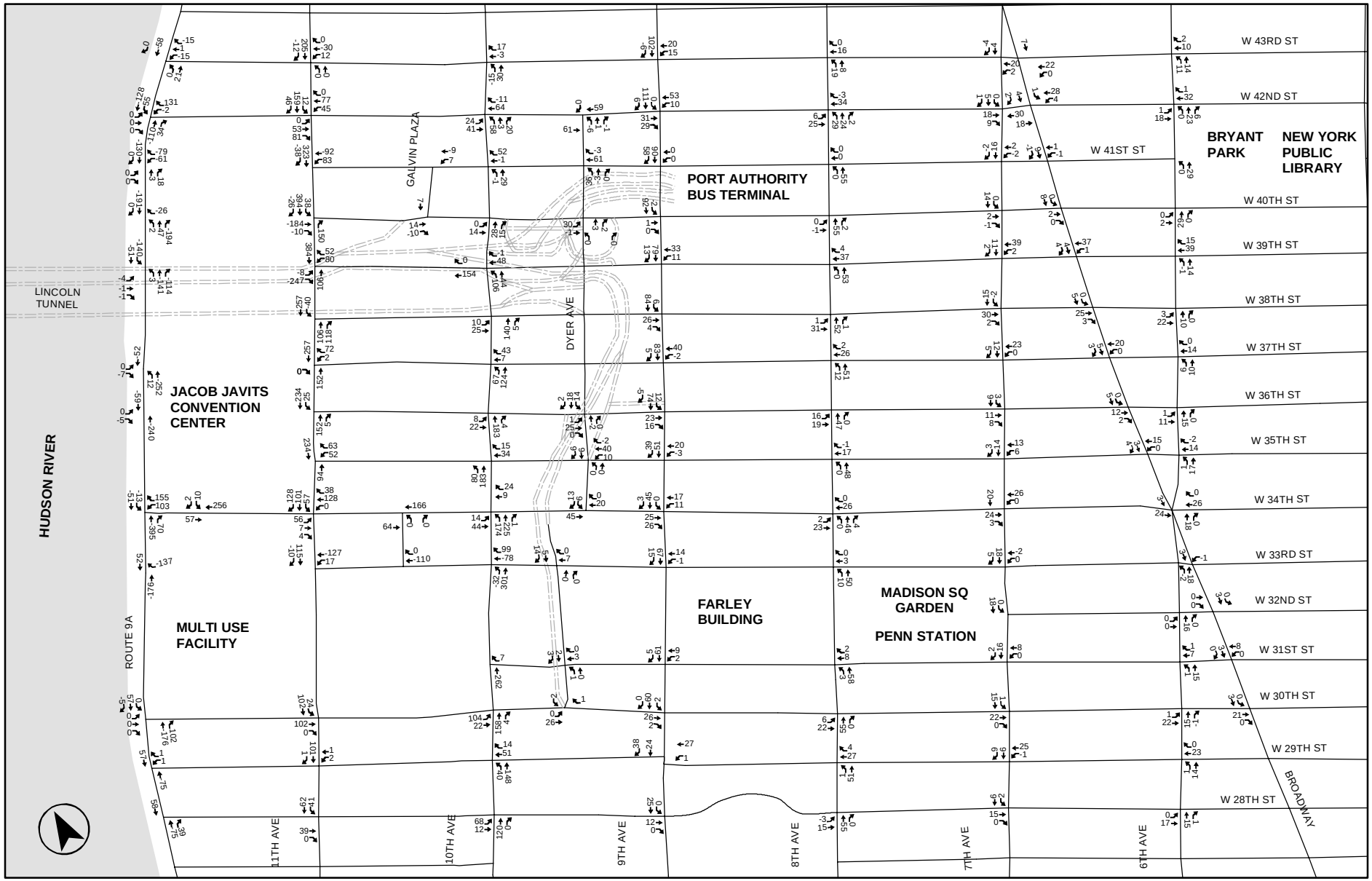
2010 Future Without The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-56



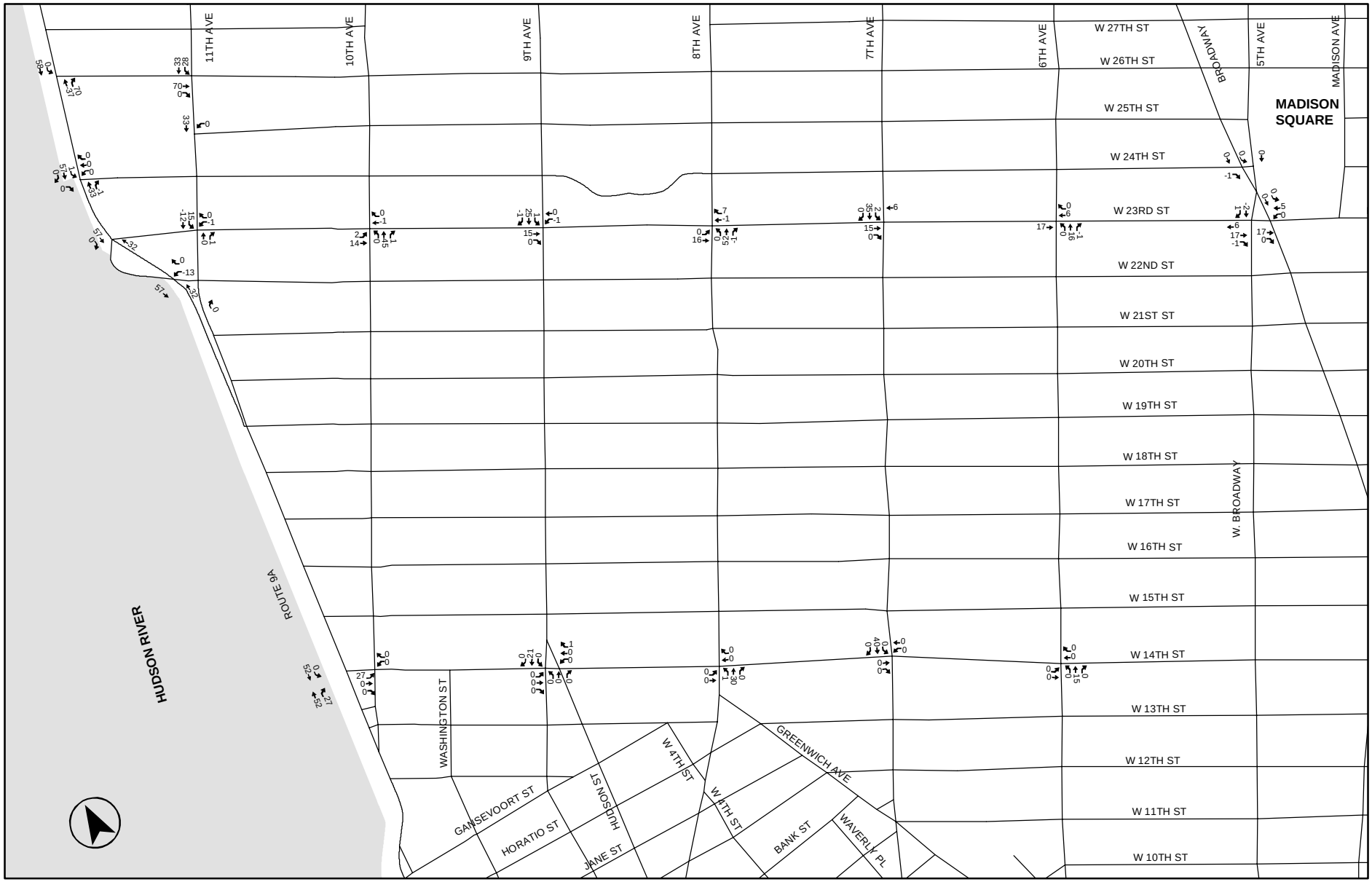
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 1
(Weekday AM Peak Hour)

Figure 19-57



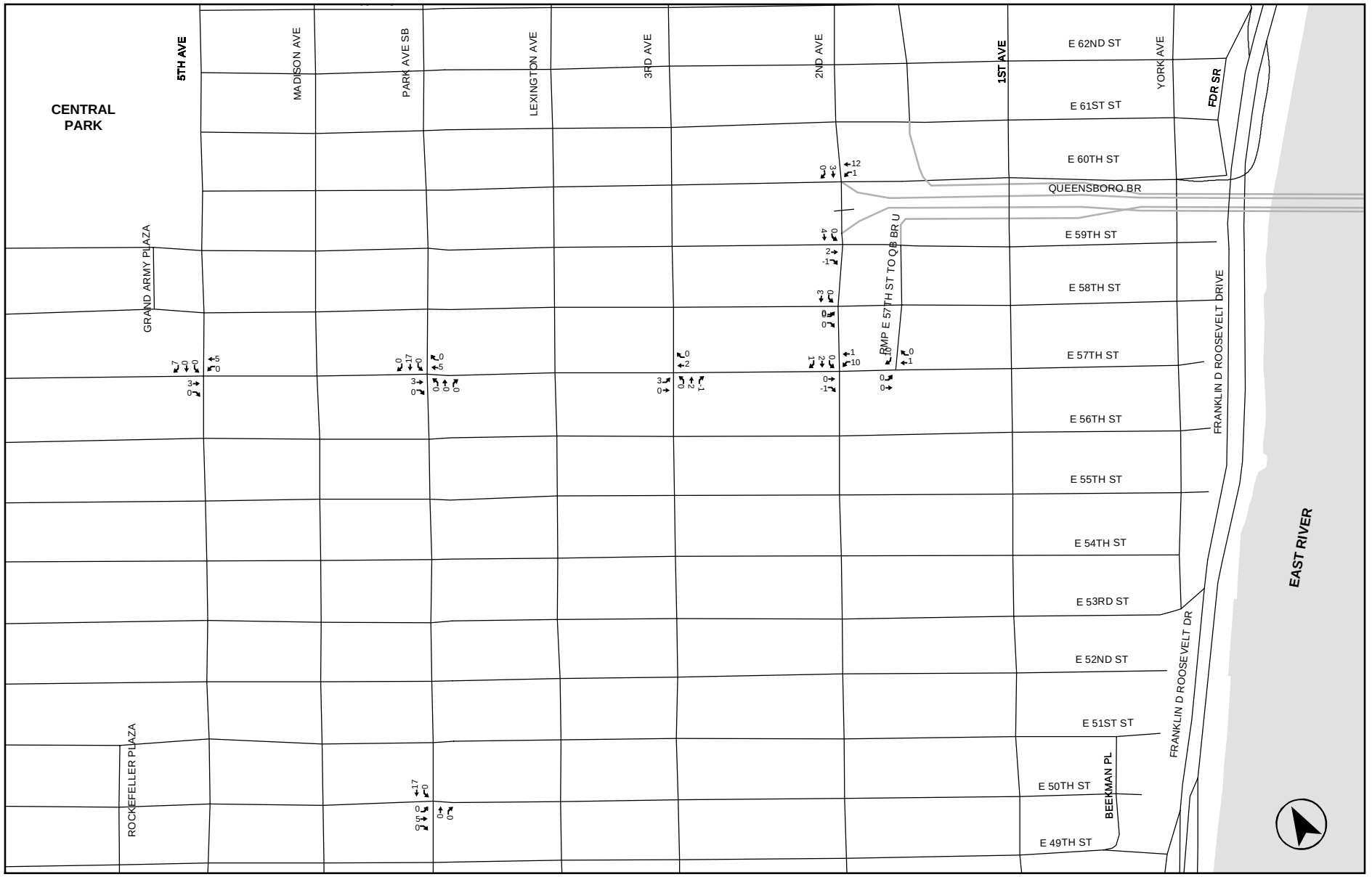
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 2 (Weekday AM Peak Hour)

Figure 19-58

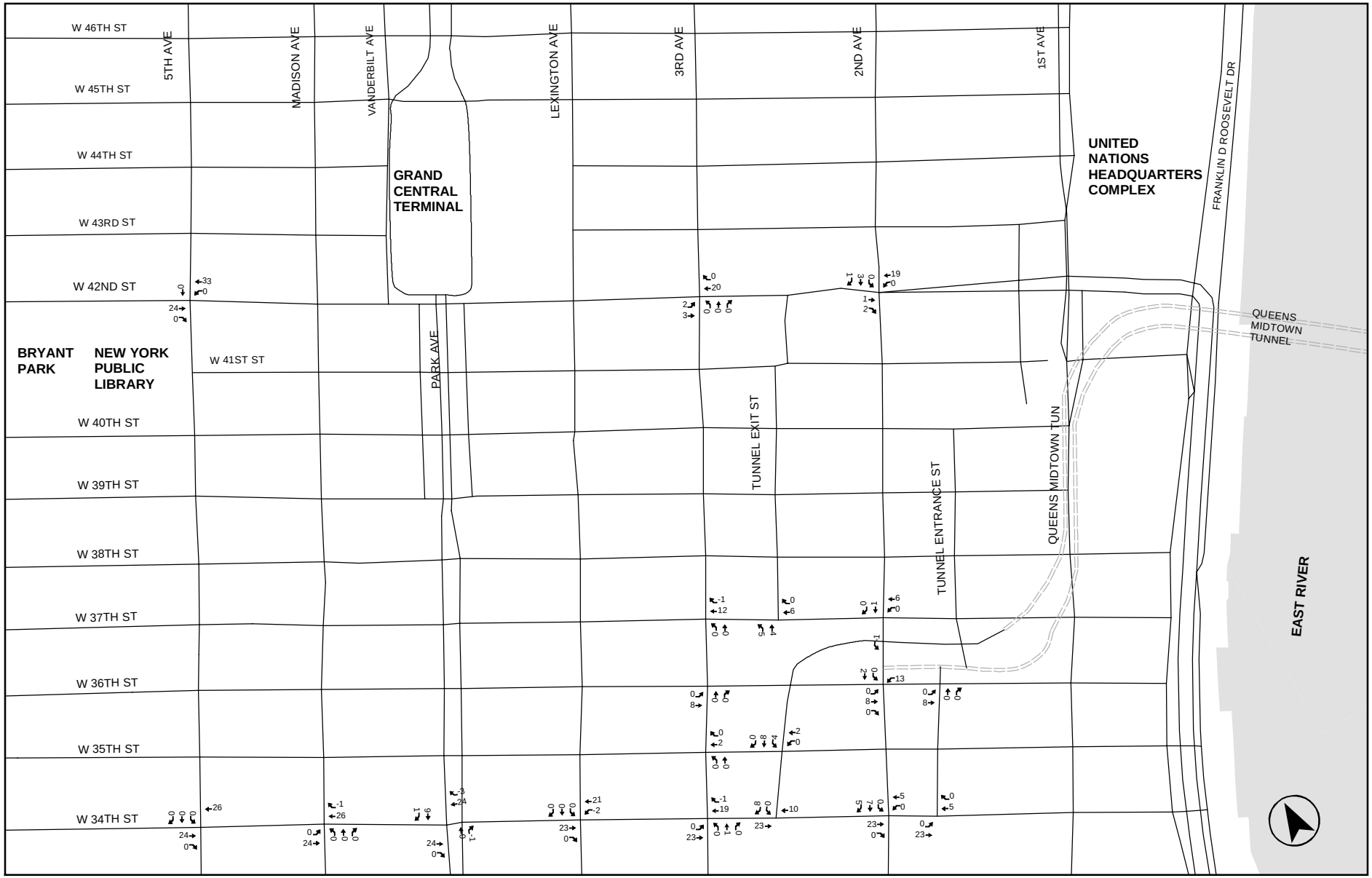


2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 3
(Weekday AM Peak Hour)

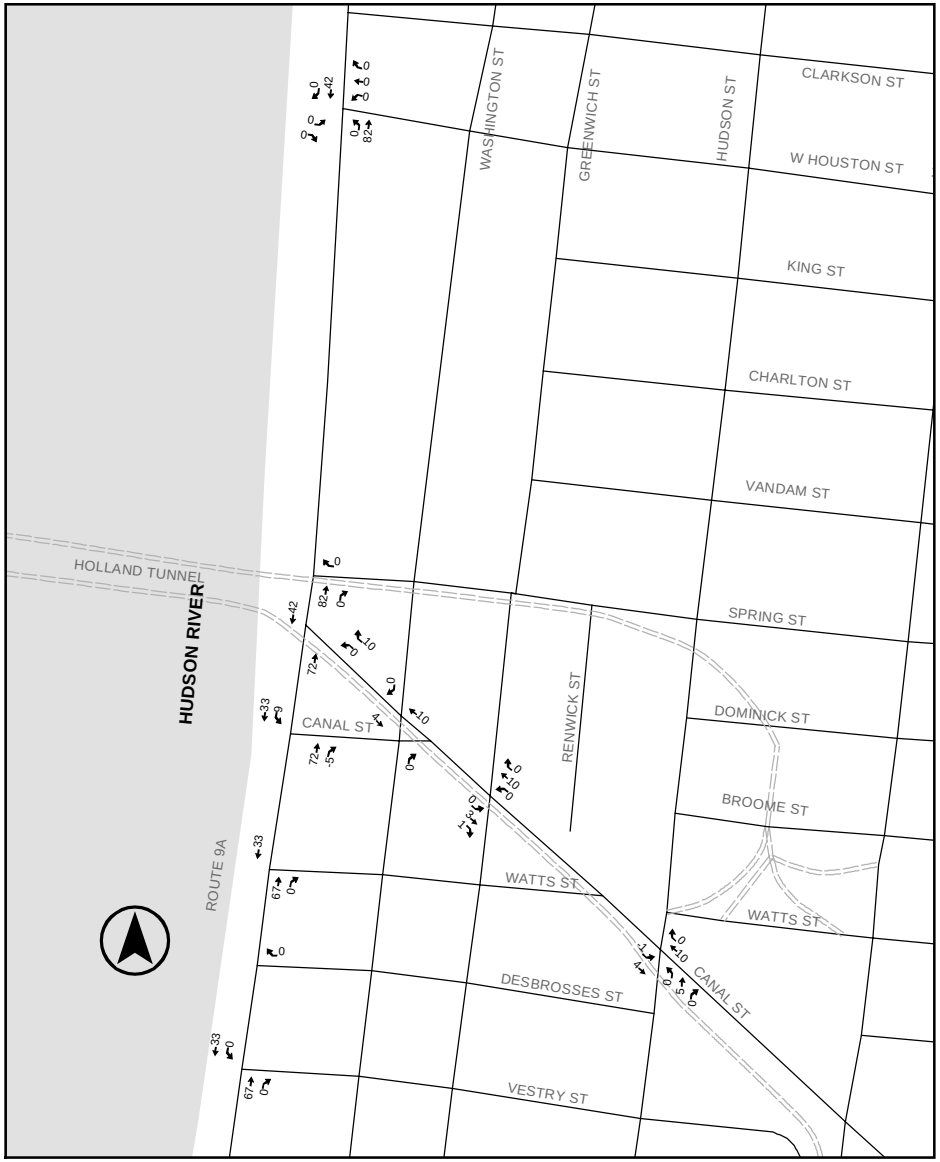
Figure 19-59



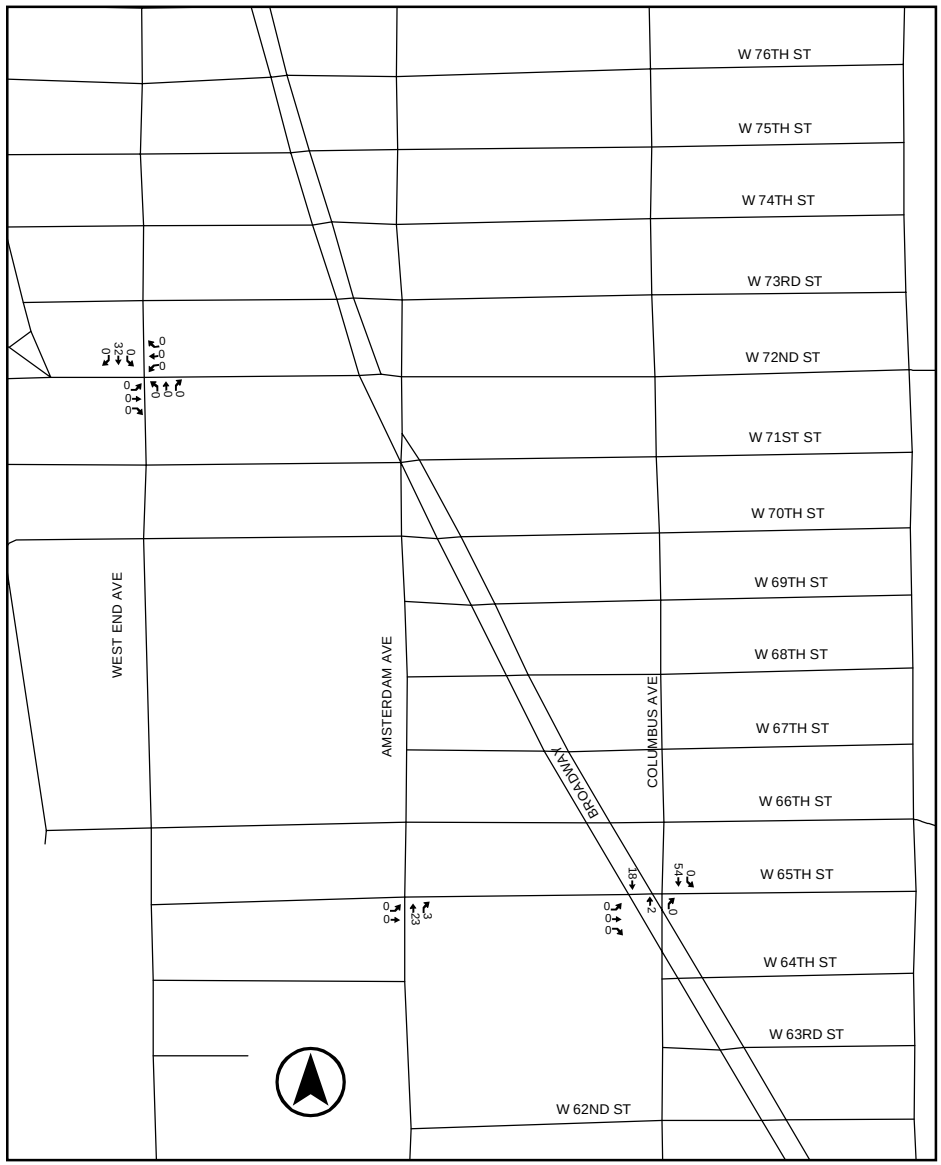
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 4
(Weekday AM Peak Hour)
Figure 19-60



2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 5
(Weekday AM Peak Hour)
Figure 19-61



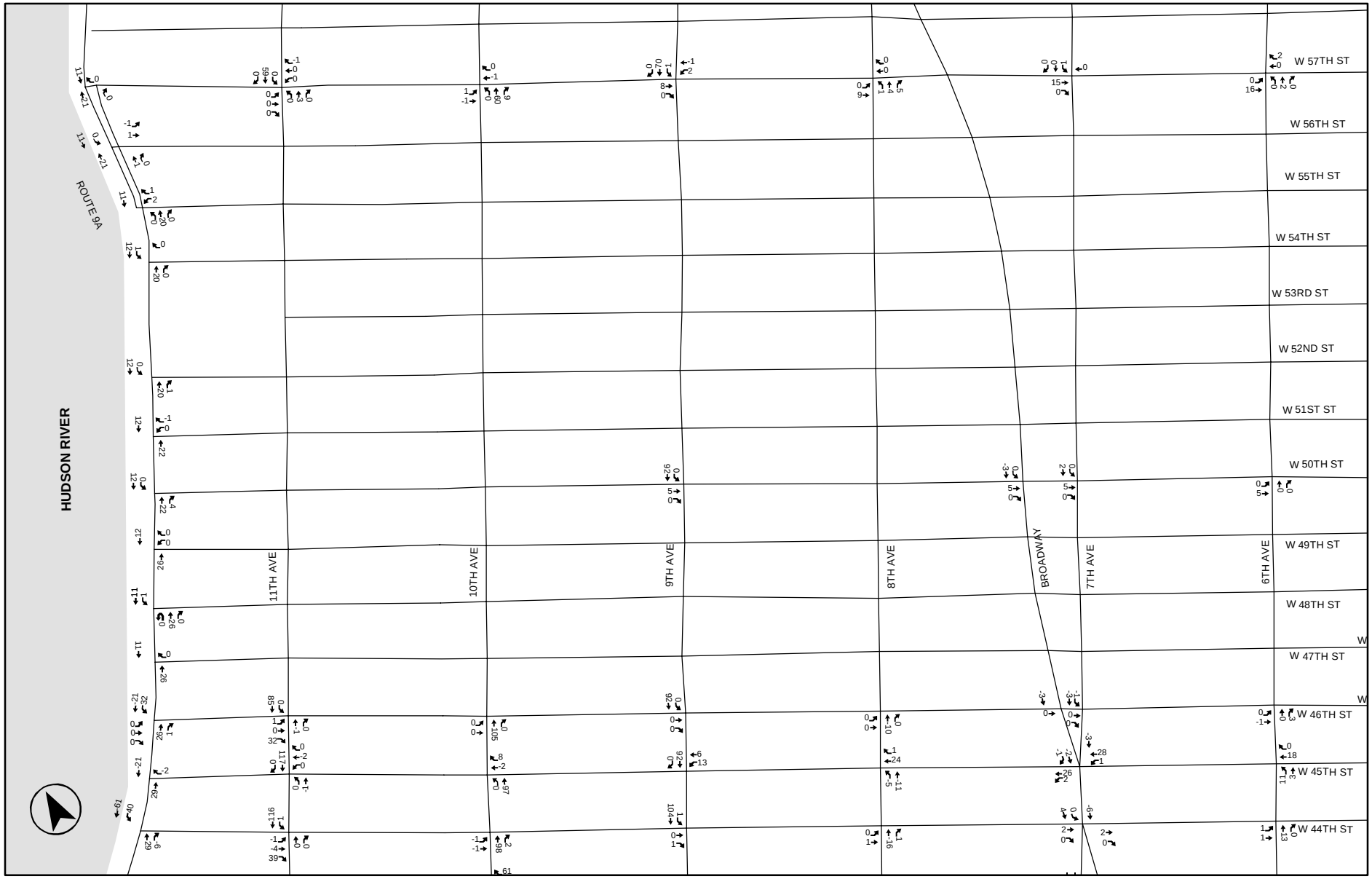
Inset 6



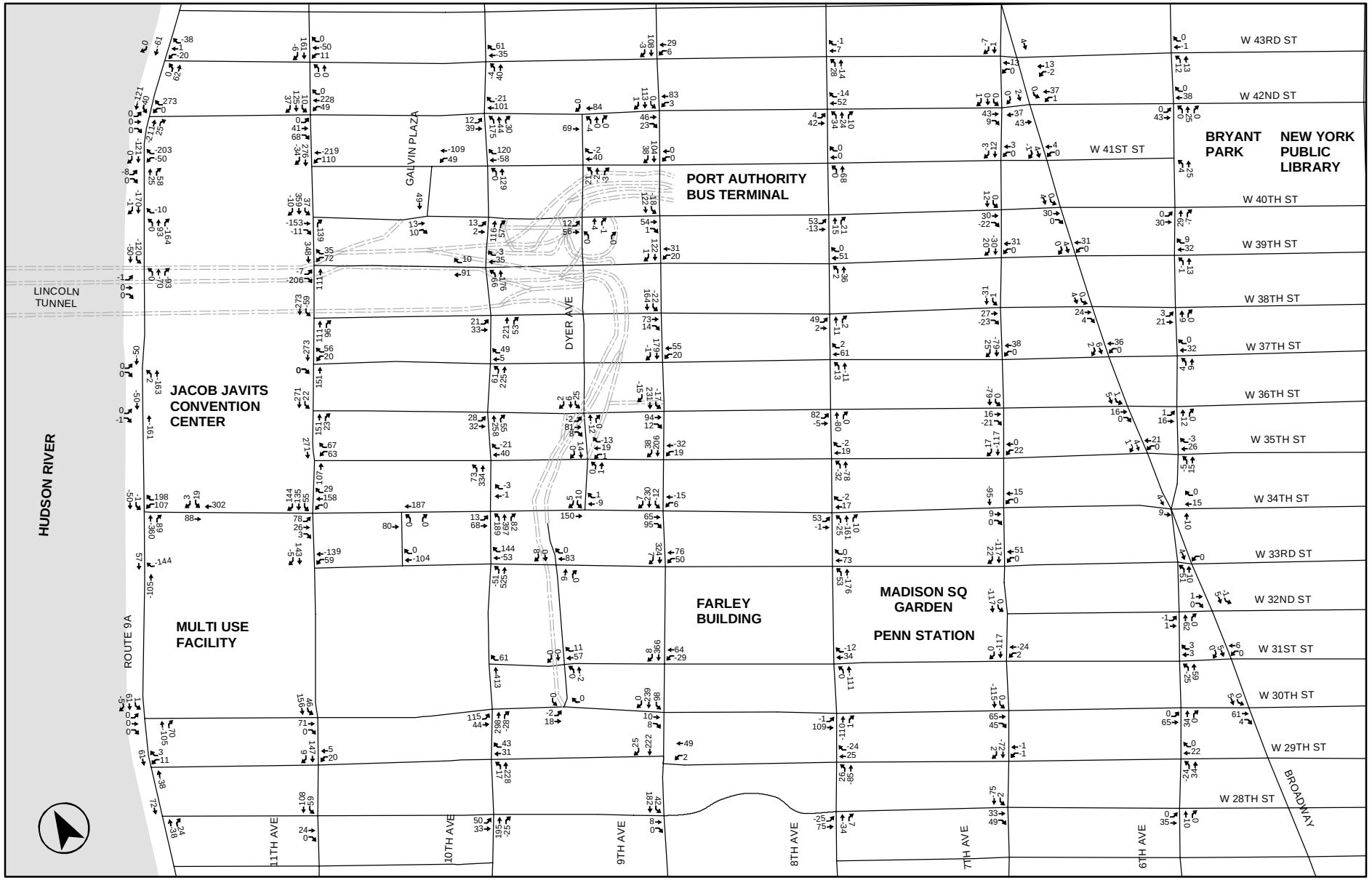
Inset 7

2010 Future With The Proposed Action
Incremental Traffic Volumes - Insets 6 and 7
(Weekday AM Peak Hour)

Figure 19-62

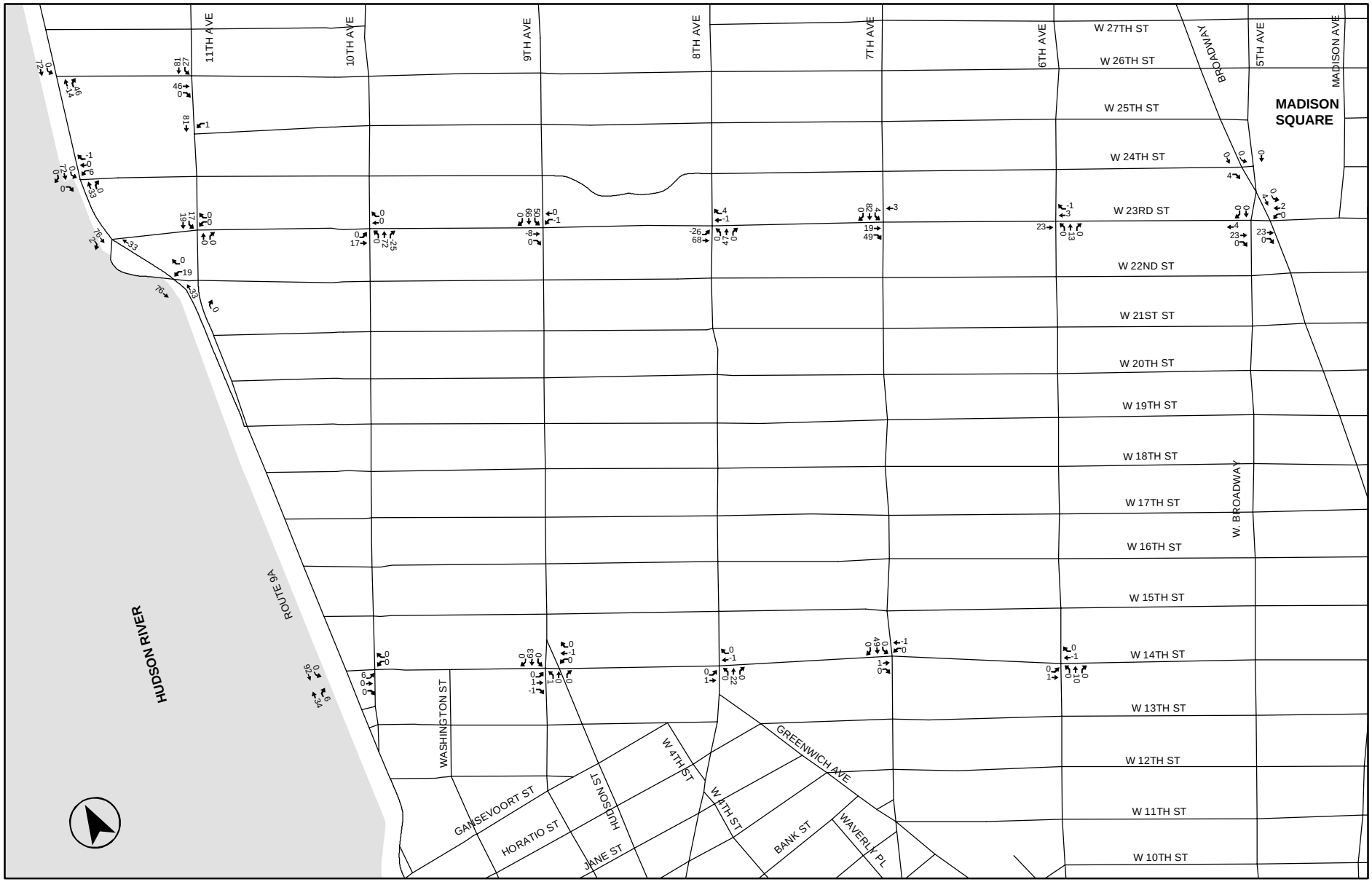


2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 1
(Weekday Midday Peak Hour)
Figure 19-63



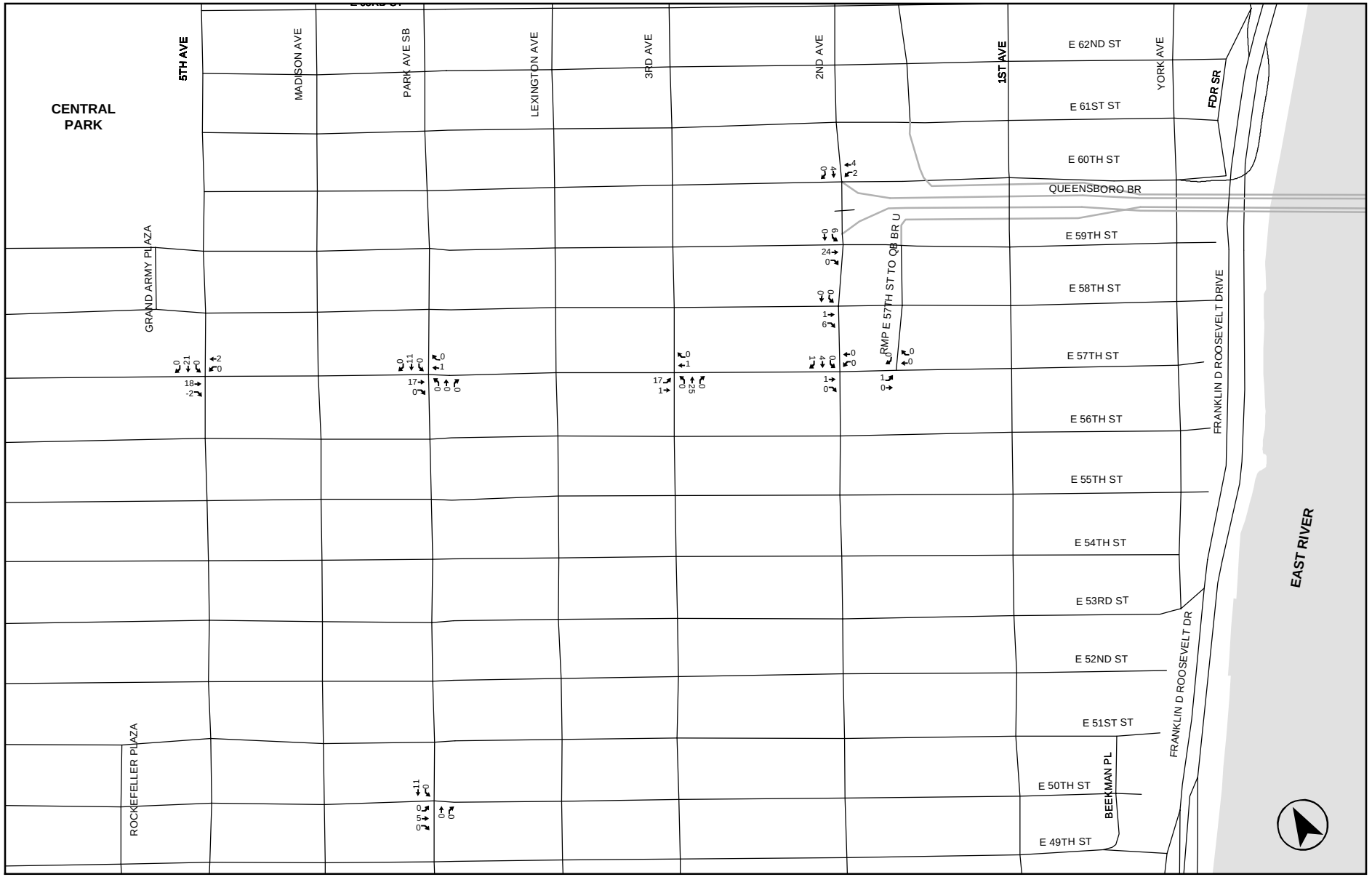
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 2
(Weekday Midday Peak Hour)

Figure 19-64



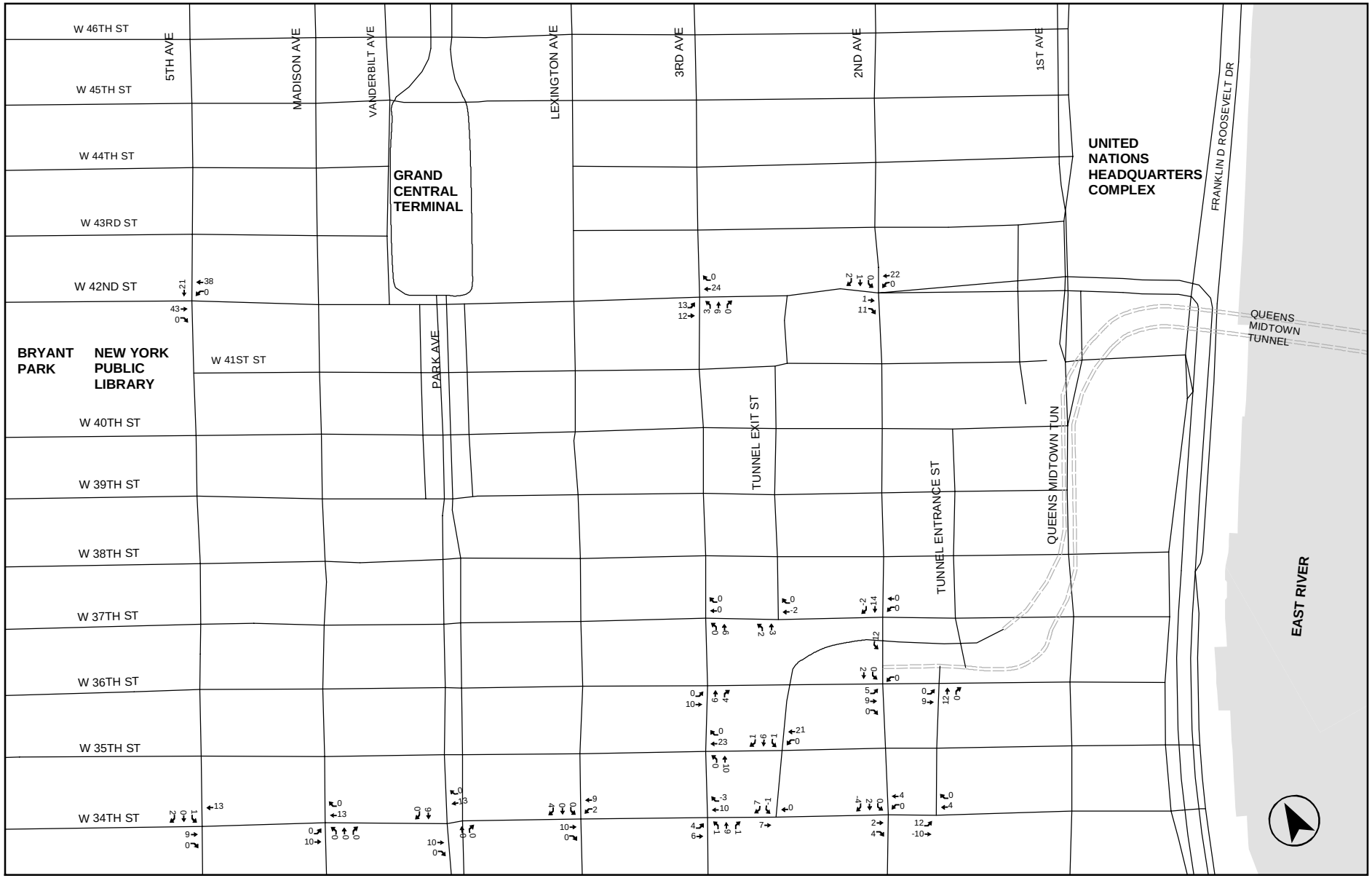
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 3
(Weekday Midday Peak Hour)

Figure 19-65



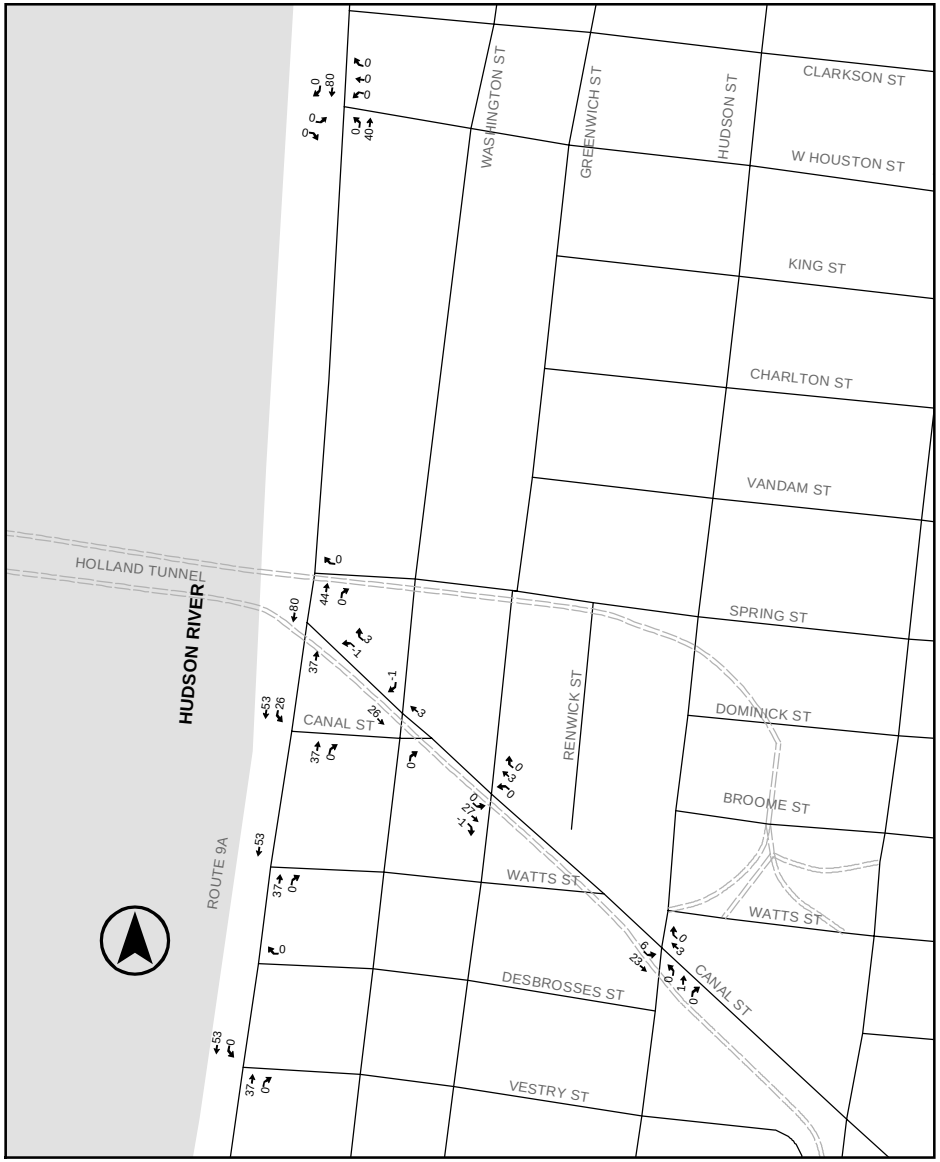
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 4
(Weekday Midday Peak Hour)

Figure 19-66

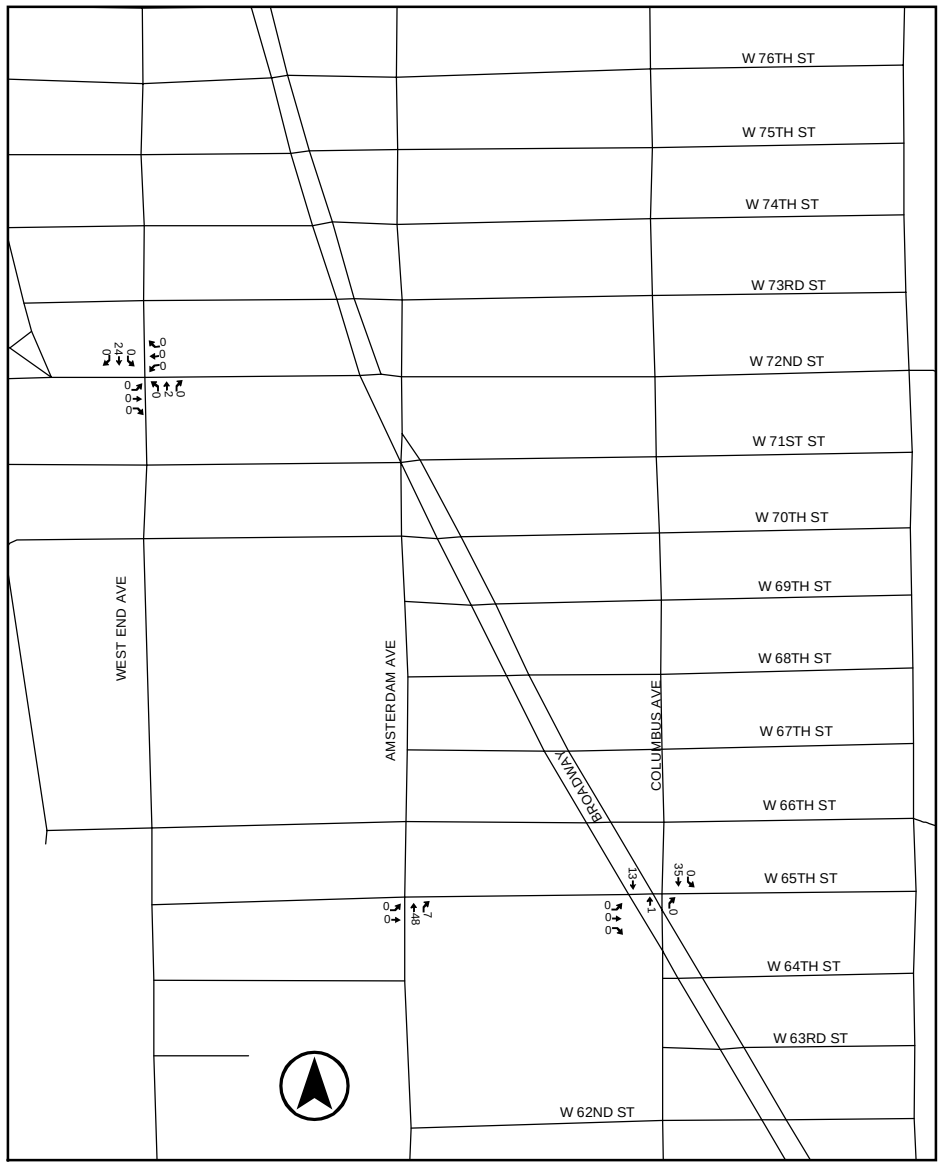


2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 5
(Weekday Midday Peak Hour)

Figure 19-67



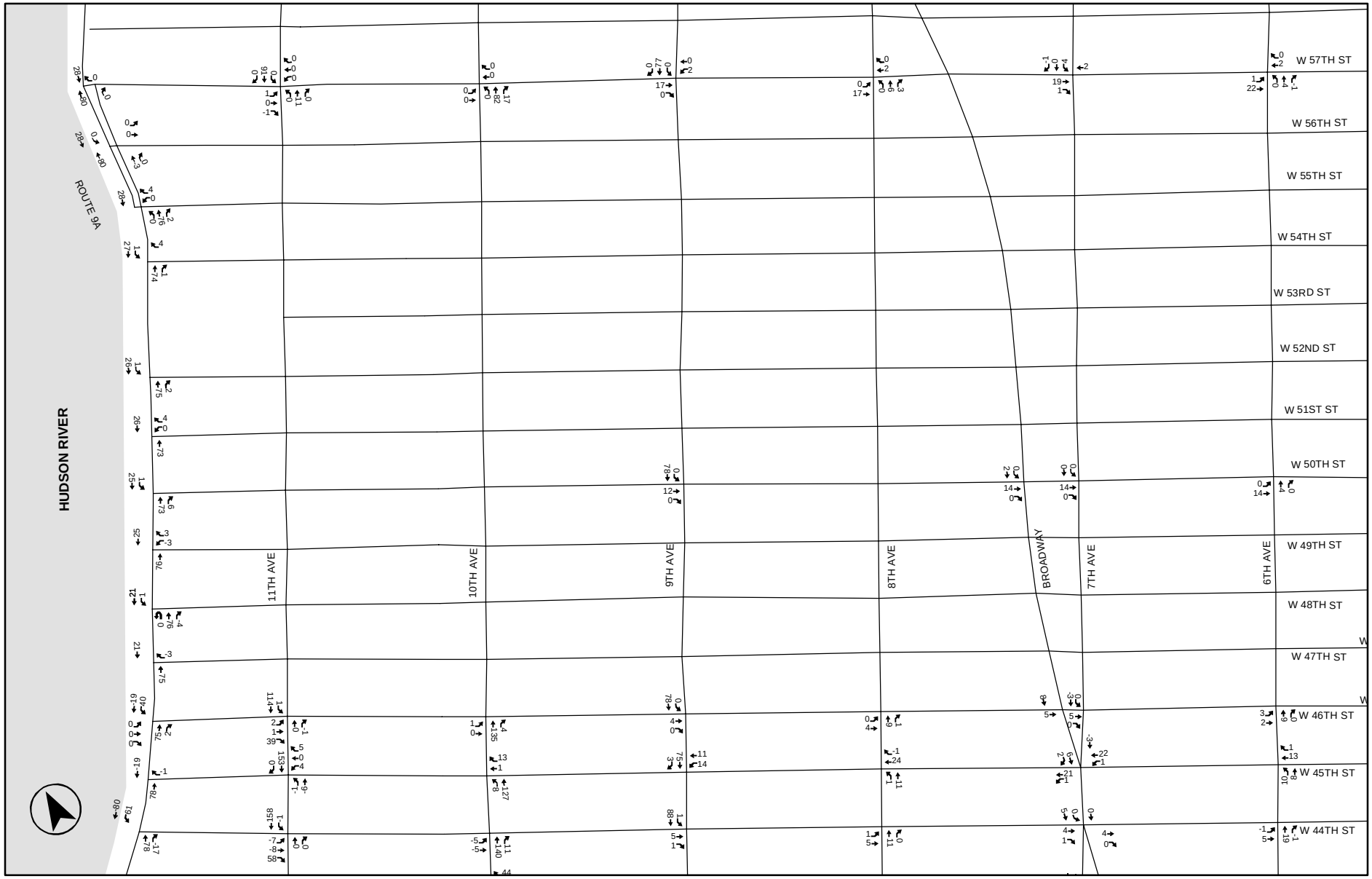
Inset 6



Inset 7

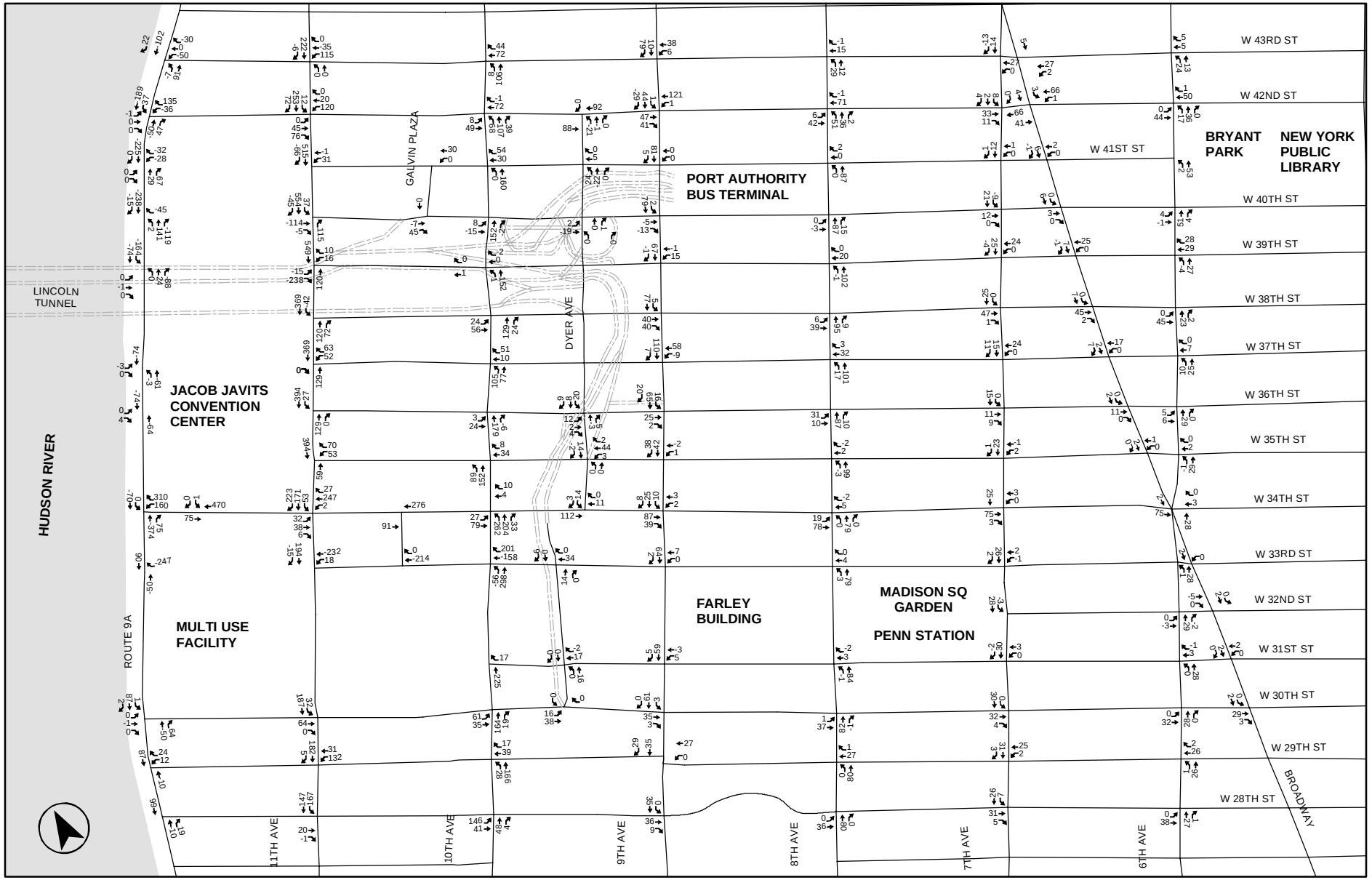
2010 Future With The Proposed Action
Incremental Traffic Volumes - Insets 6 and 7
(Weekday Midday Peak Hour)

Figure 19-68



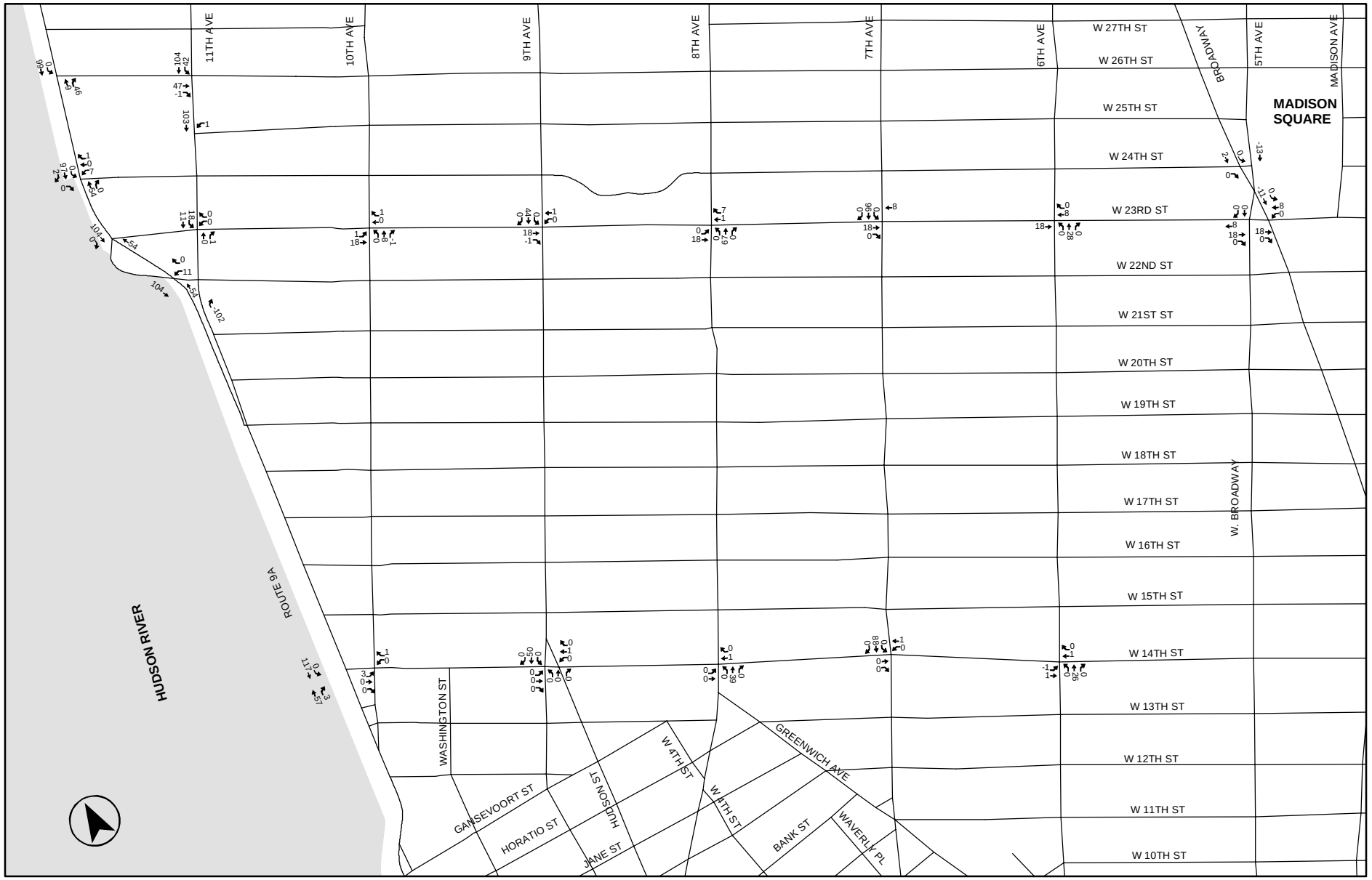
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 1
(Weekday PM Peak Hour)

Figure 19-69



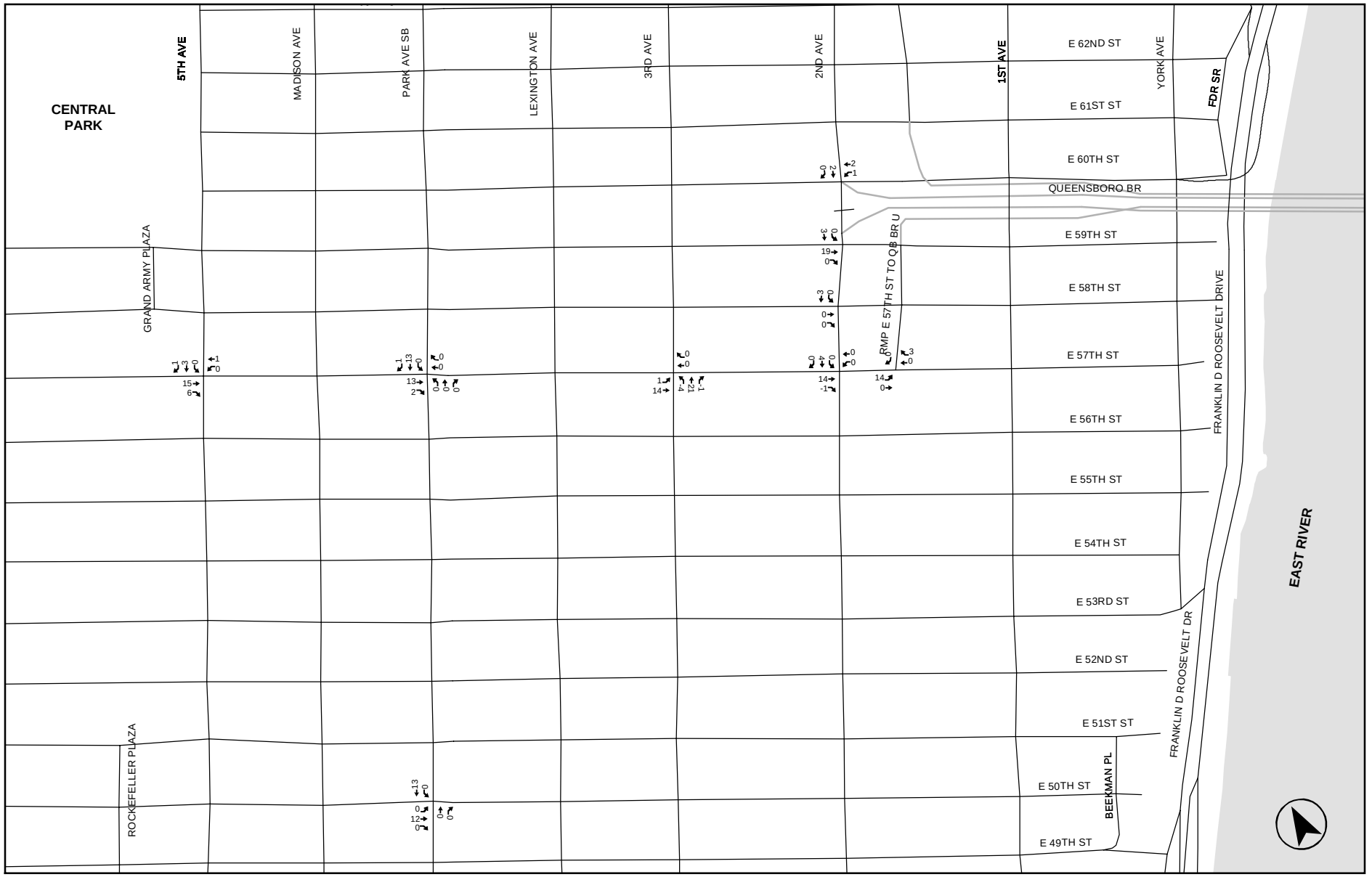
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 2
(Weekday PM Peak Hour)

Figure 19-70



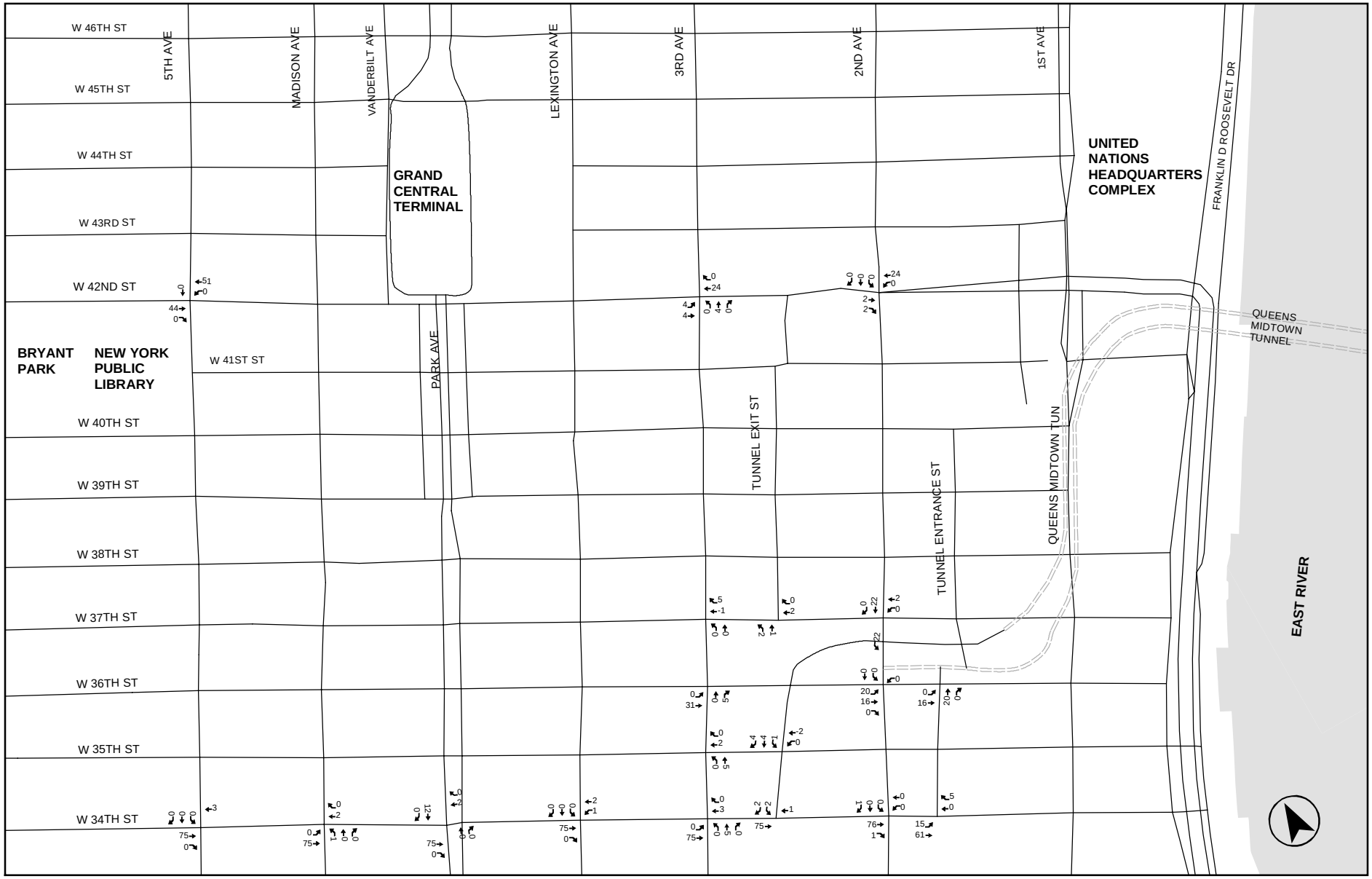
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 3
(Weekday PM Peak Hour)

Figure 19-71



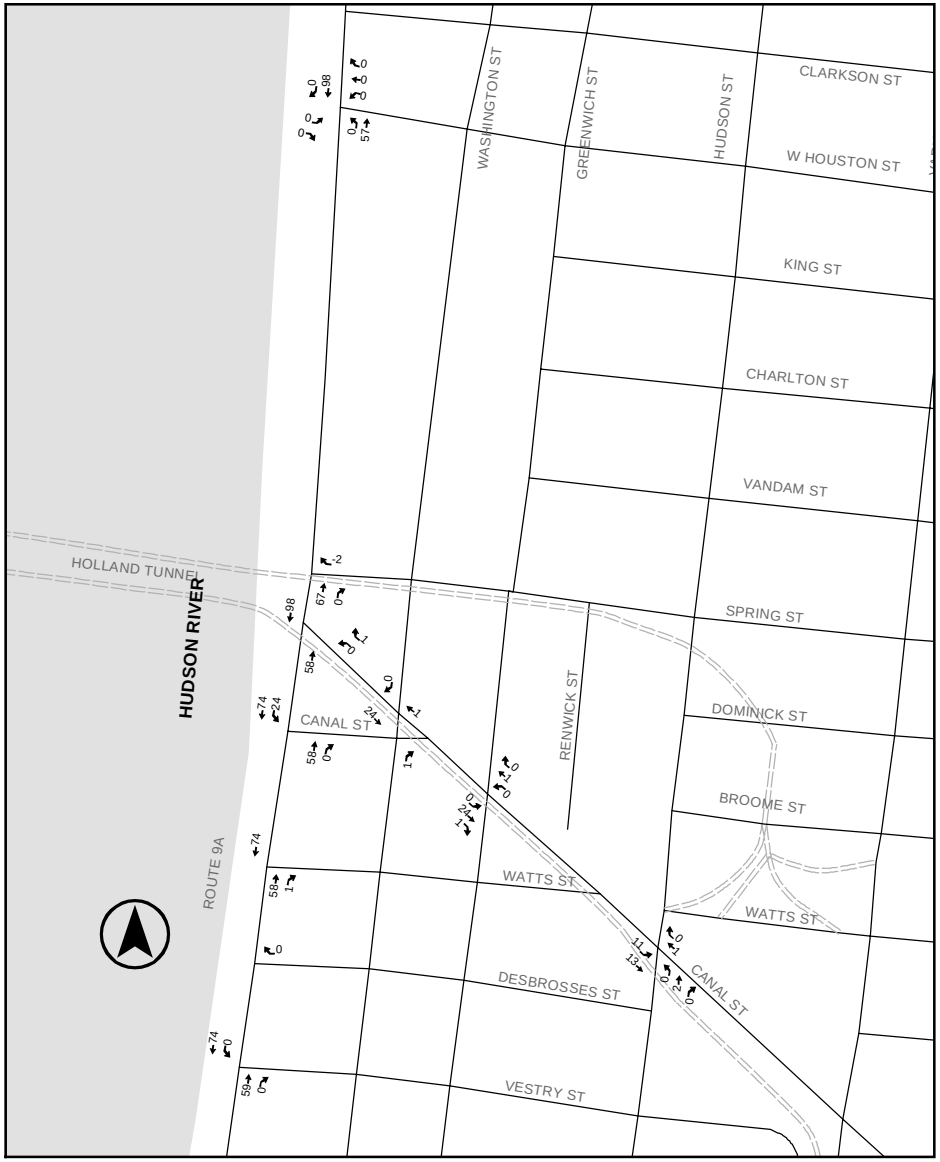
2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 4
(Weekday PM Peak Hour)

Figure 19-72

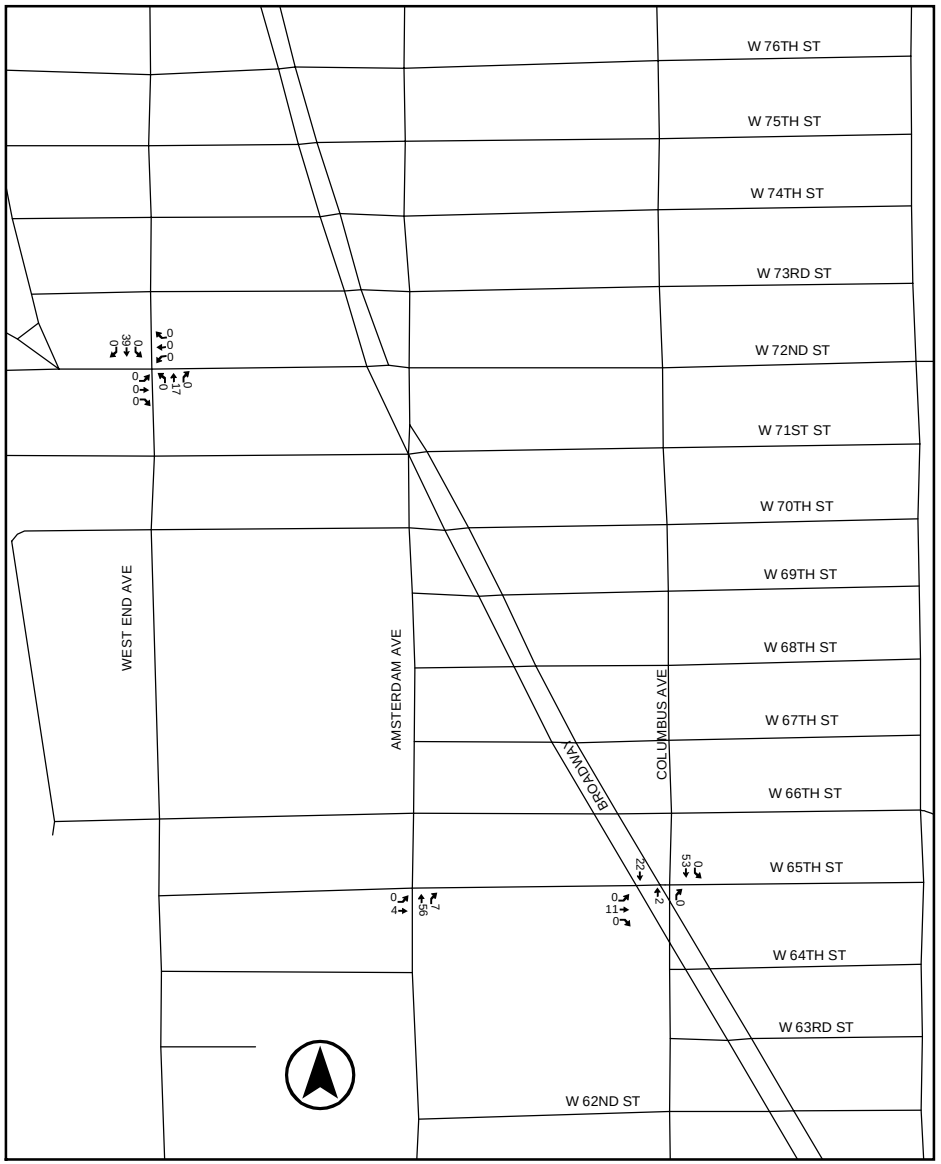


2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 5
(Weekday PM Peak Hour)

Figure 19-73



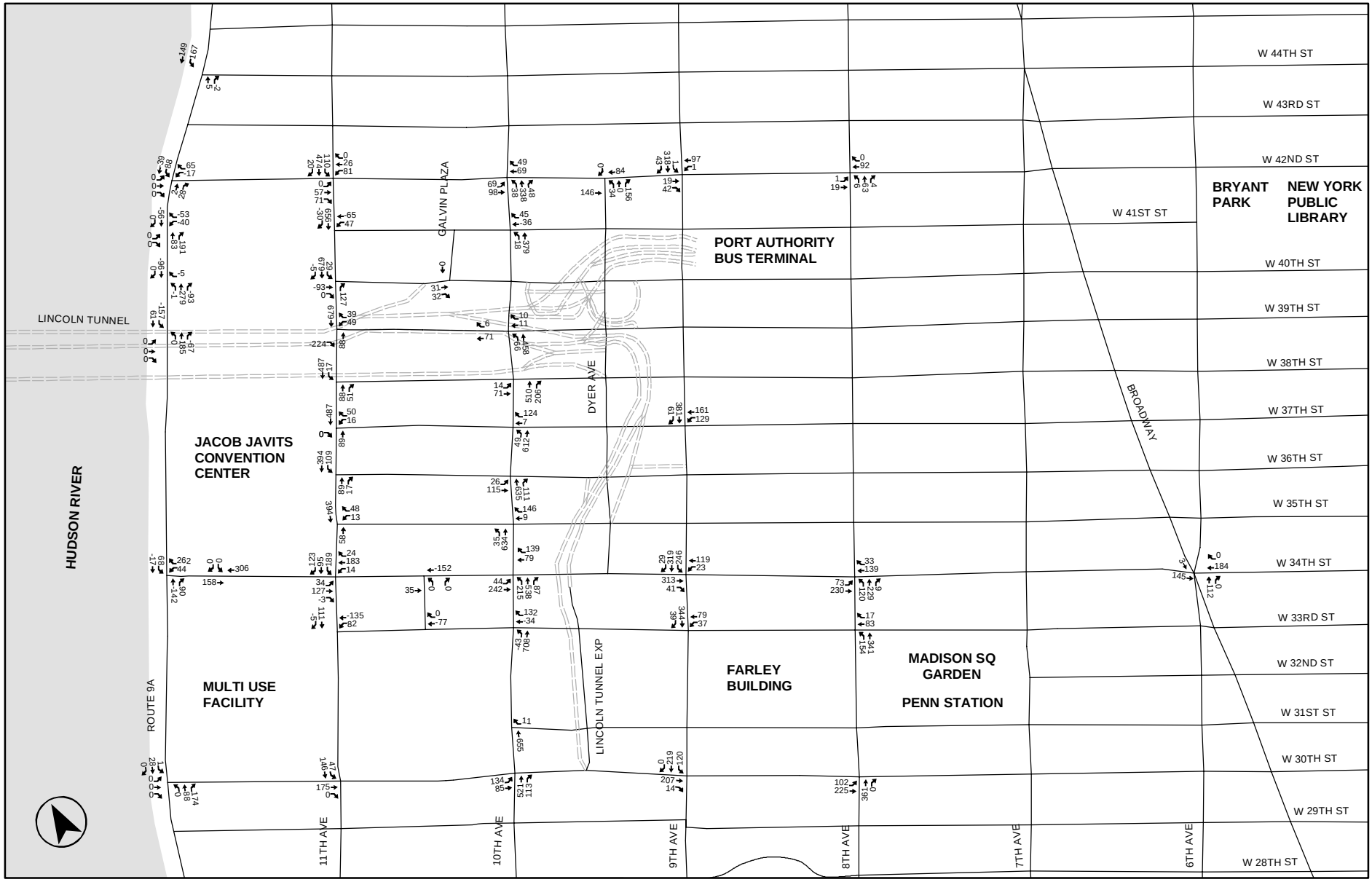
Inset 6



Inset 7

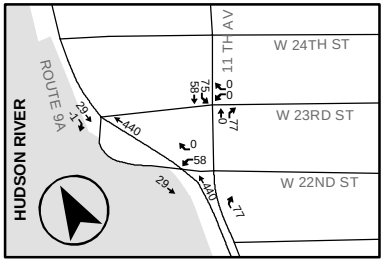
2010 Future With The Proposed Action
Incremental Traffic Volumes - Insets 6 and 7
(Weekday PM Peak Hour)

Figure 19-74

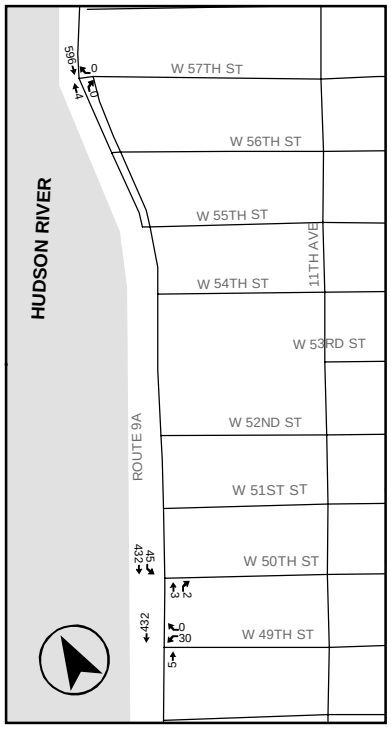


2010 Future With The Proposed Action Incremental Traffic Volumes - Inset 1
(Weeknight Special Event Peak Hour)

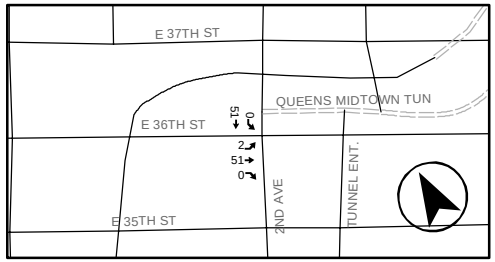
Figure 19-75



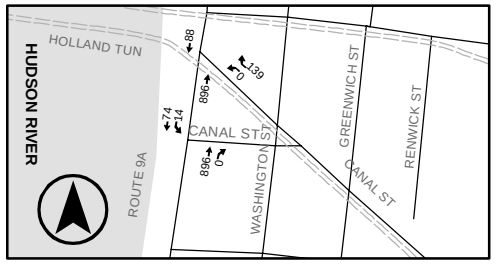
Inset 2



Inset 3



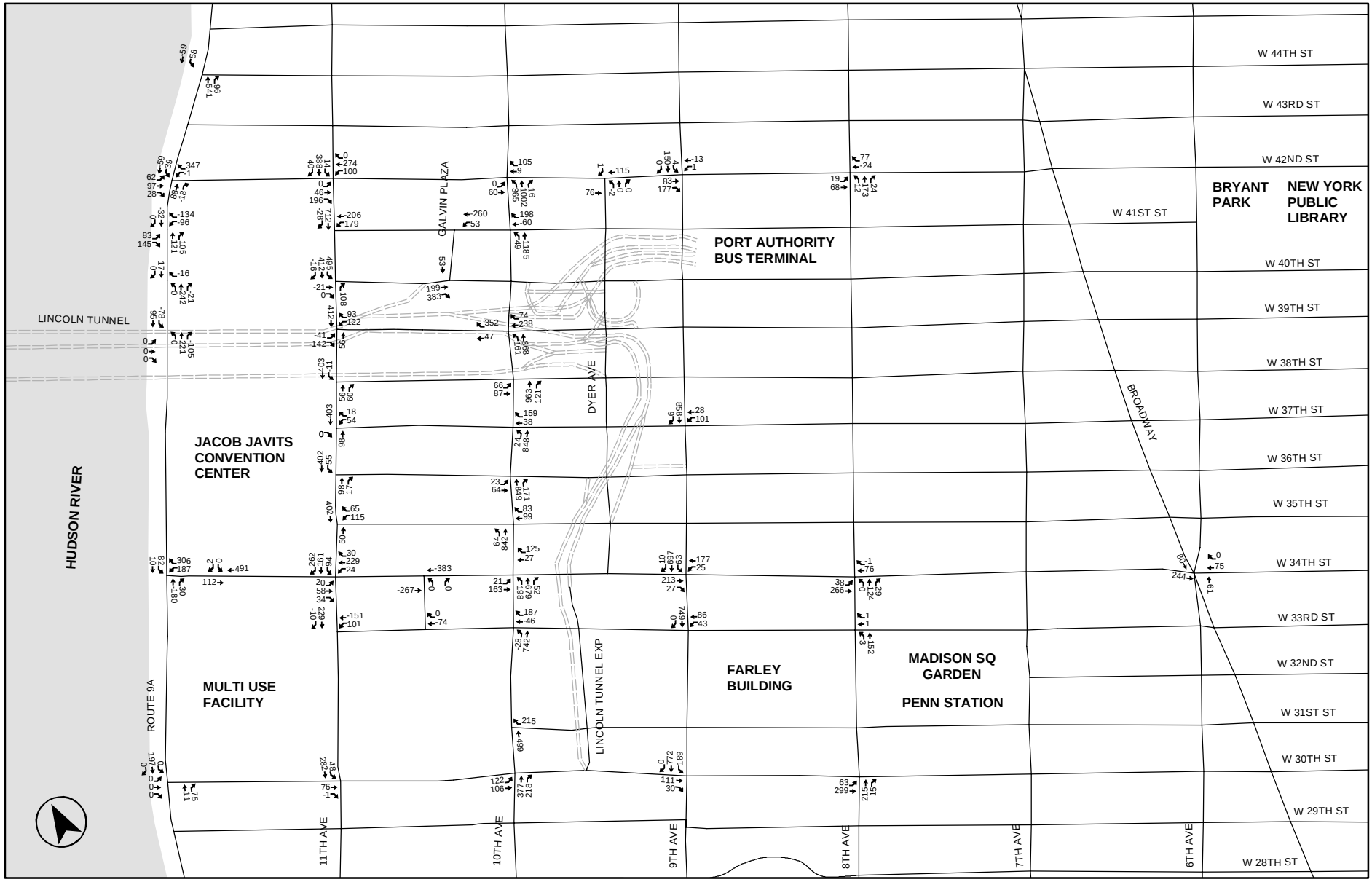
Inset 4



Inset 5

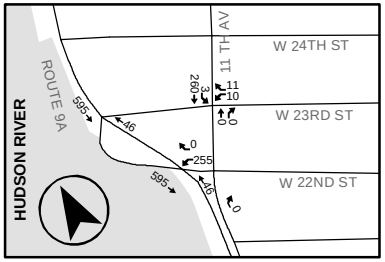
2010 Future With The Proposed Action Incremental Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-76

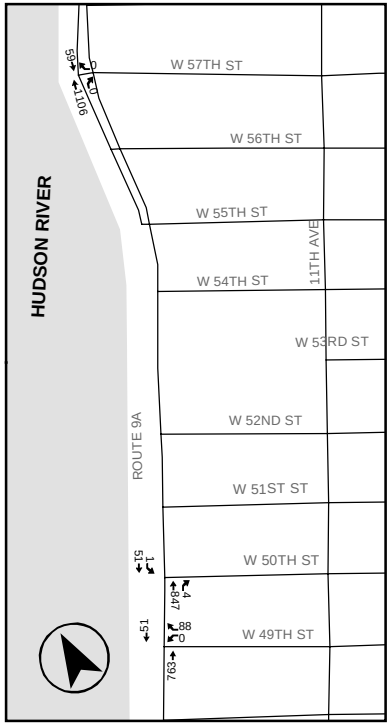


2010 Future With The Proposed Action Incremental Traffic Volumes-Inset 1
(Sunday Special Event Peak Hour)

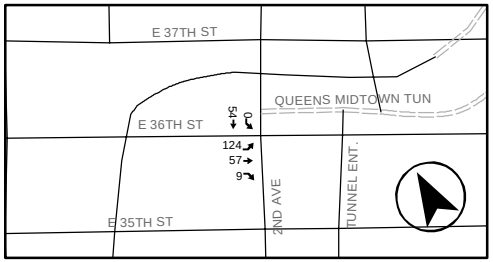
Figure 19-77



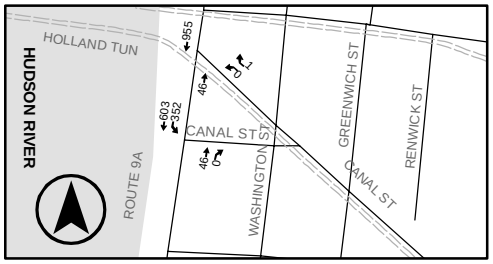
Inset 2



Inset 3



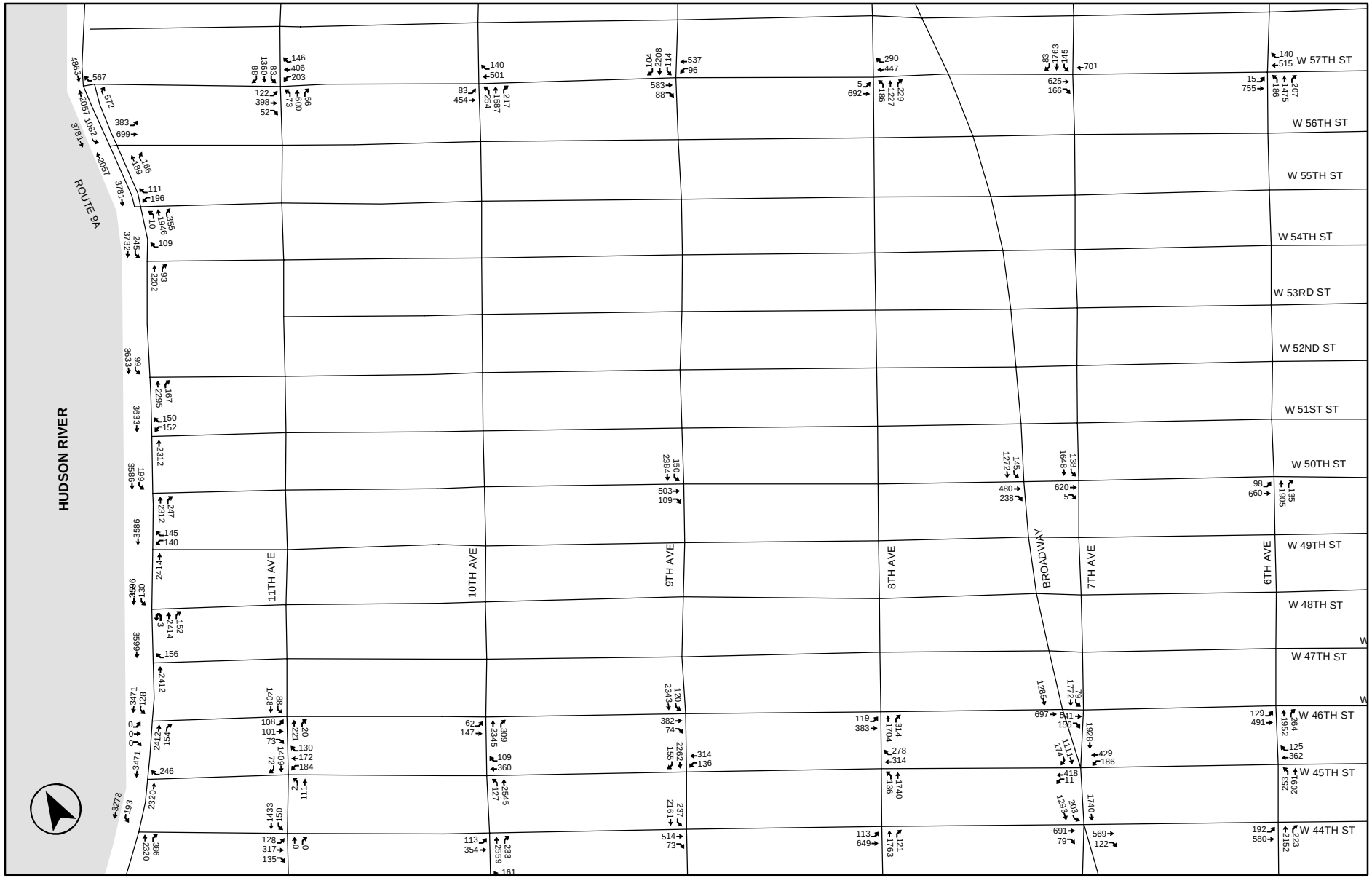
Inset 4



Inset 5

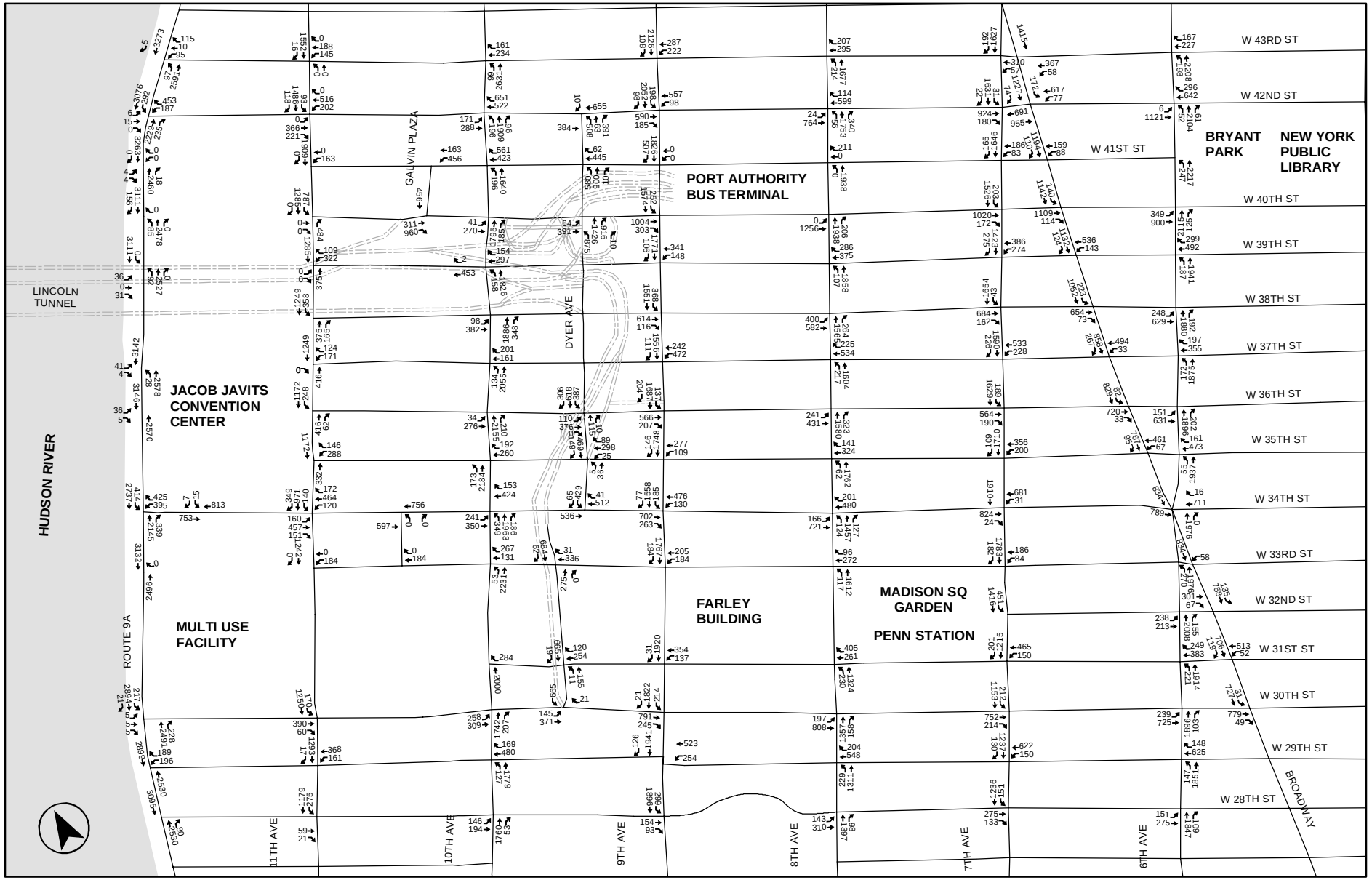
2010 Future With The Proposed Action Incremental Traffic Volumes- Inset 2, 3, 4 and 6 (Sunday Special Event Peak Hour)

Figure 19-78



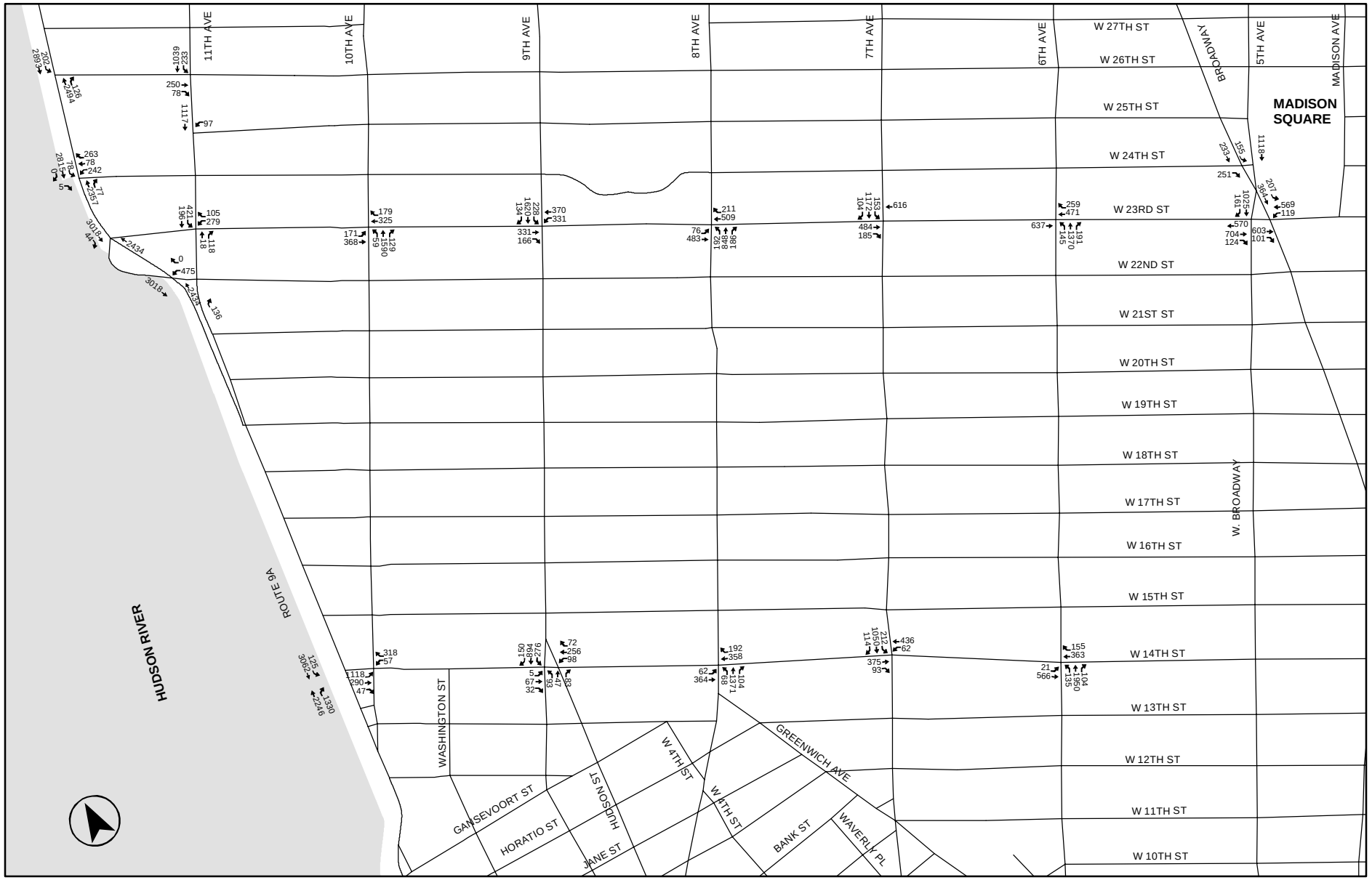
2010 Future With The Proposed Action Traffic Volumes-Inset 1 (Weekday AM Peak Hour)

Figure 19-79



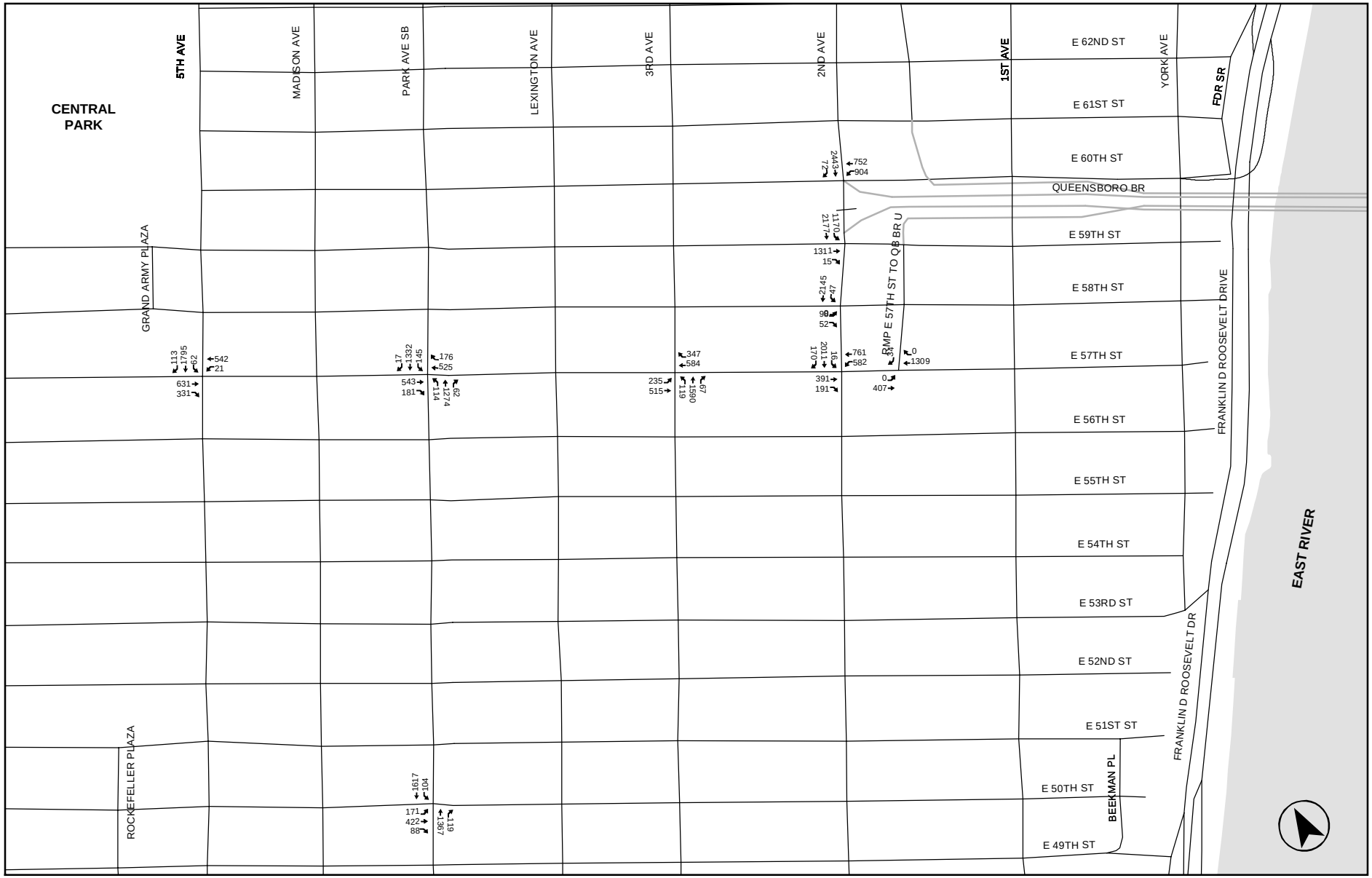
2010 Future With The Proposed Action Traffic Volumes-Inset 2 (Weekday AM Peak Hour)

Figure 19-80



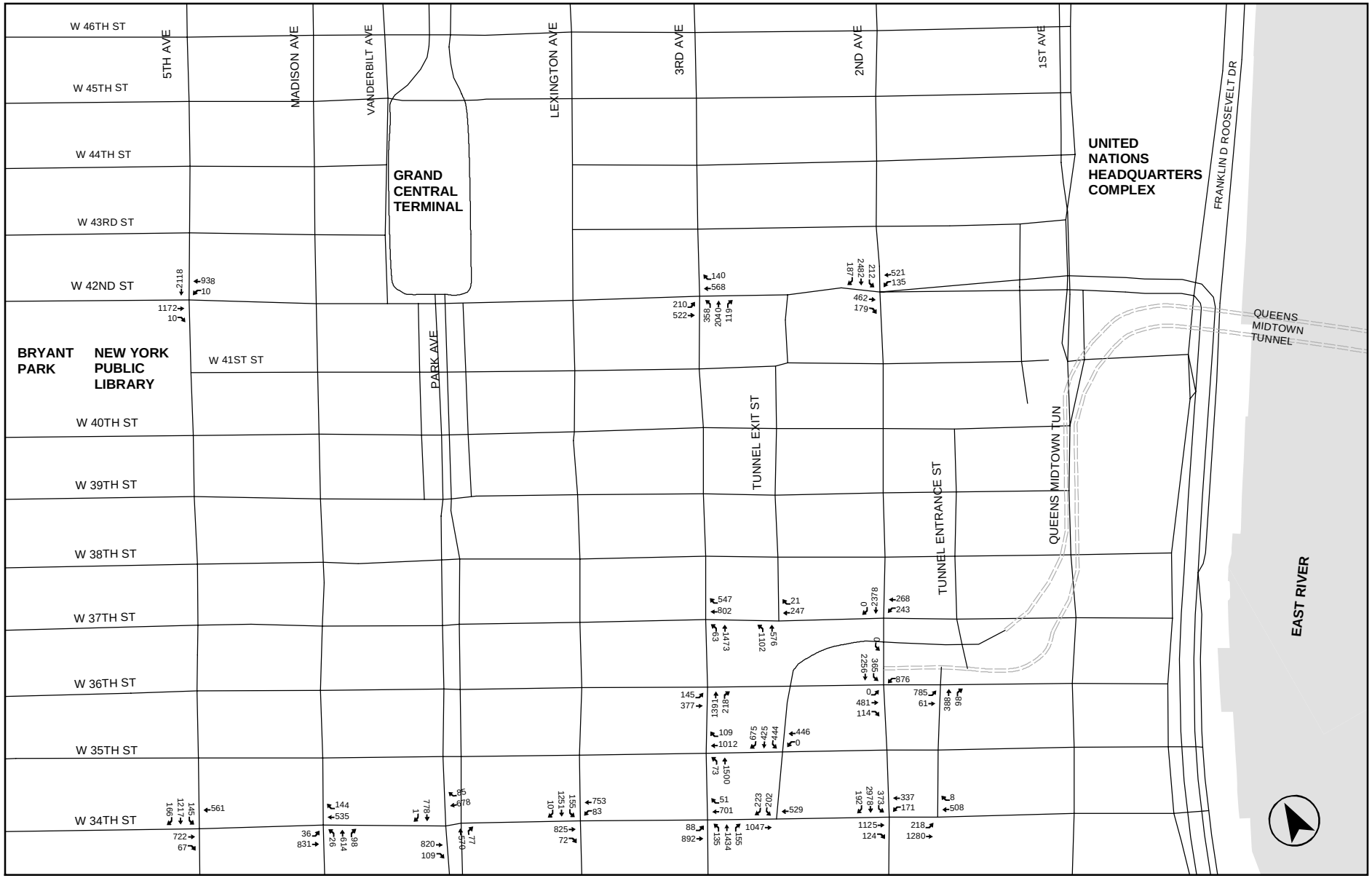
2010 Future With The Proposed Action Traffic Volumes-
Inset 3
(Weekday AM Peak Hour)

Figure 19-81



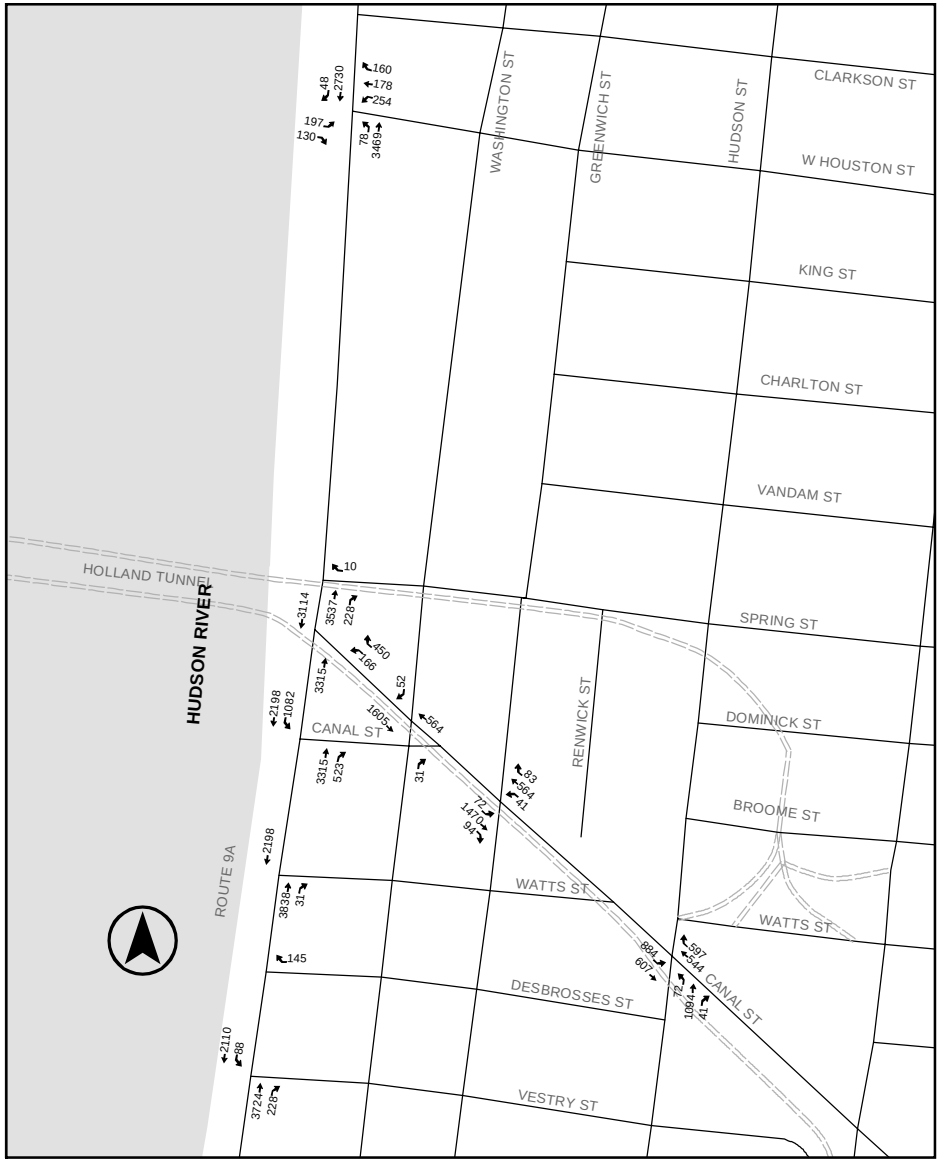
2010 Future With The Proposed Action Traffic Volumes-Inset 4
(Weekday AM Peak Hour)

Figure 19-82

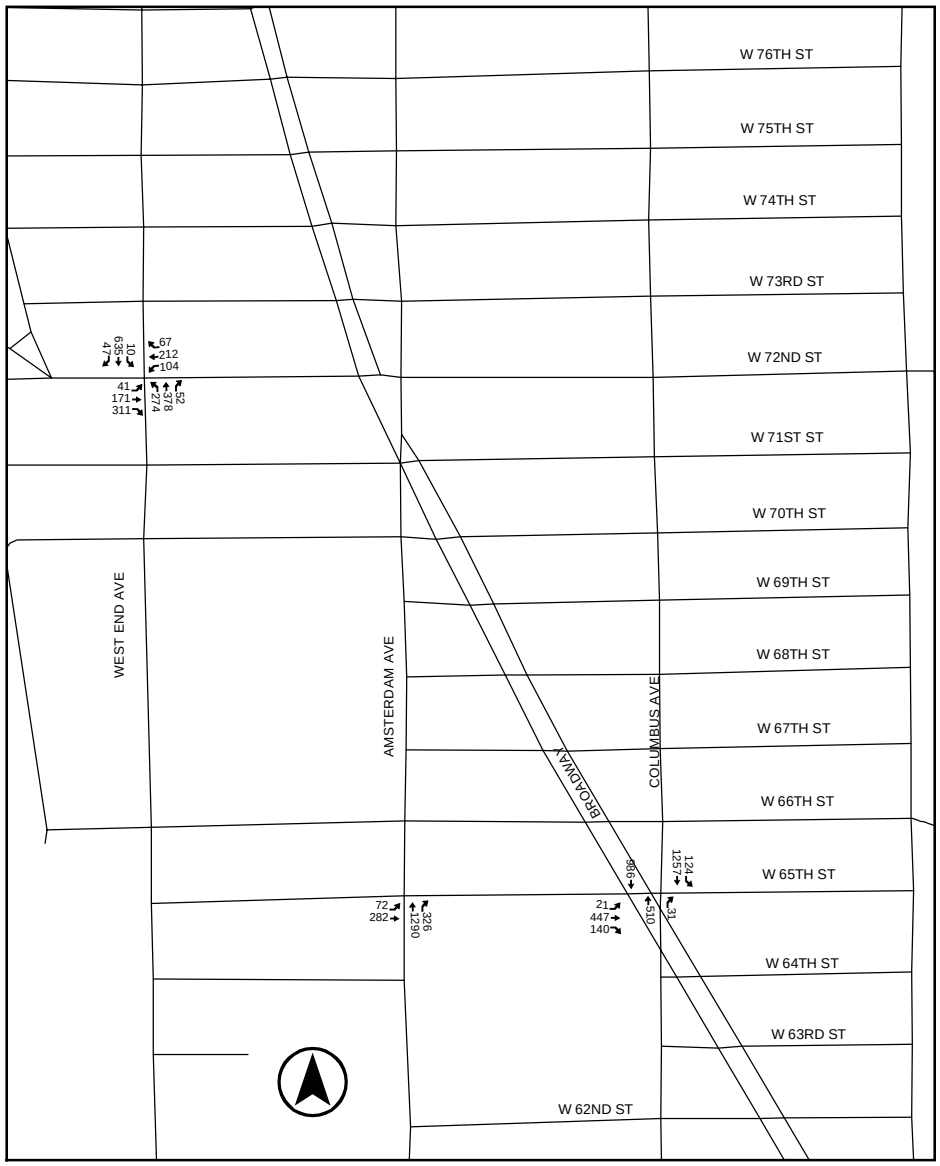


2010 Future With The Proposed Action Traffic Volumes- Inset 5 (Weekday AM Peak Hour)

Figure 19-83



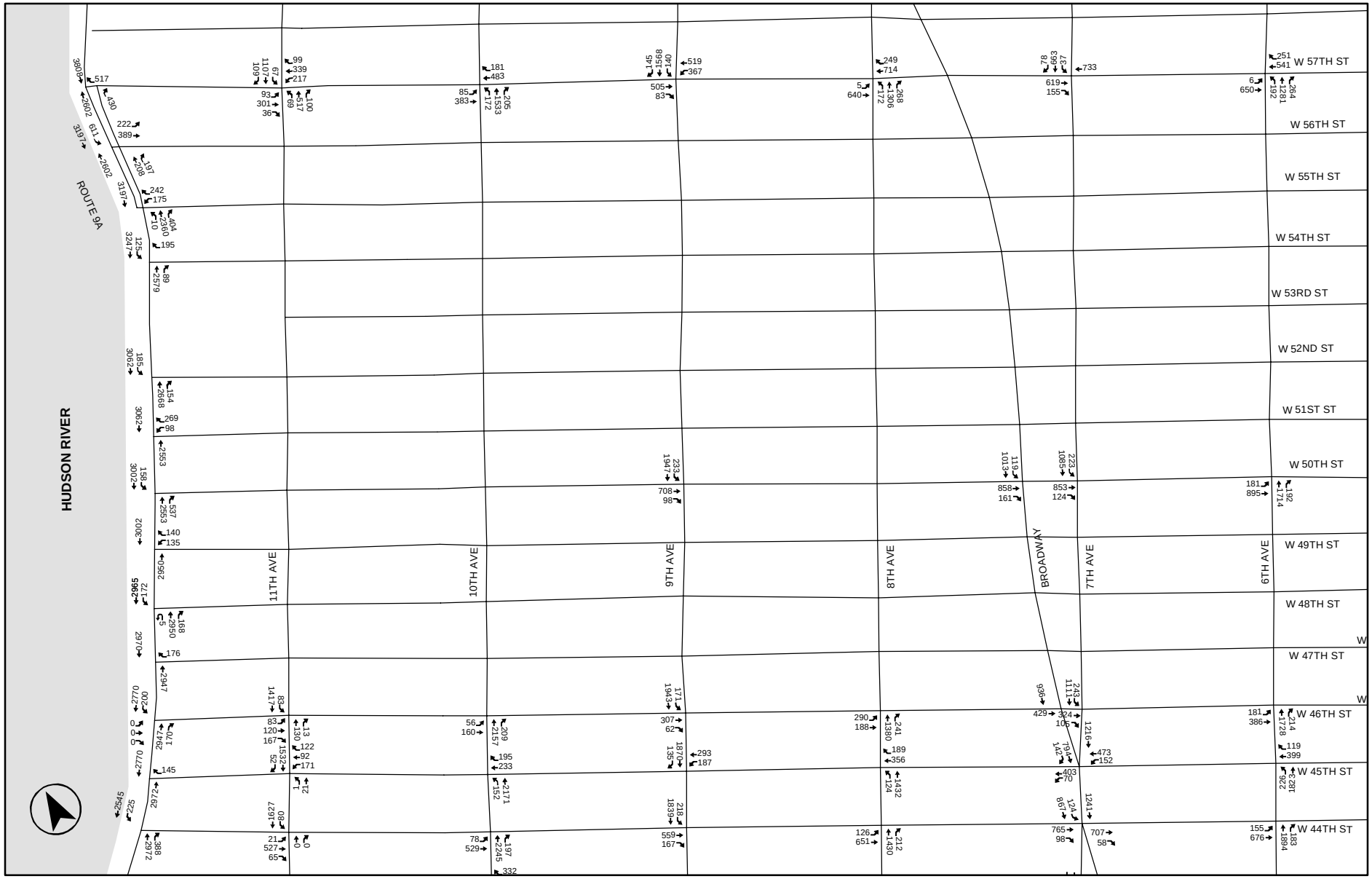
Inset 6



Inset 7

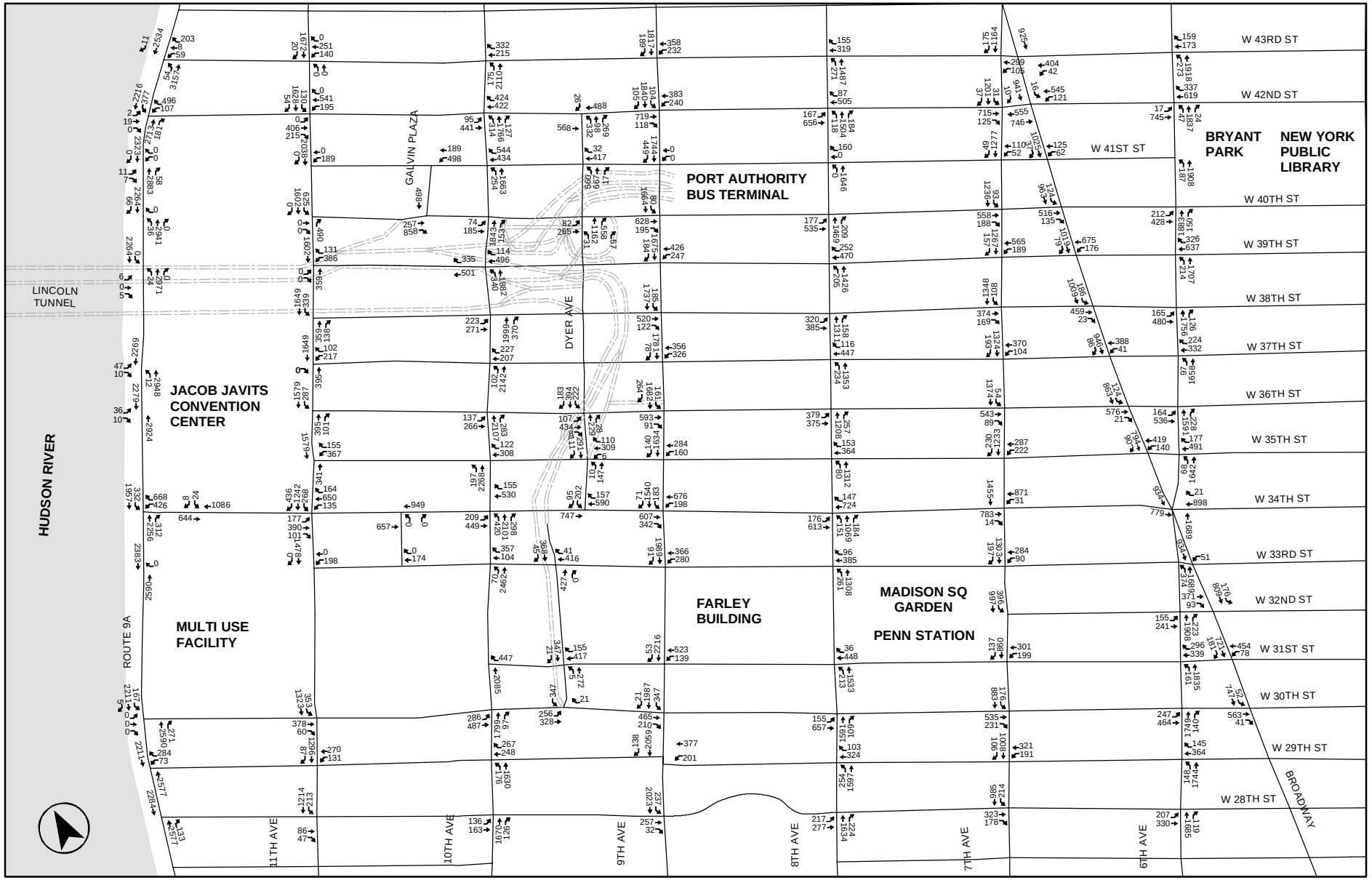
2010 Future With The Proposed Action Traffic Volumes - Insets 6 and 7 (Weekday AM Peak Hour)

Figure 19-84



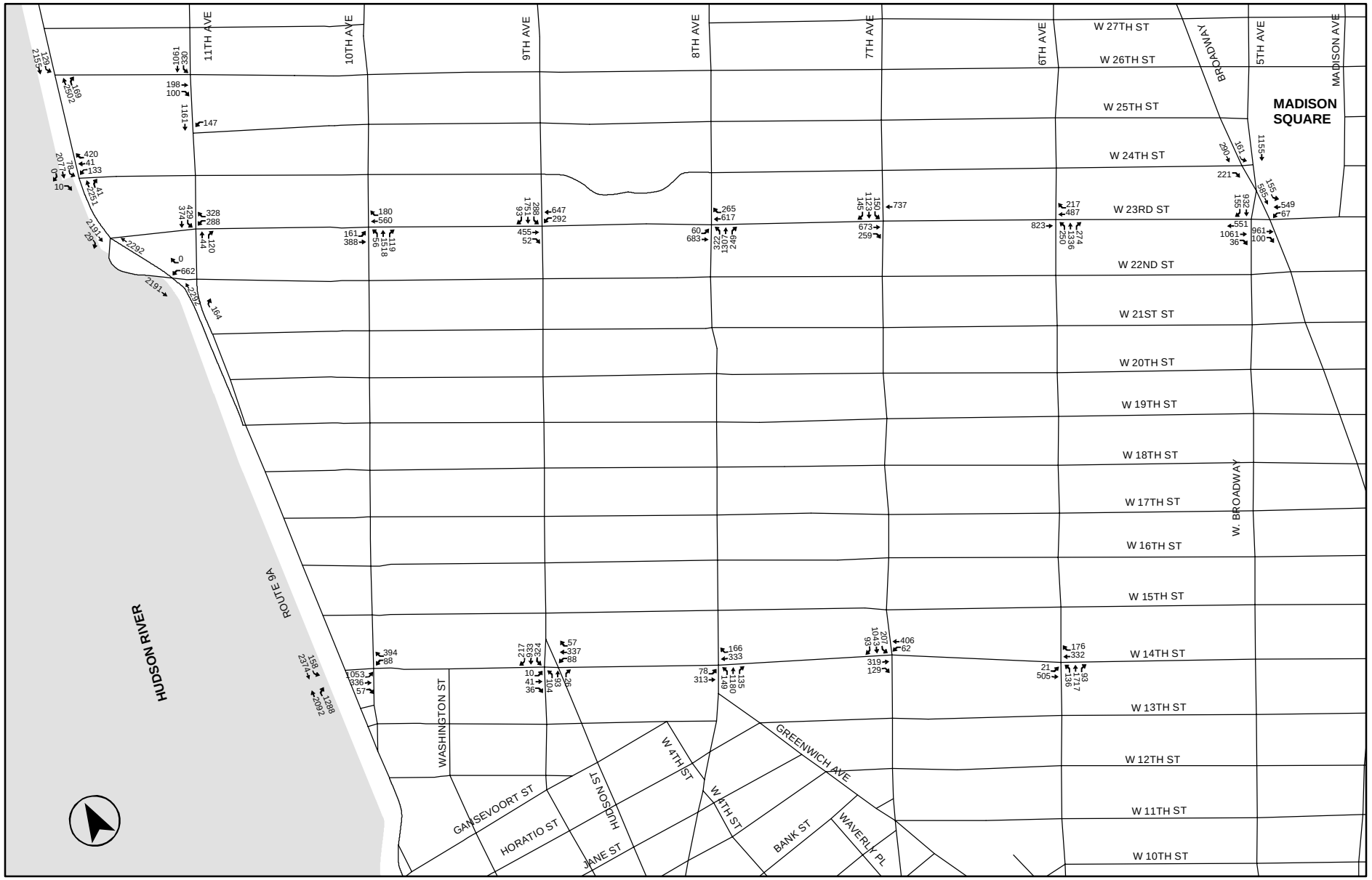
2010 Future With The Proposed Action Traffic Volumes-
Inset 1
(Weekday Midday Peak Hour)

Figure 19-85



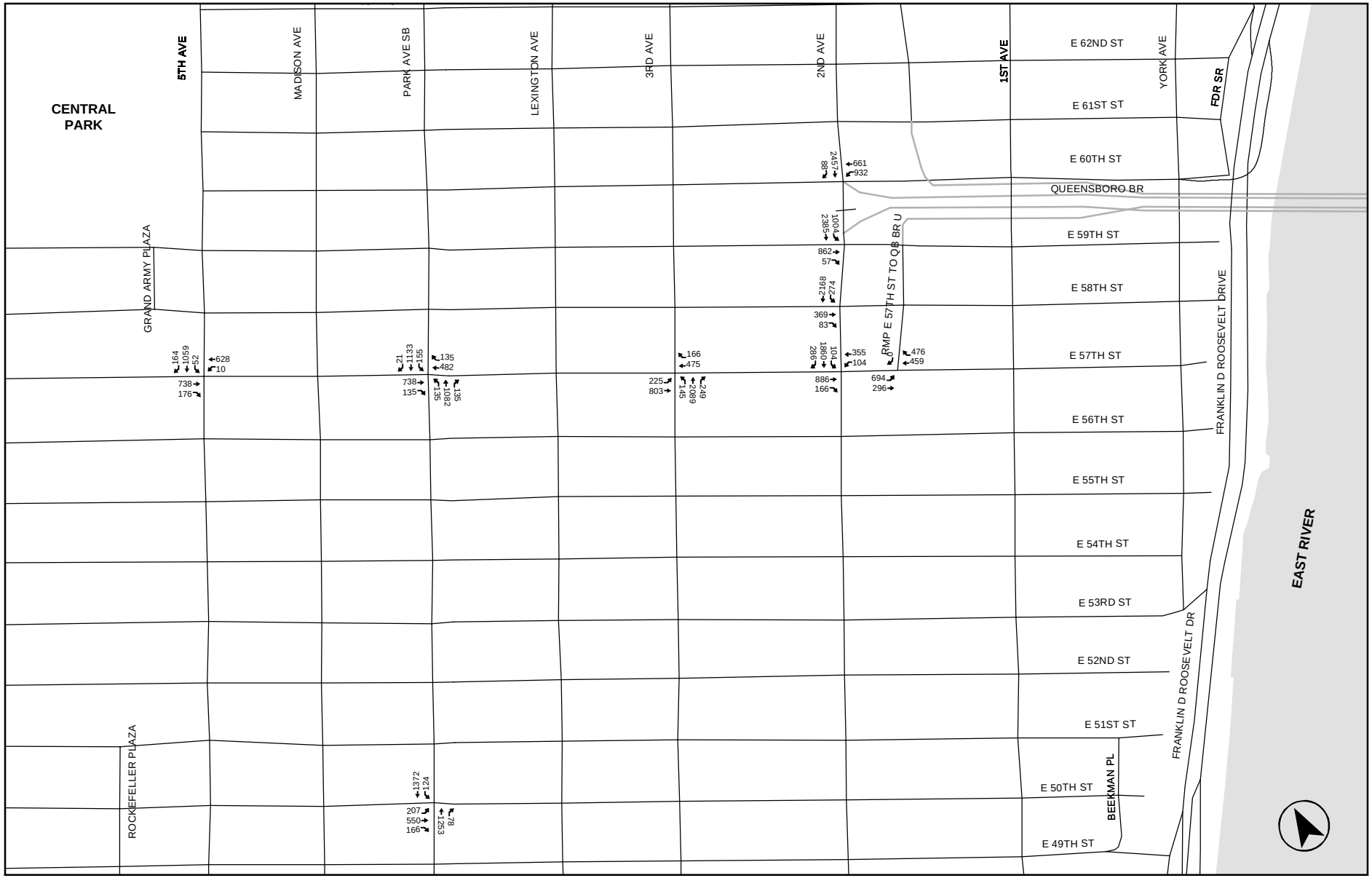
2010 Future With The Proposed Action Traffic Volumes-Inset 2 (Weekday Midday Peak Hour)

Figure 19-86



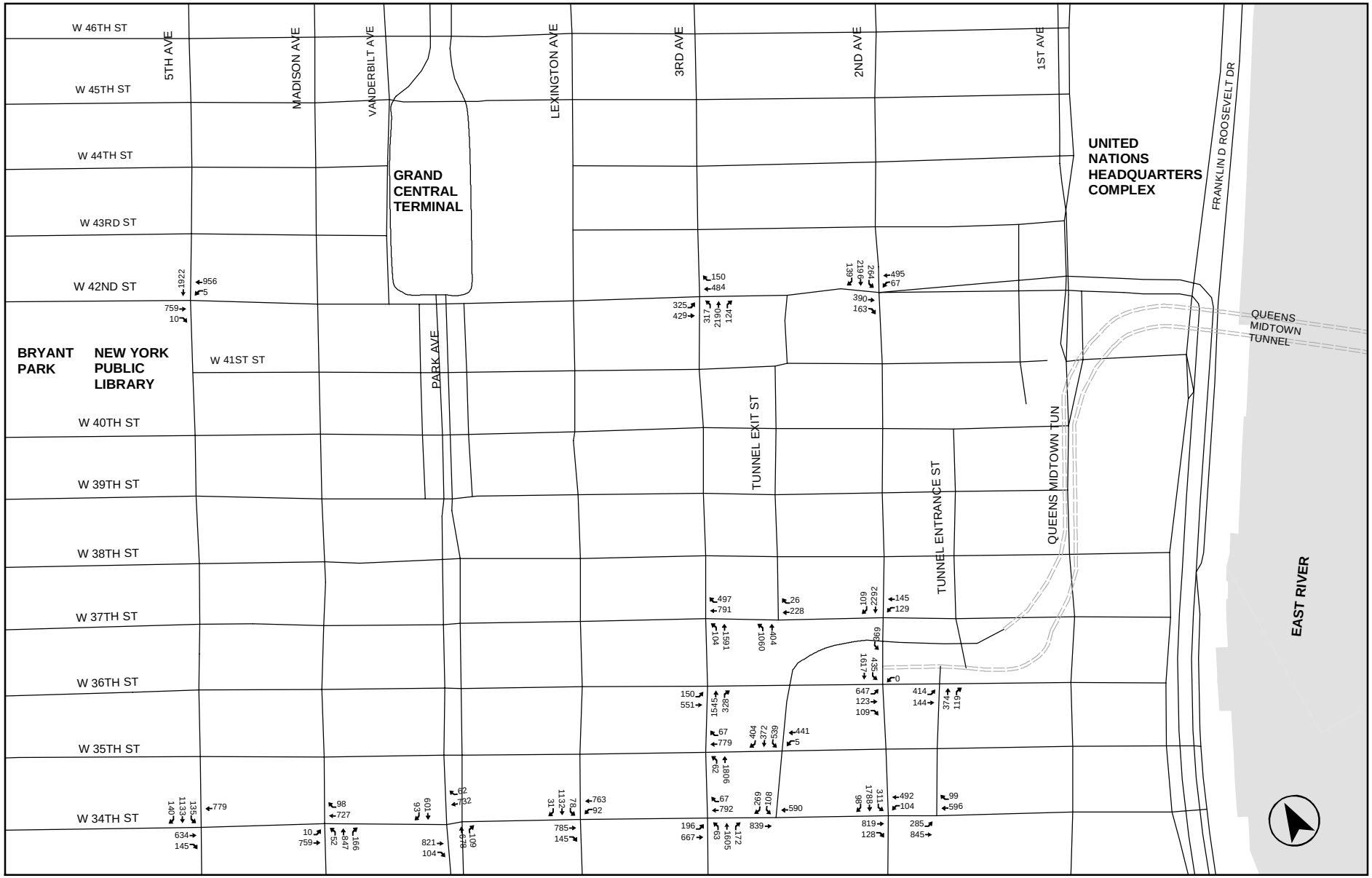
2010 Future With The Proposed Action Traffic Volumes-Inset 3 (Weekday Midday Peak Hour)

Figure 19-87



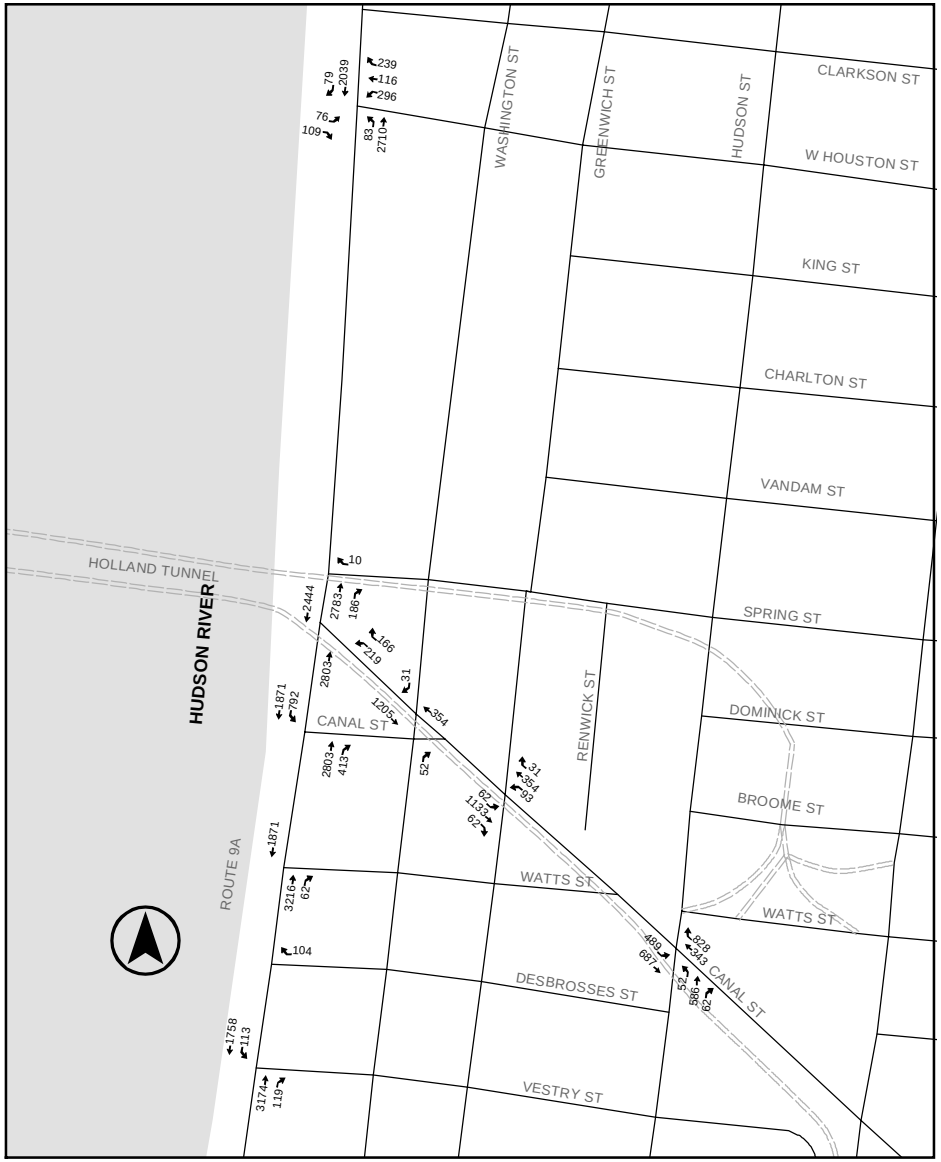
2010 Future With The Proposed Action Traffic Volumes-Inset 4
(Weekday Midday Peak Hour)

Figure 19-88

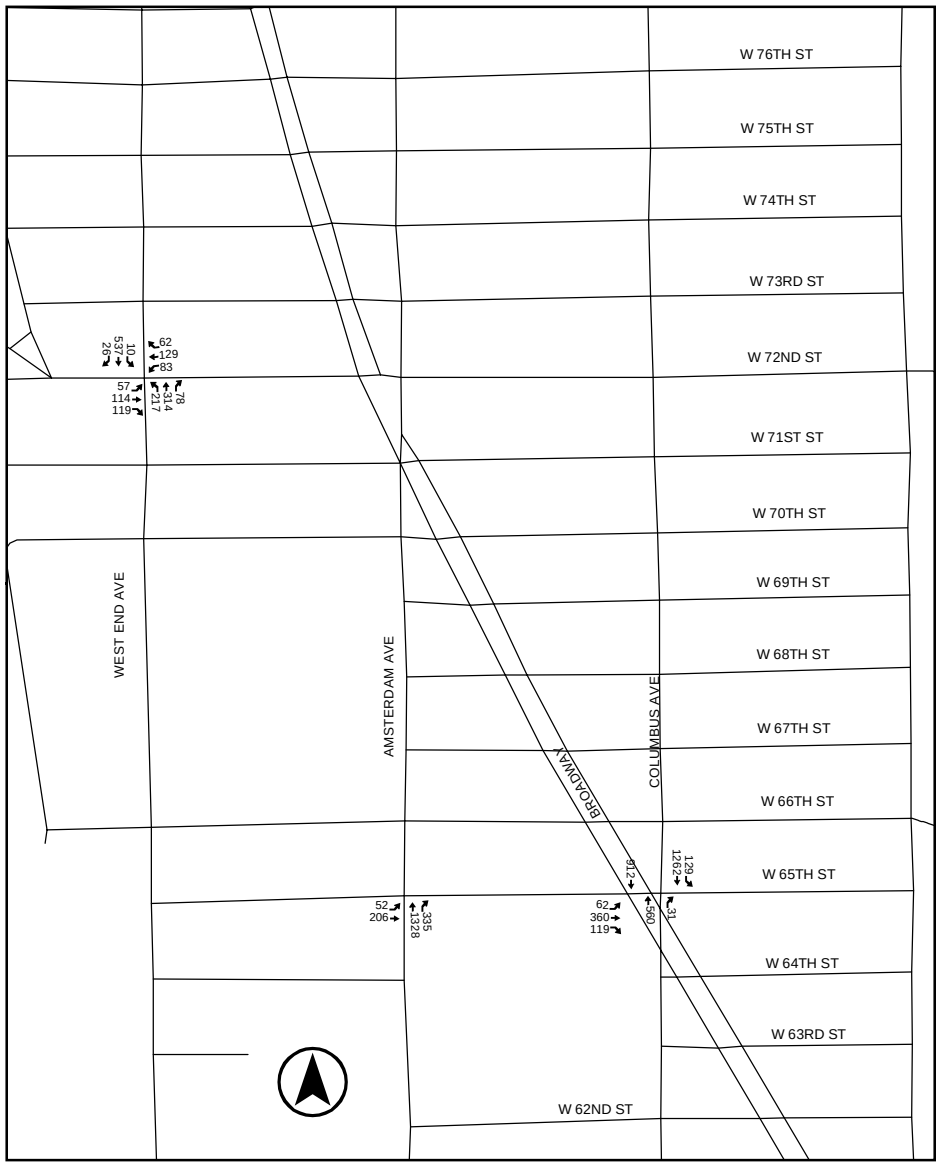


2010 Future With The Proposed Action Traffic Volumes-Inset 5 (Weekday Midday Peak Hour)

Figure 19-89



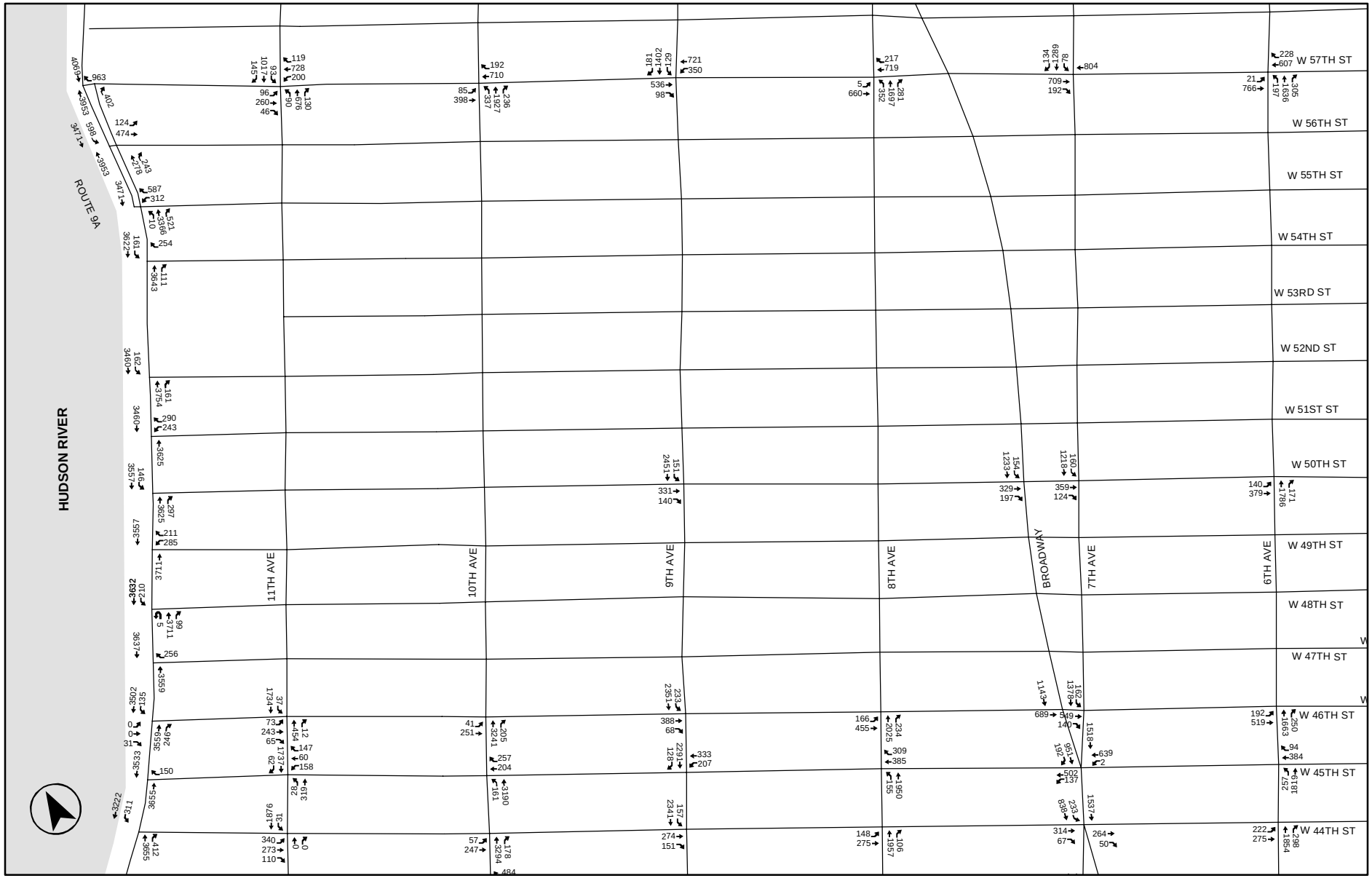
Inset 6



Inset 7

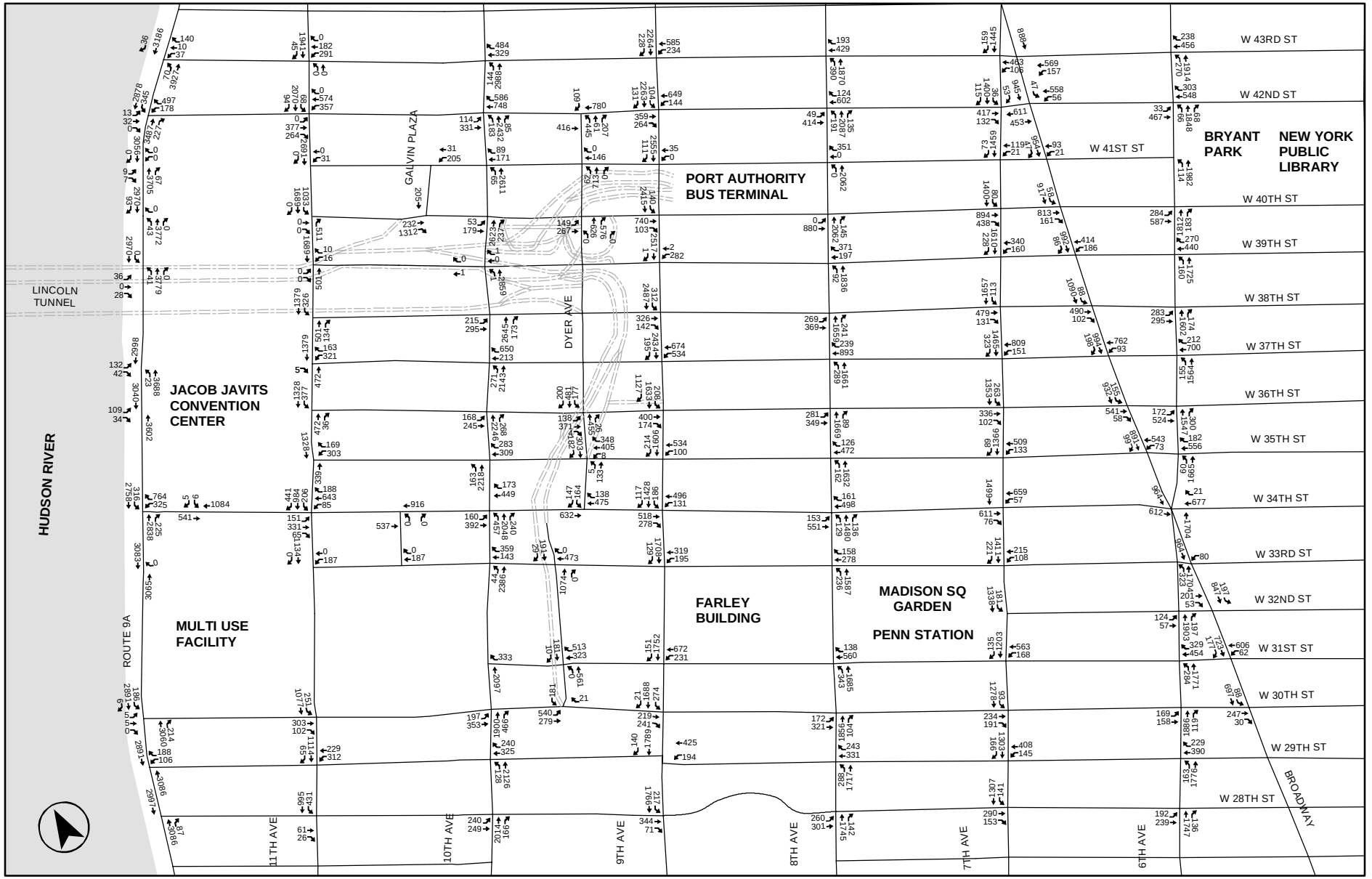
2010 Future With The Proposed Action
Traffic Volumes - Insets 6 and 7
(Weekday Midday Peak Hour)

Figure 19-90



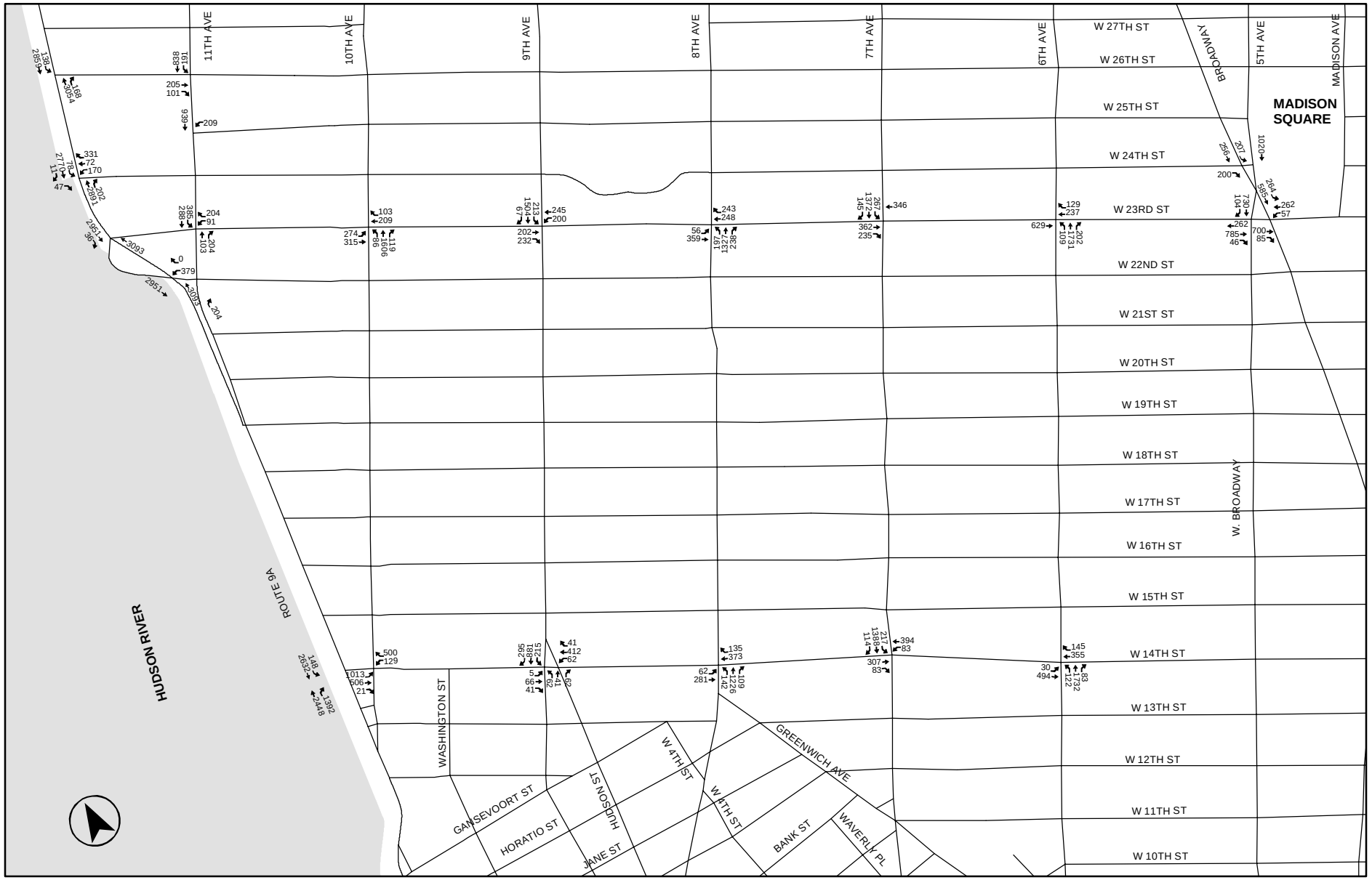
2010 Future With The Proposed Action Traffic Volumes-Inset 1
(Weekday PM Peak Hour)

Figure 19-91



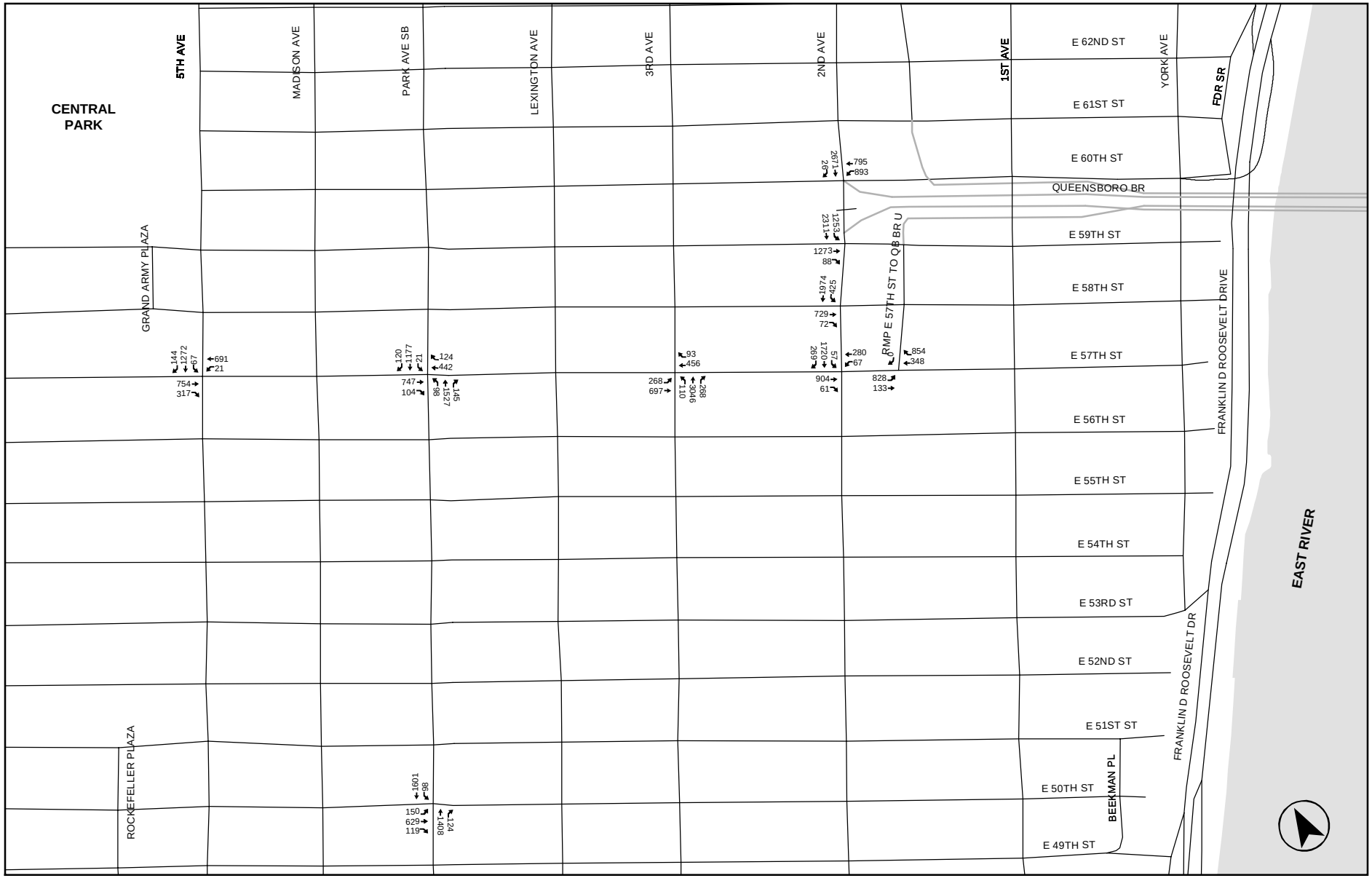
2010 Future With The Proposed Action Traffic Volumes-Inset 2 (Weekday PM Peak Hour)

Figure 19-92



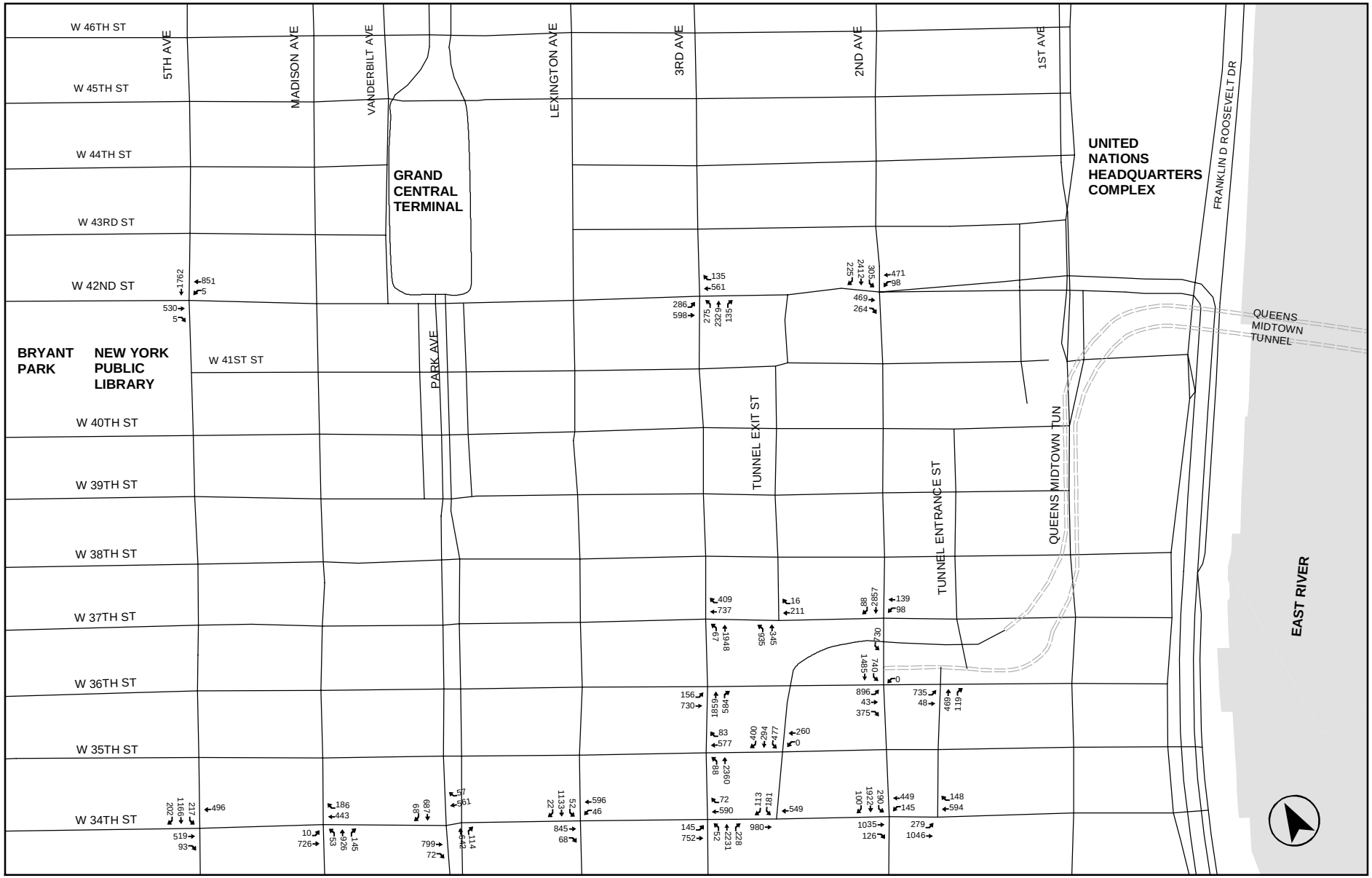
2010 Future With The Proposed Action Traffic Volumes-Inset 3 (Weekday PM Peak Hour)

Figure 19-93



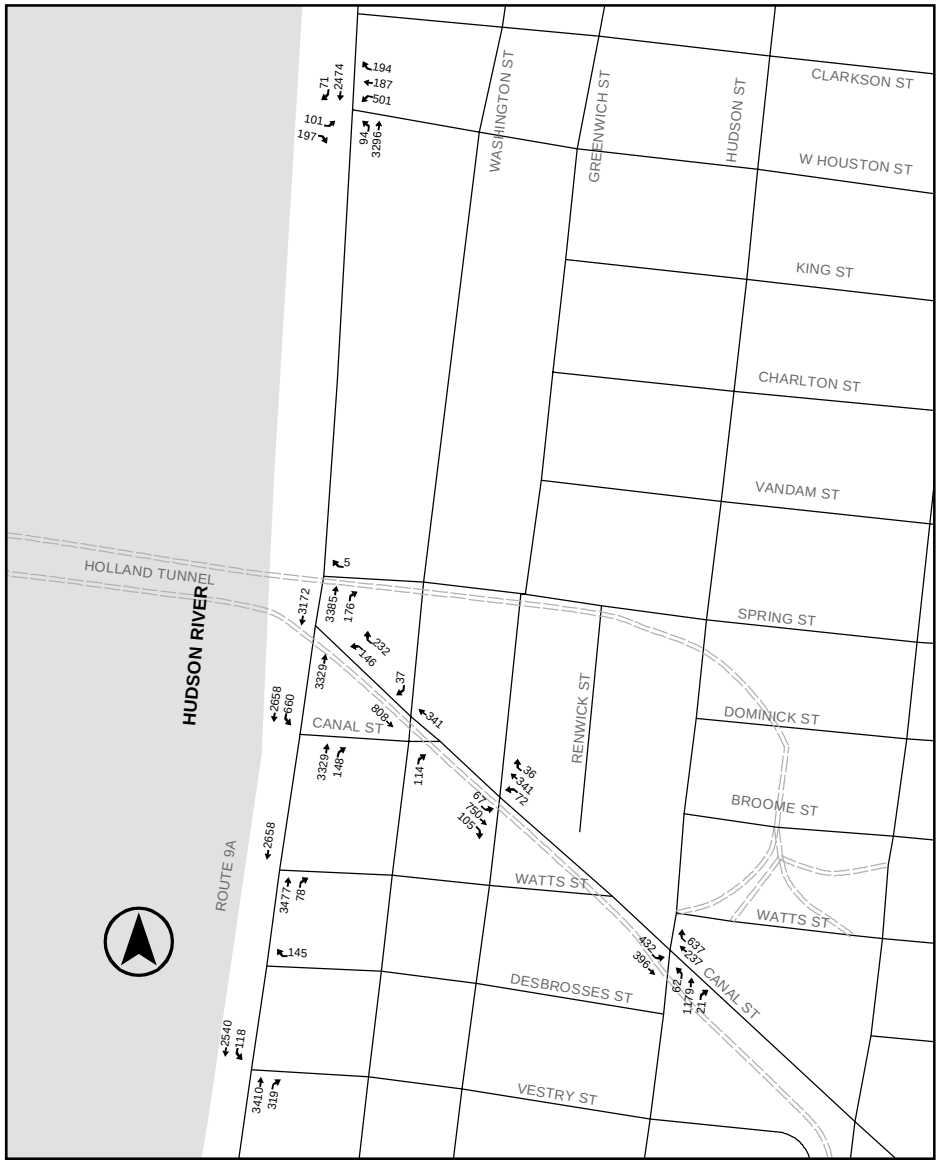
2010 Future With The Proposed Action Traffic Volumes-Inset 4
(Weekday PM Peak Hour)

Figure 19-94

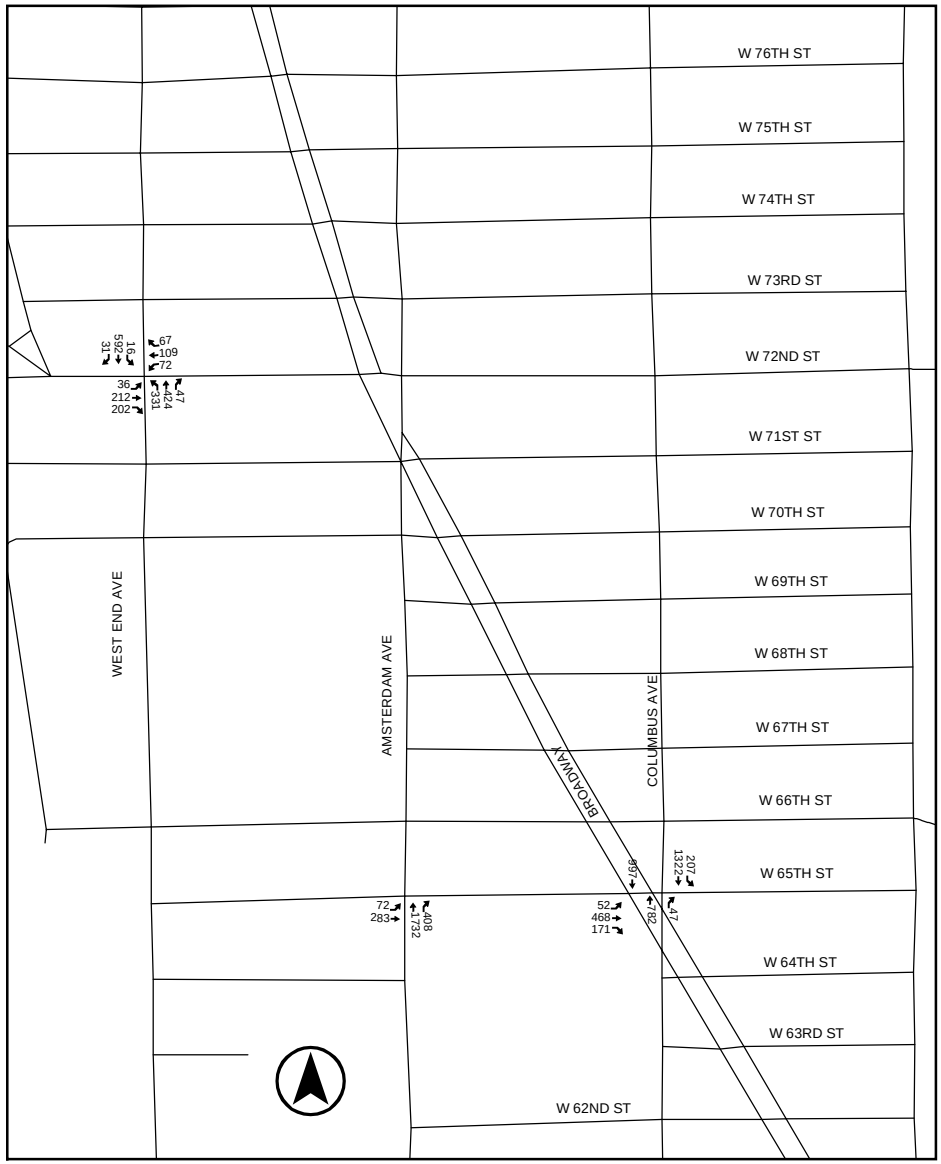


2010 Future With The Proposed Action Traffic Volumes- Inset 5 (Weekday PM Peak Hour)

Figure 19-95



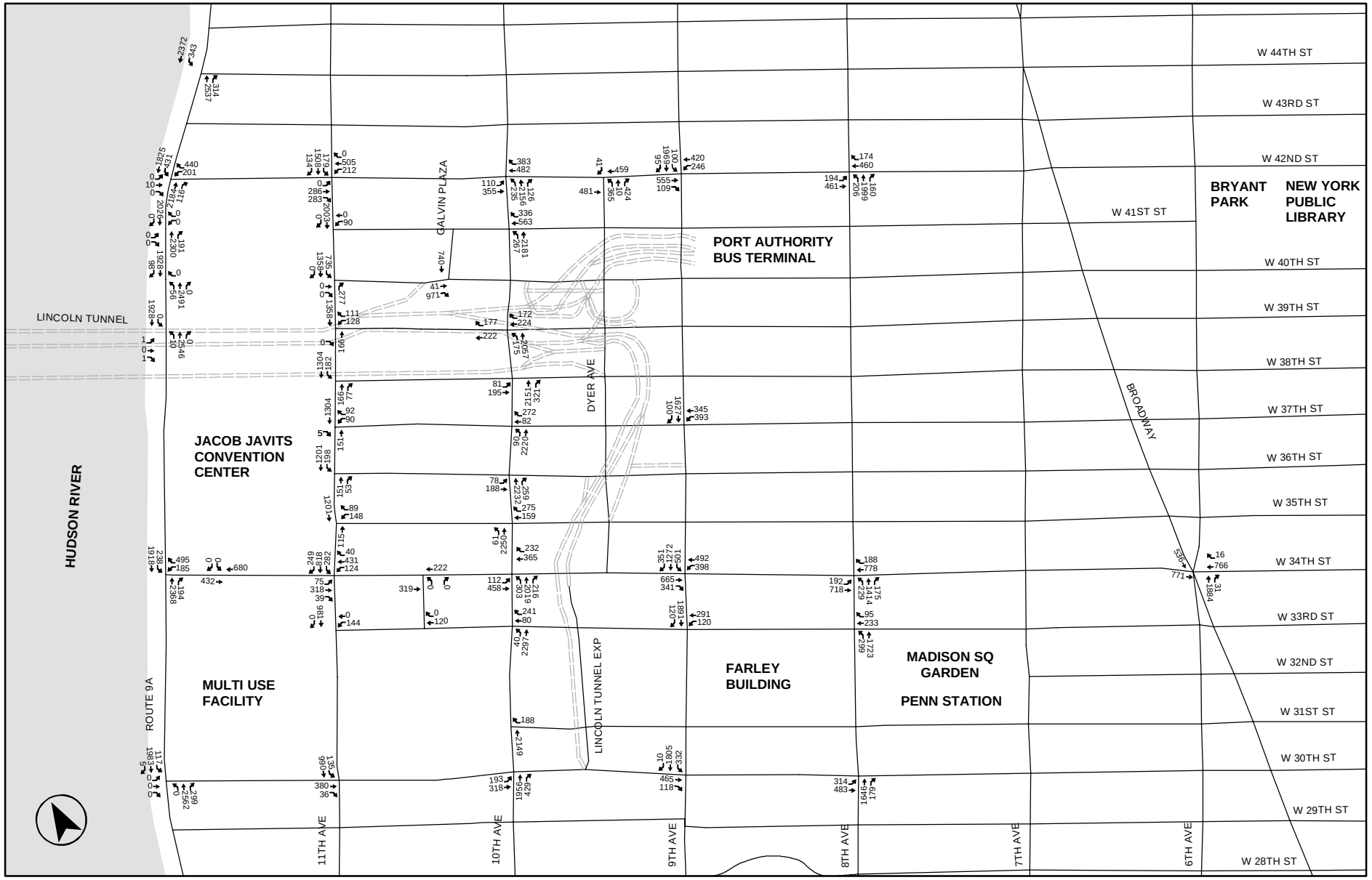
Inset 6



Inset 7

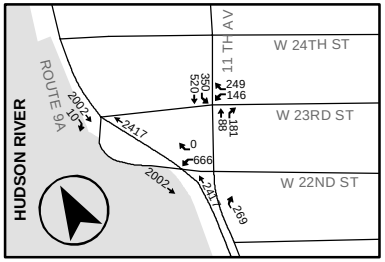
2010 Future With The Proposed Action Traffic Volumes - Insets 6 and 7 (Weekday PM Peak Hour)

Figure 19-96

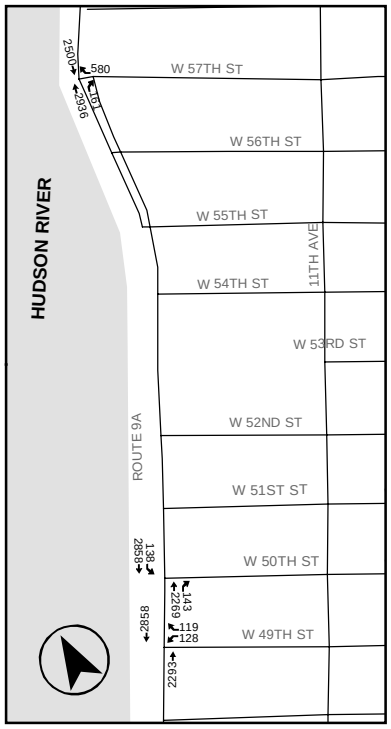


2010 Future With The Proposed Action Traffic Volumes-Inset 1
(Weeknight Special Event Peak Hour)

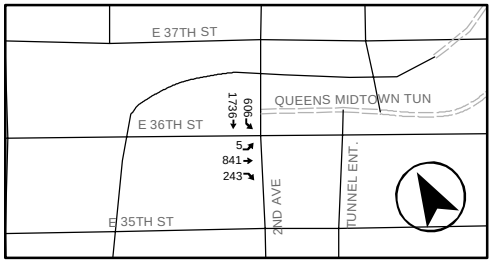
Figure 19-97



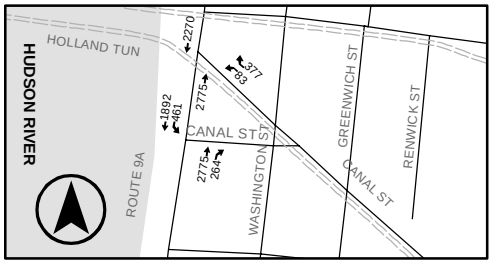
Inset 2



Inset 3



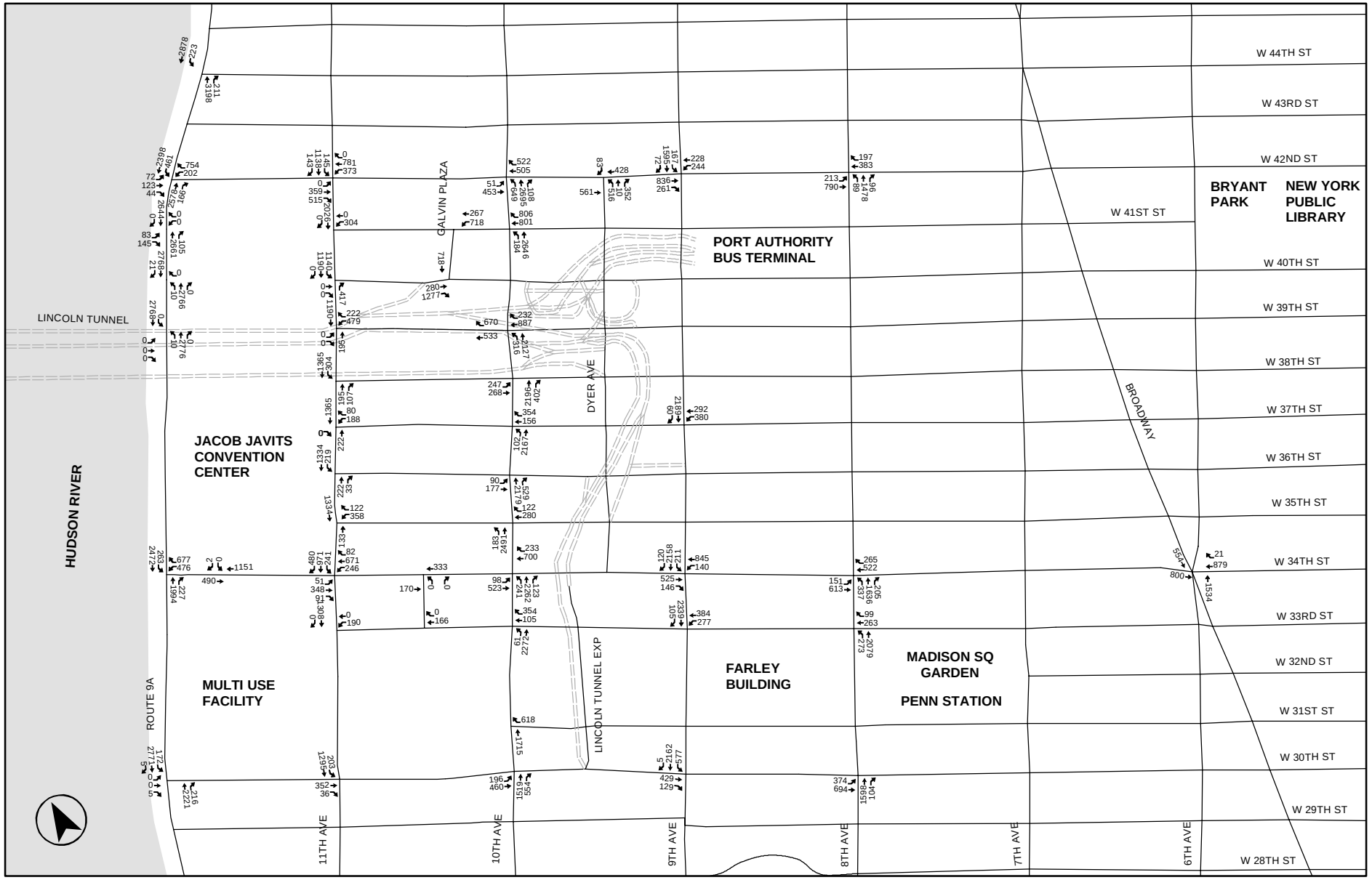
Inset 4



Inset 5

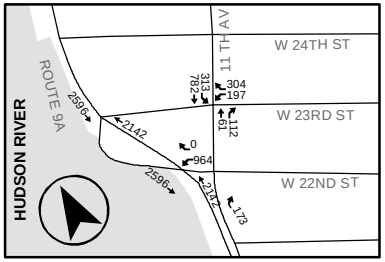
2010 Future With The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-98

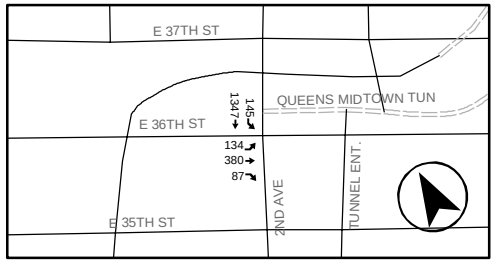


2010 Future With The Proposed Action Traffic Volumes-Inset 1
(Sunday Special Event Peak Hour)

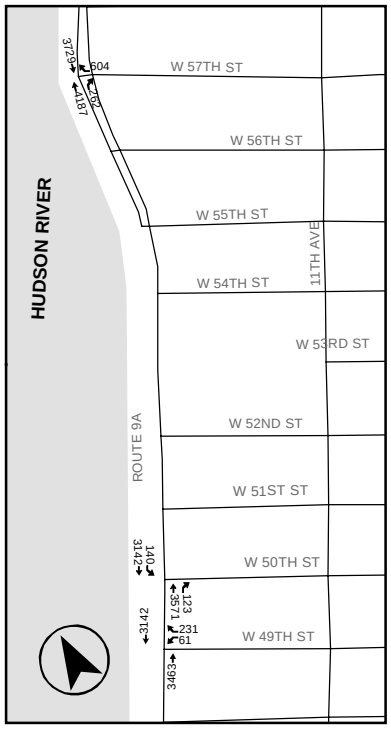
Figure 19-99



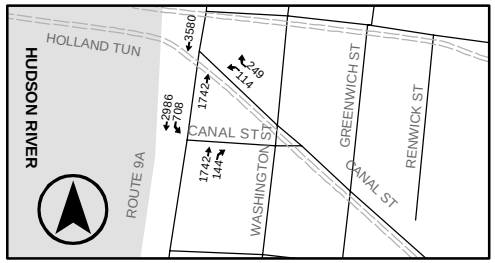
Inset 2



Inset 4



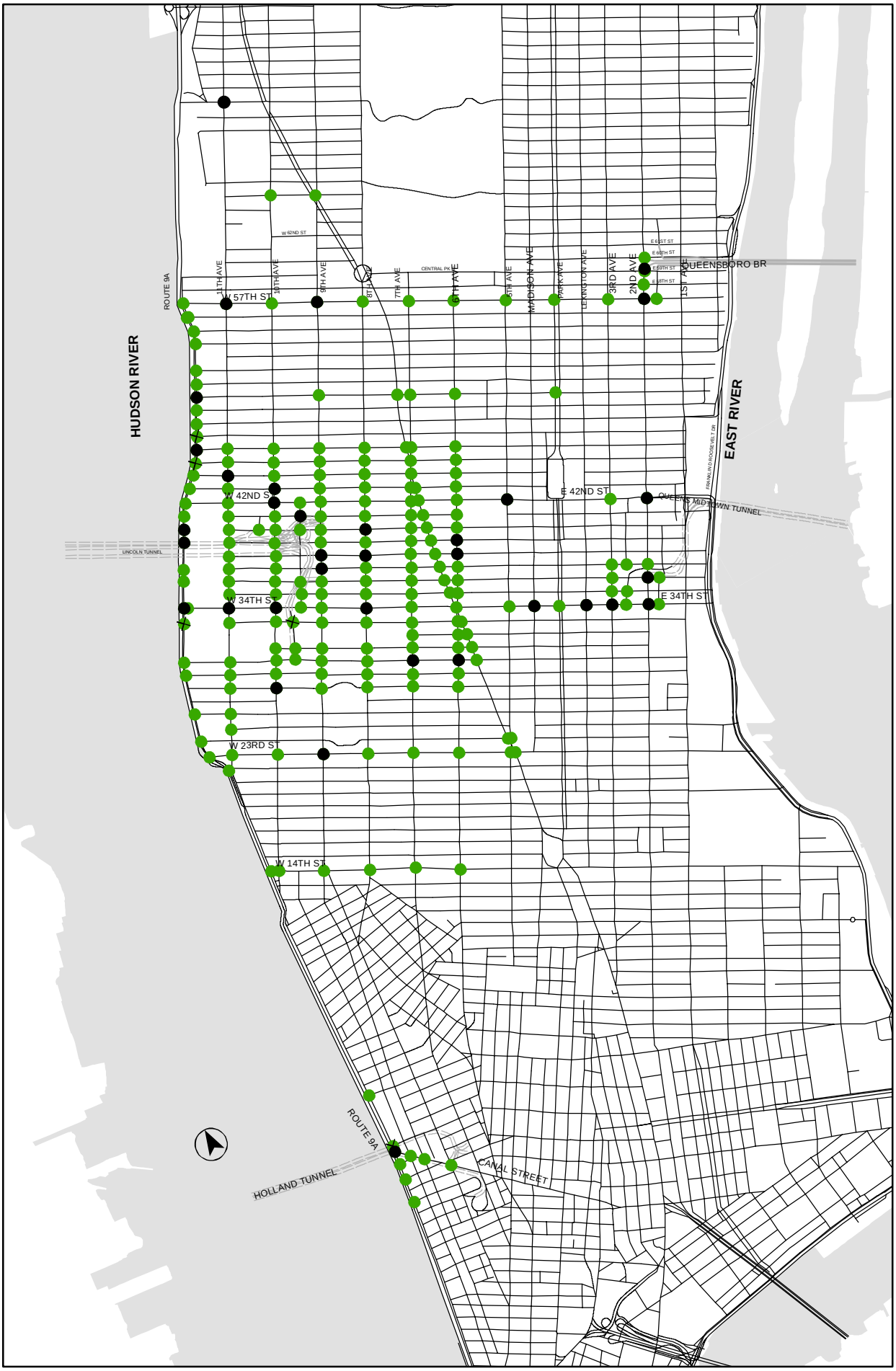
Inset 3



Inset 5

2010 Future With The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-100

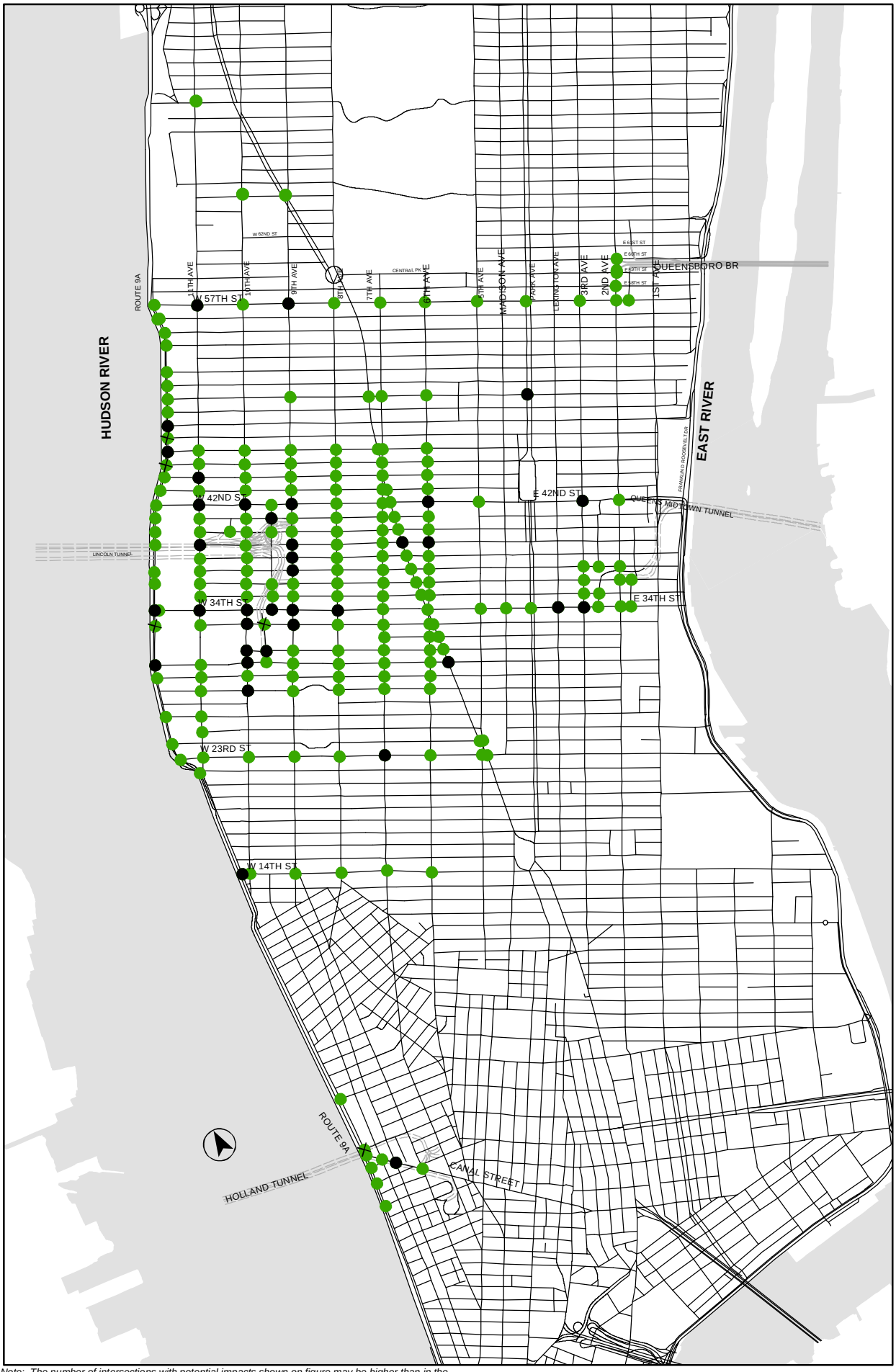


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

2010 Future With The Proposed Action
Analyzed Intersections
(Weekday AM Peak Hour)

Figure 19-101

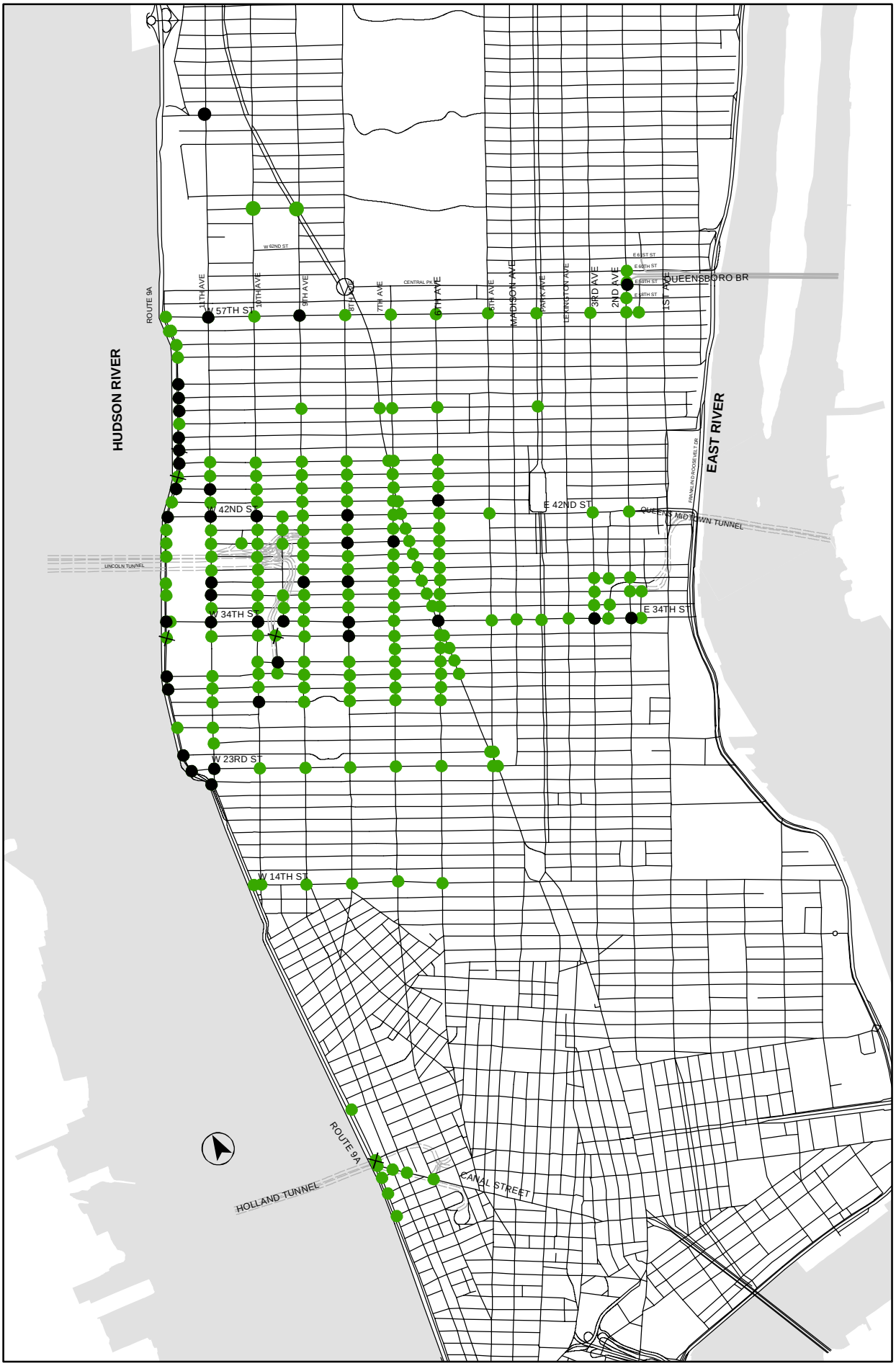


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

2010 Future With The Proposed Action
Analyzed Intersections
(Weekday Midday Peak Hour)

Figure 19-102

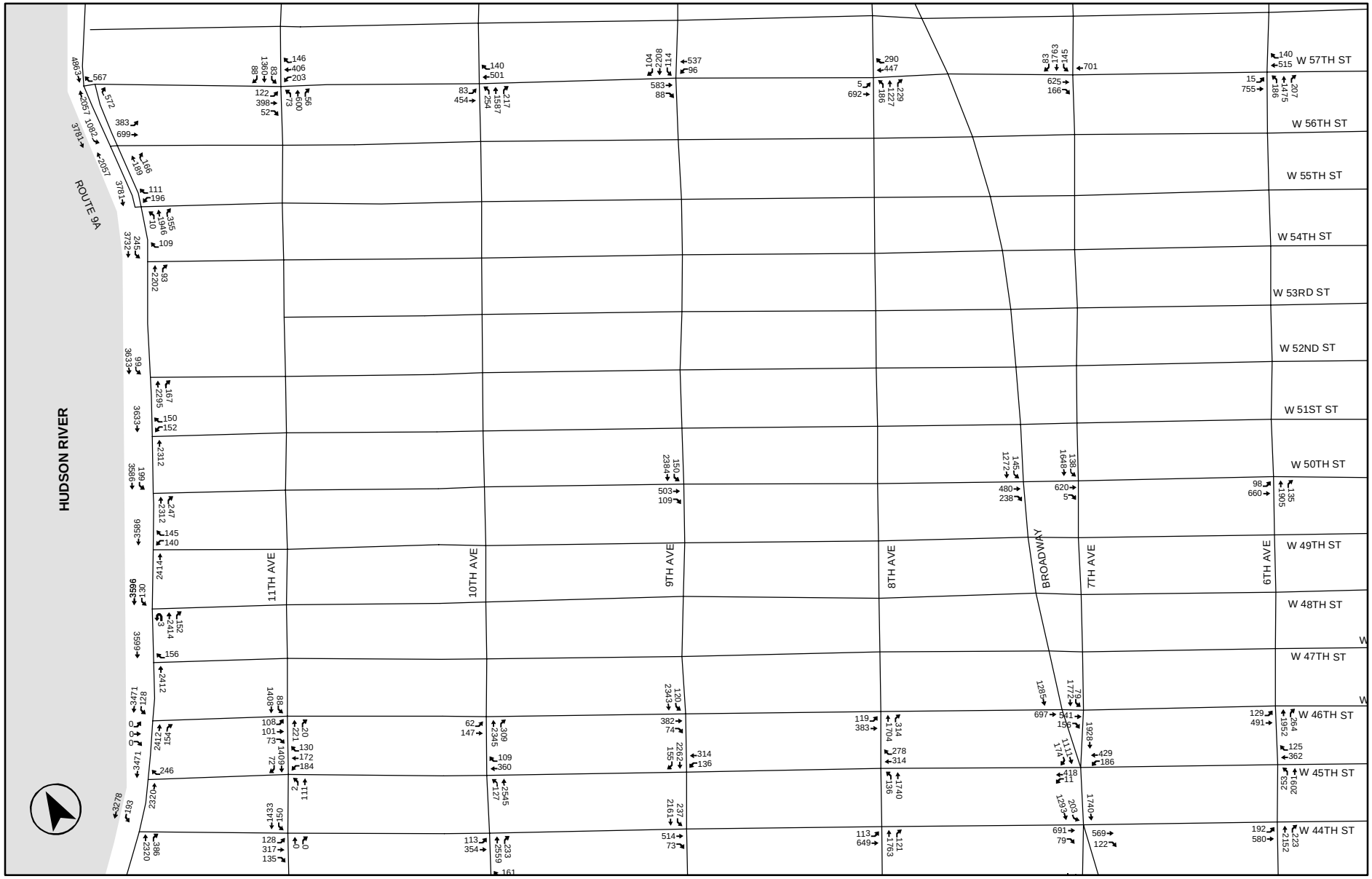


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

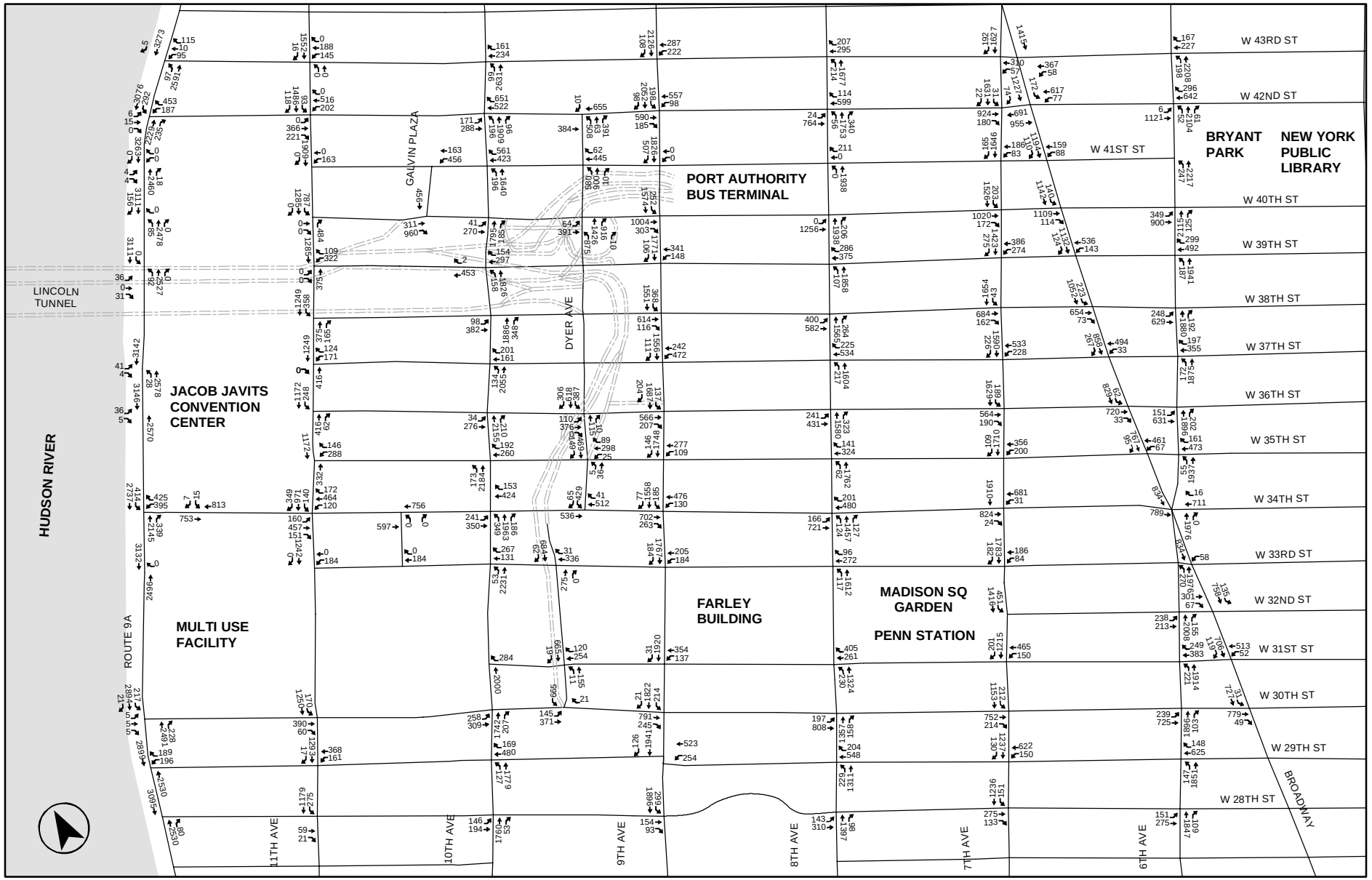
2010 Future With The Proposed Action
Analyzed Intersections
(Weekday PM Peak Hour)

Figure 19-103



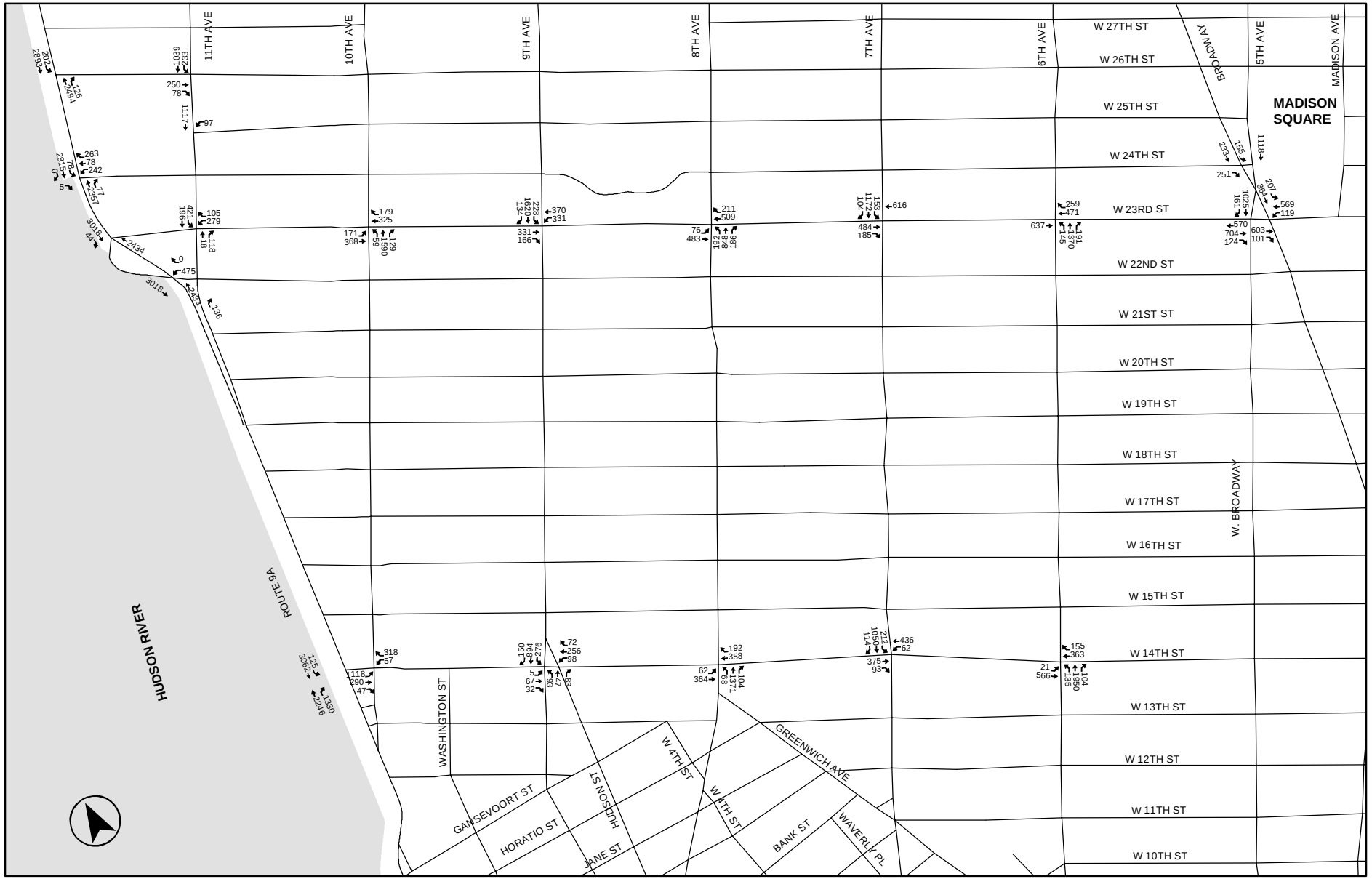
2010 Future With The Proposed Action With Mitigated Traffic Volumes-Inset 1 (Weekday AM Peak Hour)

Figure 19-104

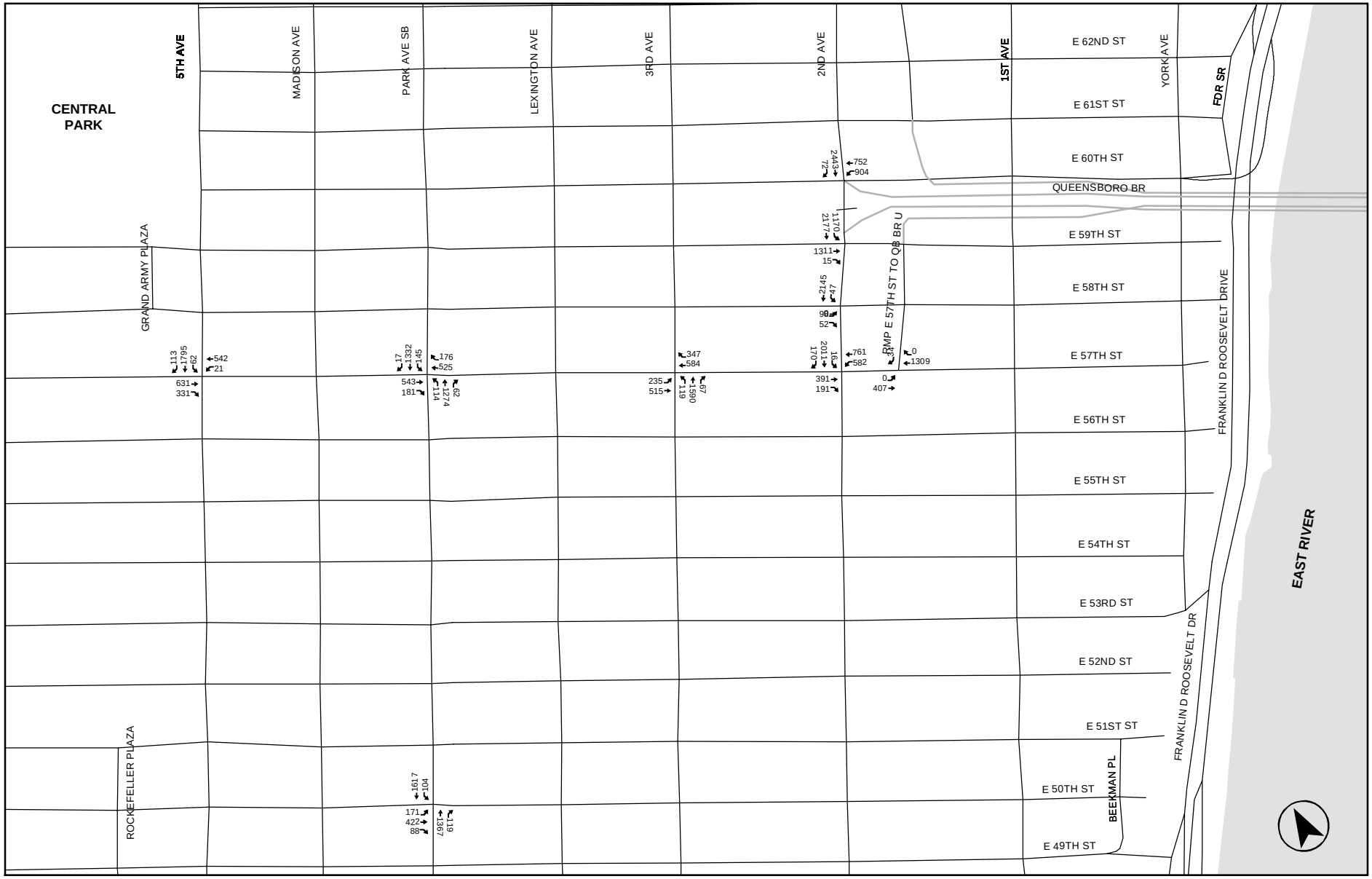


2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 2 (Weekday AM Peak Hour)

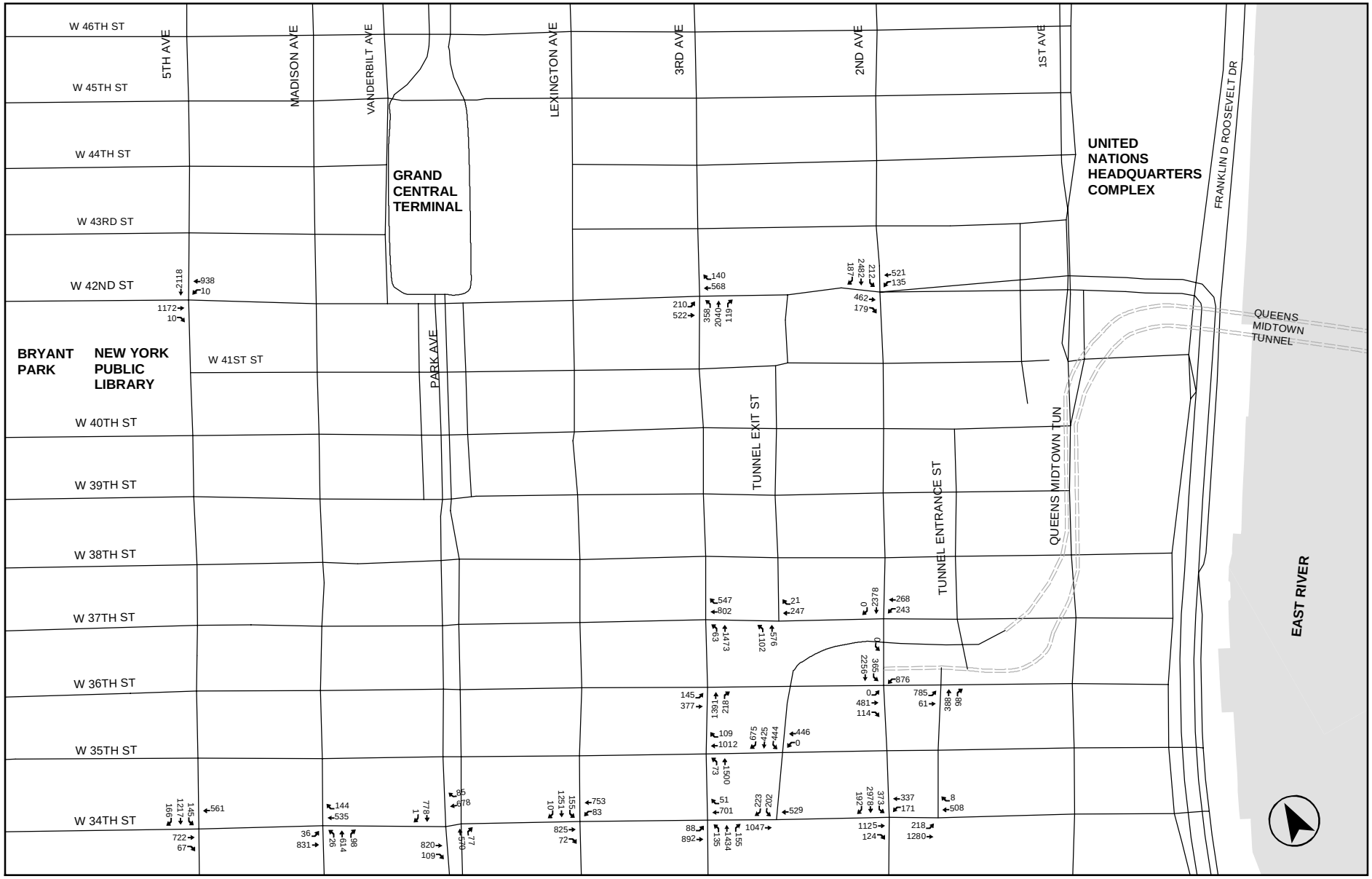
Figure 19-105



2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 3
(Weekday AM Peak Hour)
Figure 19-106

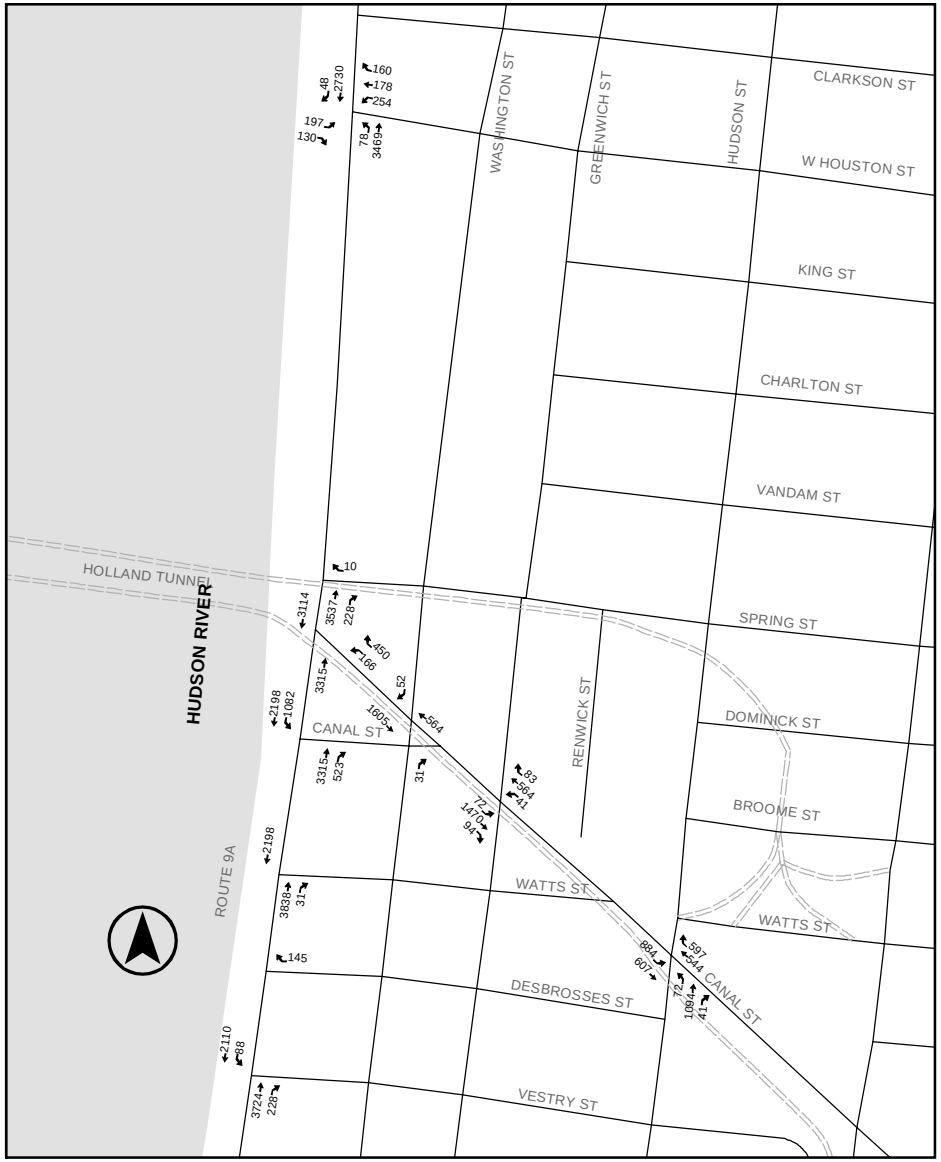


2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 4
(Weekday AM Peak Hour)
Figure 19-107

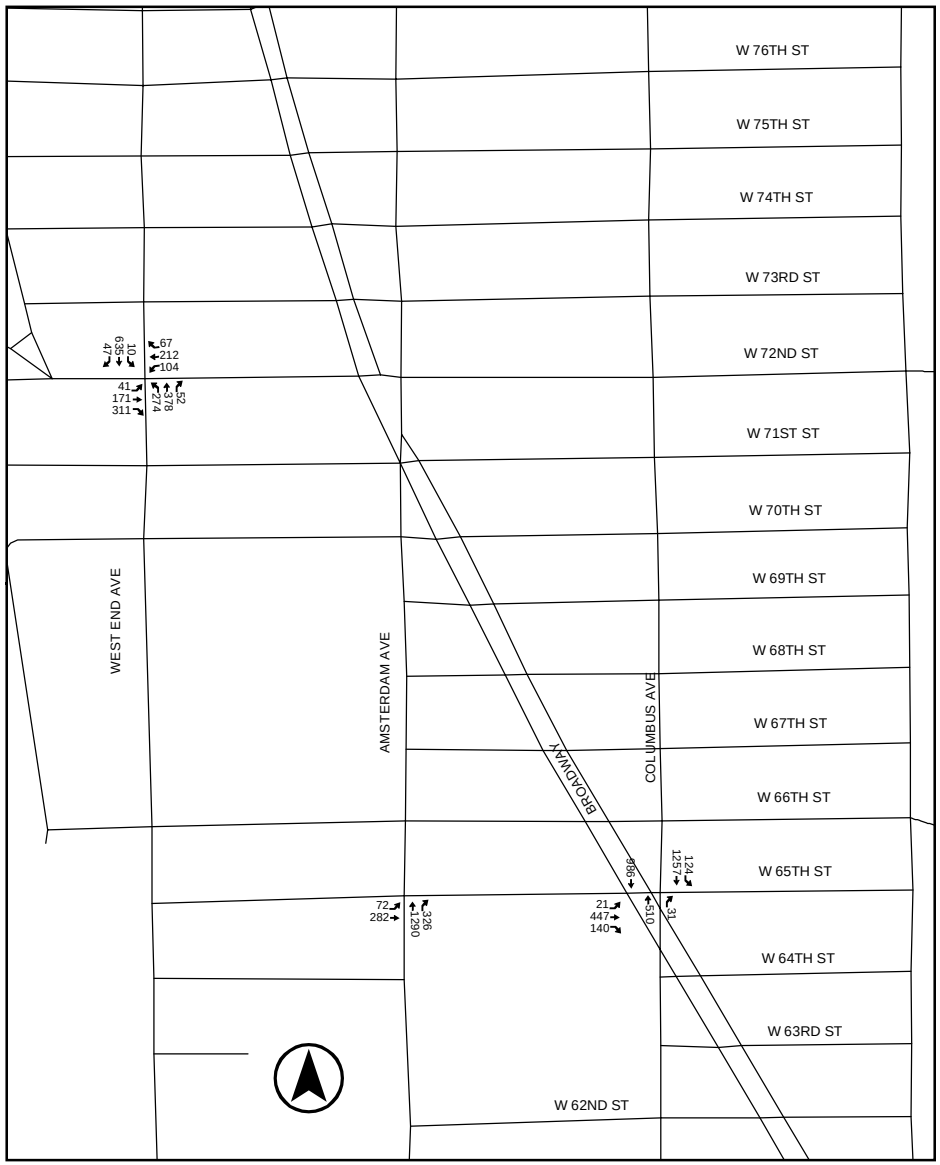


2010 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 5 (Weekday AM Peak Hour)

Figure 19-108



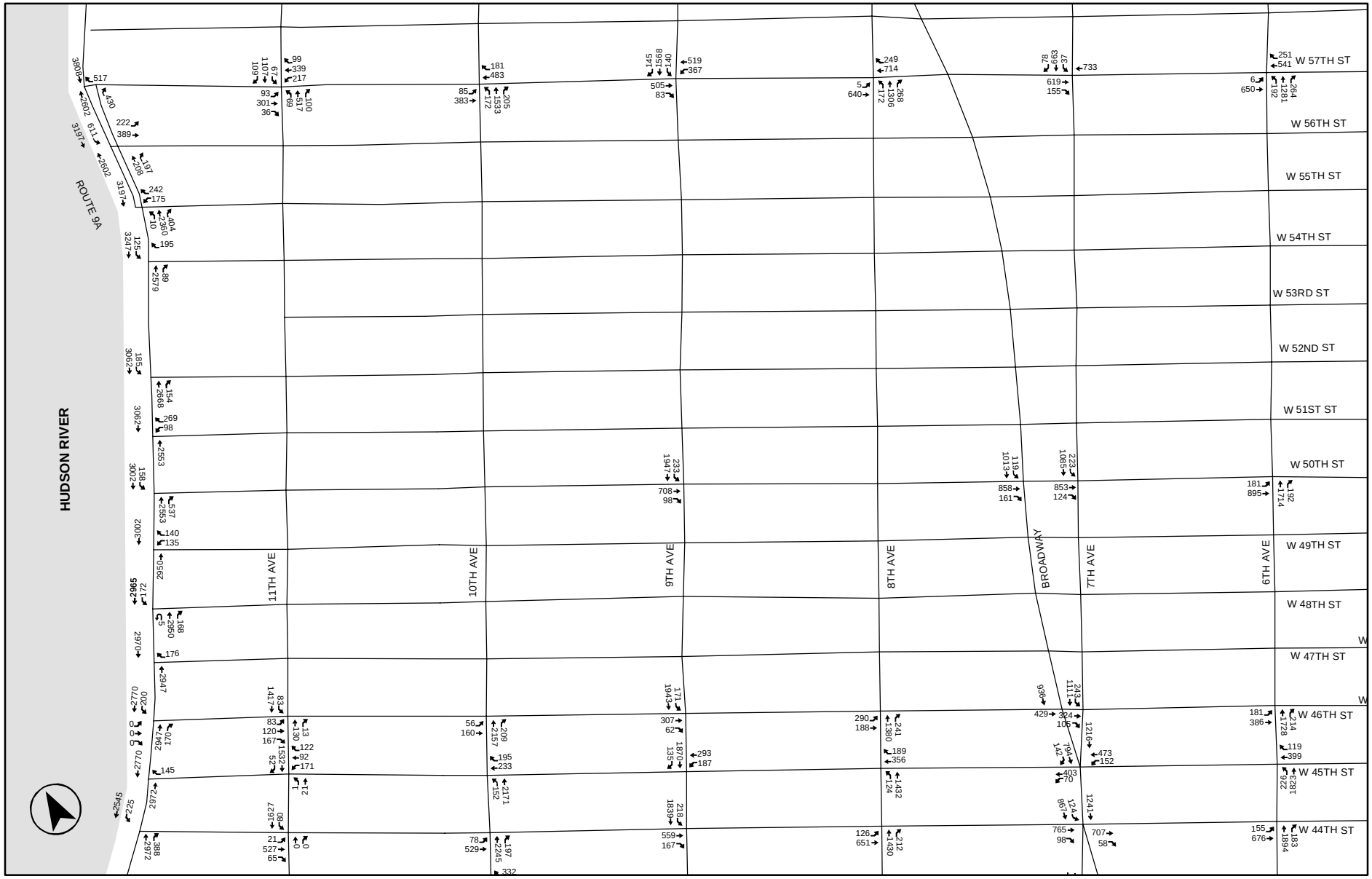
Inset 6



Inset 7

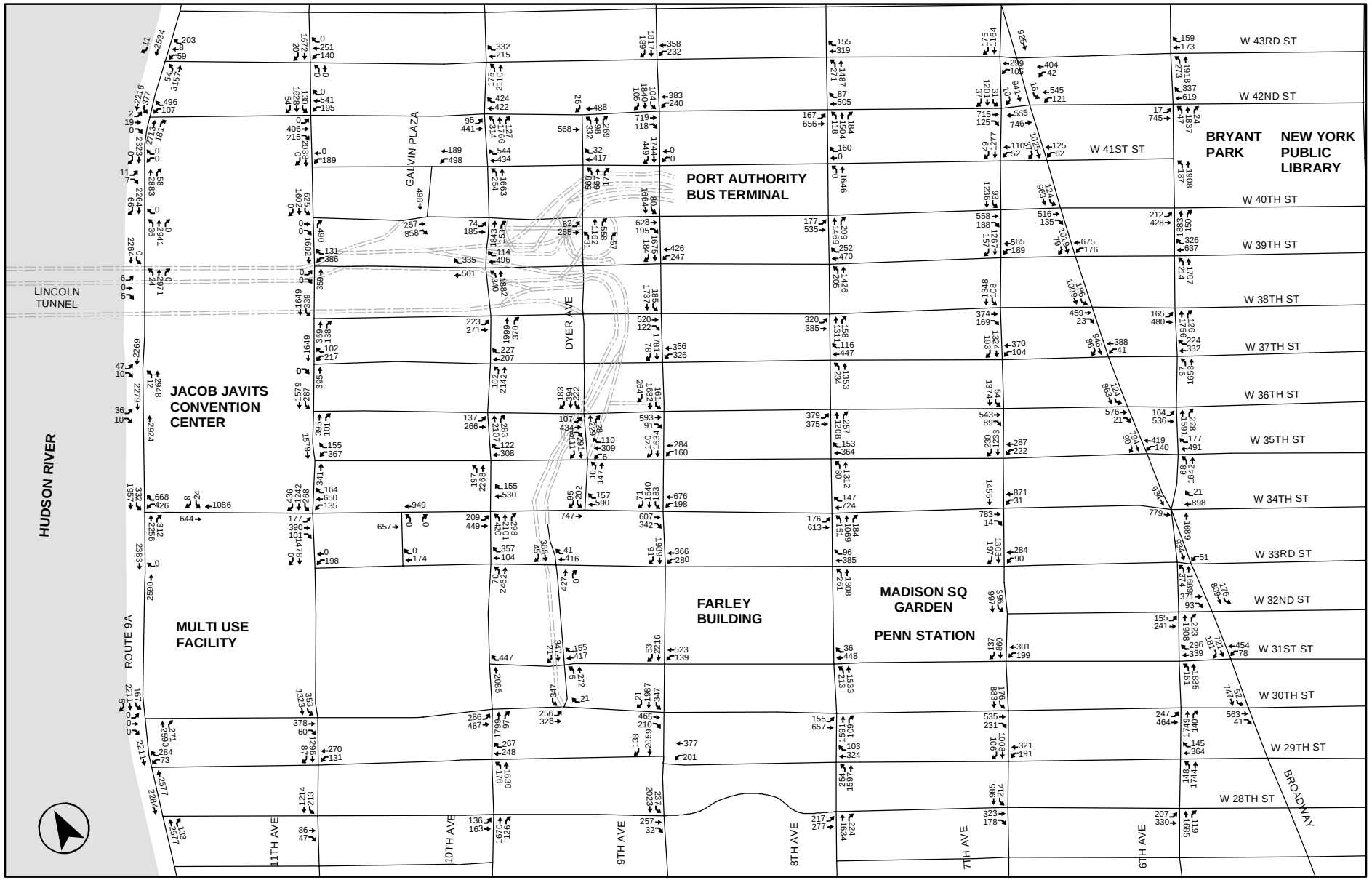
2010 Future With The Proposed Action With Mitigation Traffic Volumes - Insets 6 and 7 (Weekday AM Peak Hour)

Figure 19-109



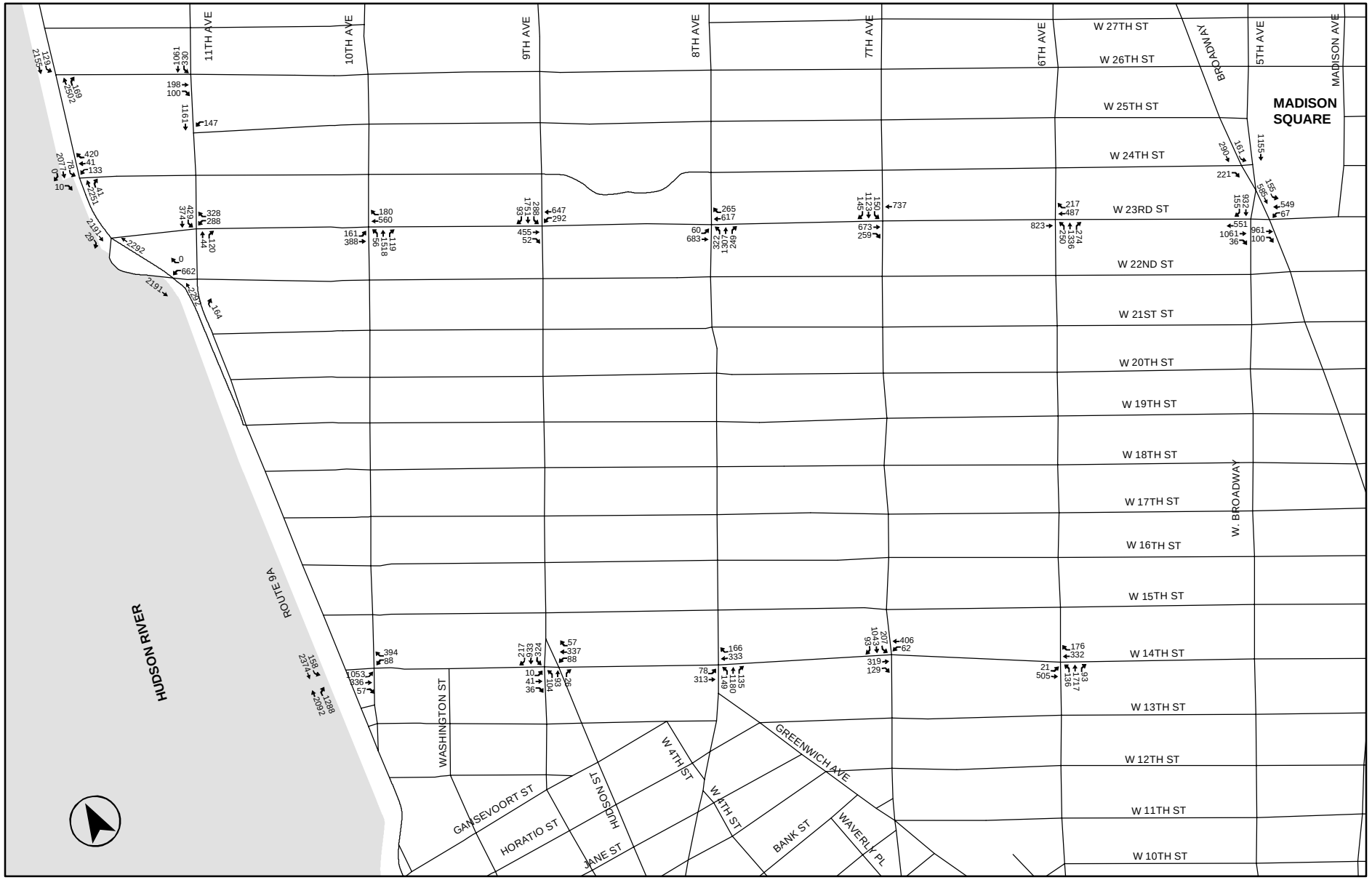
2010 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 1 (Weekday Midday Peak Hour)

Figure 19-110

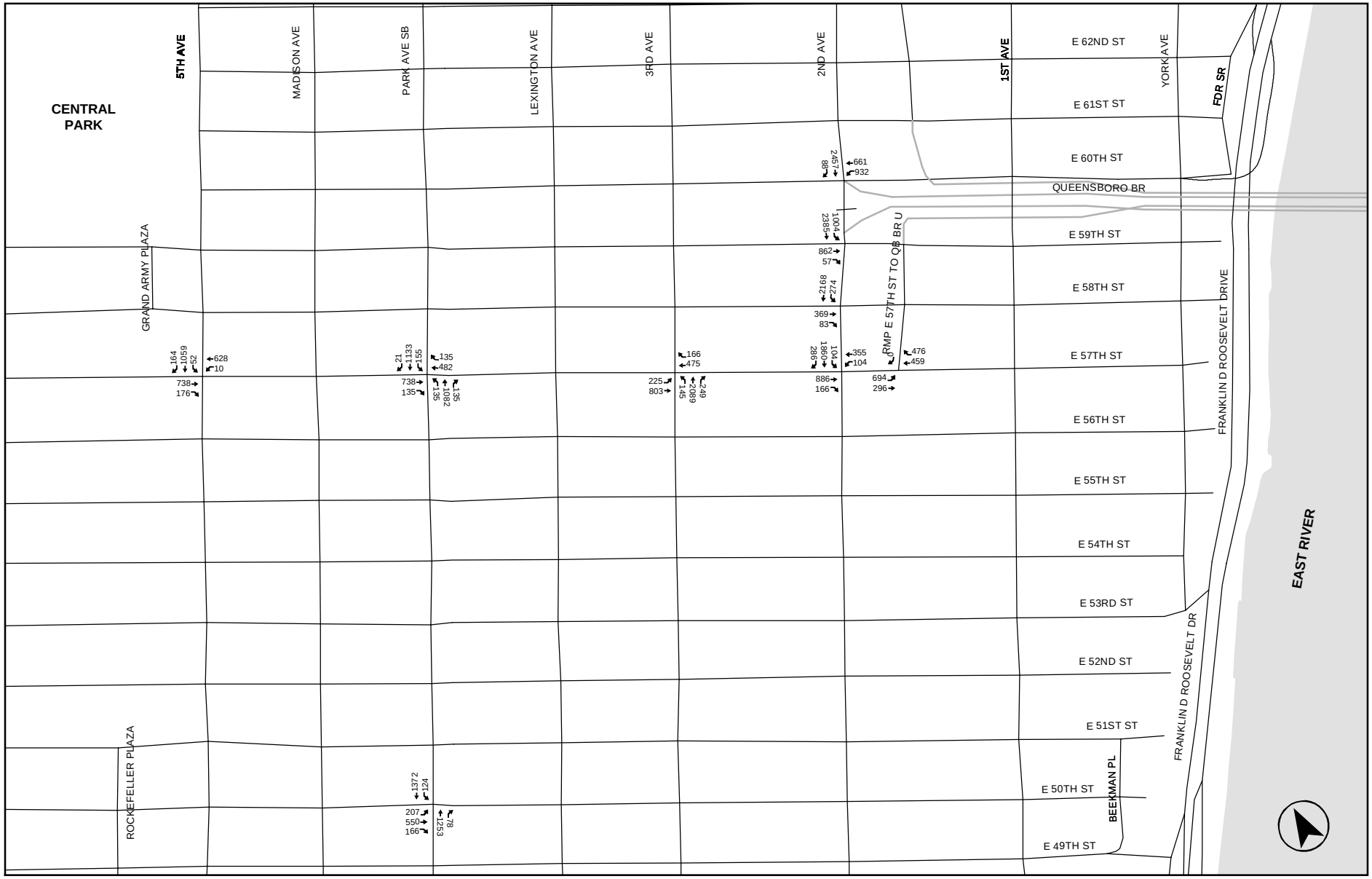


2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 2 (Weekday Midday Peak Hour)

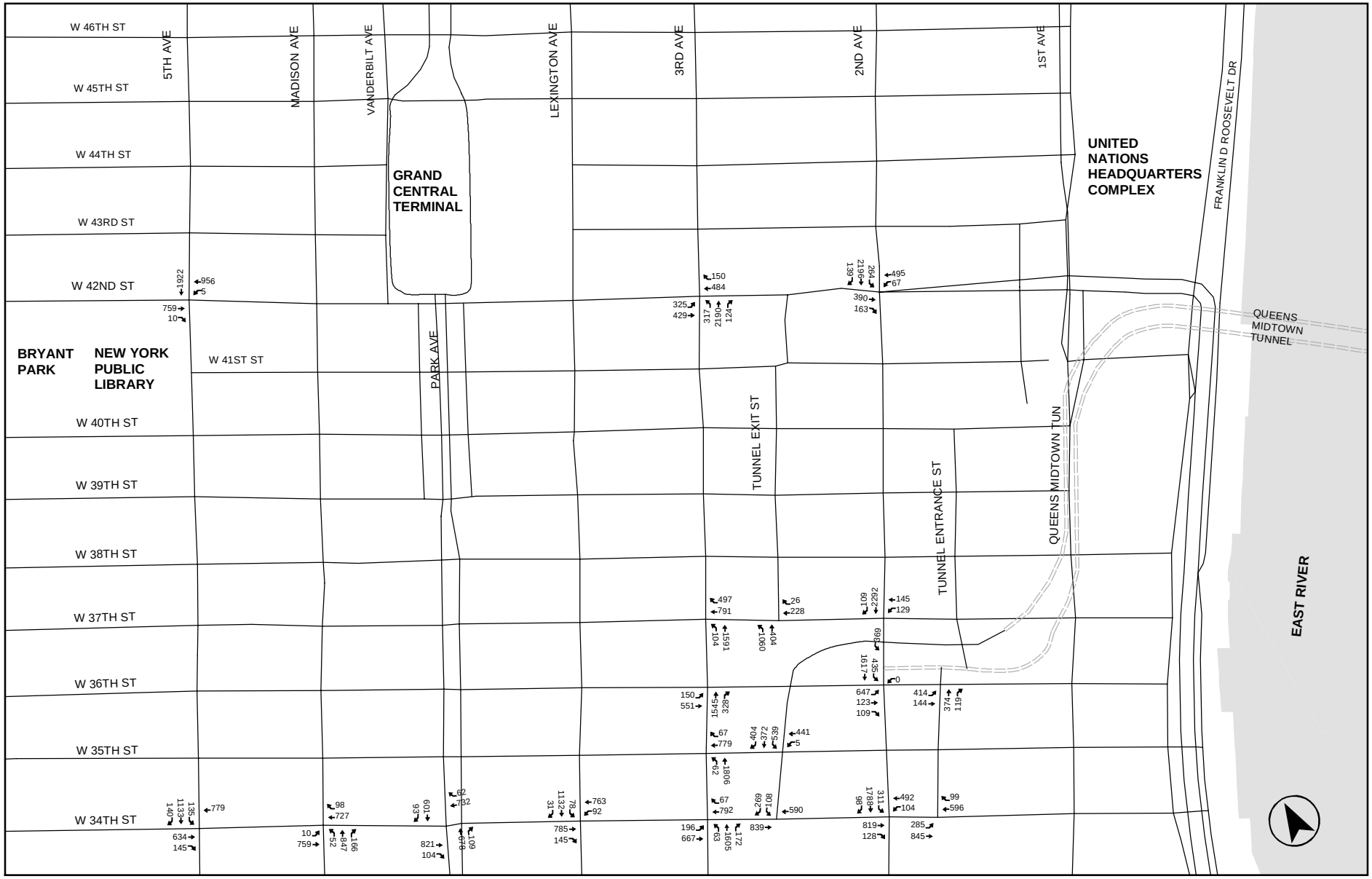
Figure 19-111



2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 3
(Weekday Midday Peak Hour)
Figure 19-112

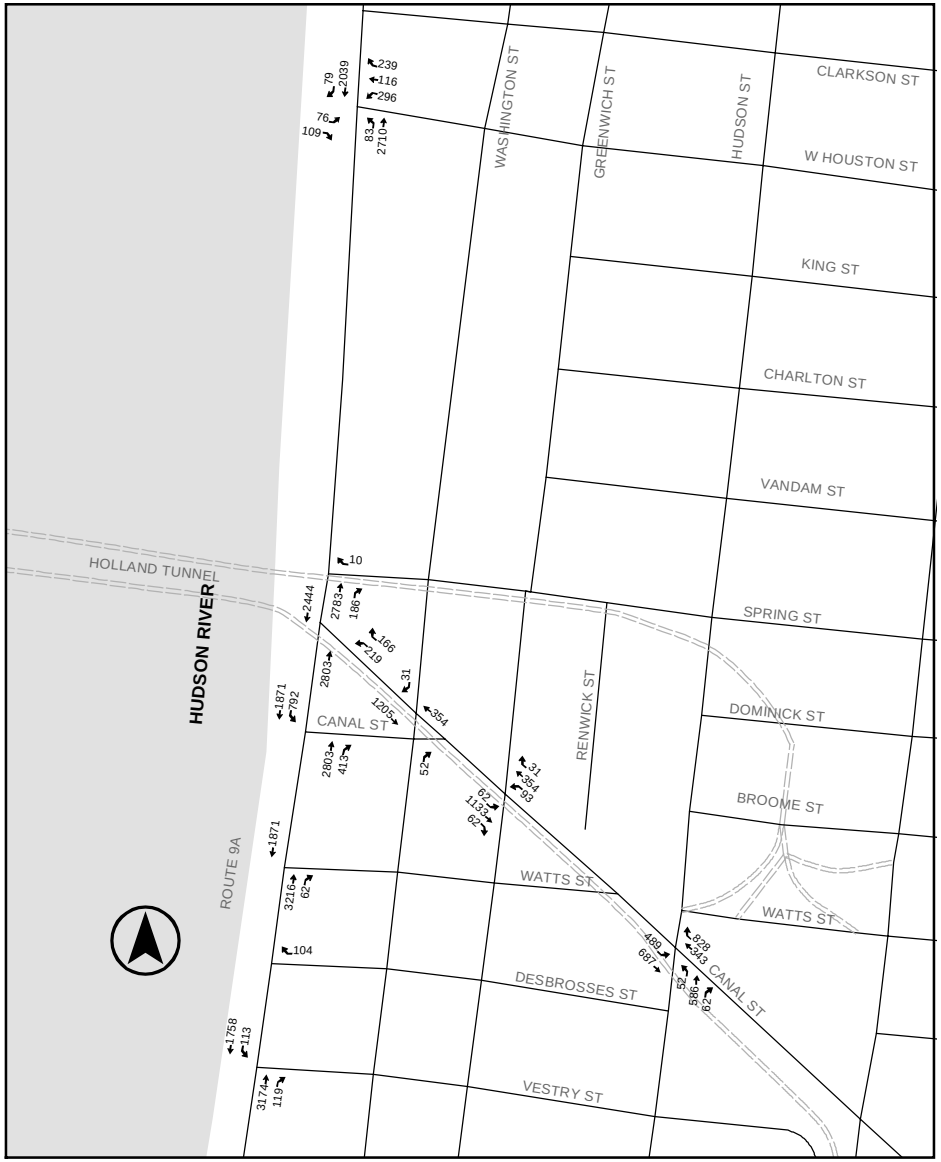


2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 4
(Weekday Midday Peak Hour)
Figure 19-113

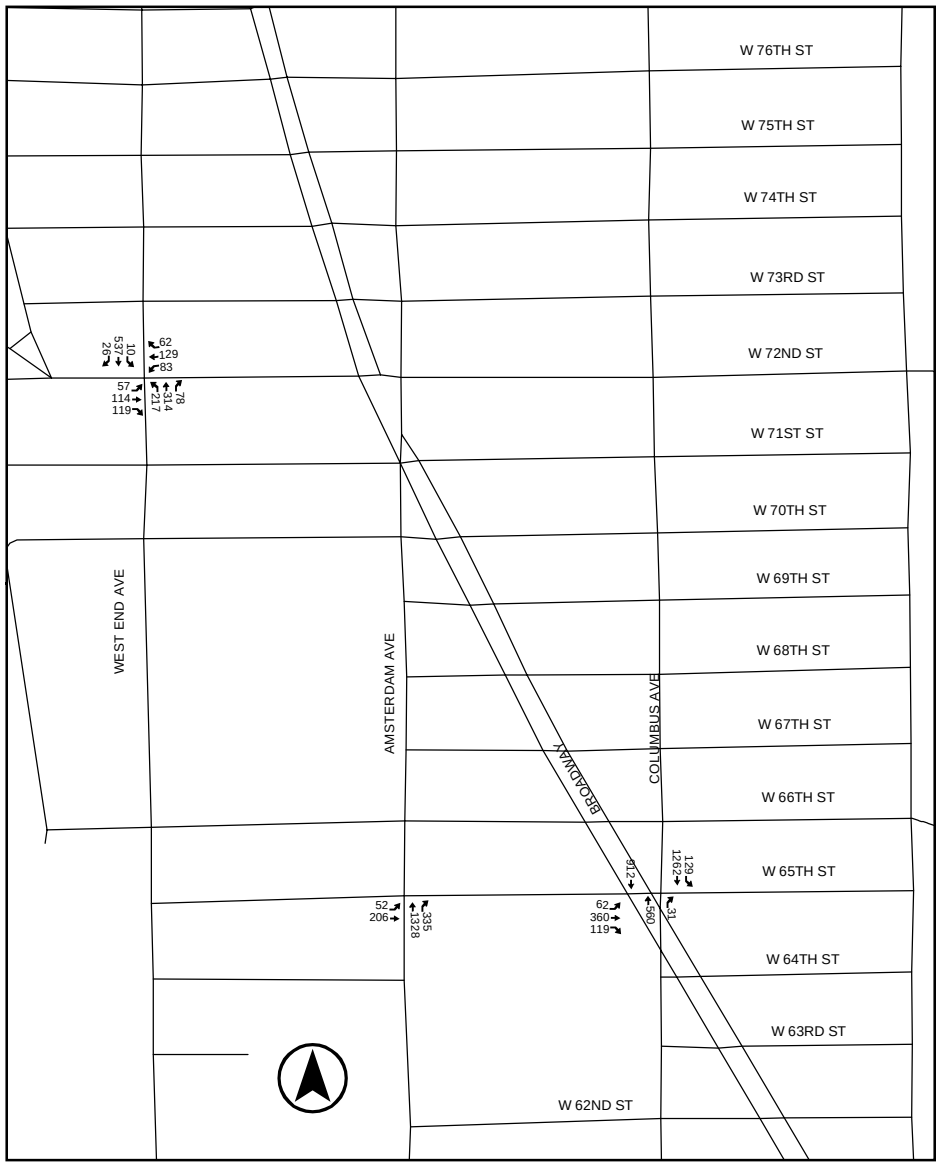


2010 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 5 (Weekday Midday Peak Hour)

Figure 19-114



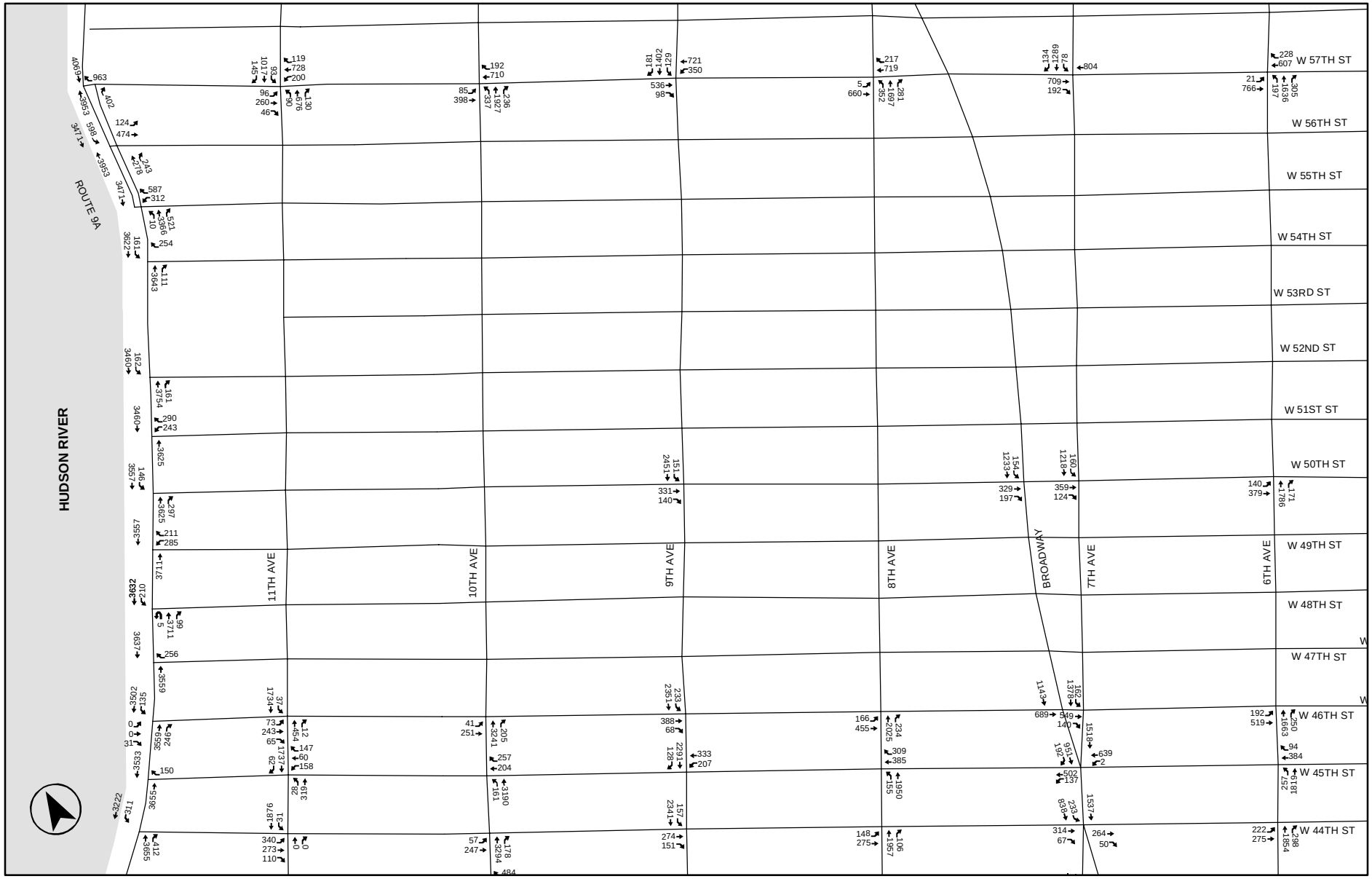
Inset 6



Inset 7

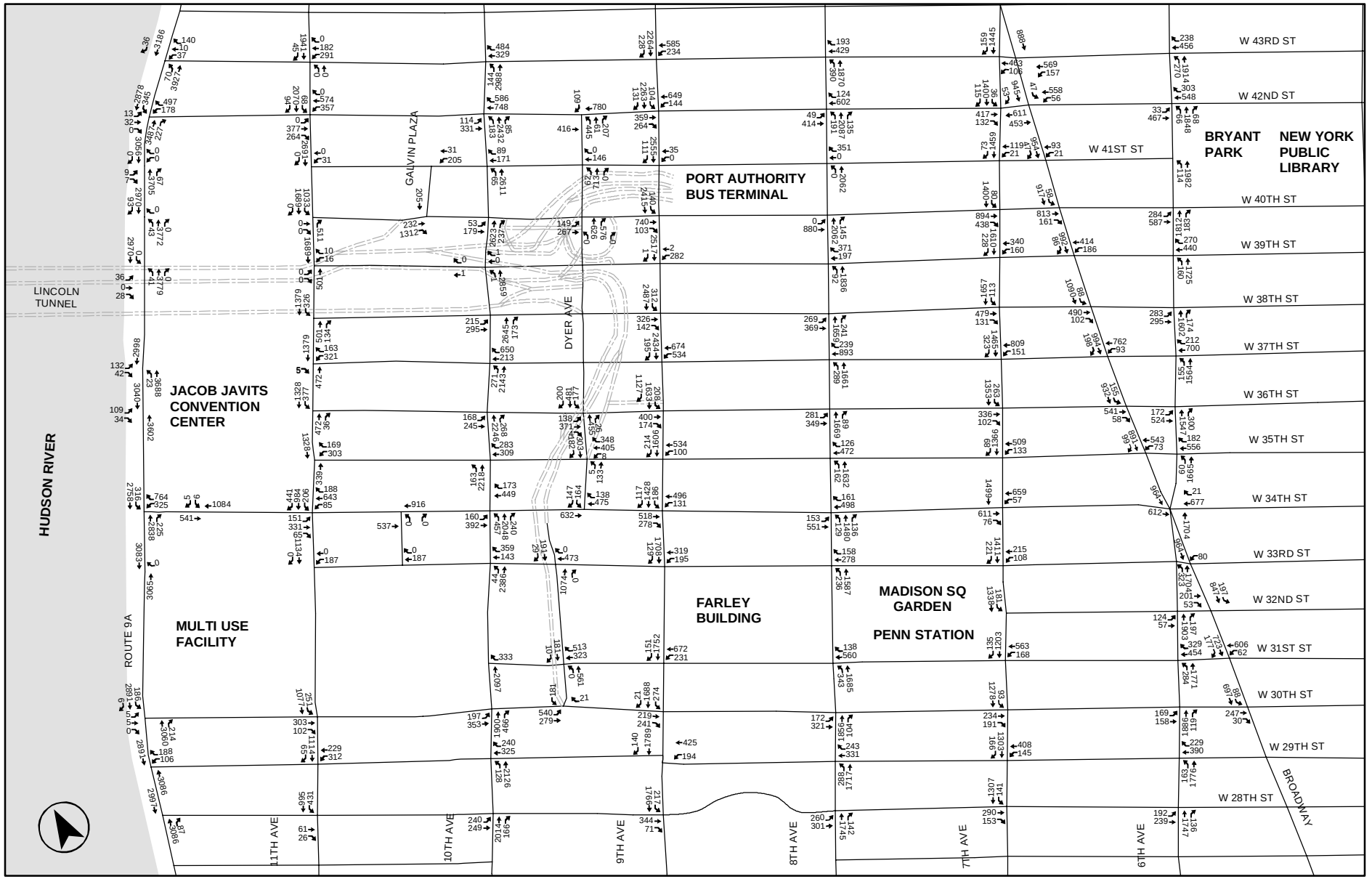
2010 Future With The Proposed Action WIth Mitigation Traffic Volumes - Insets 6 and 7 (Weekday Midday Peak Hour)

Figure 19-115



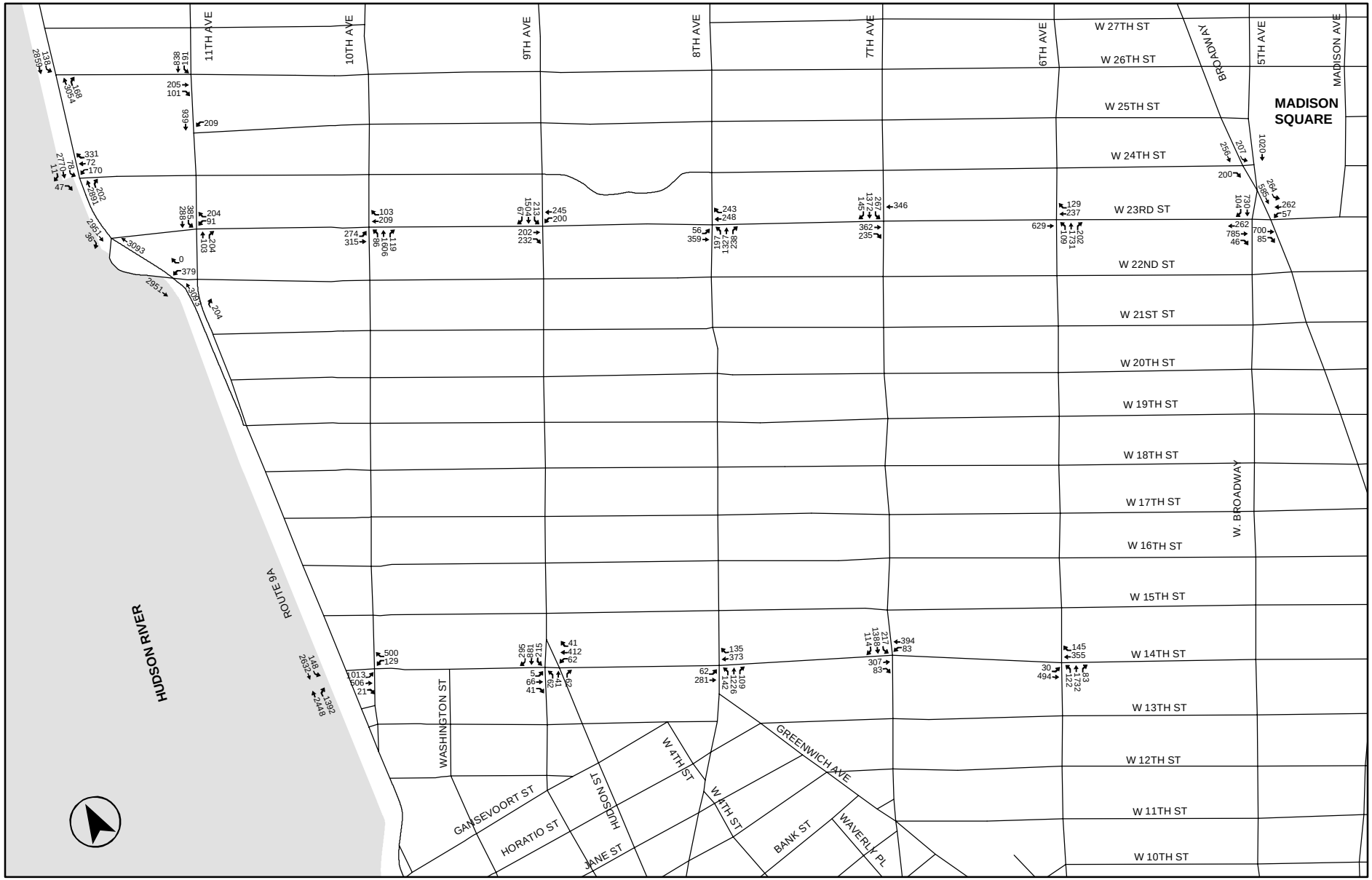
2010 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 1 (Weekday PM Peak Hour)

Figure 19-116



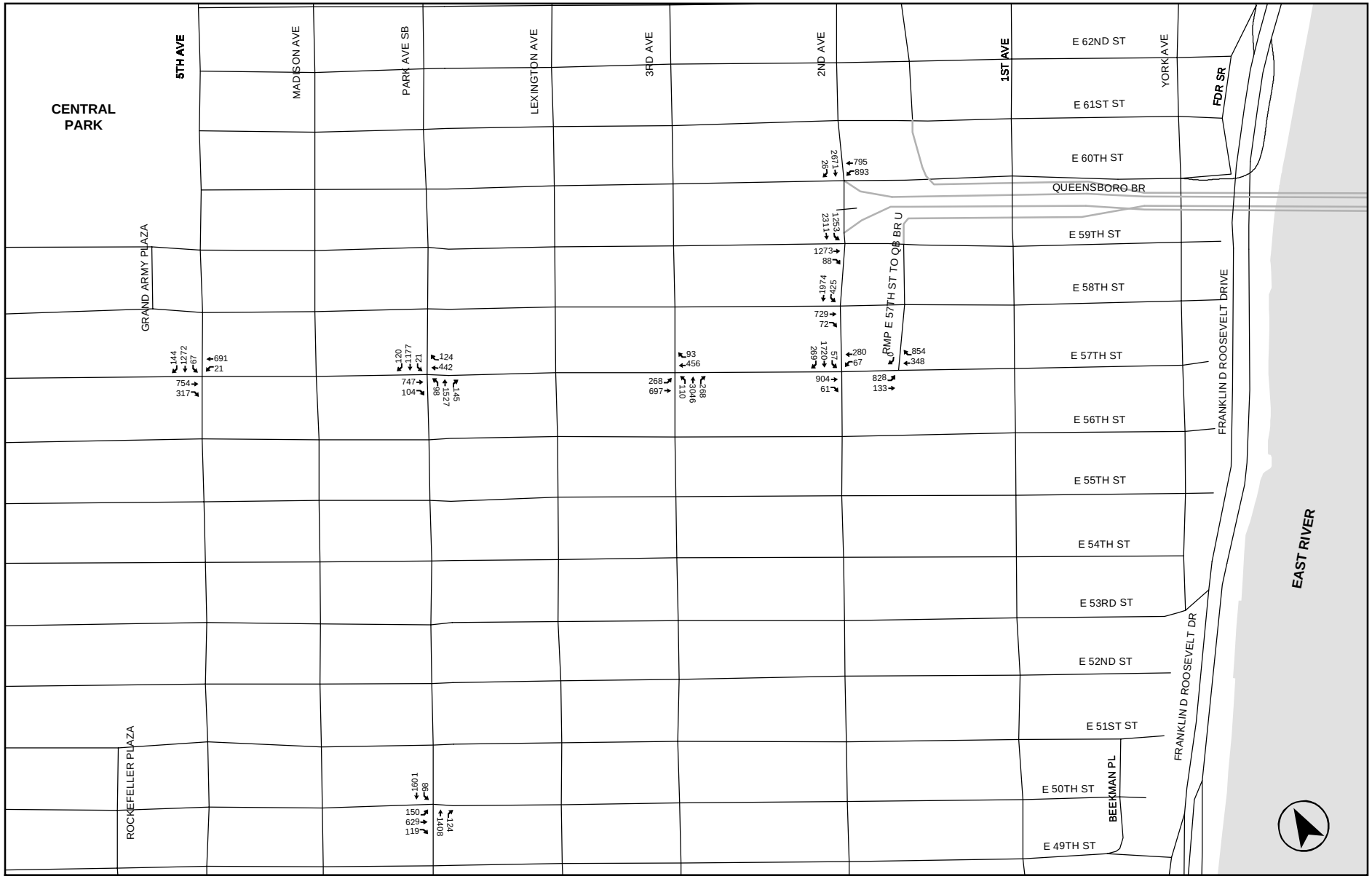
2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 2 (Weekday PM Peak Hour)

Figure 19-117



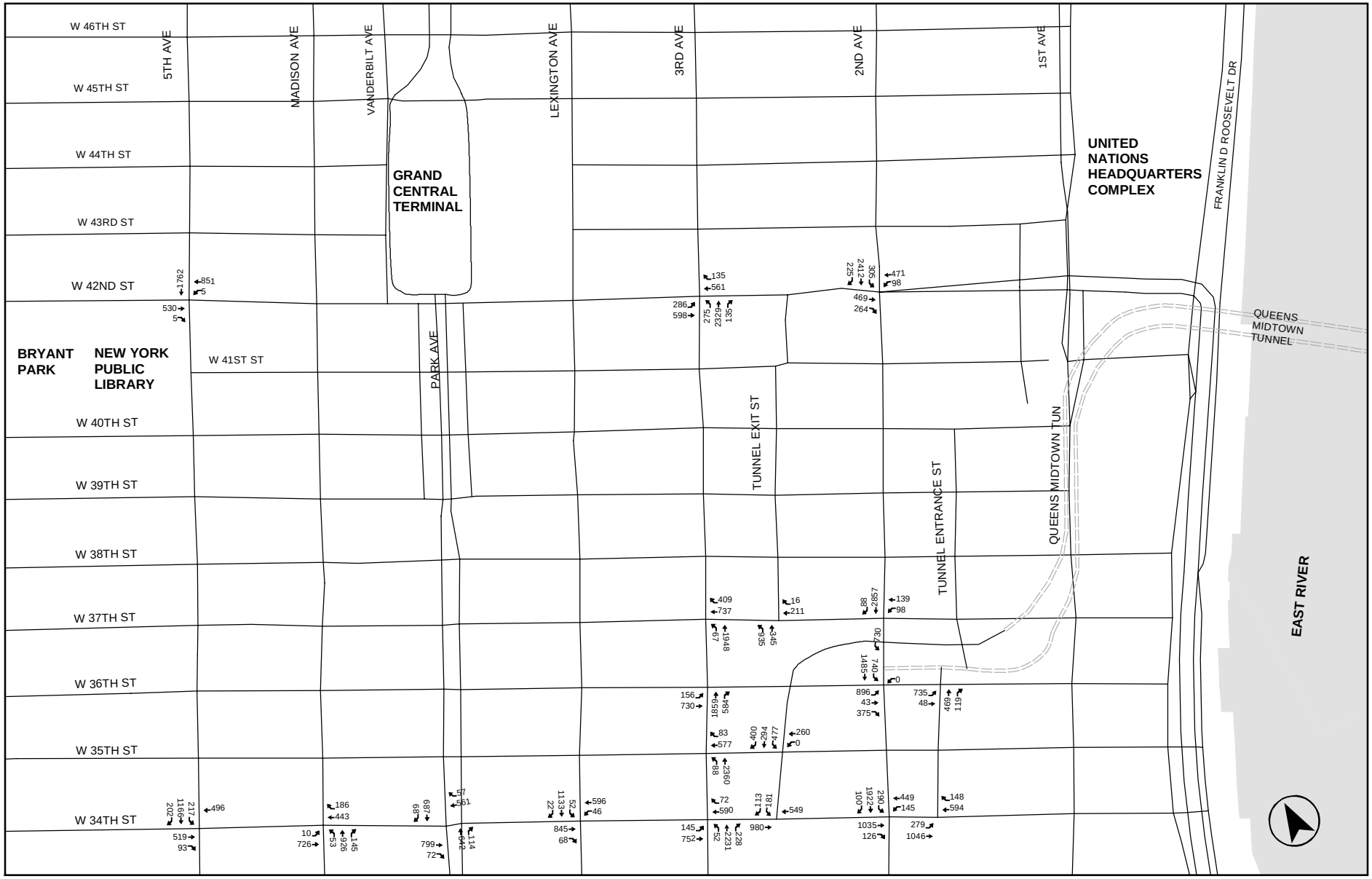
2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 3 (Weekday PM Peak Hour)

Figure 19-118



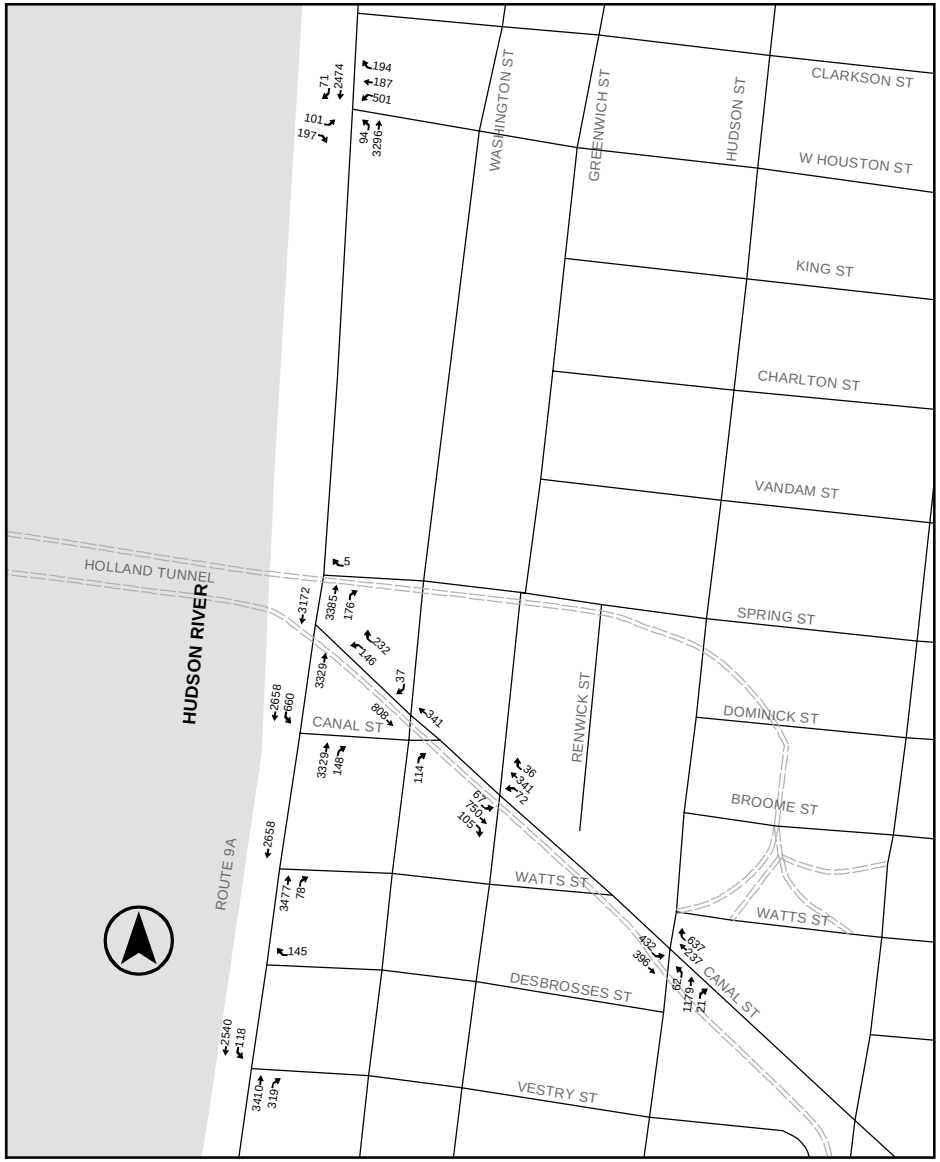
2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 4 (Weekday PM Peak Hour)

Figure 19-119

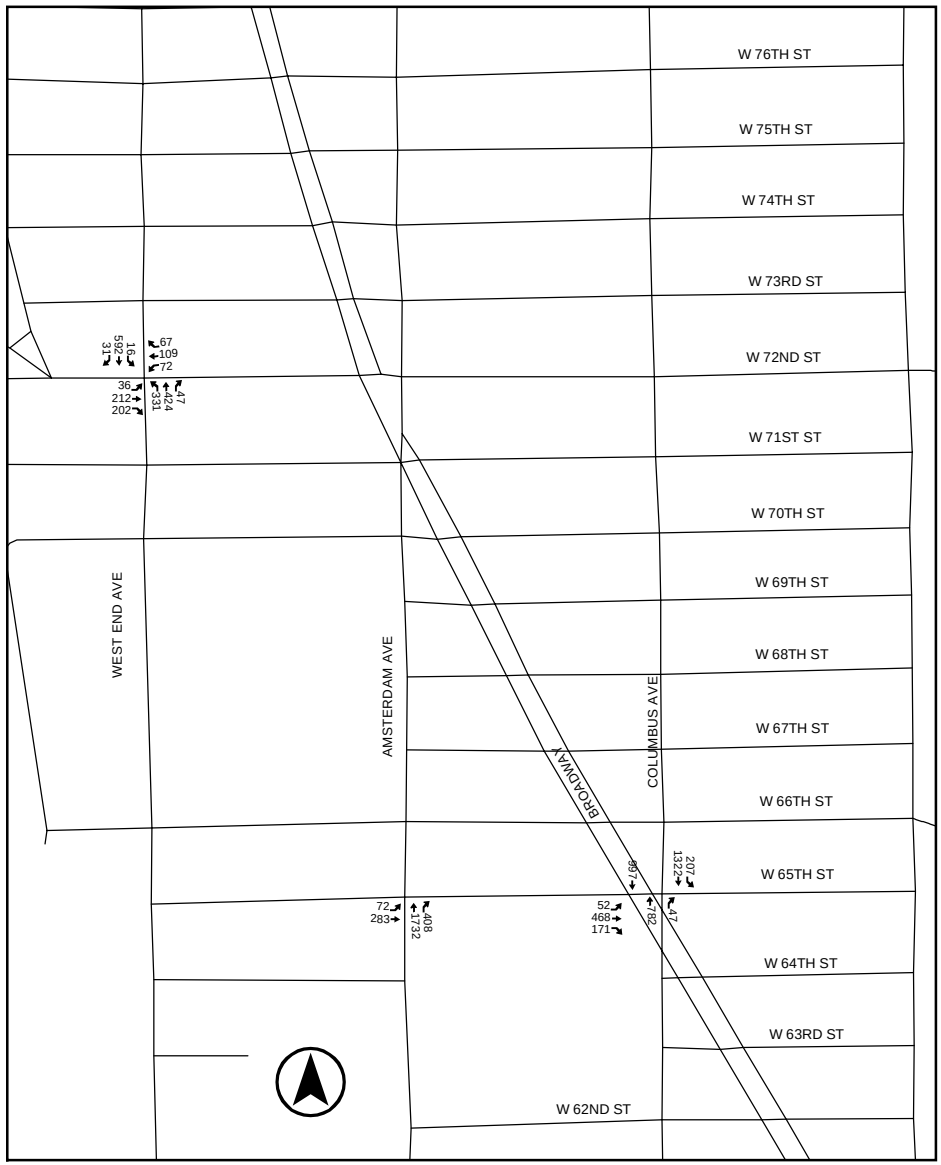


2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 5
(Weekday PM Peak Hour)

Figure 19-120



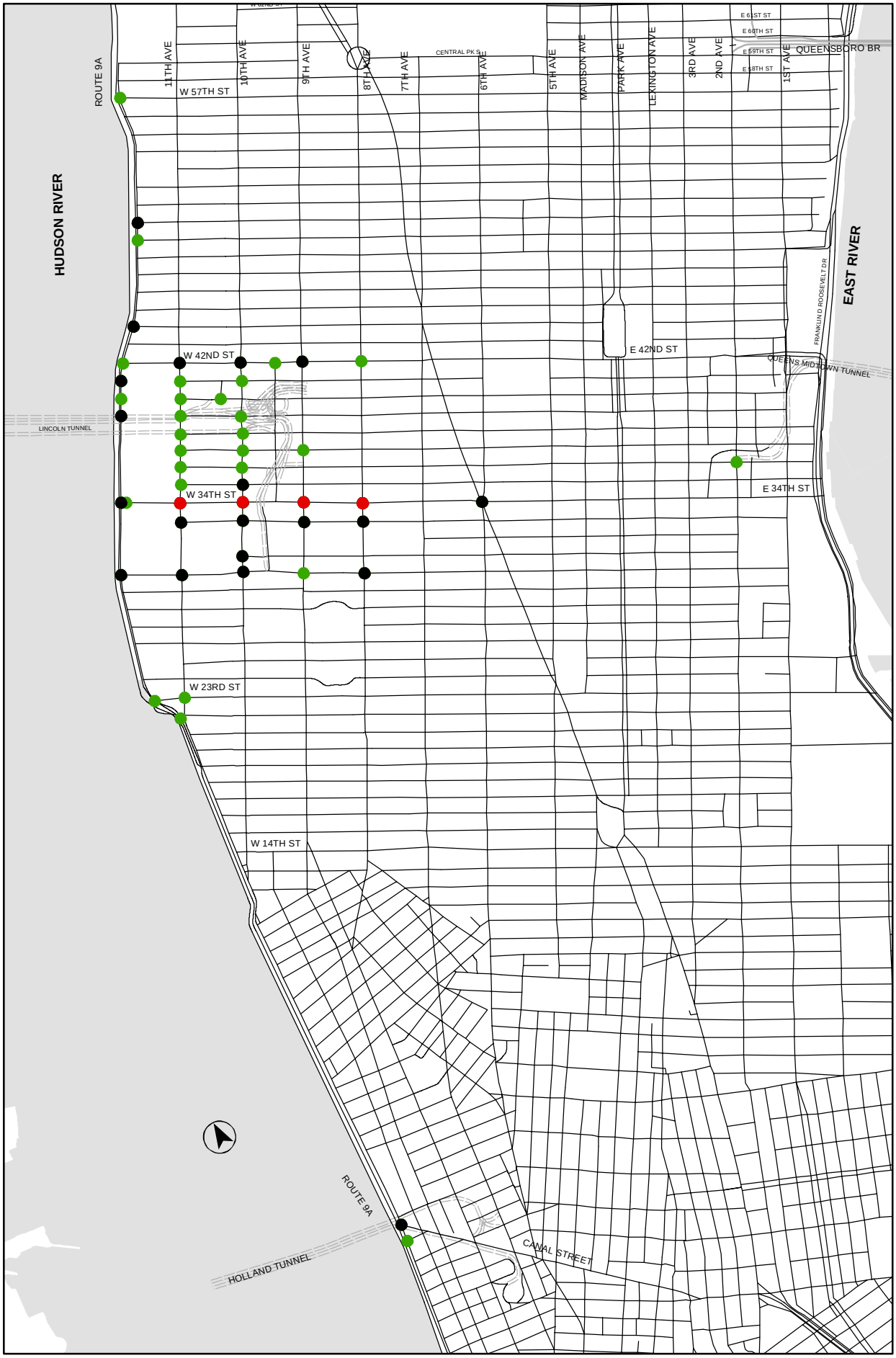
Inset 6



Inset 7

2010 Future With The Proposed Action With Mitigation Traffic Volumes - Insets 6 and 7 (Weekday PM Peak Hour)

Figure 19-121

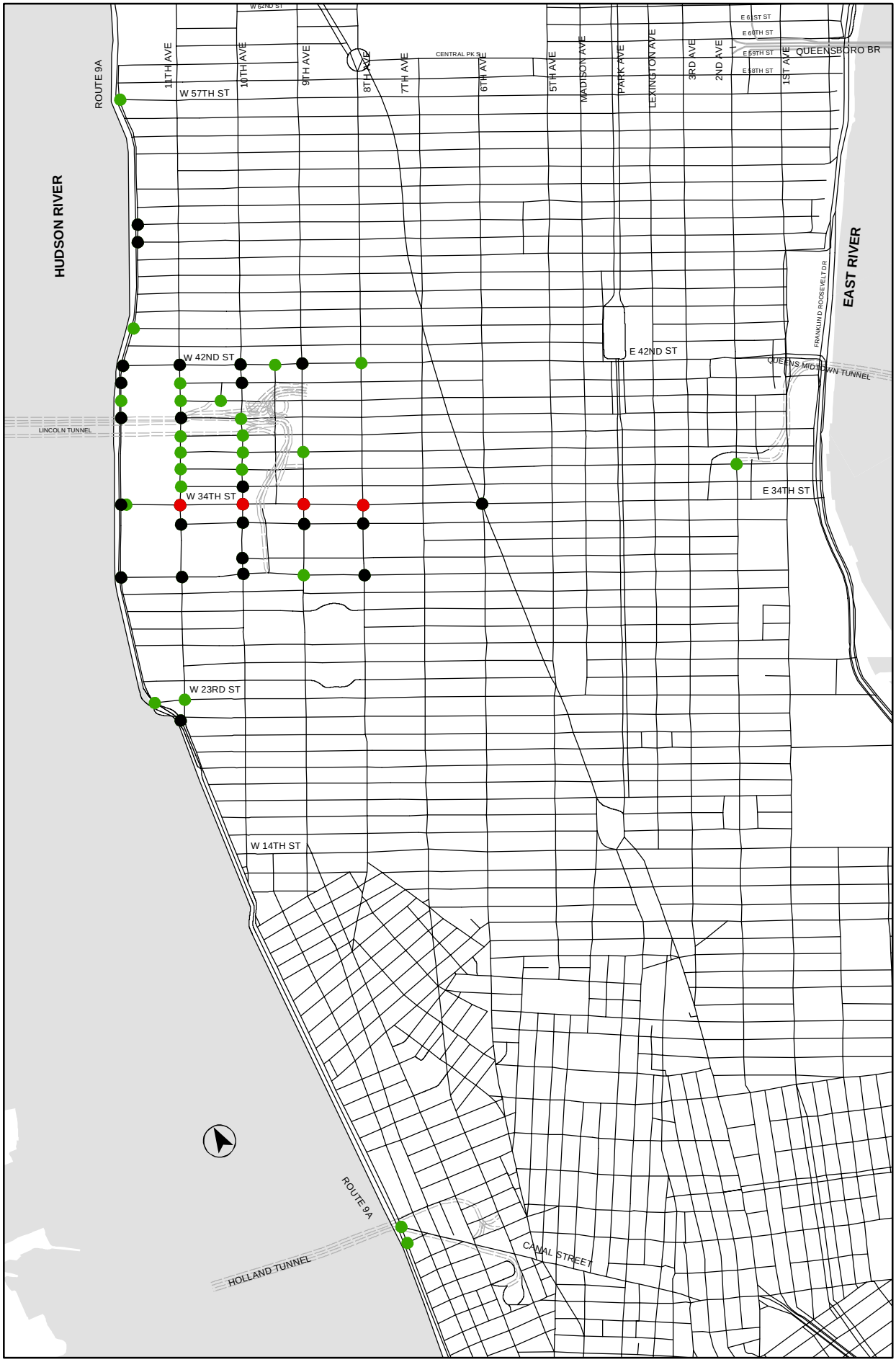


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

2010 Future With The Proposed Action
Analyzed Intersections
(Weeknight Special Event Peak Hour)

Figure 19-122

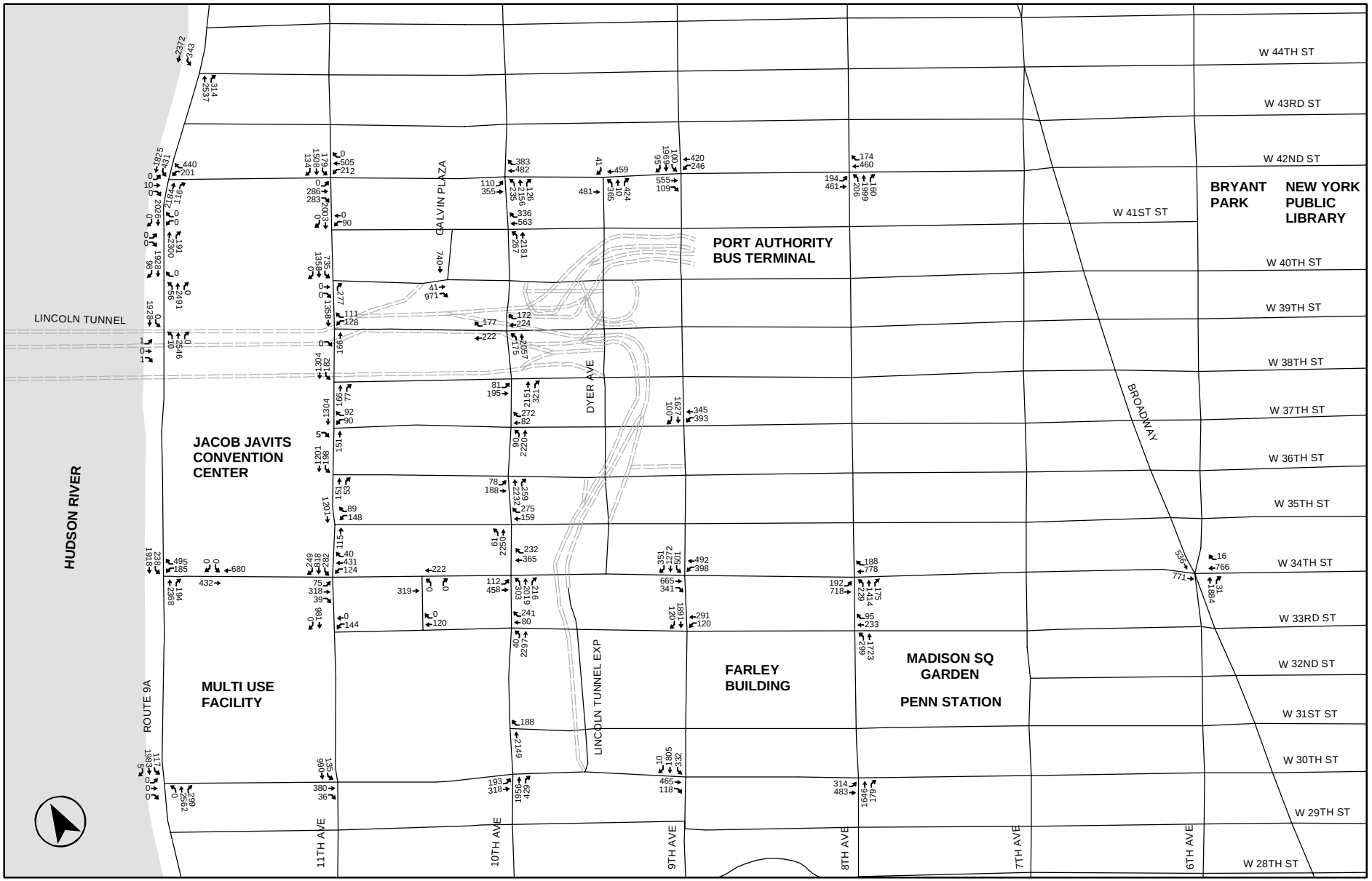


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- × Unsignalized Intersection

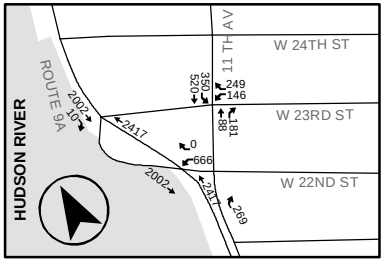
2010 Future With The Proposed Action
Analyzed Intersections
(Sunday Special Event Peak Hour)

Figure 19-123

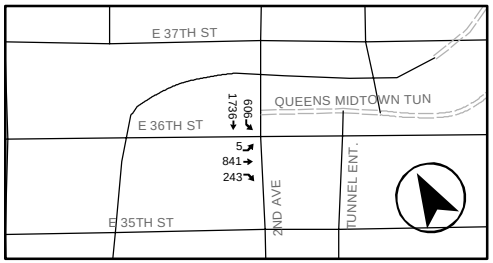


2010 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 1 (Weeknight Special Event Peak Hour)

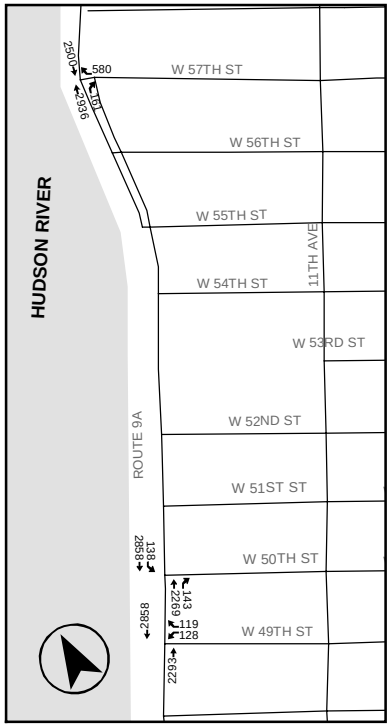
Figure 19-124



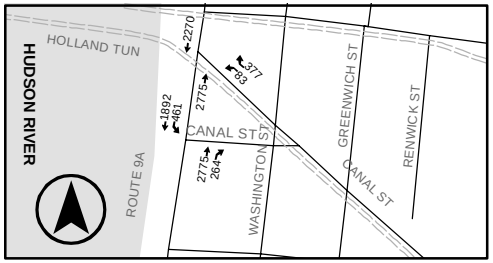
Inset 2



Inset 4



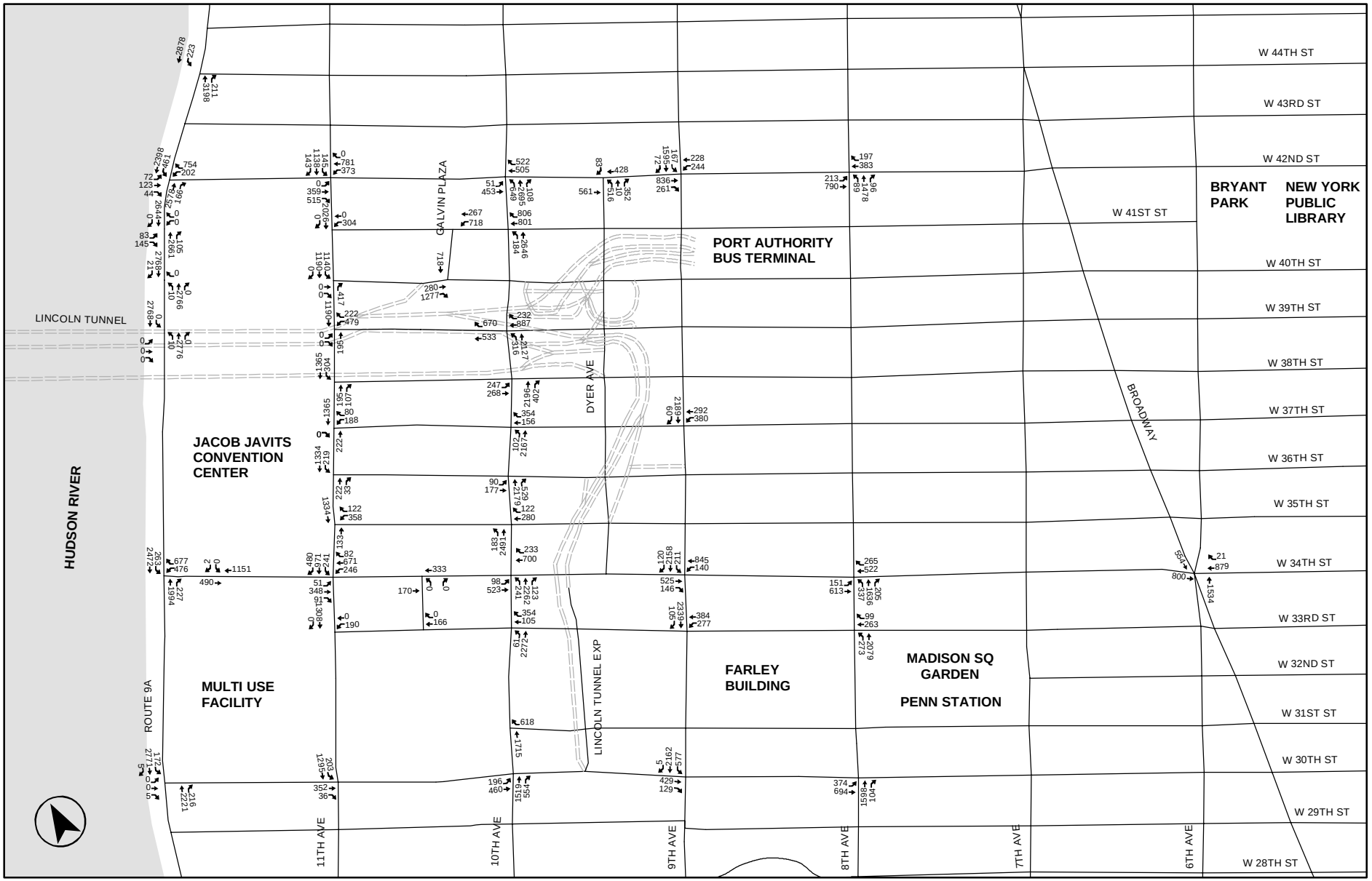
Inset 3



Inset 5

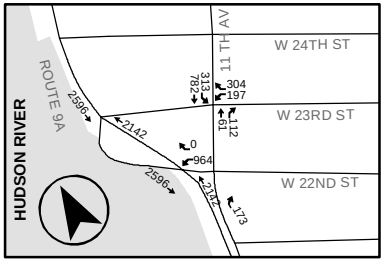
2010 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-125

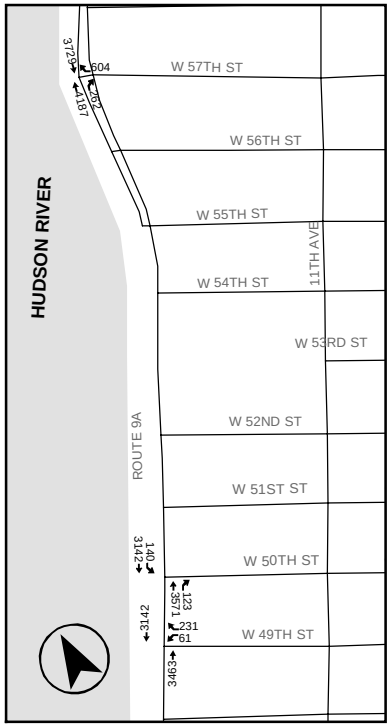


2010 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 1 (Sunday Special Event Peak Hour)

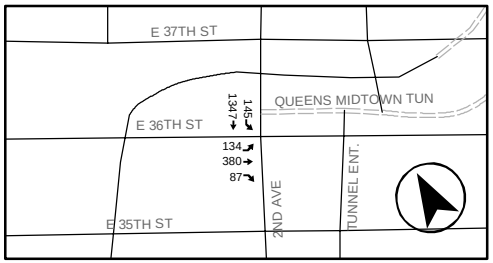
Figure 19-126



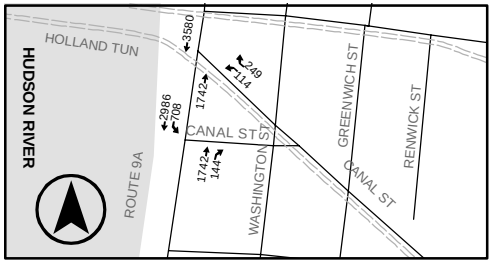
Inset 2



Inset 3



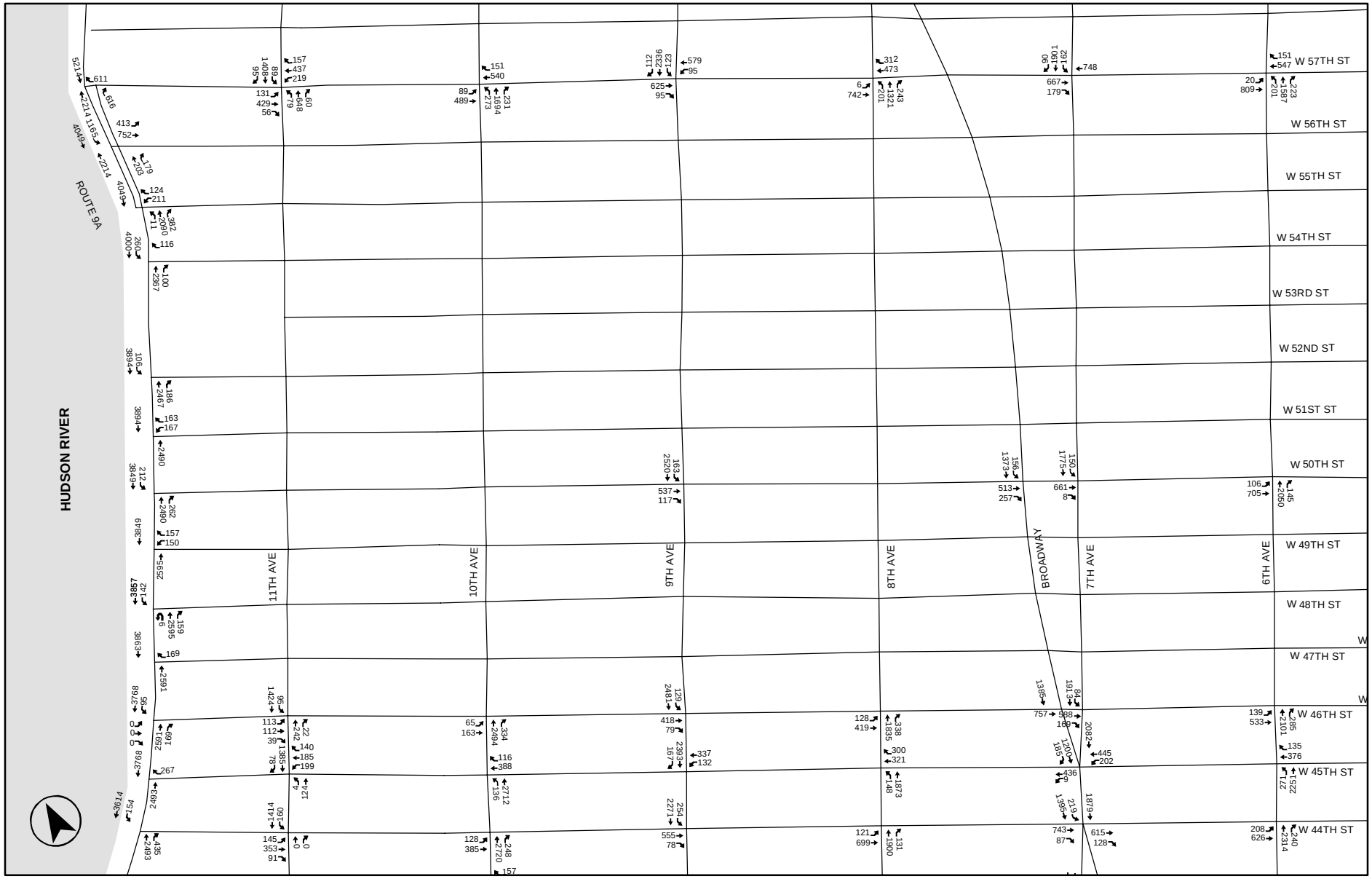
Inset 4



Inset 5

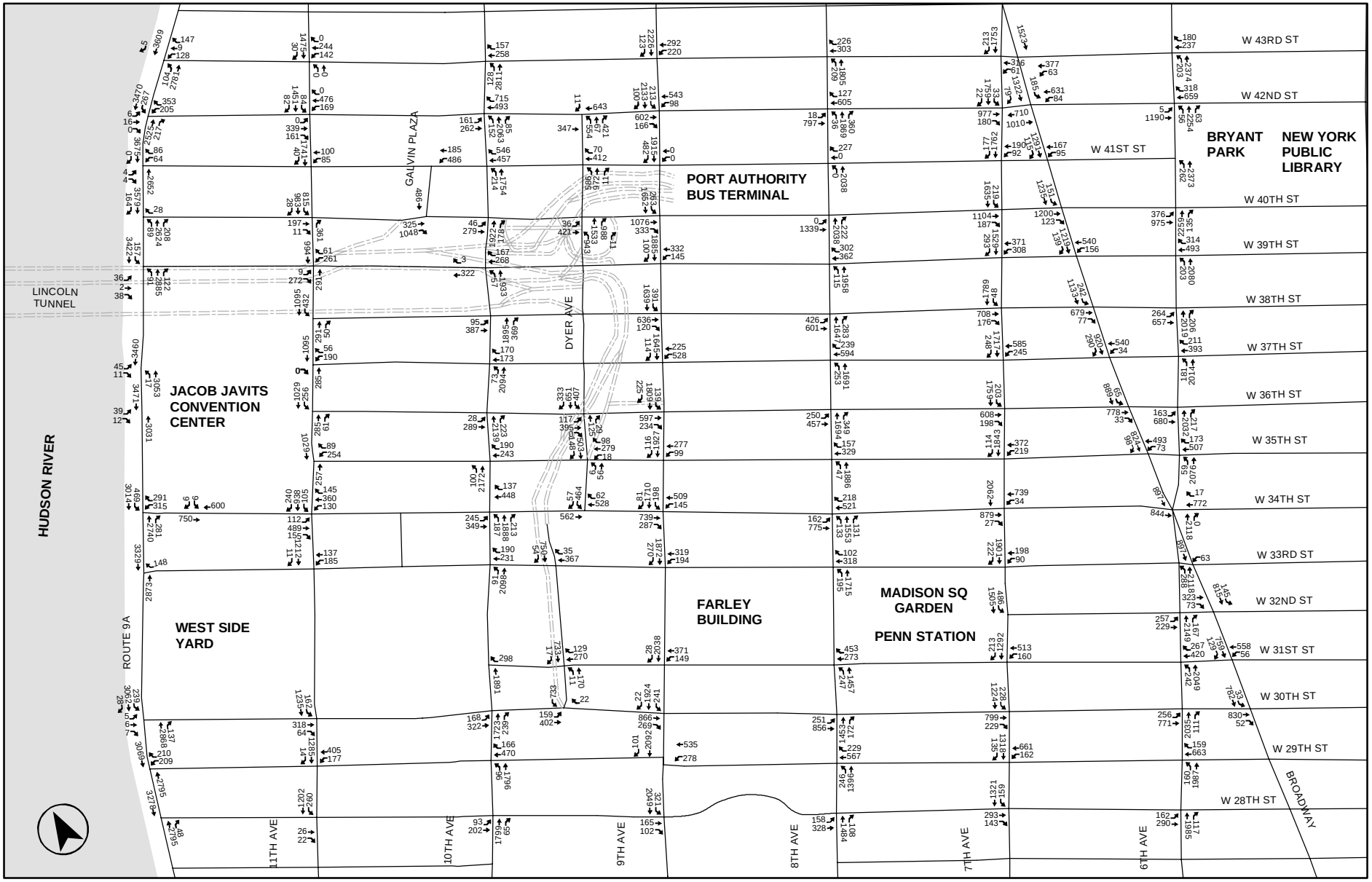
2010 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-127



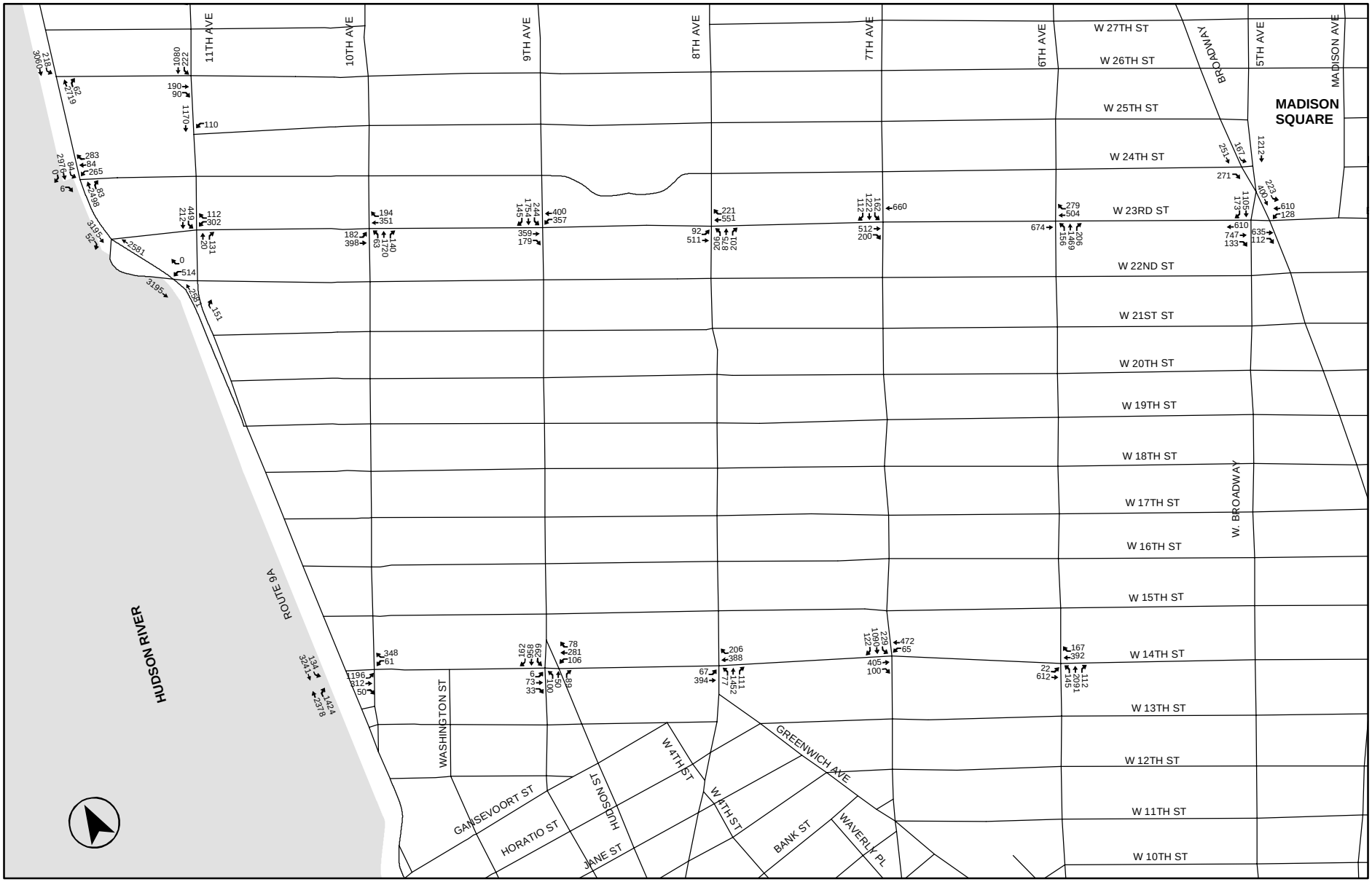
2025 Future Without The Proposed Action Traffic Volumes-Inset 1 (Weekday AM Peak Hour)

Figure 19-128



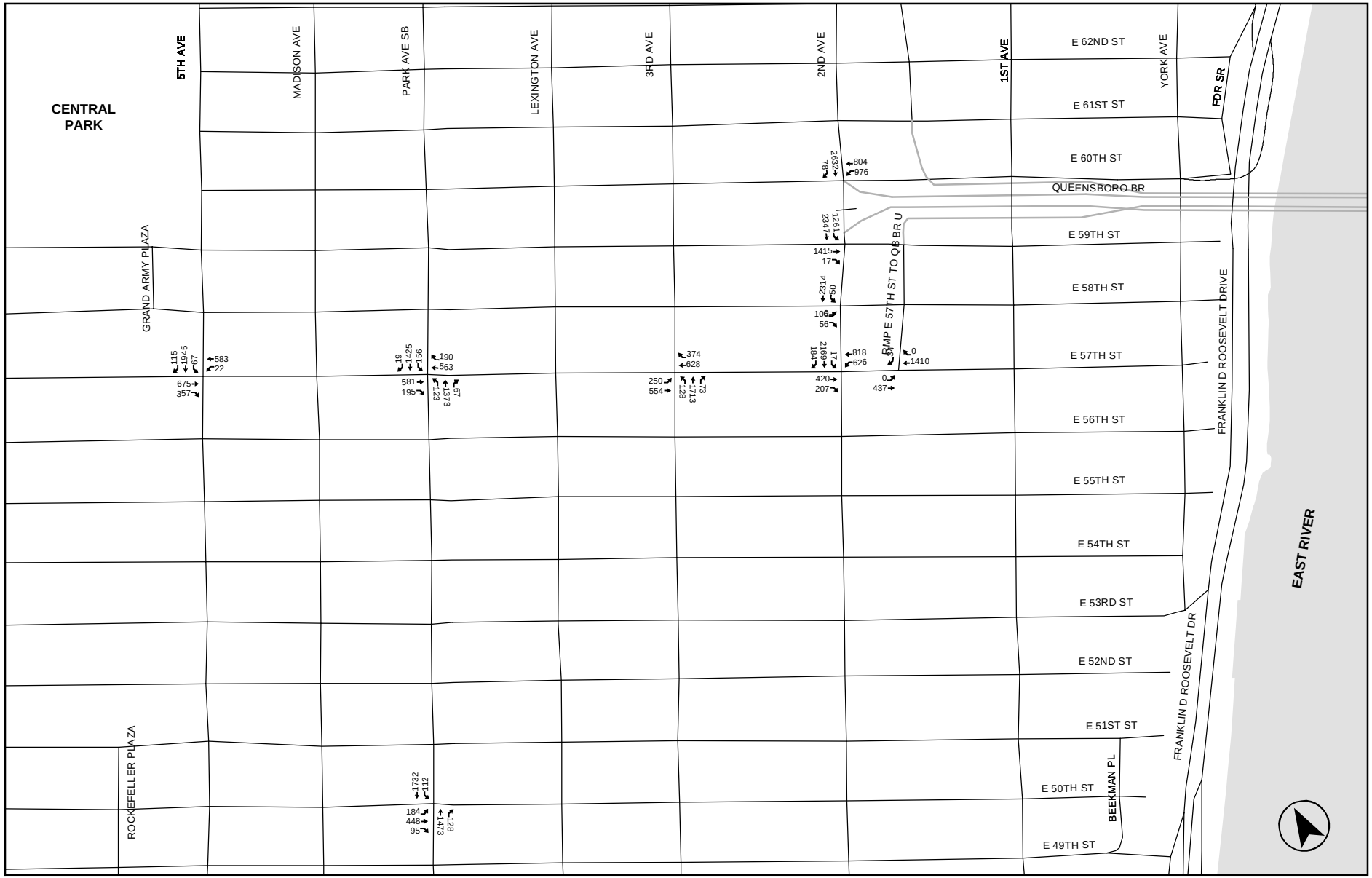
2025 Future Without The Proposed Action Traffic Volumes- Inset 2 (Weekday AM Peak Hour)

Figure 19-129



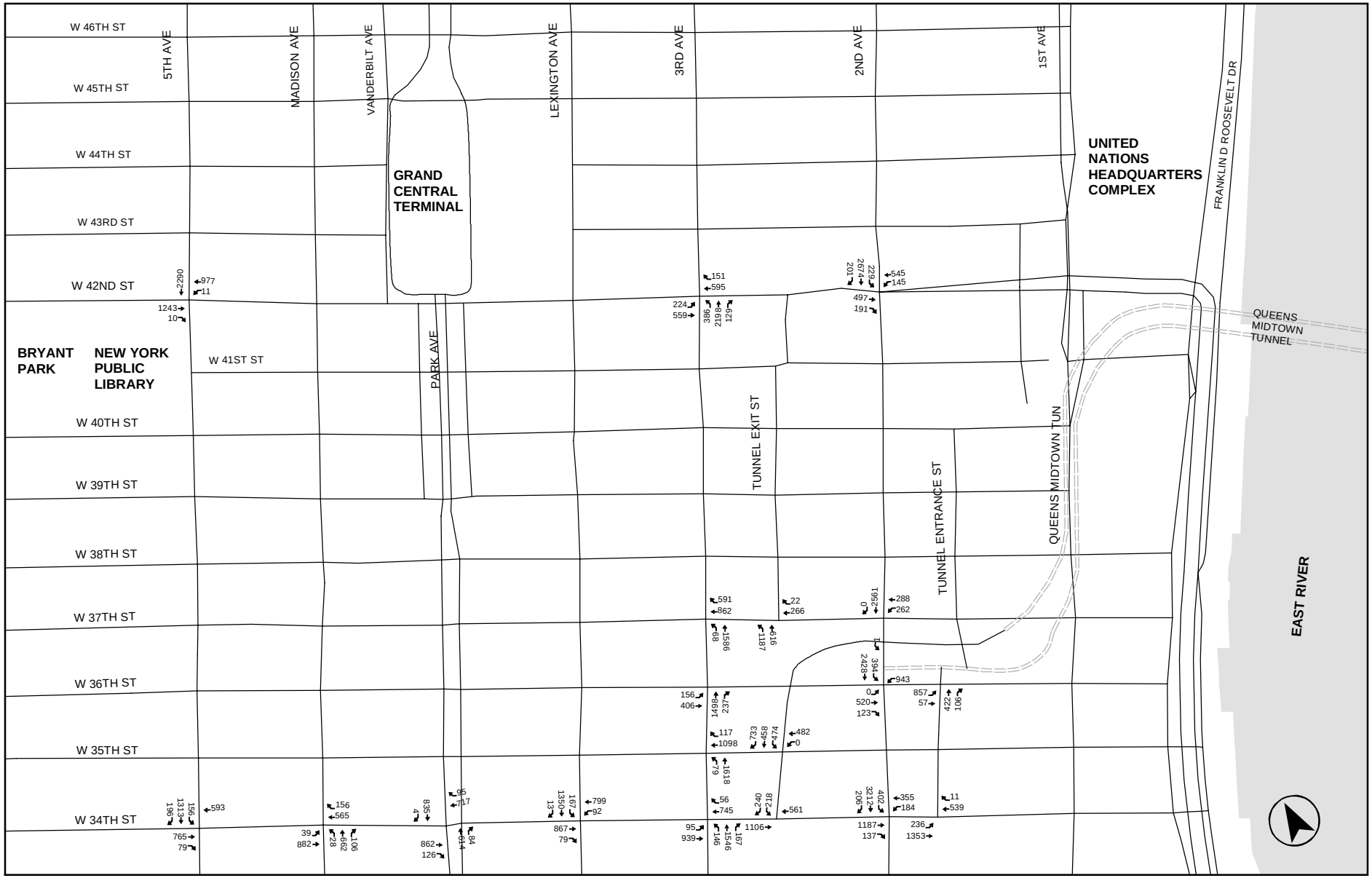
2025 Future Without The Proposed Action Traffic Volumes-Inset 3
(Weekday AM Peak Hour)

Figure 19-130



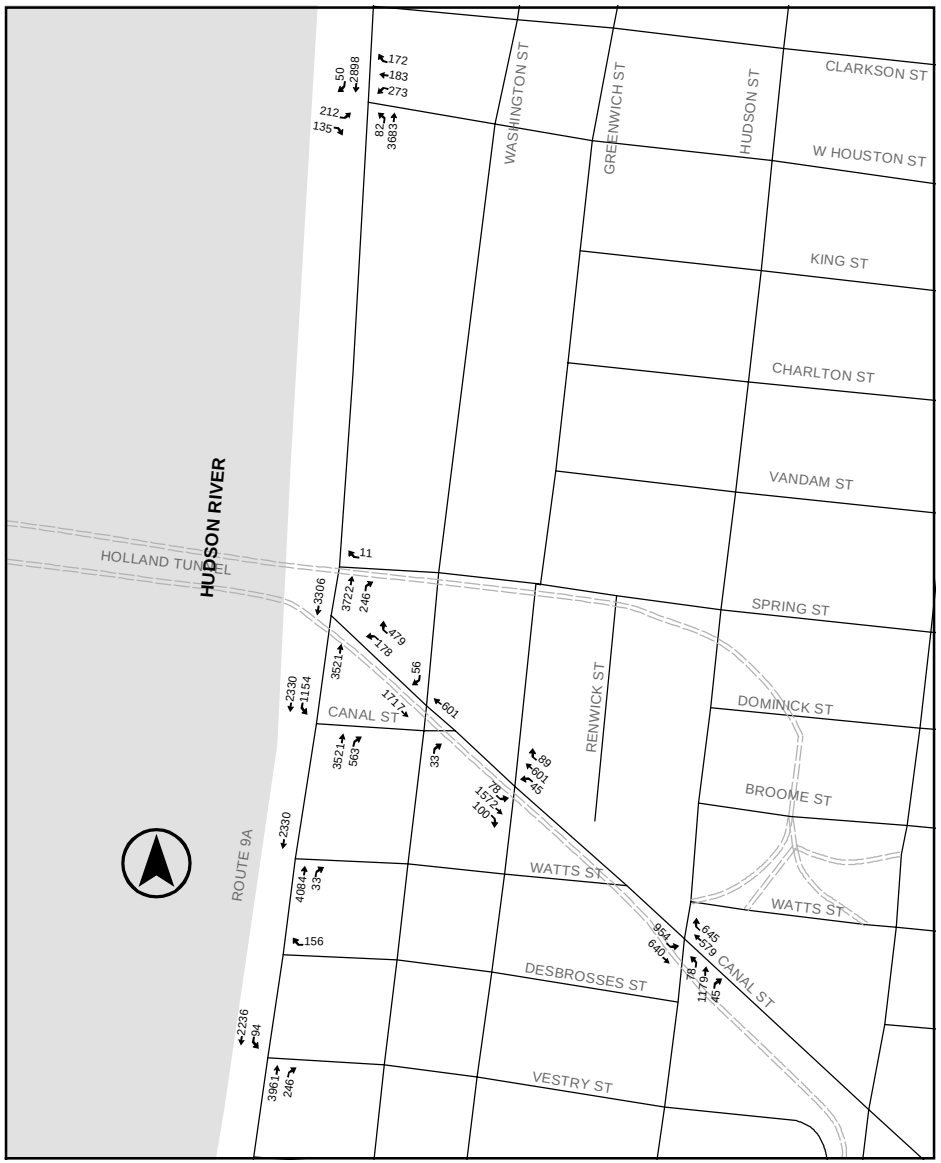
2025 Future Without The Proposed Action Traffic Volumes- Inset 4 (Weekday AM Peak Hour)

Figure 19-131

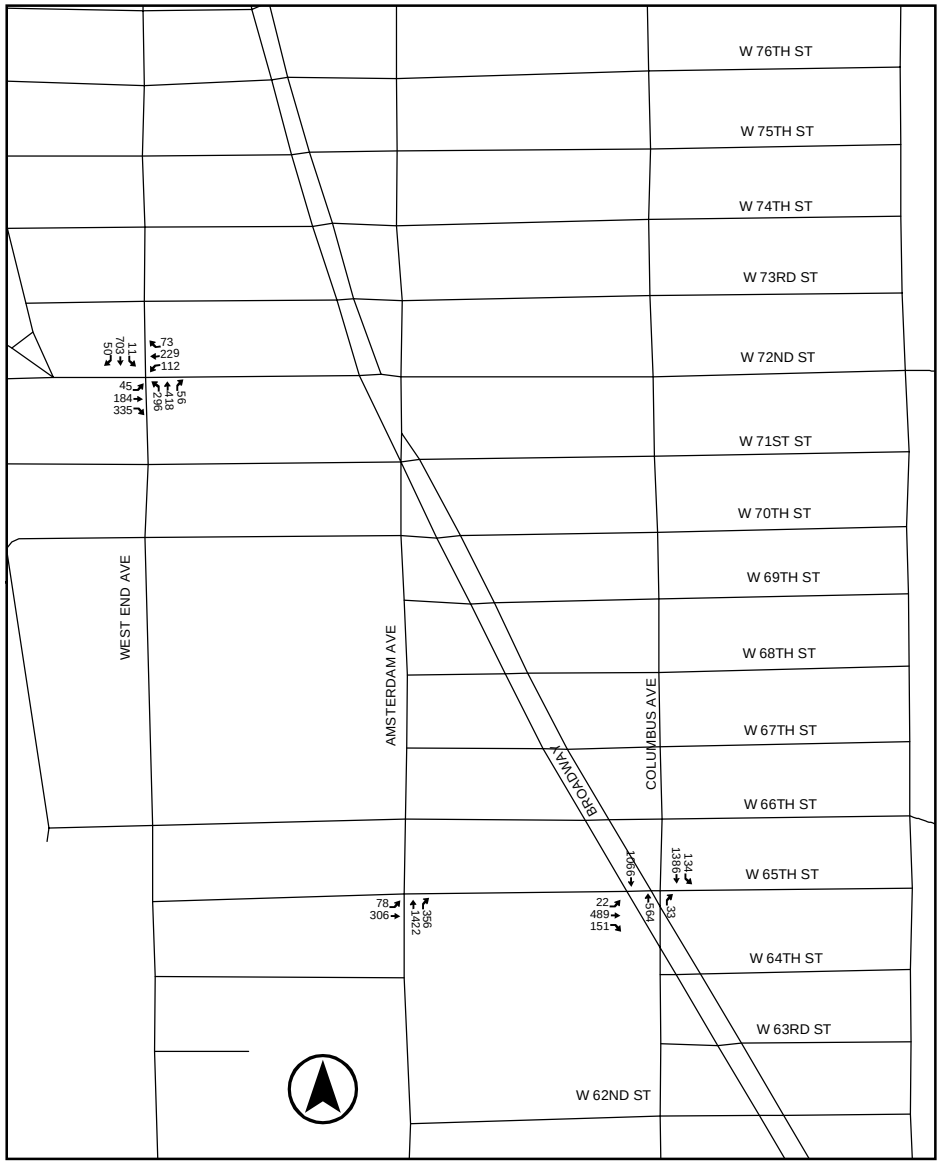


2025 Future Without The Proposed Action Traffic Volumes- Inset 5 (Weekday AM Peak Hour)

Figure 19-132



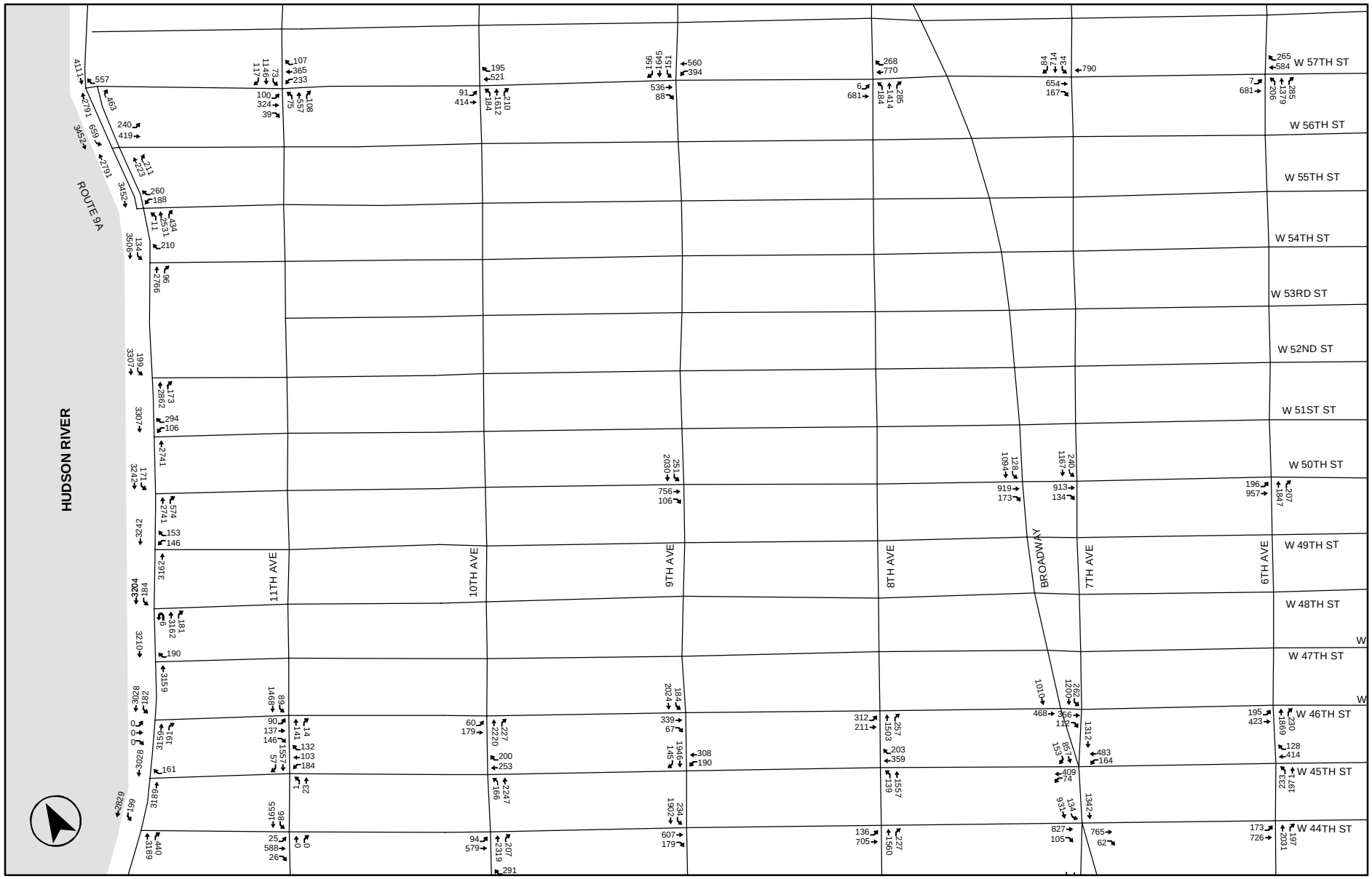
Inset 6



Inset 7

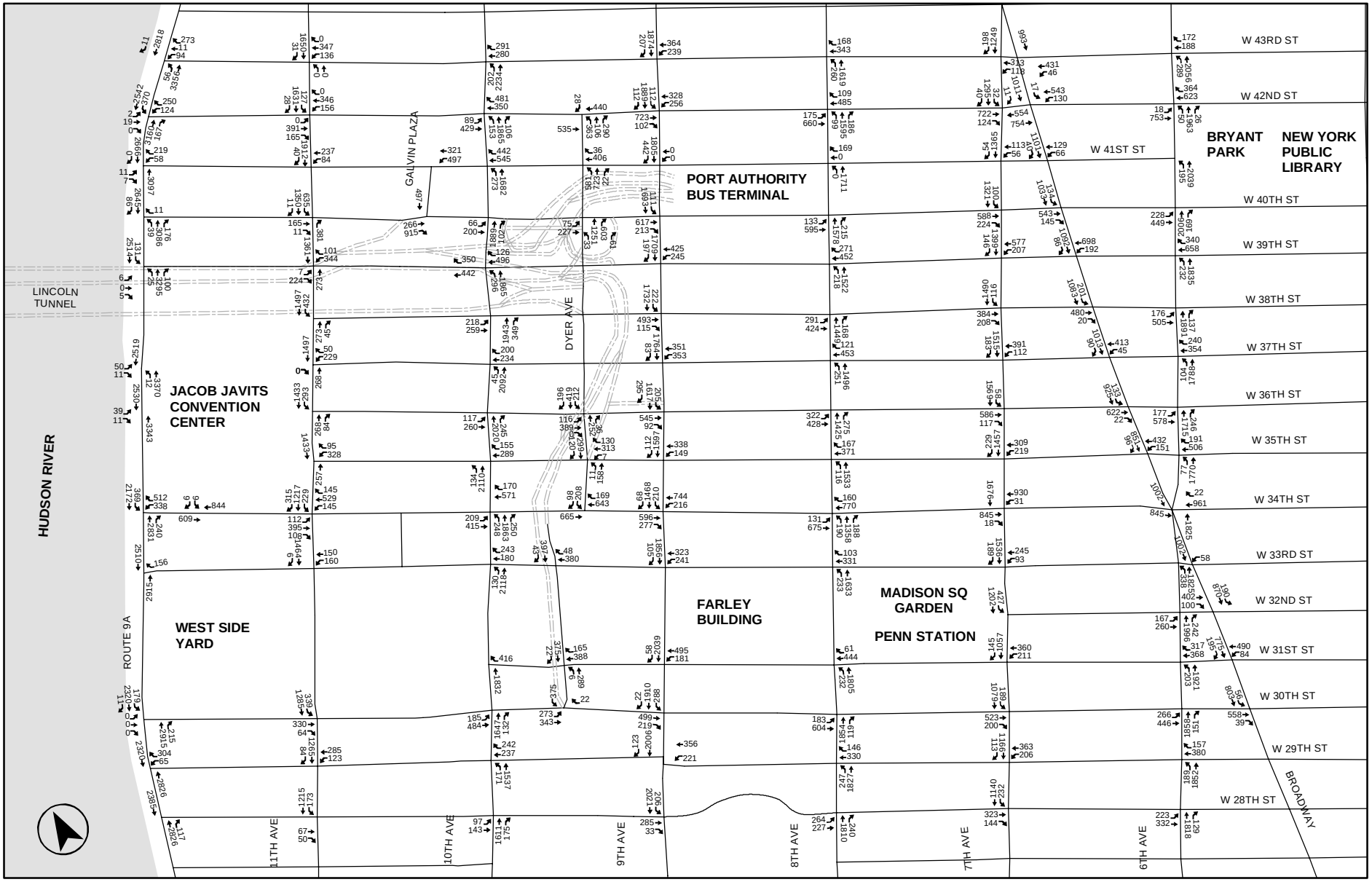
2025 Future Without The Proposed Action Traffic Volumes - Insets 6 and 7 (Weekday AM Peak Hour)

Figure 19-133



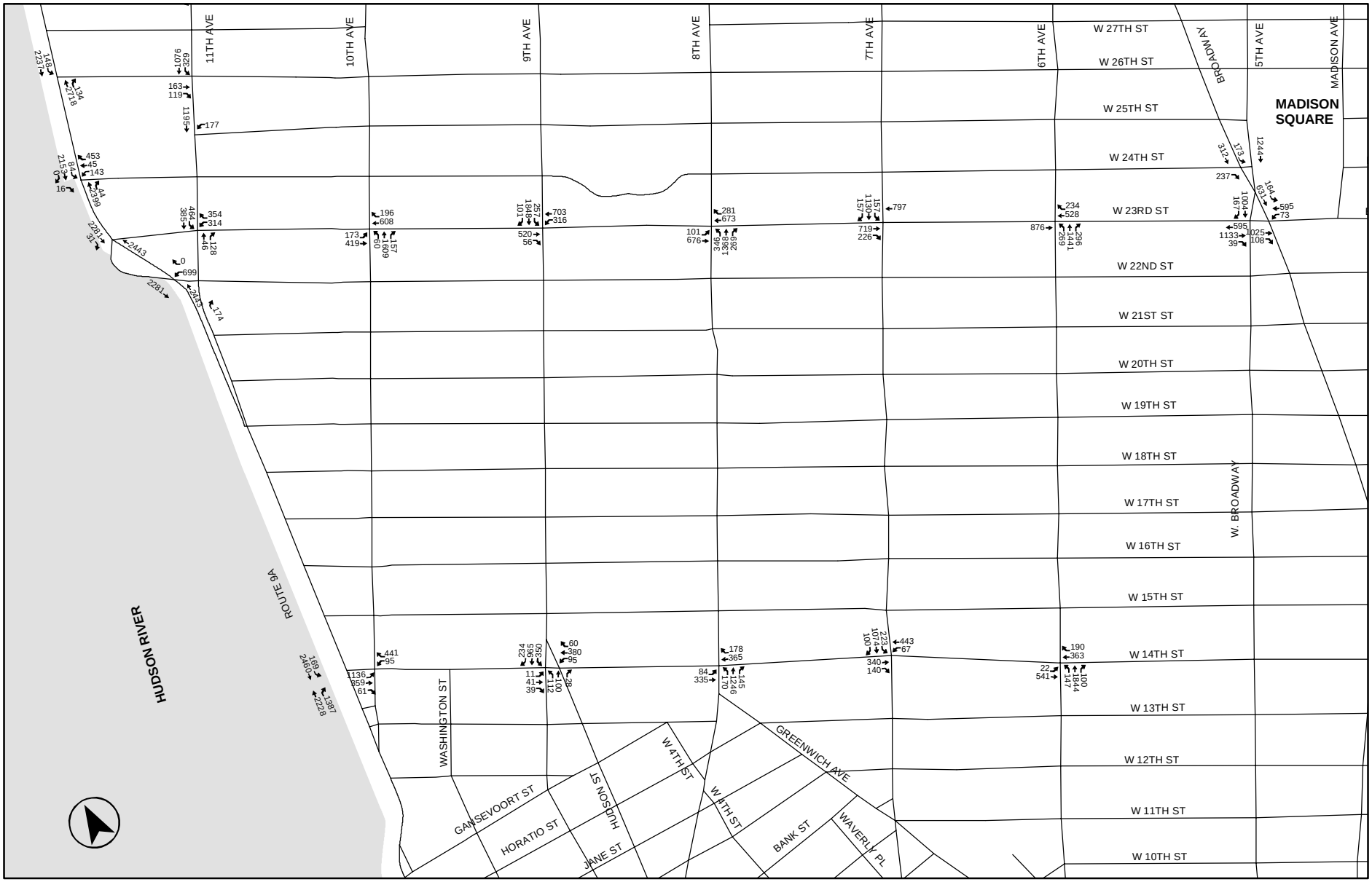
2025 Future Without The Proposed Action Traffic Volumes-Inset 1
(Weekday Midday Peak Hour)

Figure 19-134



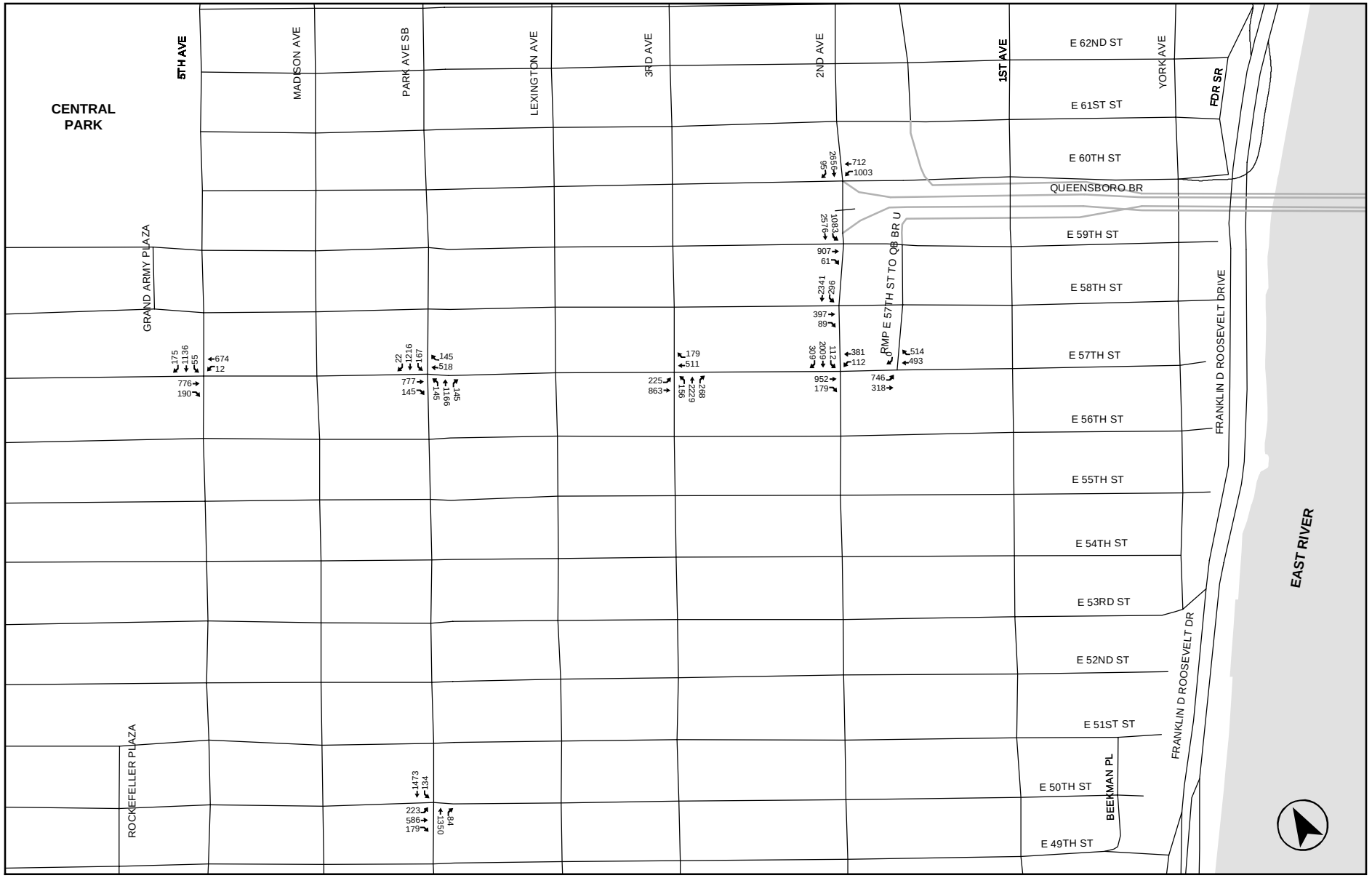
2025 Future Without The Proposed Action Traffic Volumes- Inset 2 (Weekday Midday Peak Hour)

Figure 19-135



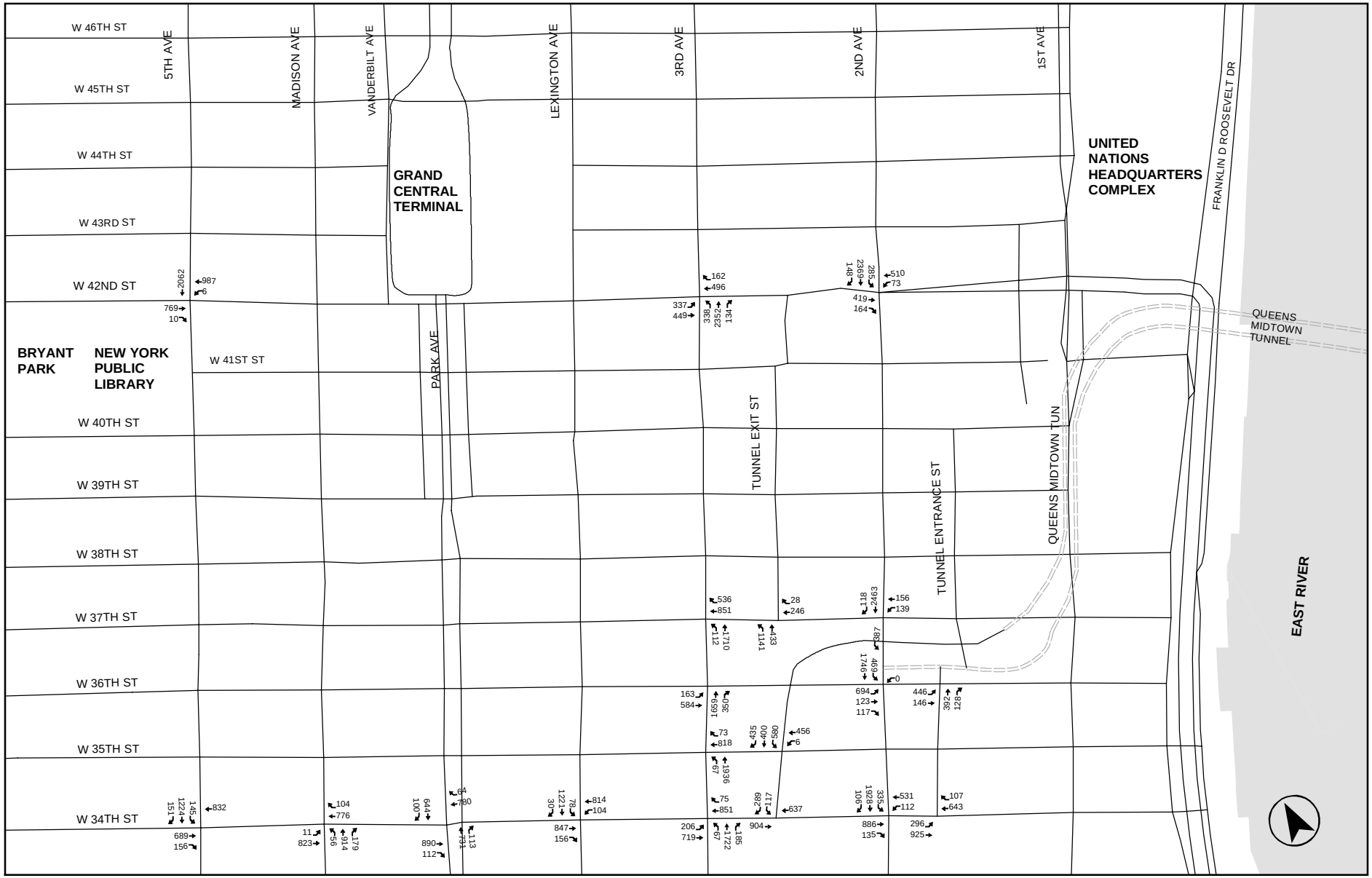
2025 Future Without The Proposed Action Traffic Volumes-Inset 3
(Weekday Midday Peak Hour)

Figure 19-136



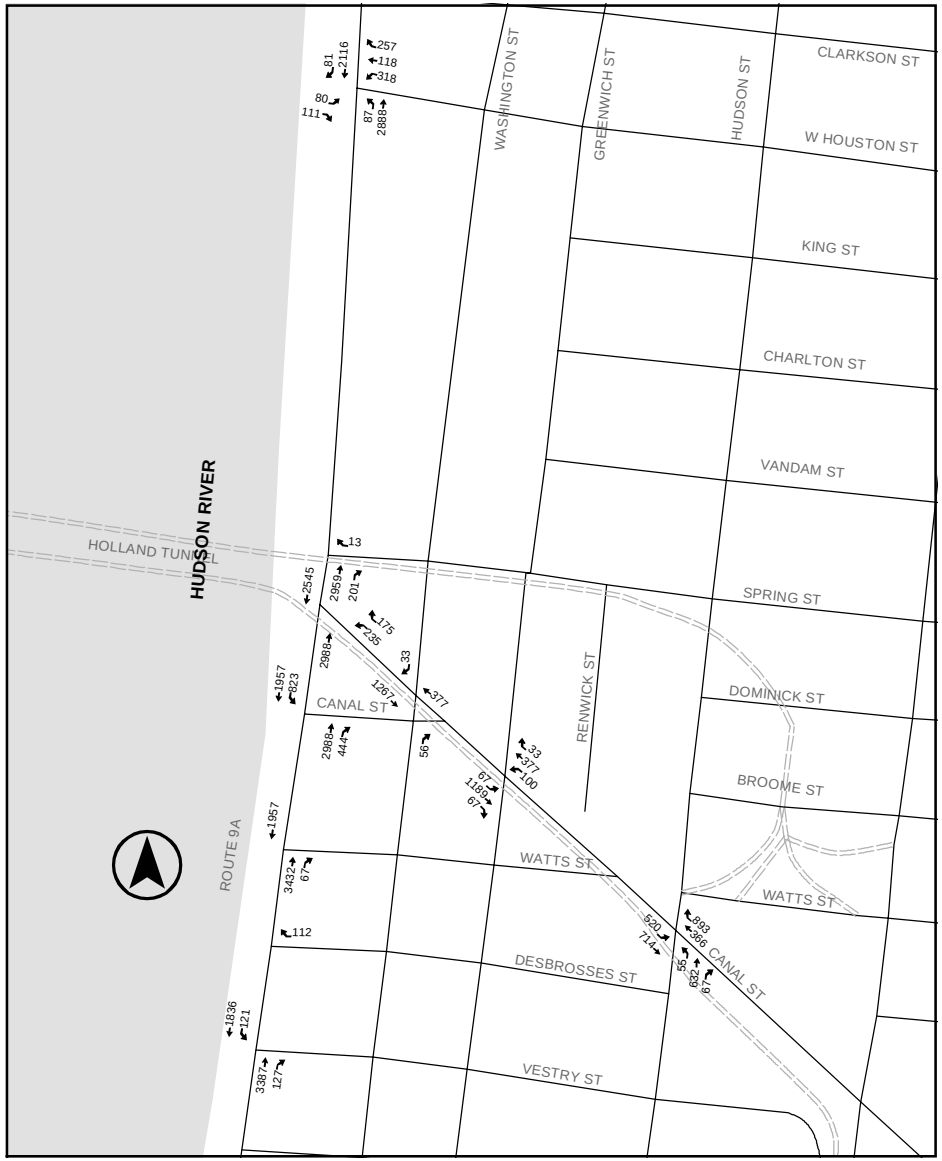
2025 Future Without The Proposed Action Traffic Volumes-Inset 4
(Weekday Midday Peak Hour)

Figure 19-137

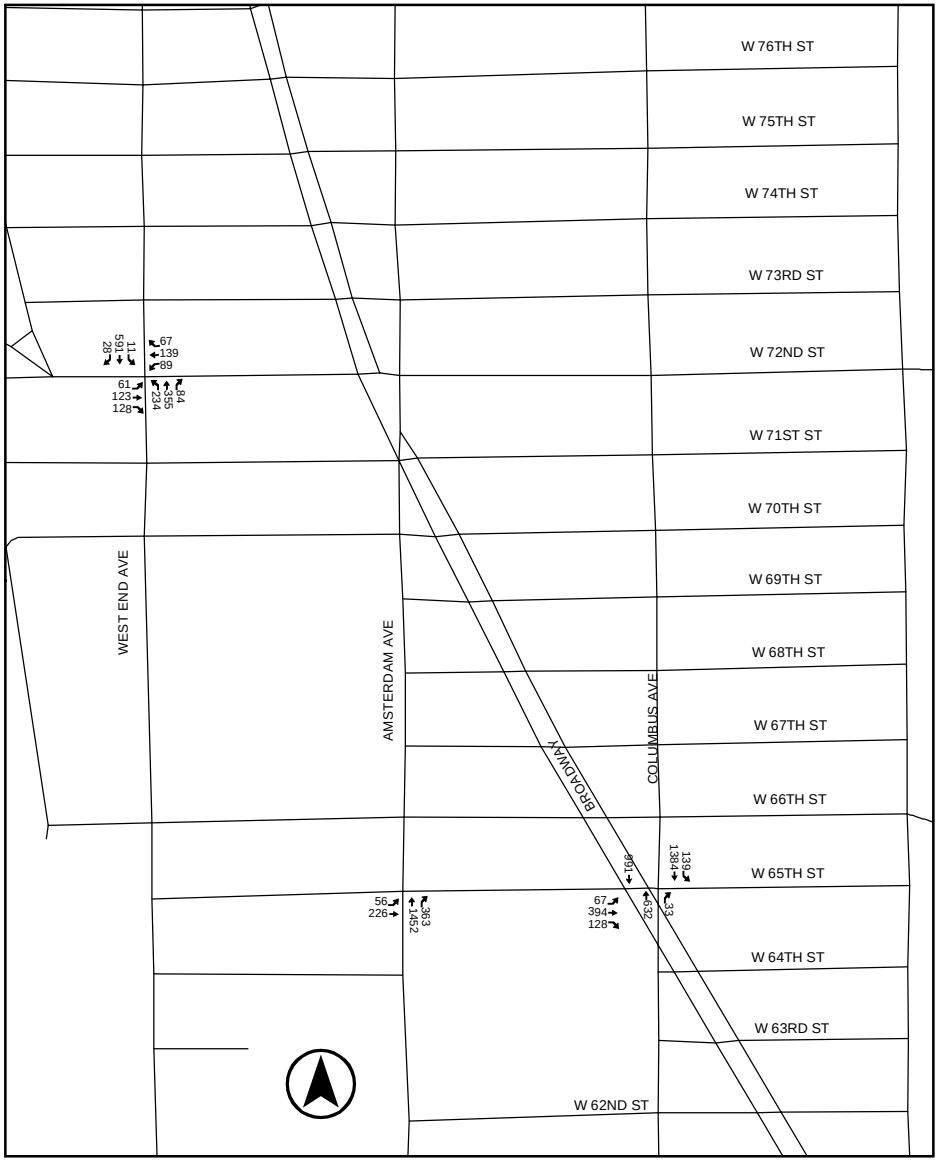


2025 Future Without The Proposed Action Traffic Volumes-Inset 5
(Weekday Midday Peak Hour)

Figure 19-138



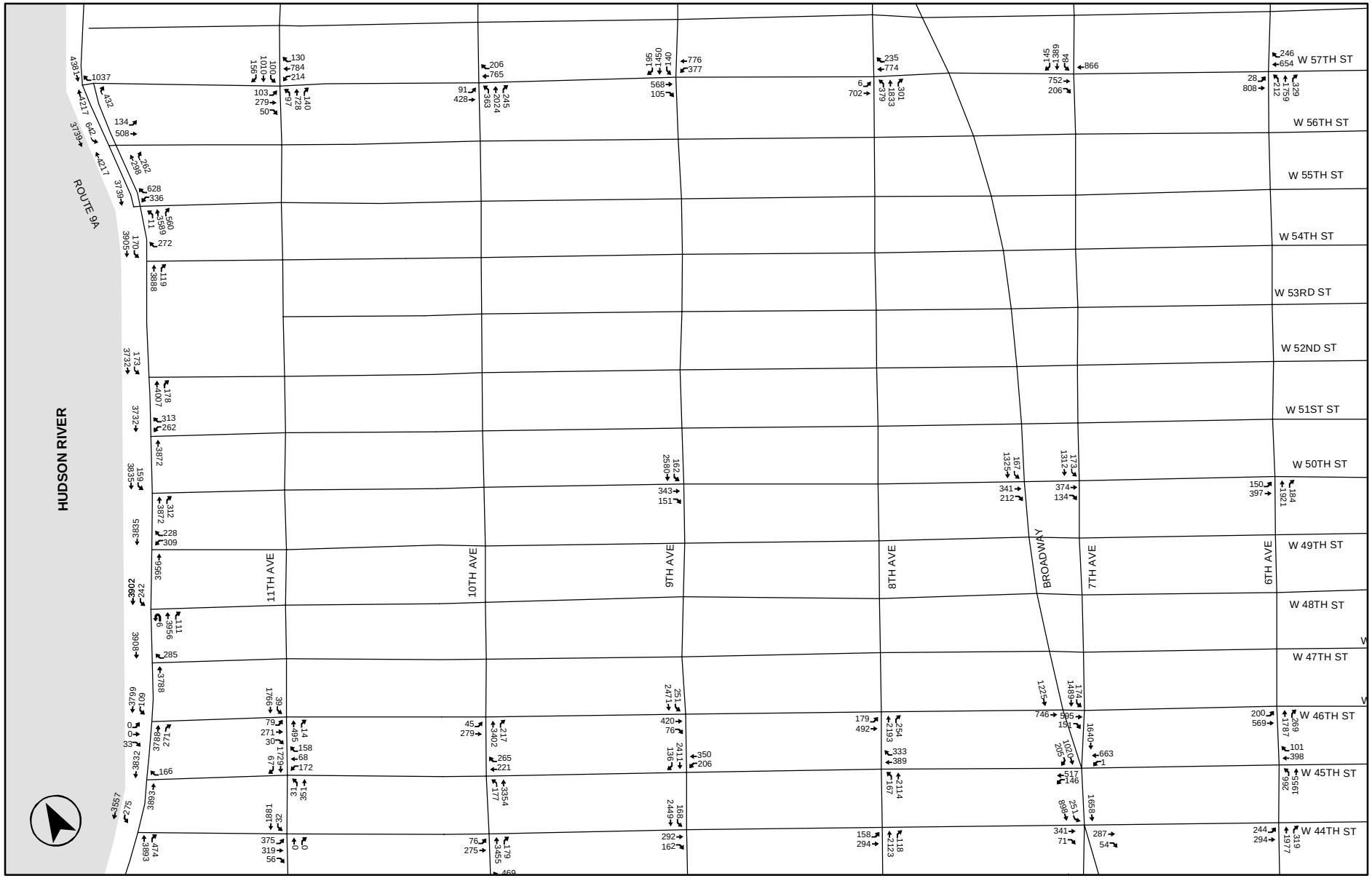
Inset 6



Inset 7

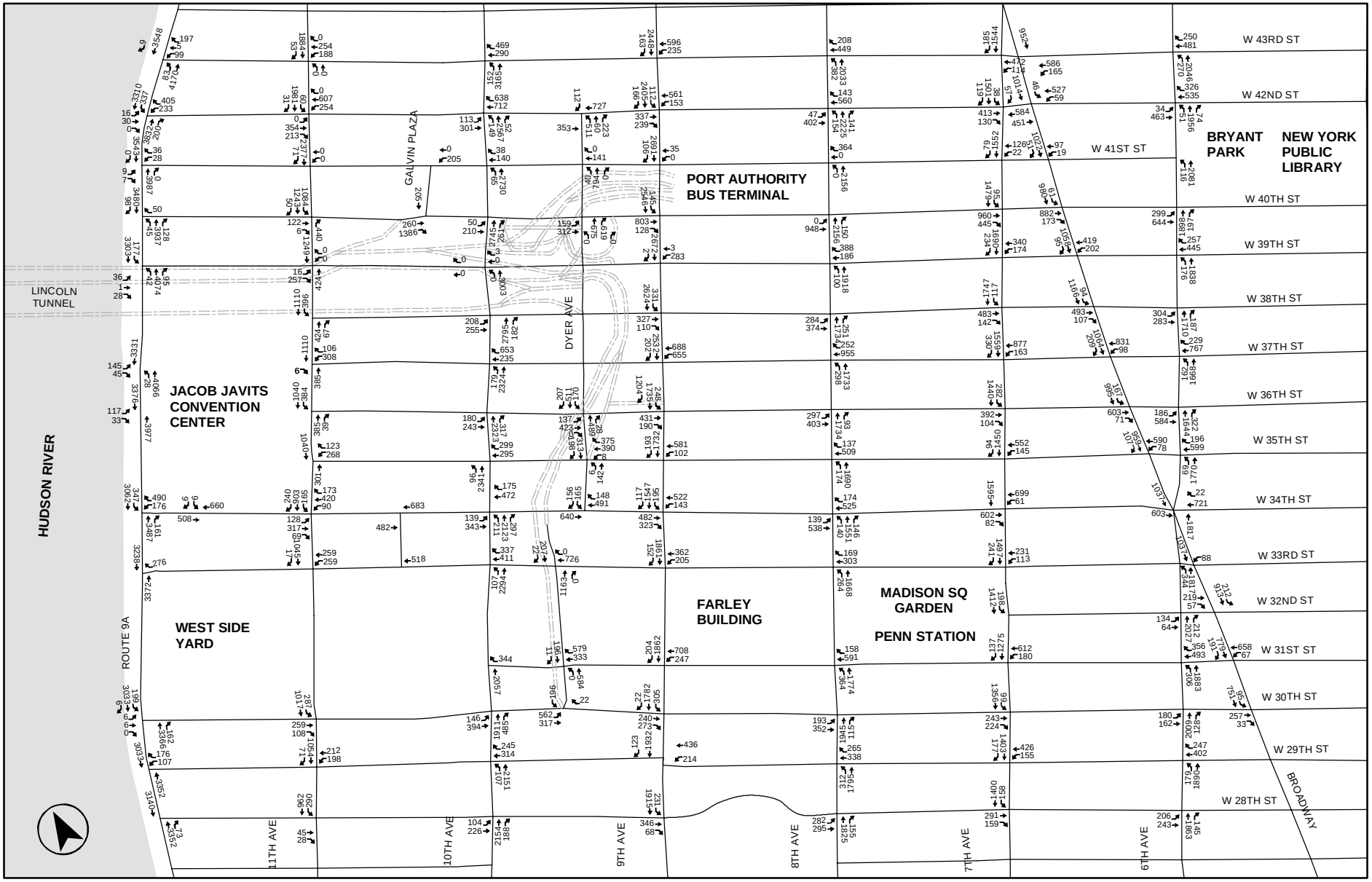
2025 Future Without The Proposed Action
Traffic Volumes - Insets 6 and 7
(Weekday Midday Peak Hour)

Figure 19-139



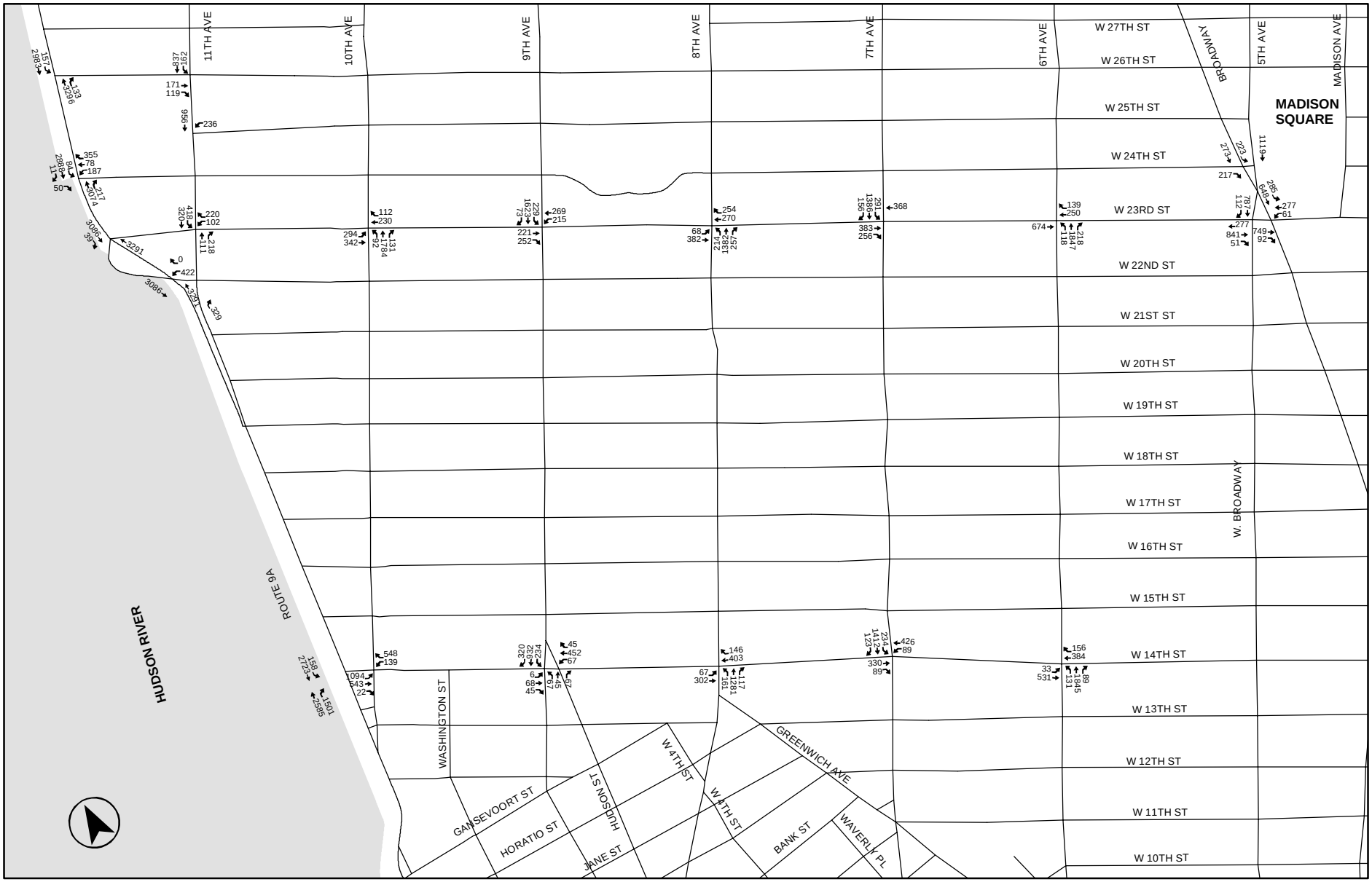
2025 Future Without The Proposed Action Traffic Volumes-Inset 1
(Weekday PM Peak Hour)

Figure 19-140



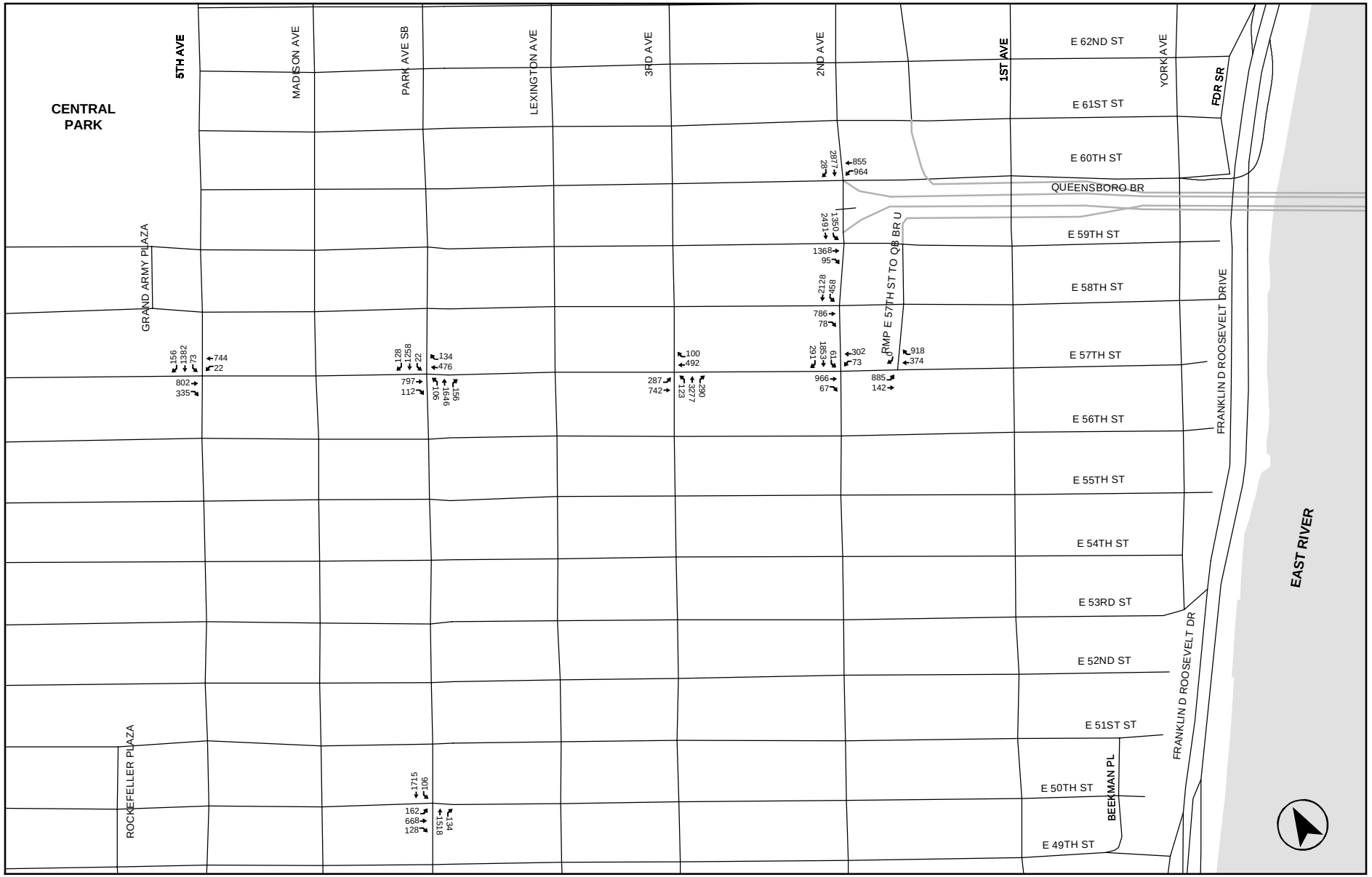
2025 Future Without The Proposed Action Traffic Volumes-Inset 2
(Weekday PM Peak Hour)

Figure 19-141



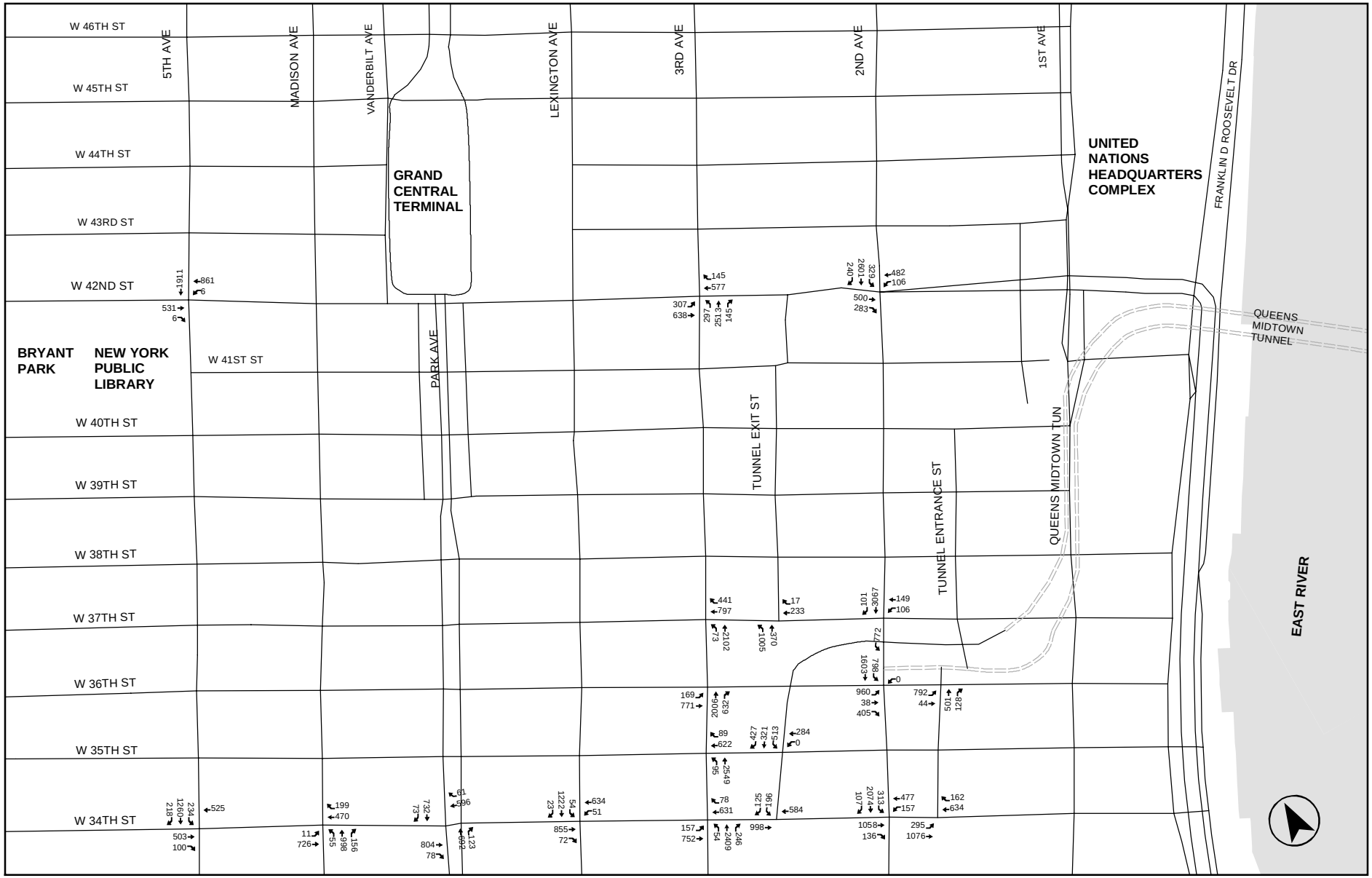
2025 Future Without The Proposed Action Traffic Volumes-Inset 3
(Weekday PM Peak Hour)

Figure 19-142



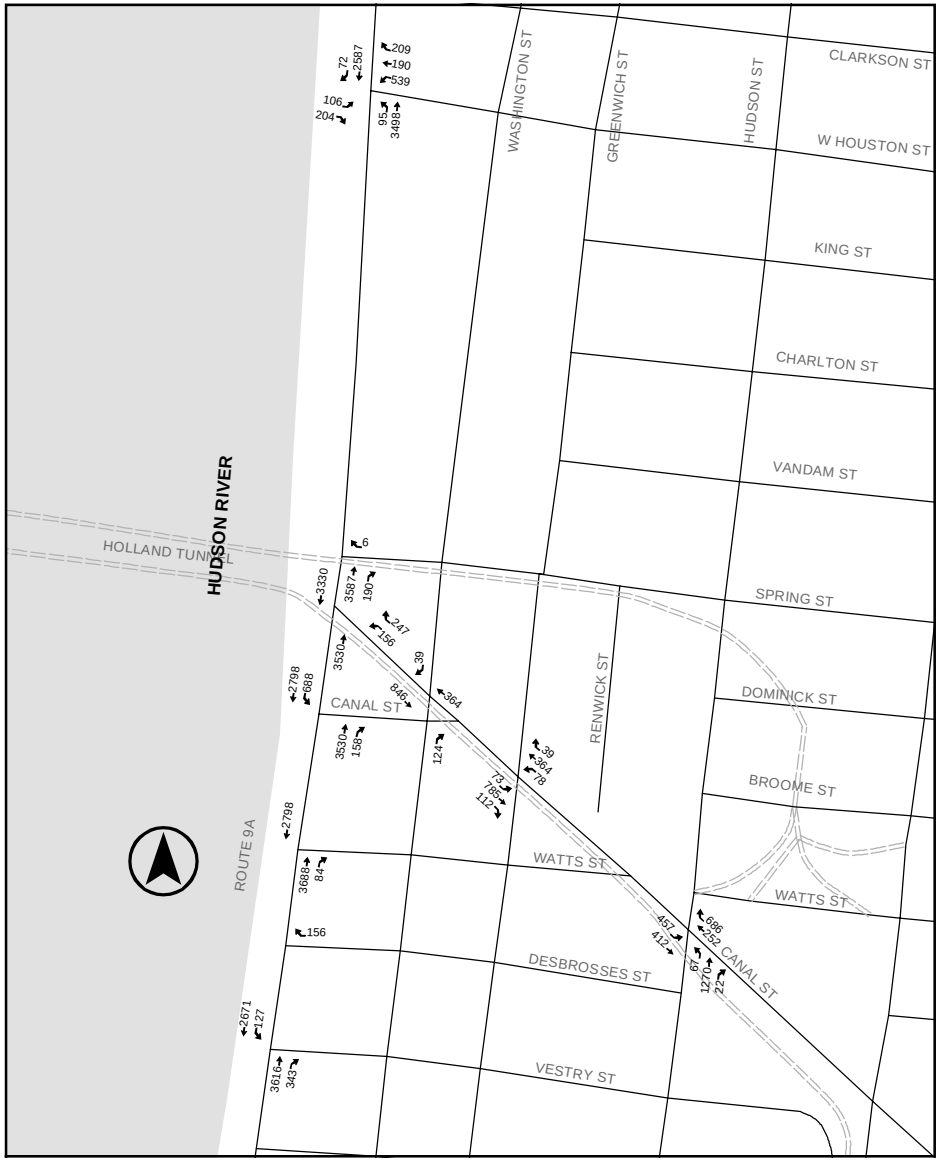
2025 Future Without The Proposed Action Traffic Volumes-Inset 4 (Weekday PM Peak Hour)

Figure 19-143

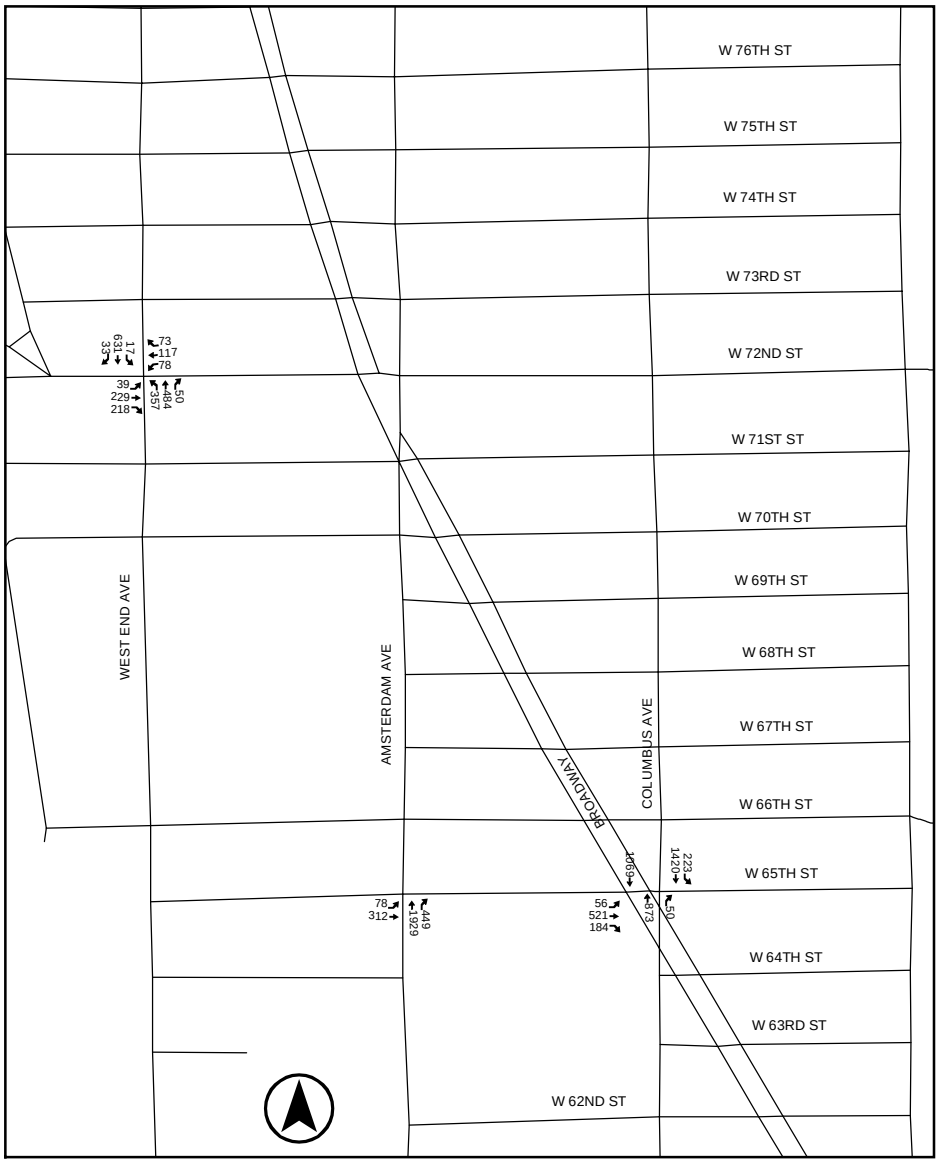


2025 Future Without The Proposed Action Traffic Volumes-Inset 5 (Weekday PM Peak Hour)

Figure 19-144



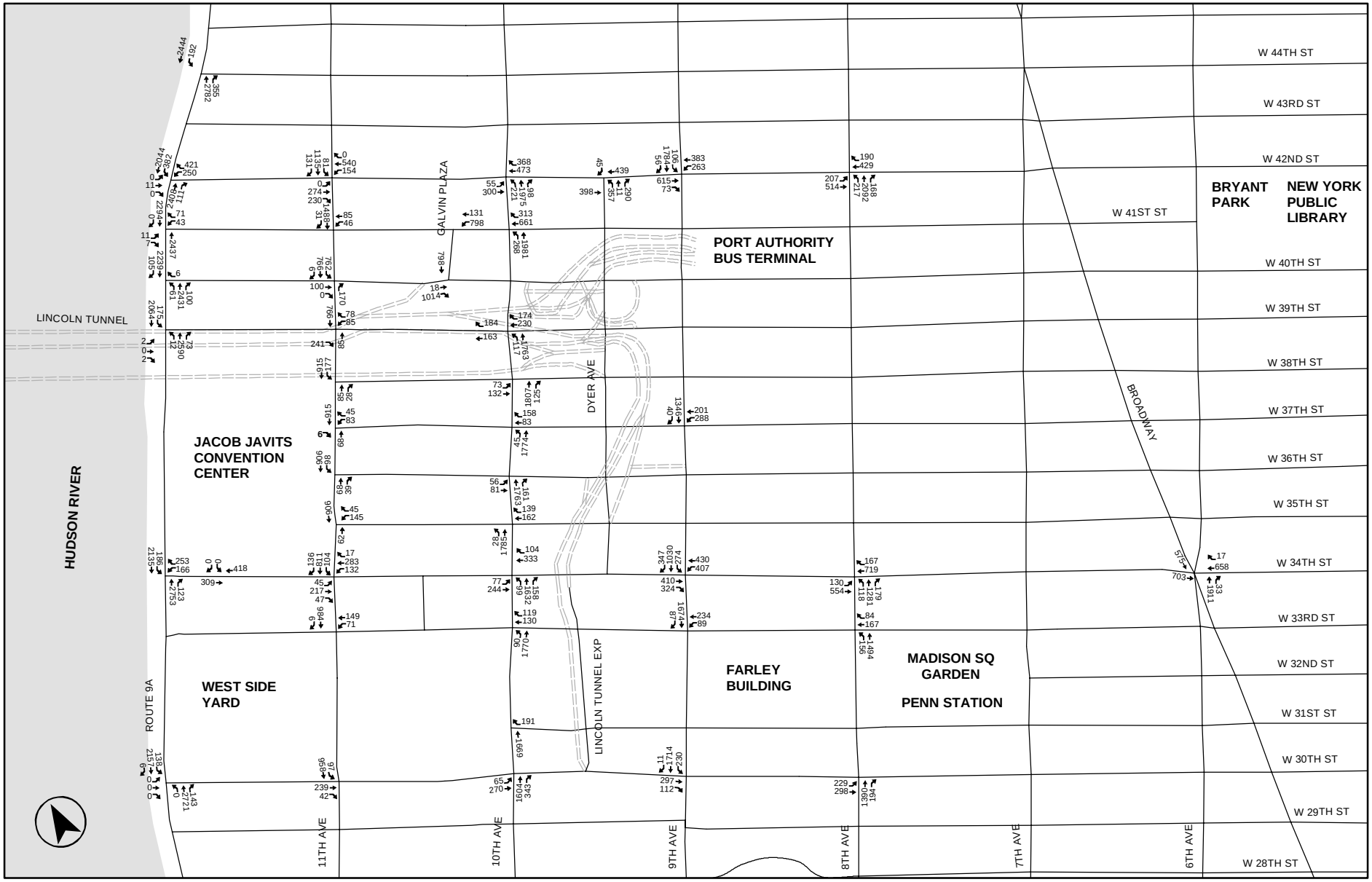
Inset 6



Inset 7

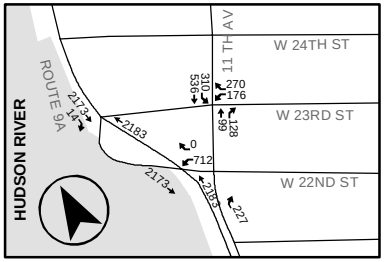
2025 Future Without The Proposed Action
Traffic Volumes - Inset 6 and 7
(Weekday PM Peak Hour)

Figure 19-145

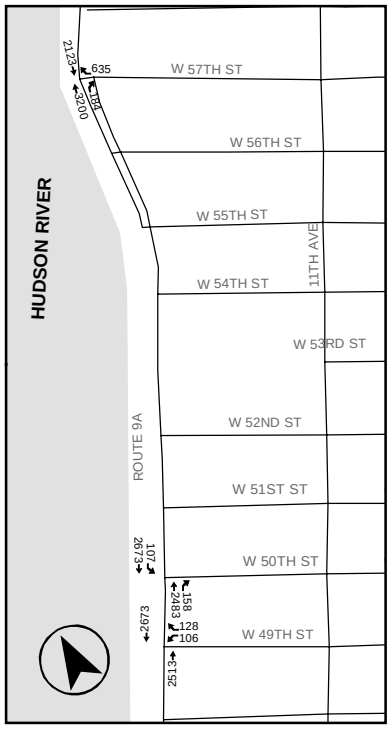


2025 Future Without The Proposed Action Traffic Volumes-Inset 1
(Weeknight Special Event Peak Hour)

Figure 19-146



Inset 2



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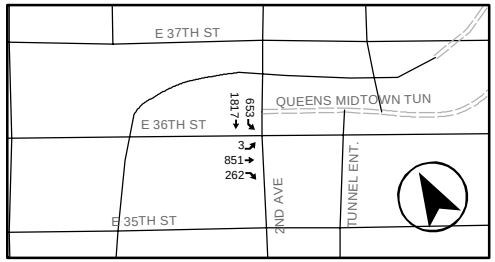
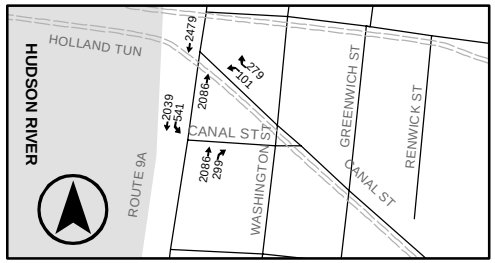


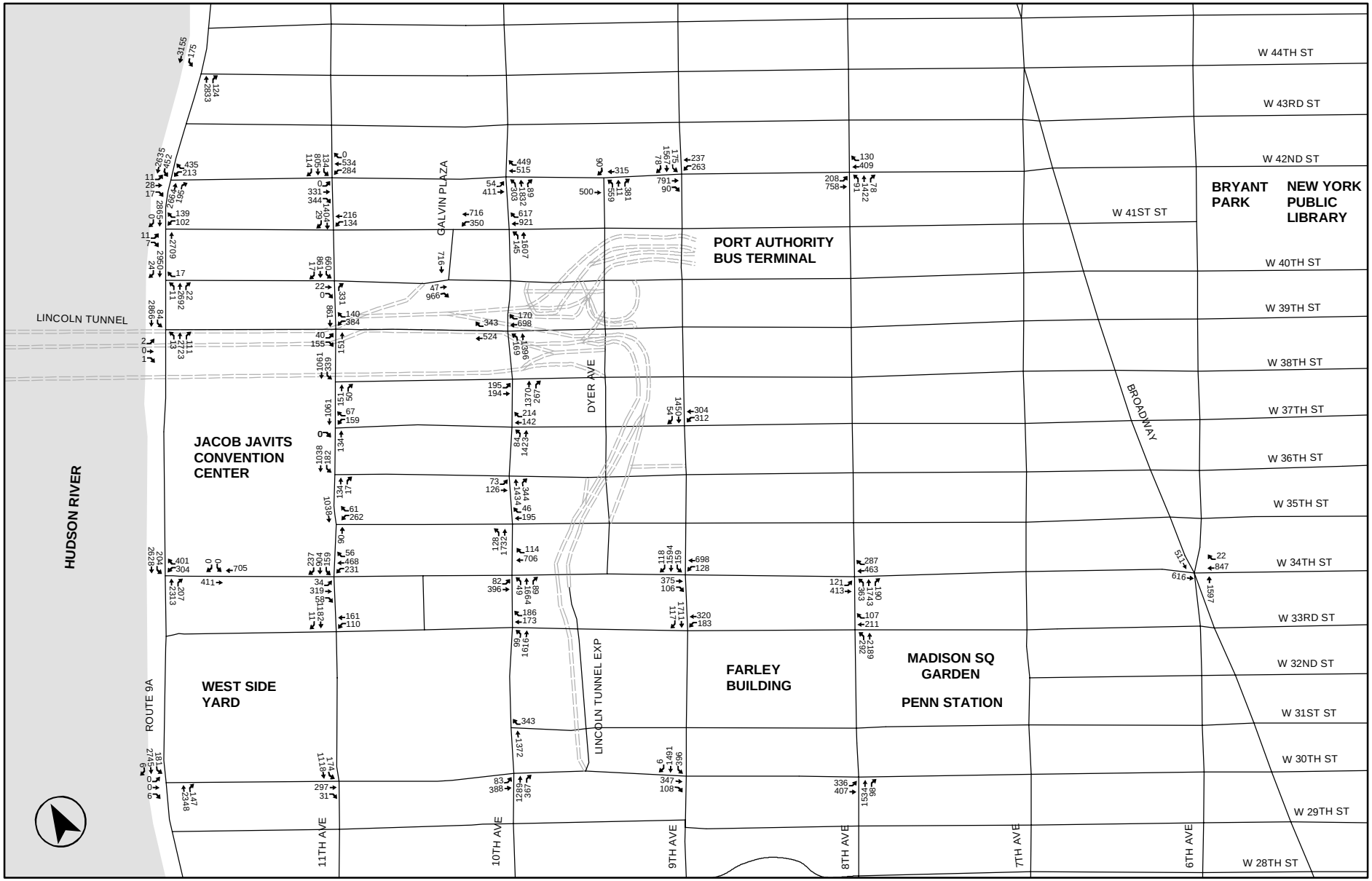
Inset 4



Inset 5

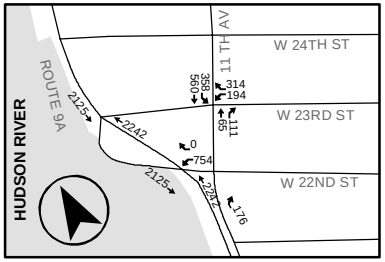
2025 Future Without The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-147

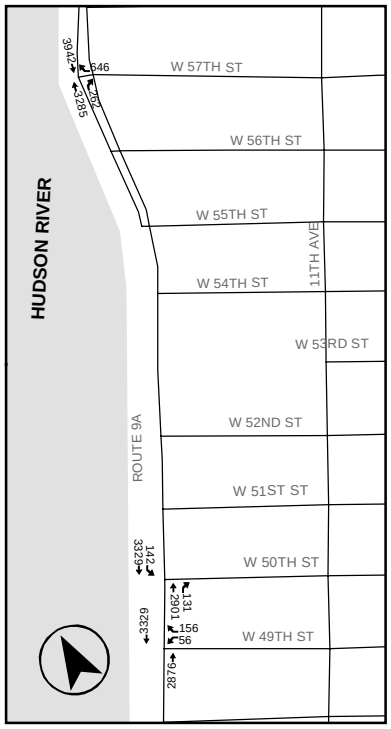


2025 Future Without The Proposed Action Traffic Volumes-Inset 1
(Sunday Special Event Peak Hour)

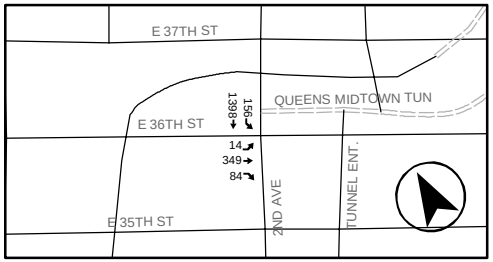
Figure 19-148



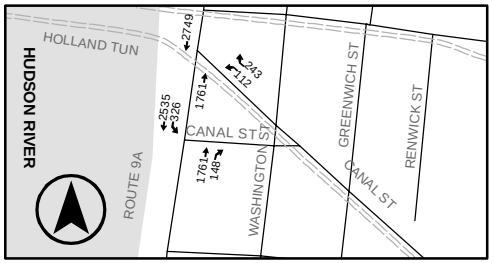
Inset 2



Inset 3



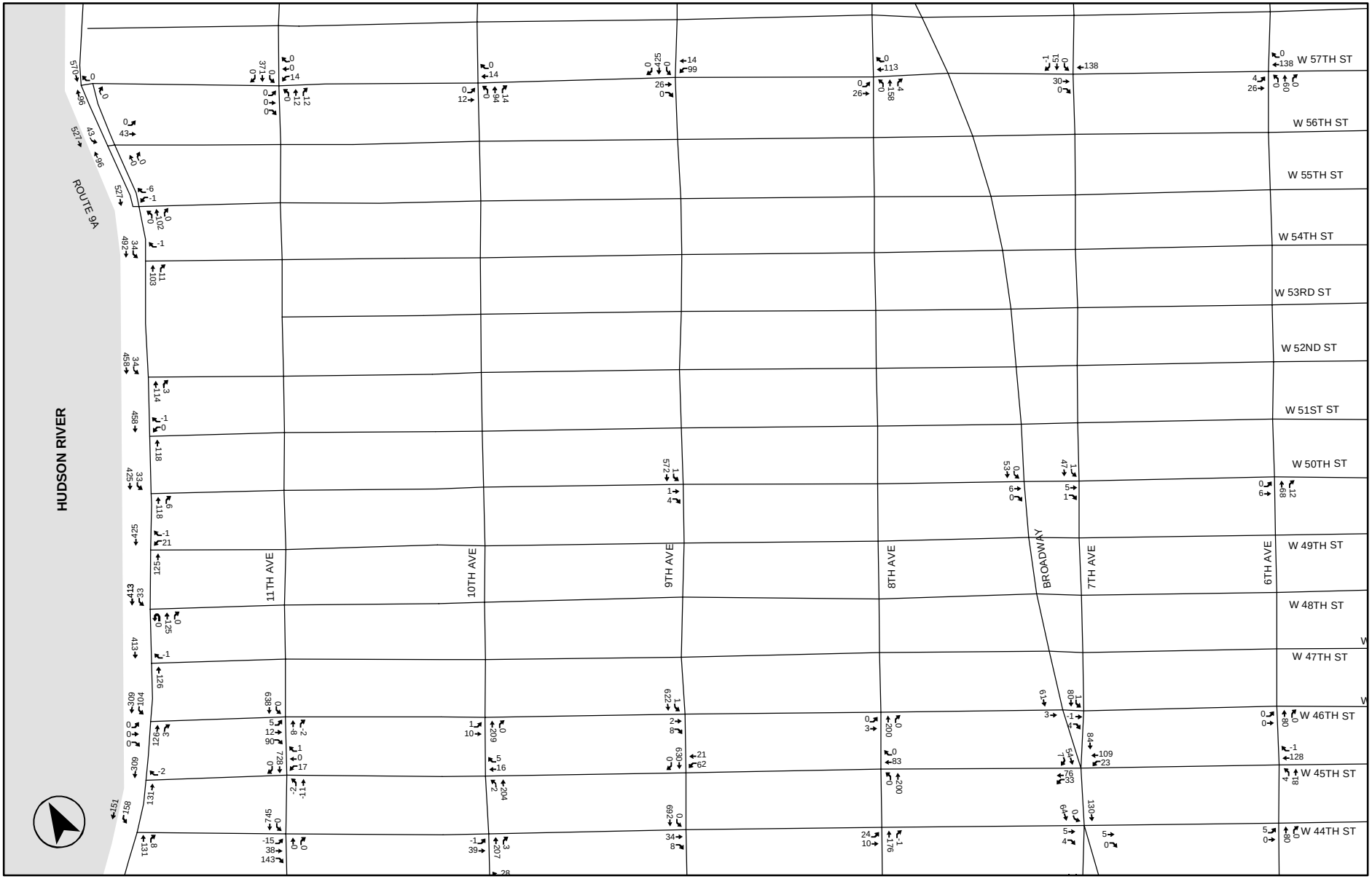
Inset 4



Inset 5

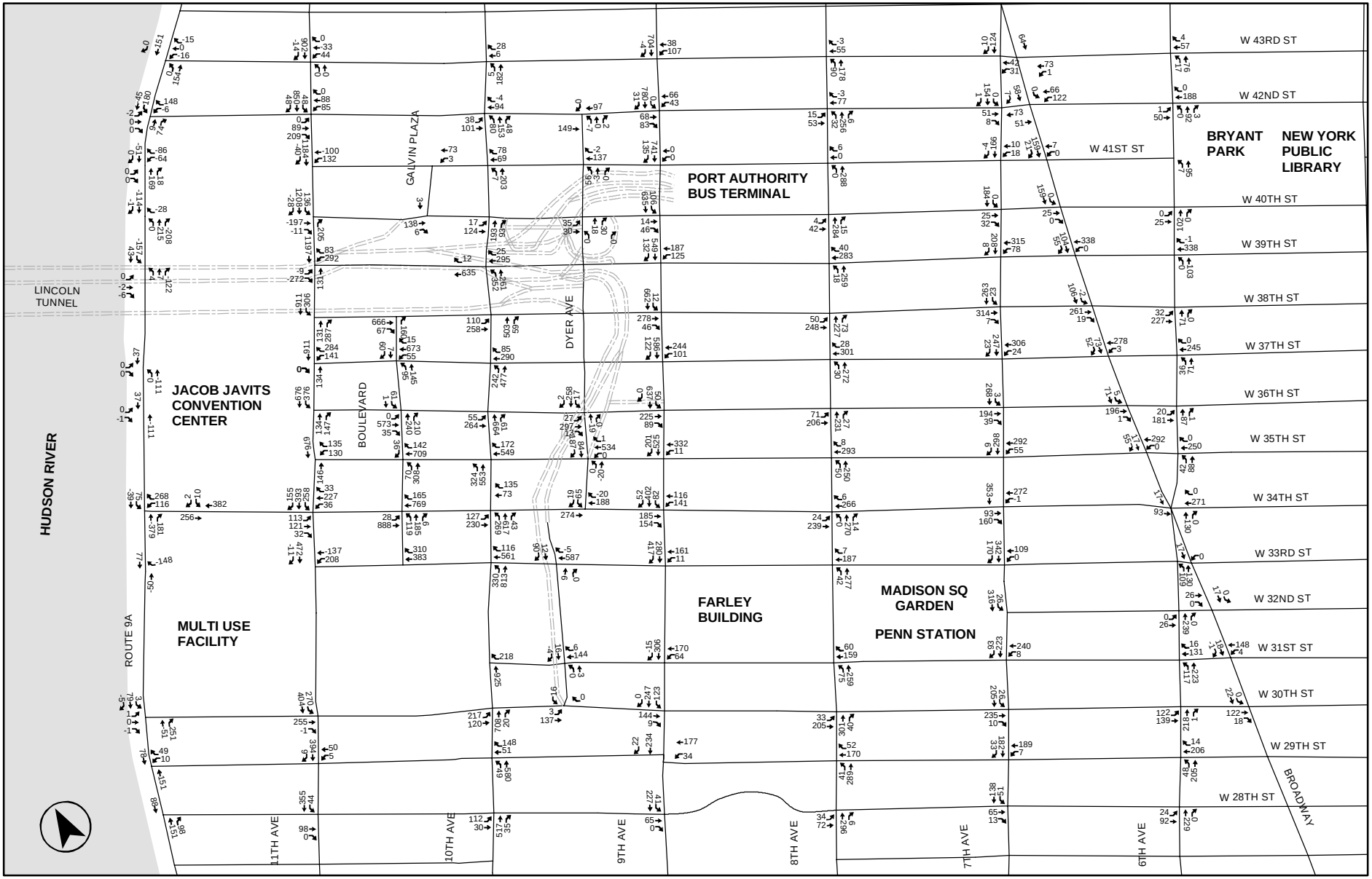
2025 Future Without The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-149



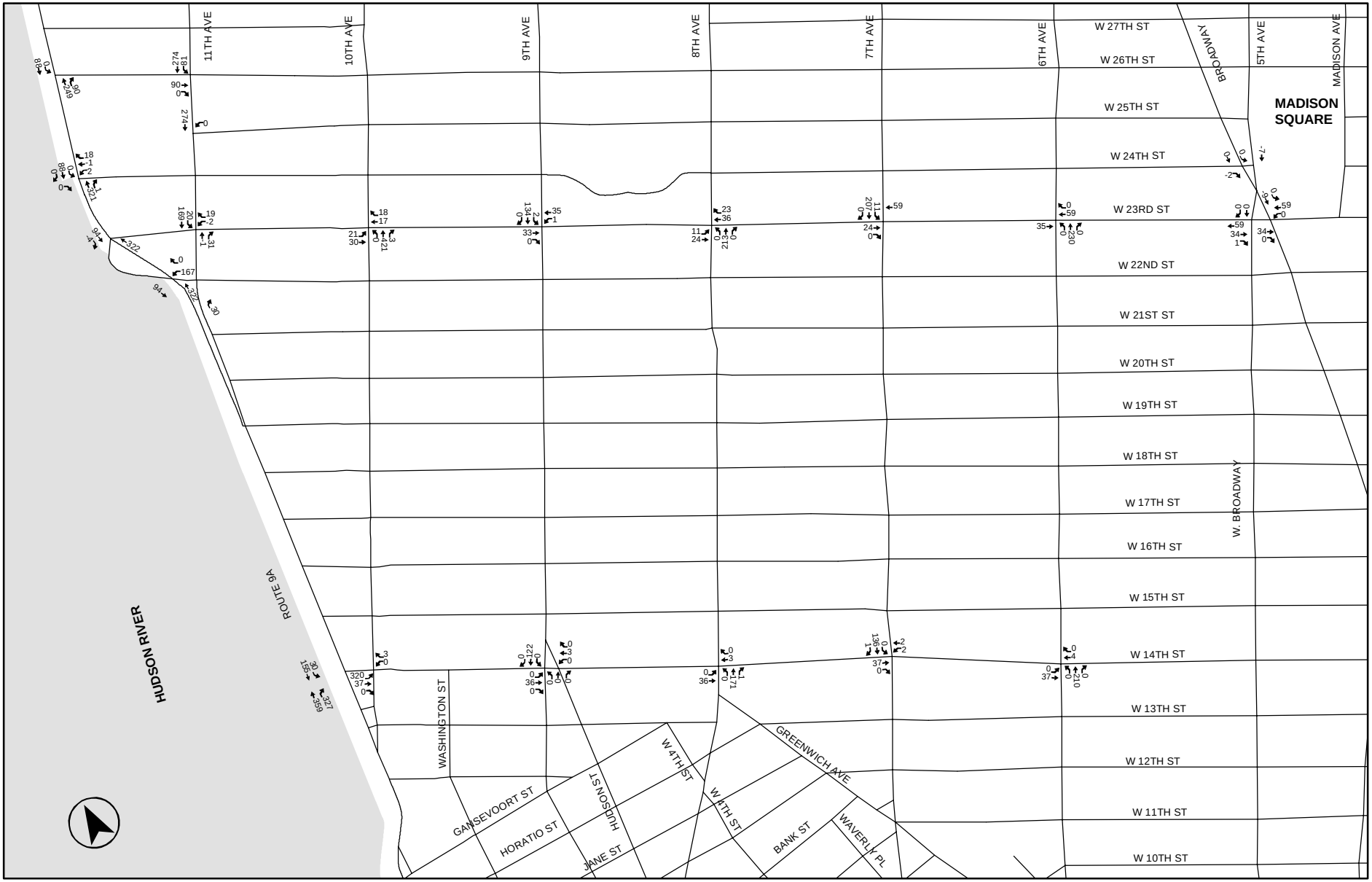
2025 Future With The Proposed Action Incremental Traffic Volumes- Inset 1 (Weekday AM Peak Hour)

Figure 19-150



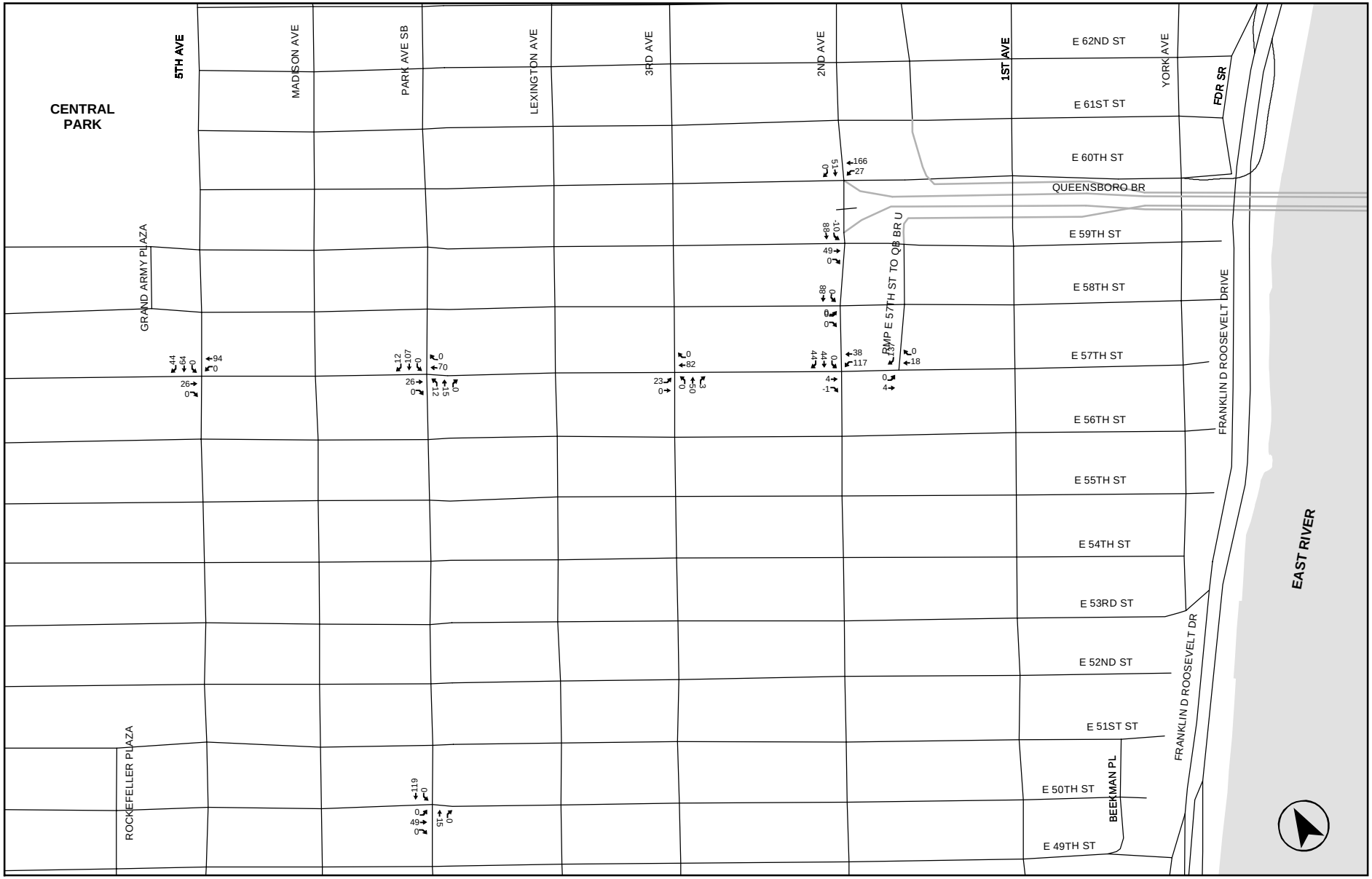
2025 Future With The Proposed Action Incremental Traffic Volumes- Inset 2 (Weekday AM Peak Hour)

Figure 19-151



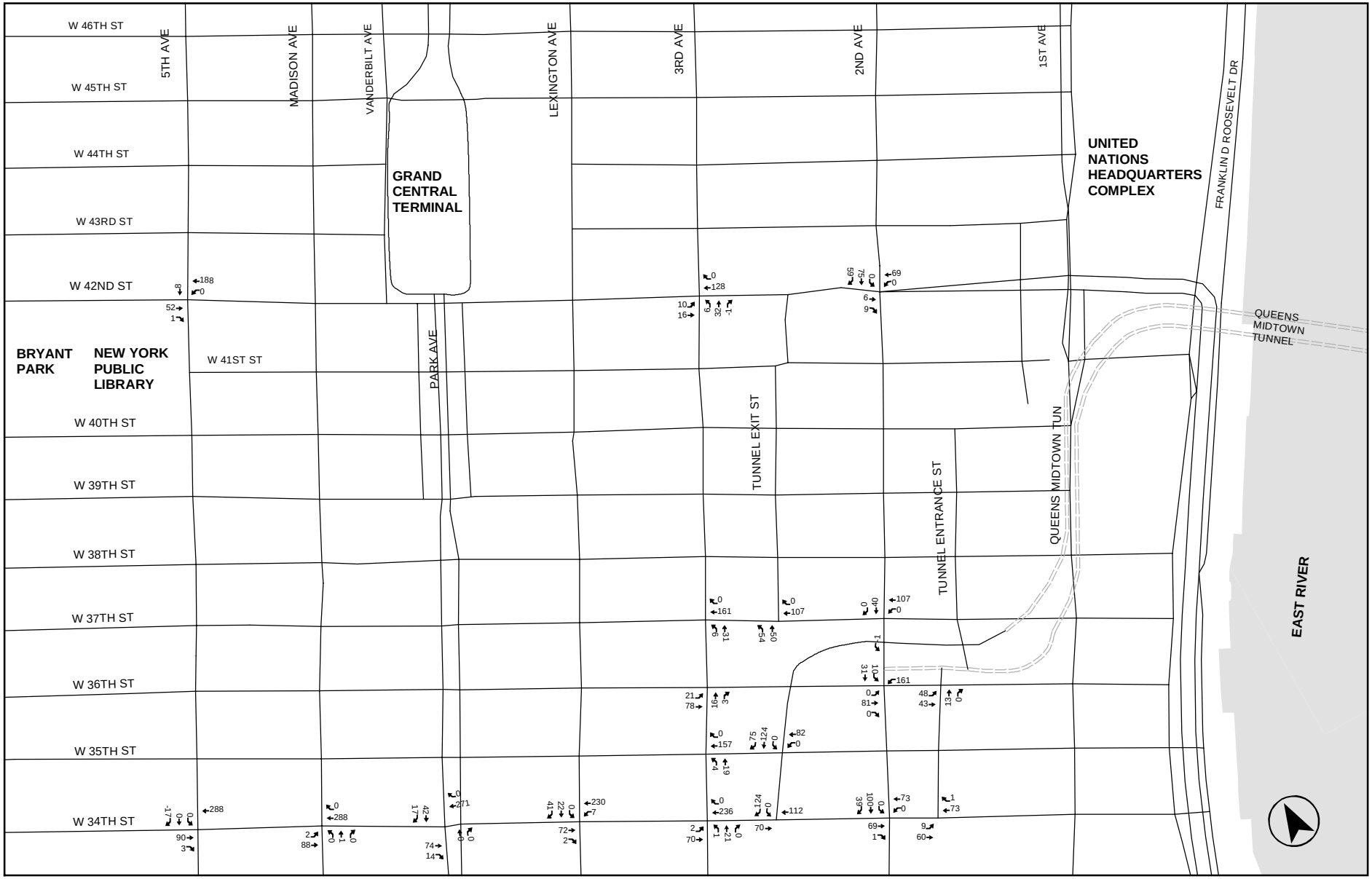
2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 3
(Weekday AM Peak Hour)

Figure 19-152



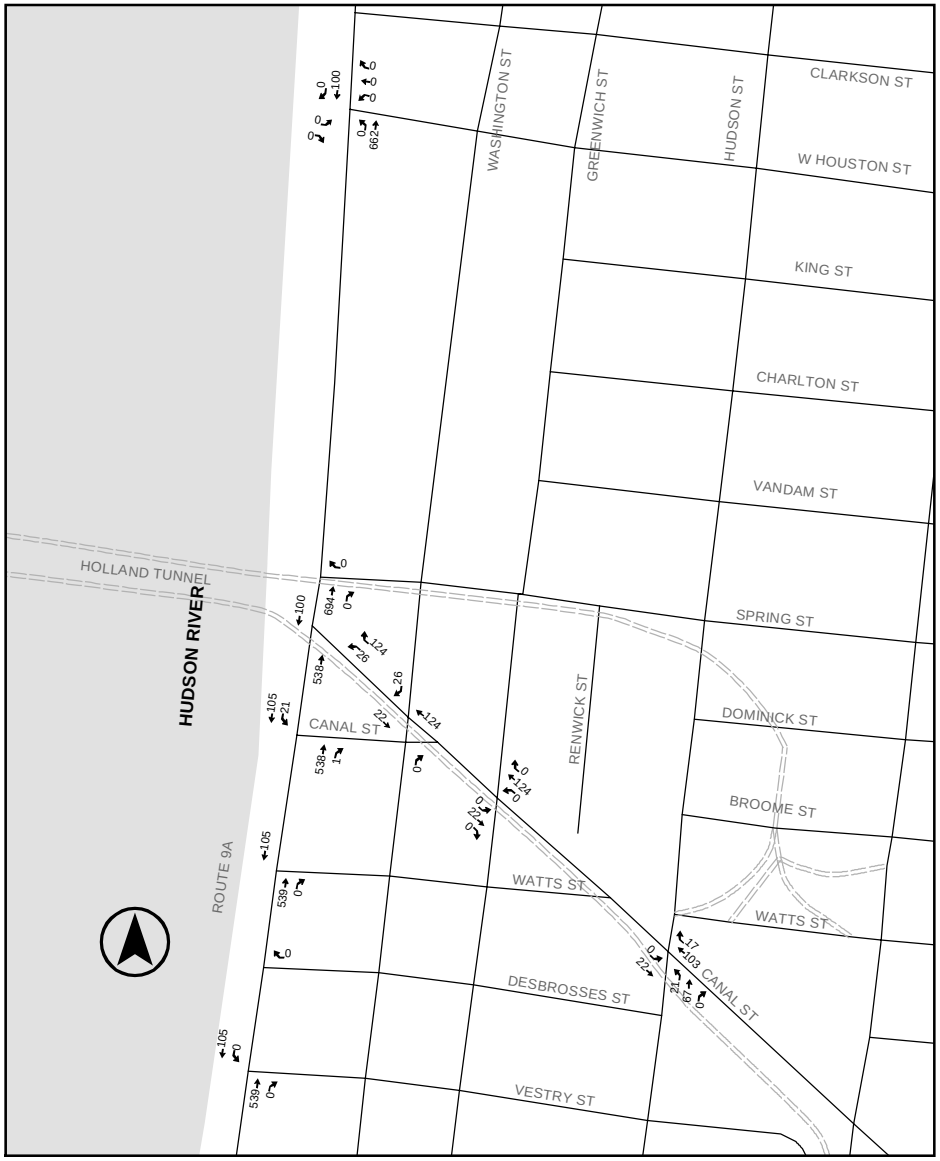
2025 Future With The Proposed Action Incremental Traffic Volumes-
Inset 4
(Weekday AM Peak Hour)

Figure 19-153

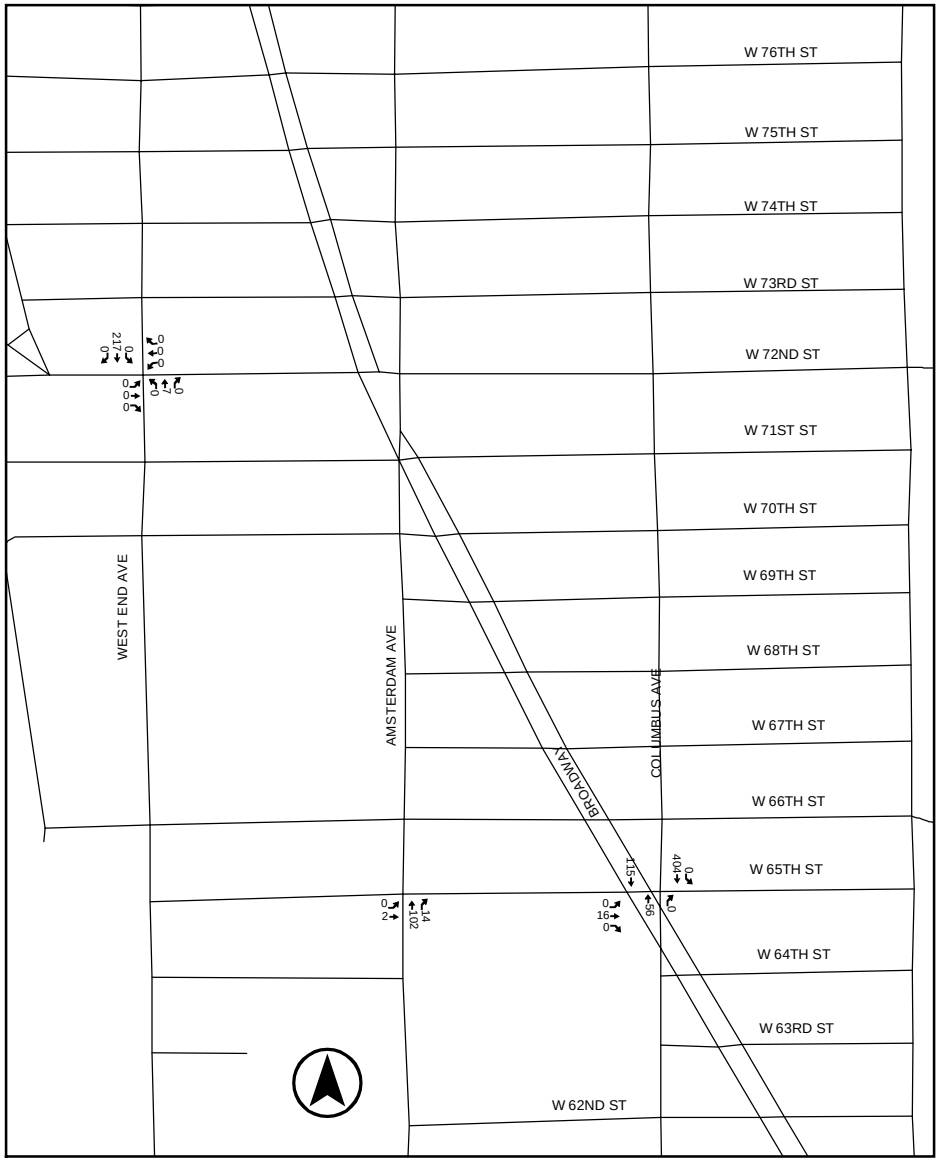


2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 5
(Weekday AM Peak Hour)

Figure 19-154



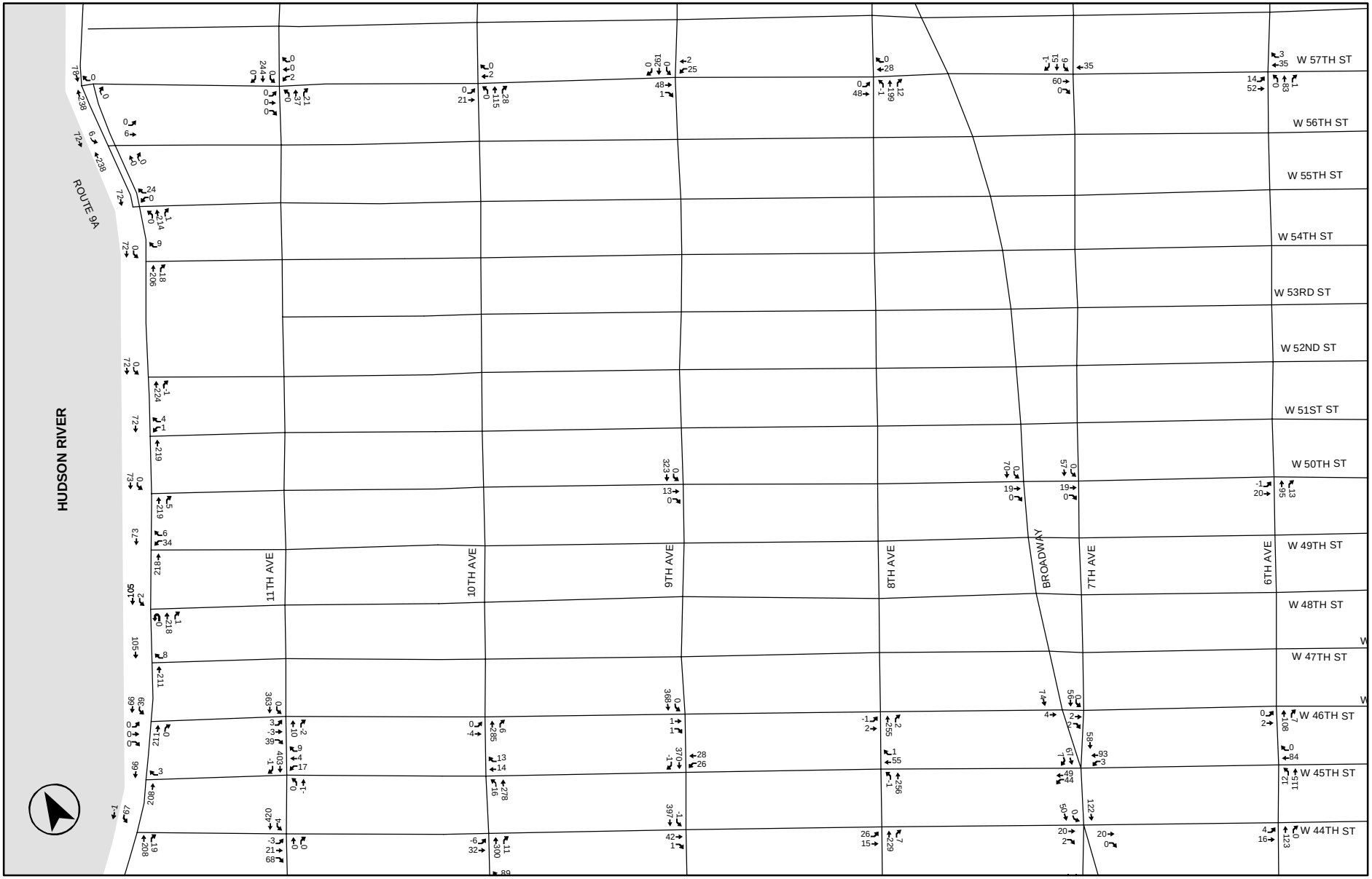
Inset 6



Inset 7

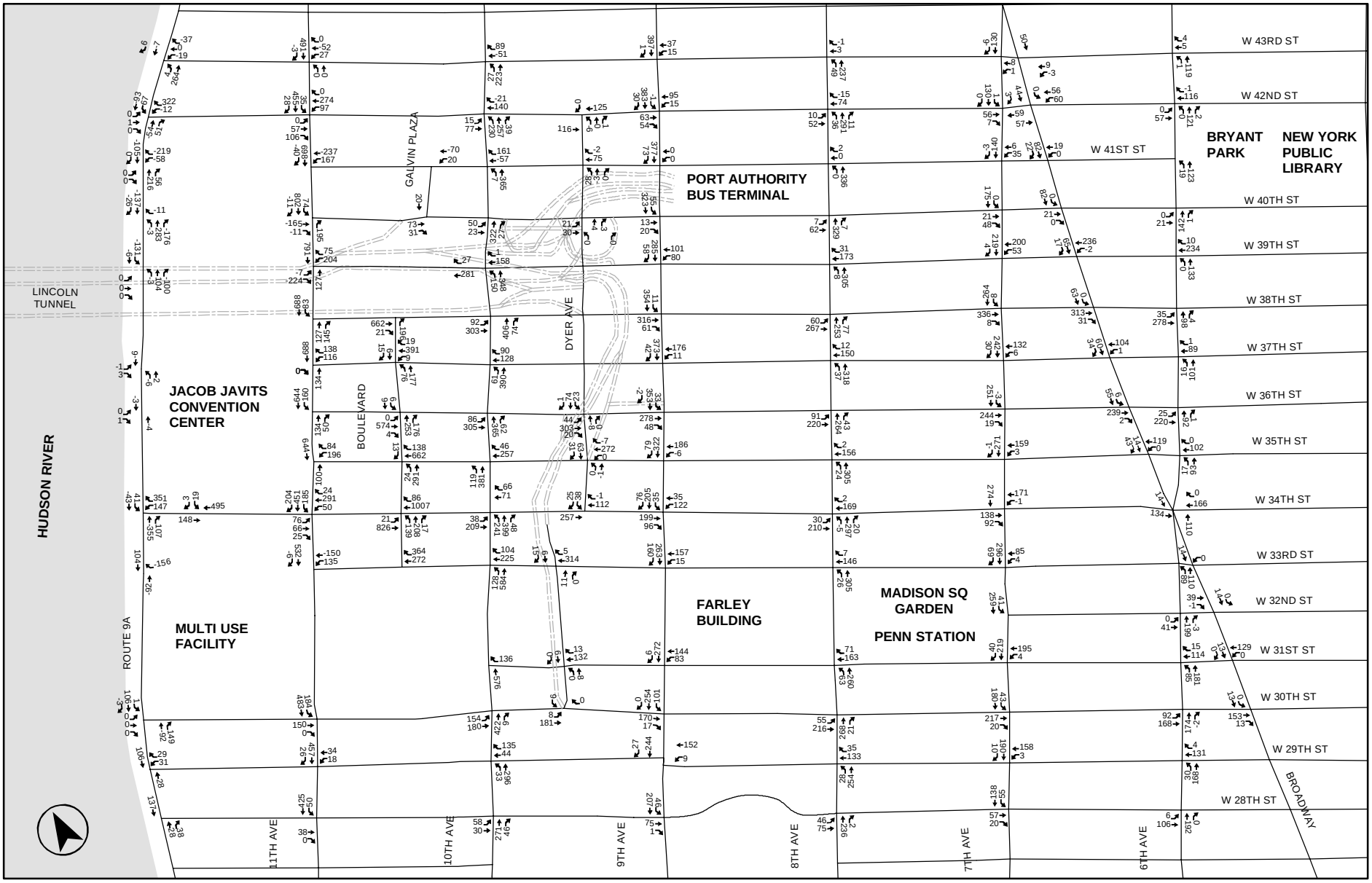
2025 Future With The Proposed Action
Incremental Traffic Volumes - Insets 6 and 7
(Weekday AM Peak Hour)

Figure 19-155



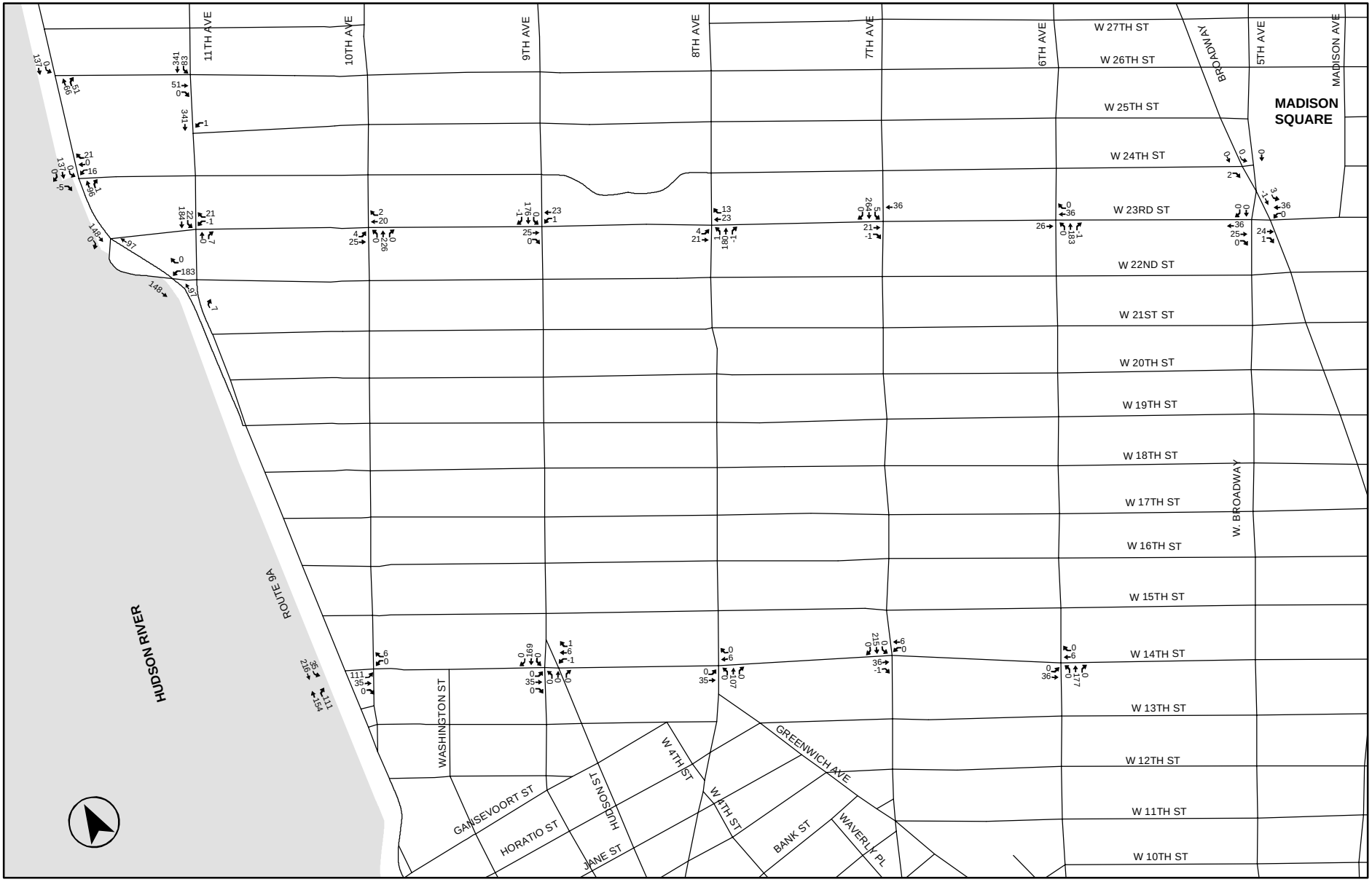
2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 1
(Weekday Midday Peak Hour)

Figure 19-156



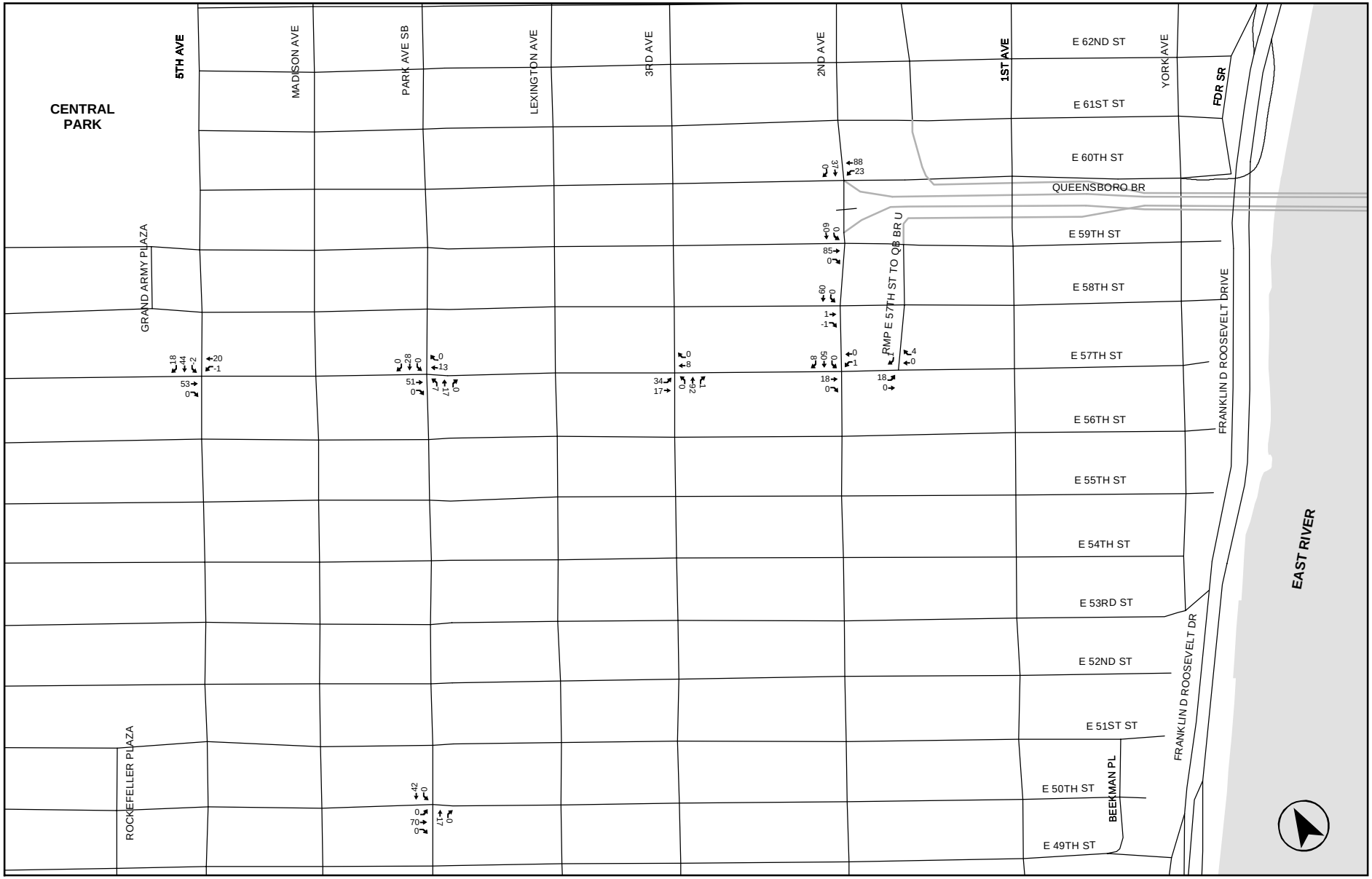
2025 Future With The Proposed Action Incremental Traffic Volumes- Inset 2 (Weekday Midday Peak Hour)

Figure 19-157



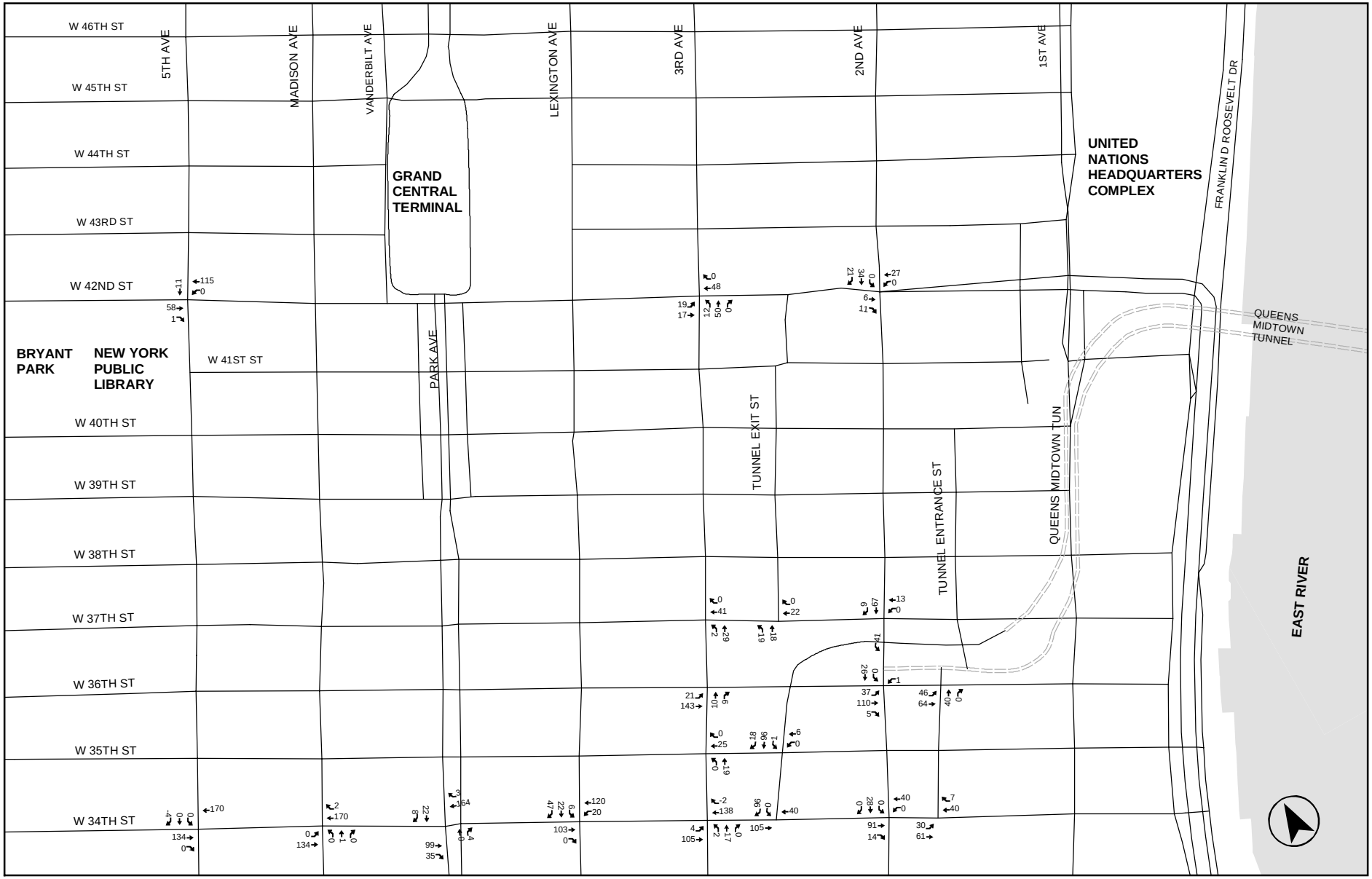
2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 3
(Weekday Midday Peak Hour)

Figure 19-158



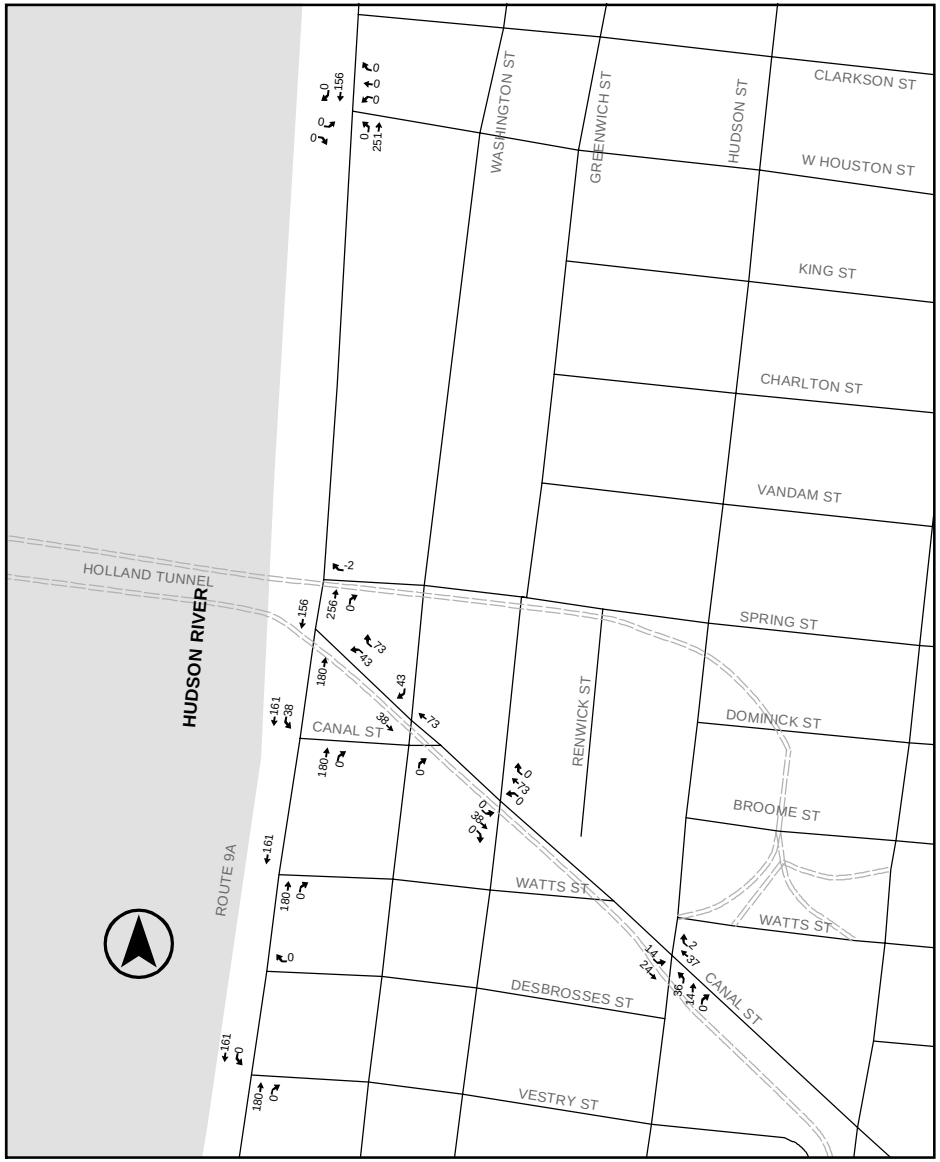
2025 Future With The Proposed Action Incremental Traffic Volumes-
Inset 4
(Weekday Midday Peak Hour)

Figure 19-159

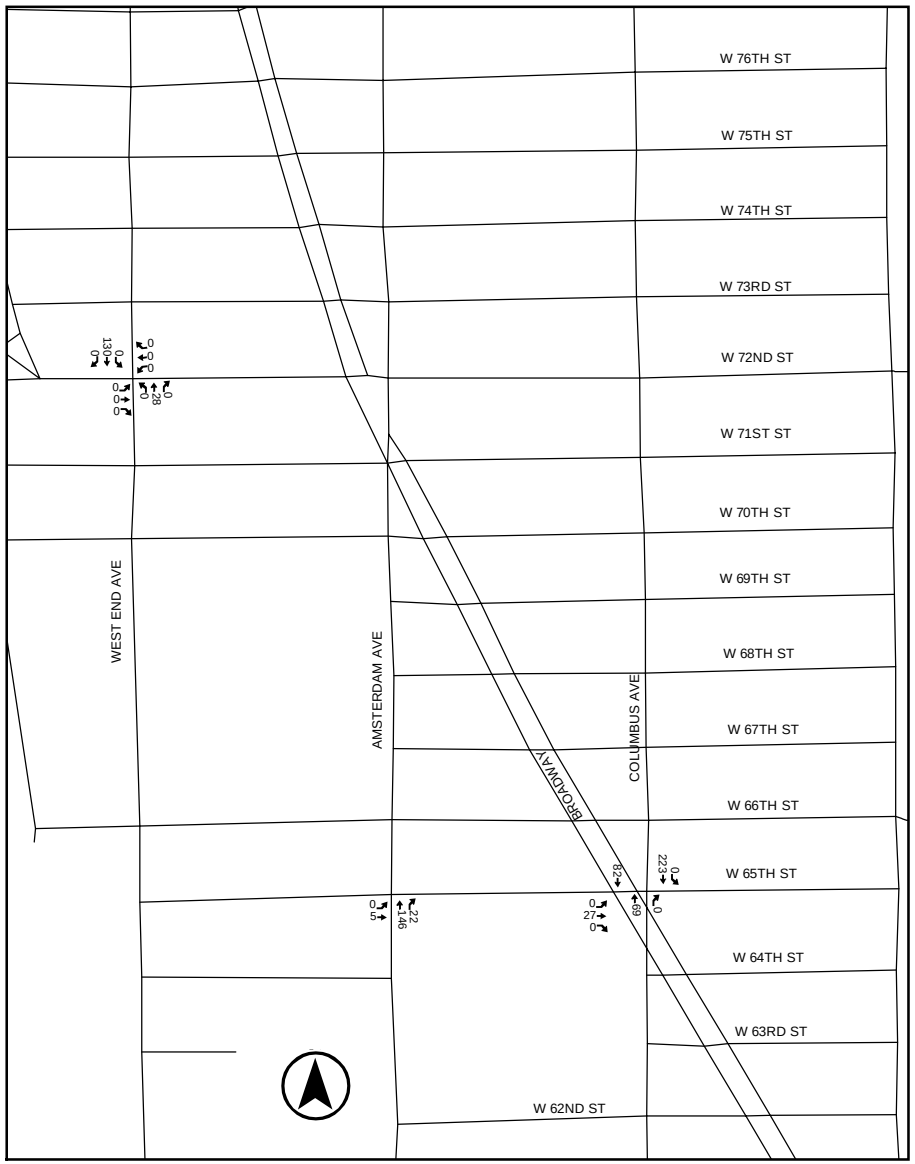


2025 Future With The Proposed Action Incremental Traffic Volumes-
Inset 5
(Weekday Midday Peak Hour)

Figure 19-160



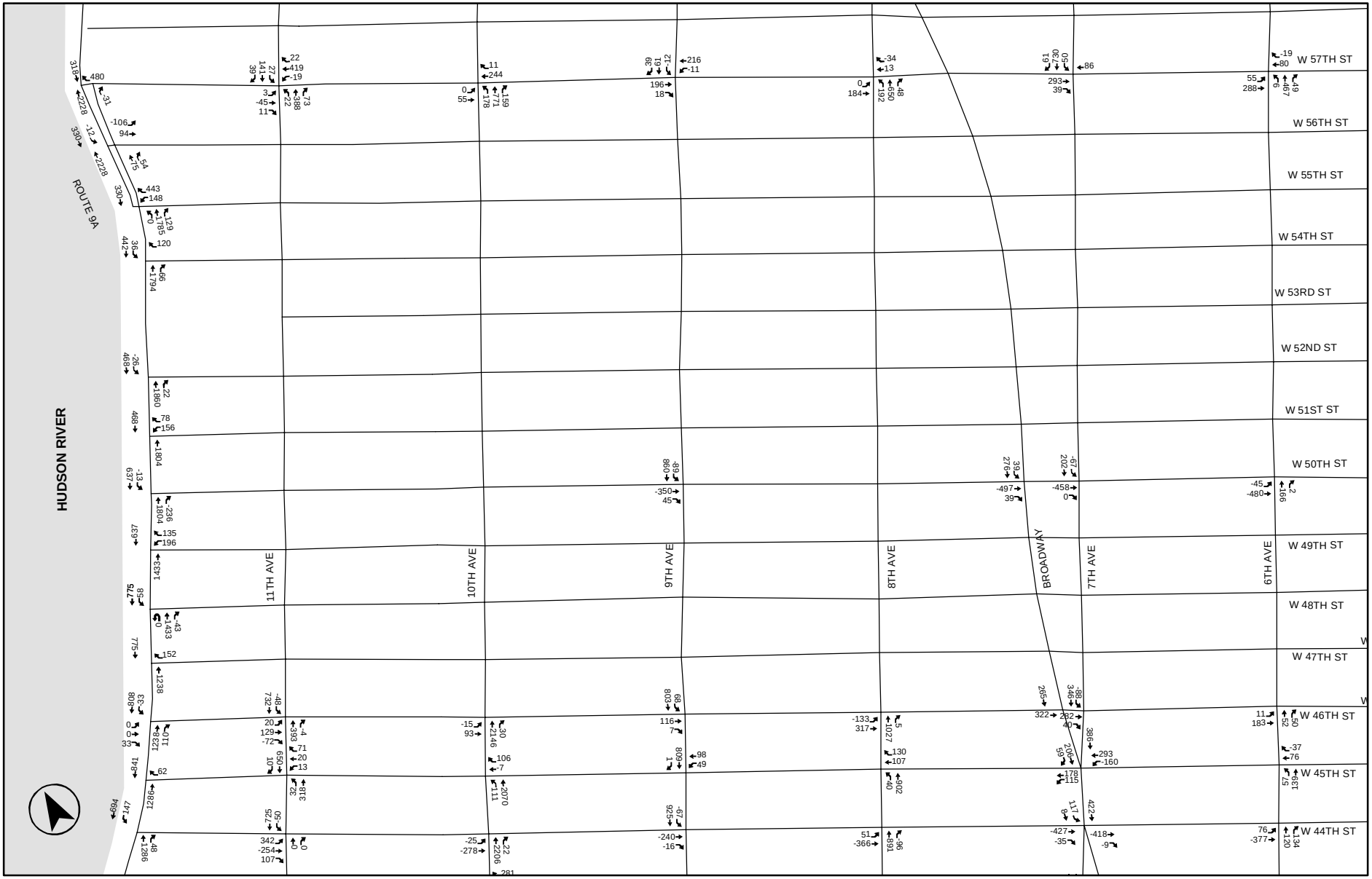
Inset 6



Inset 7

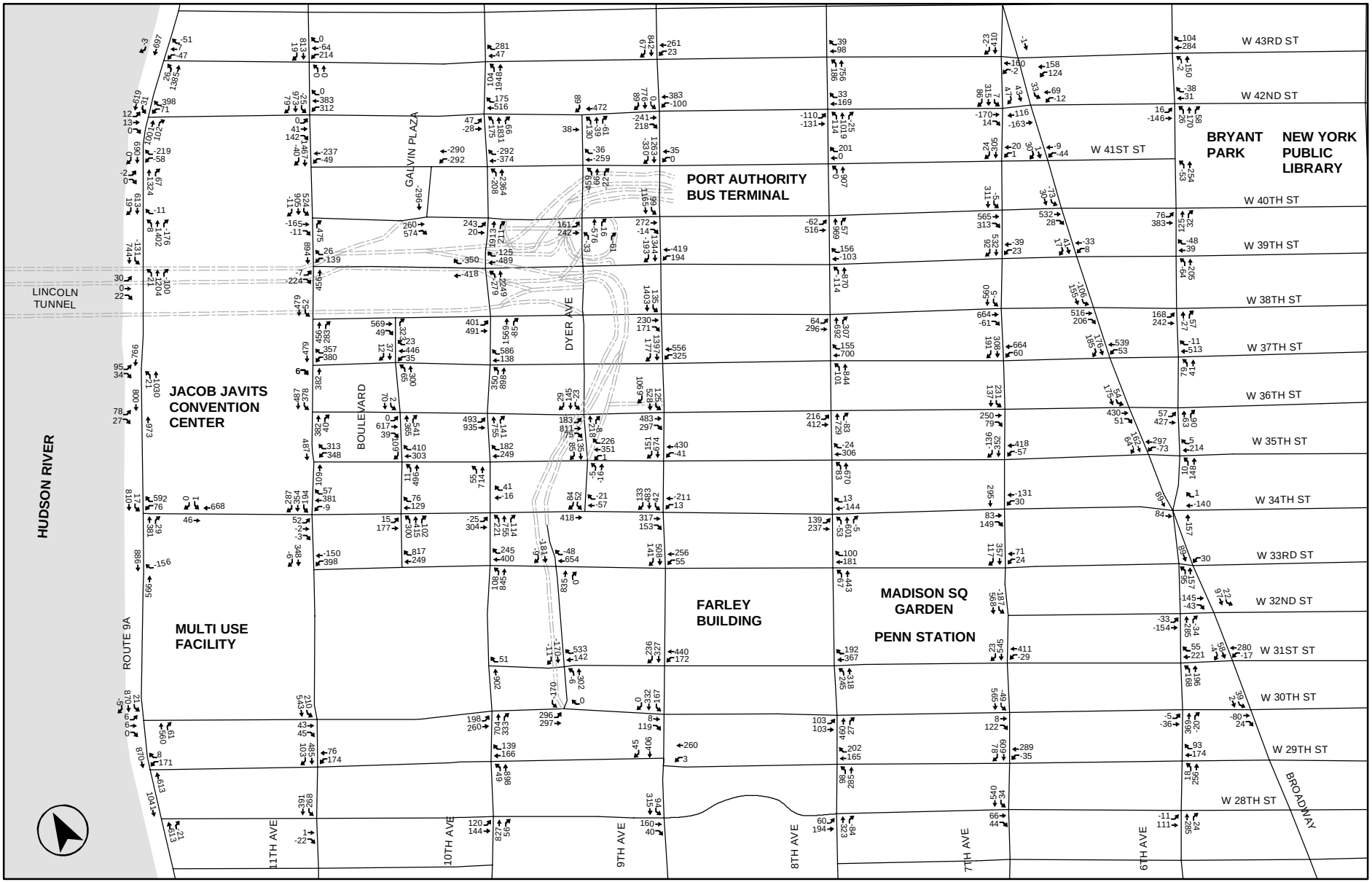
2025 Future With The Proposed Action
Incremental Traffic Volumes - Insets 6 and 7
(Weekday Midday Peak Hour)

Figure 19-161



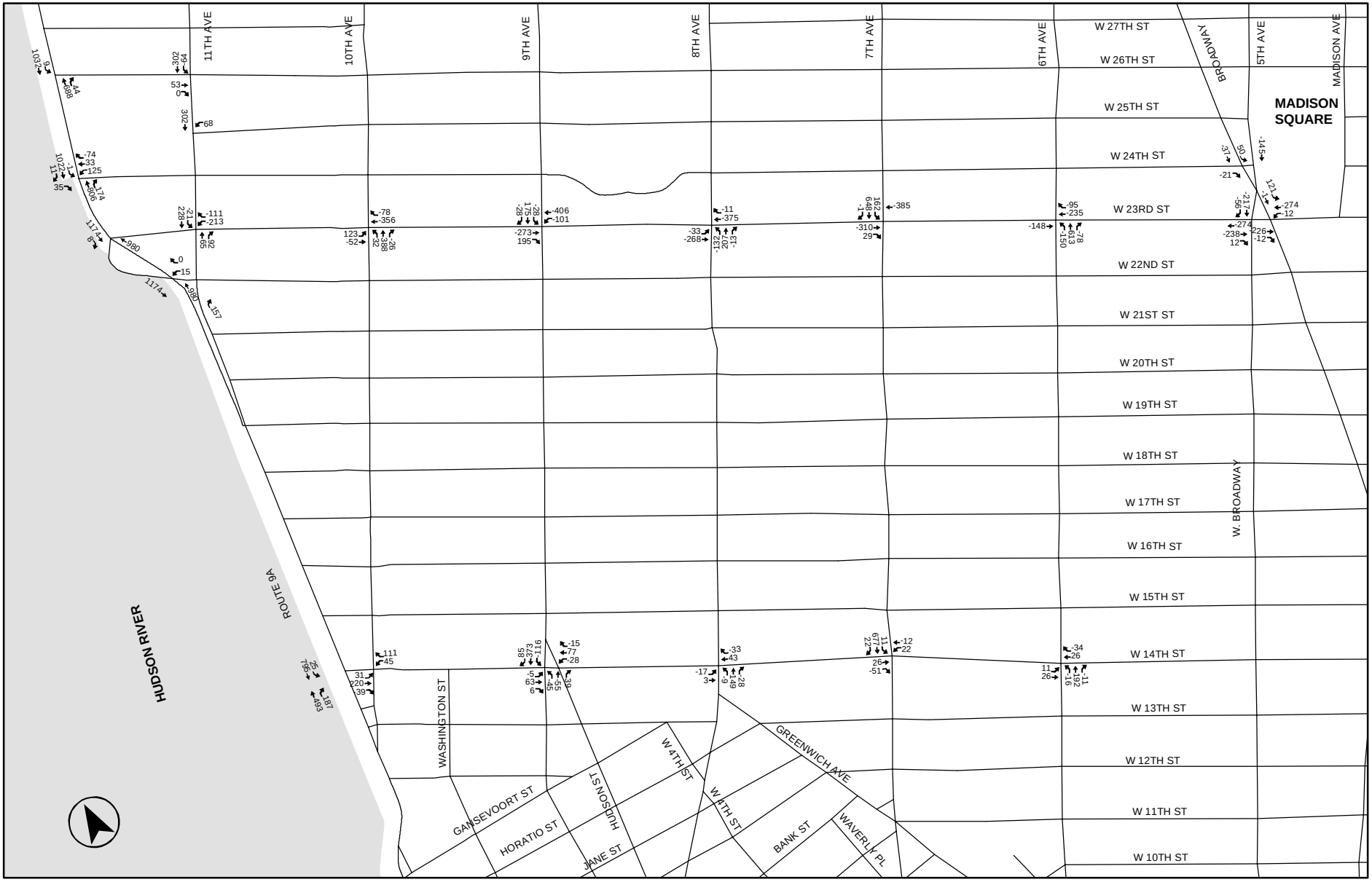
2025 Future With The Proposed Action Incremental Traffic Volumes- Inset 1 (Weekday PM Peak Hour)

Figure 19-162



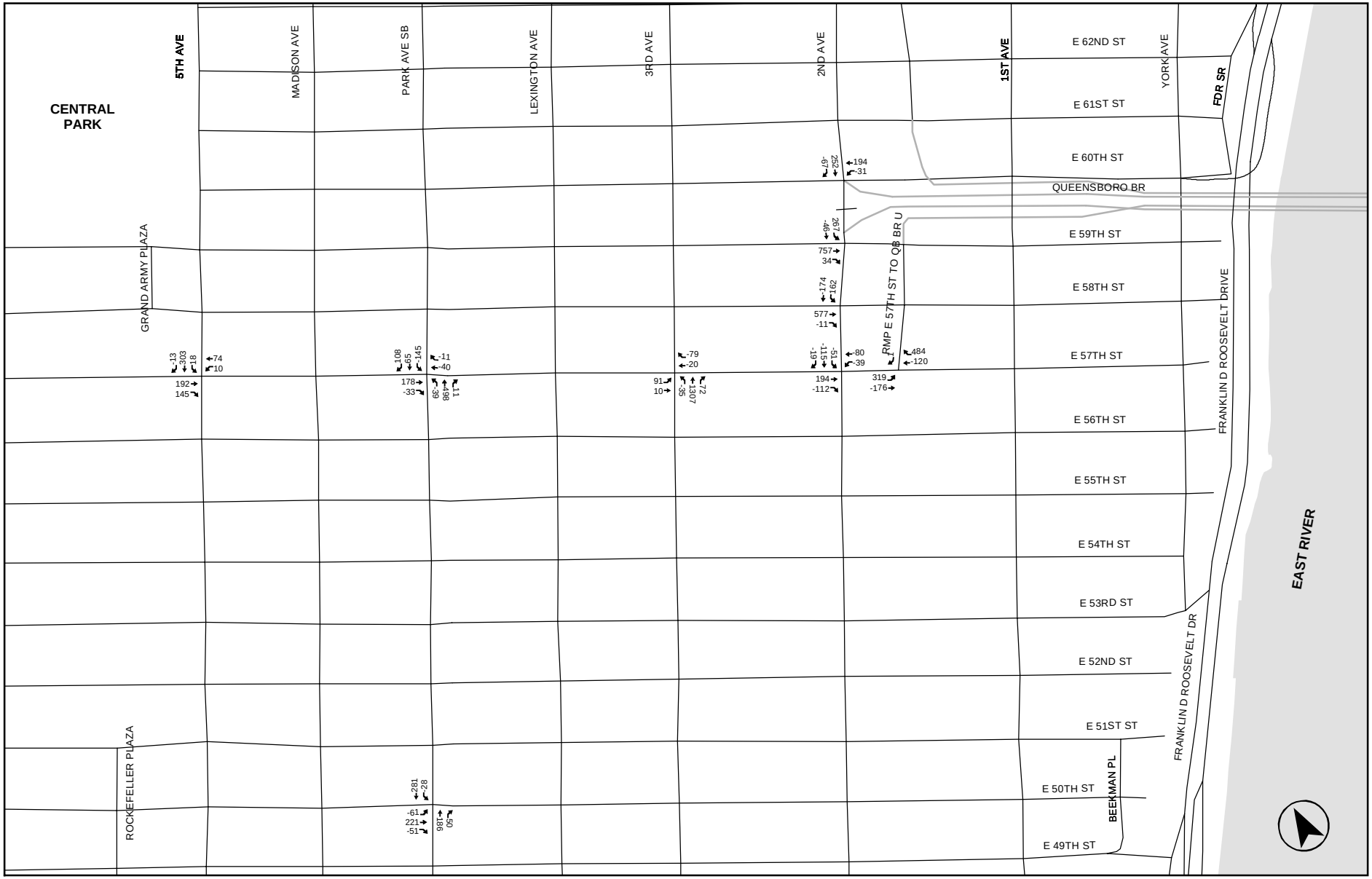
2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 2
(Weekday PM Peak Hour)

Figure 19-163



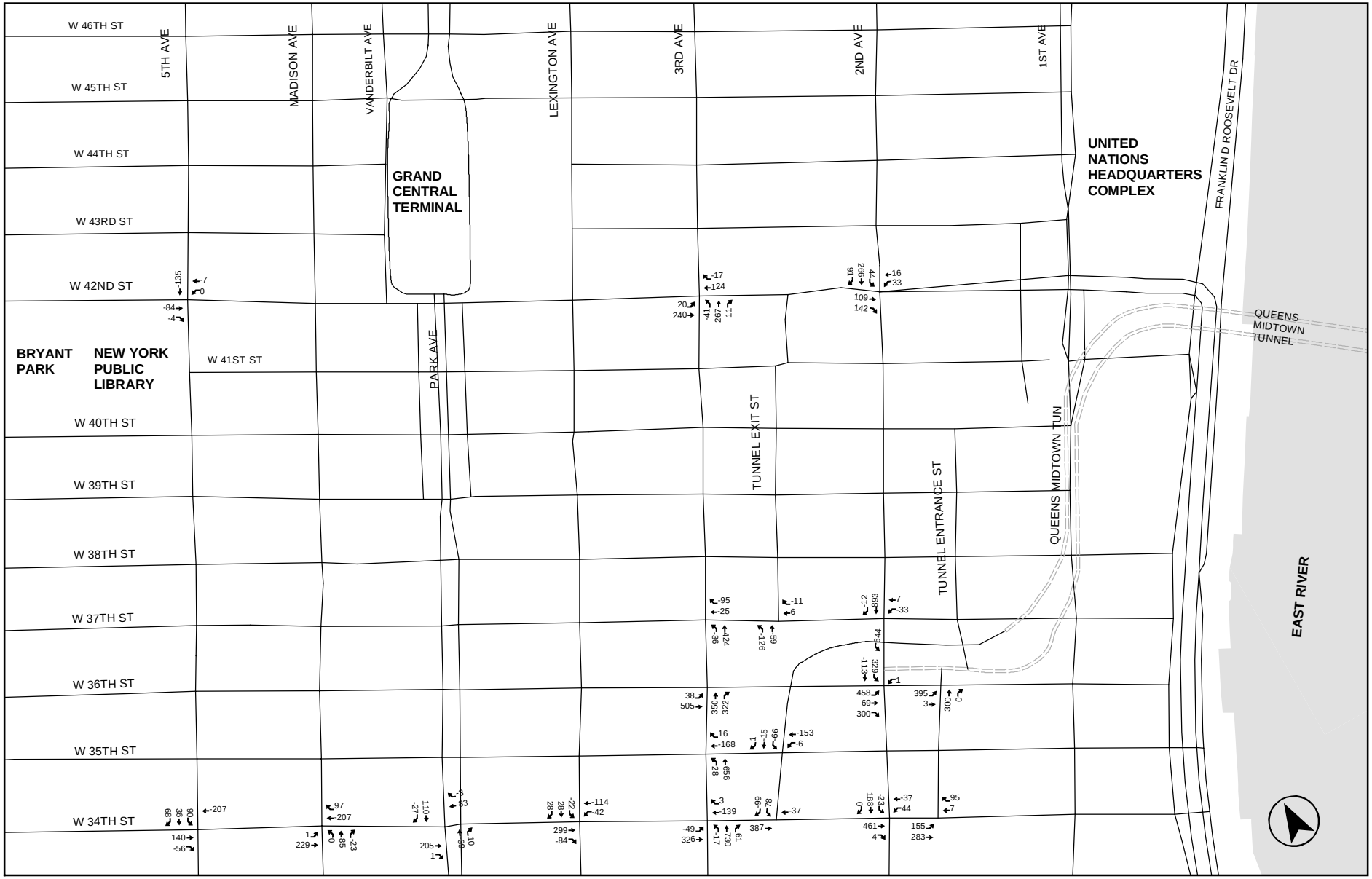
2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 3 (Weekday PM Peak Hour)

Figure 19-164



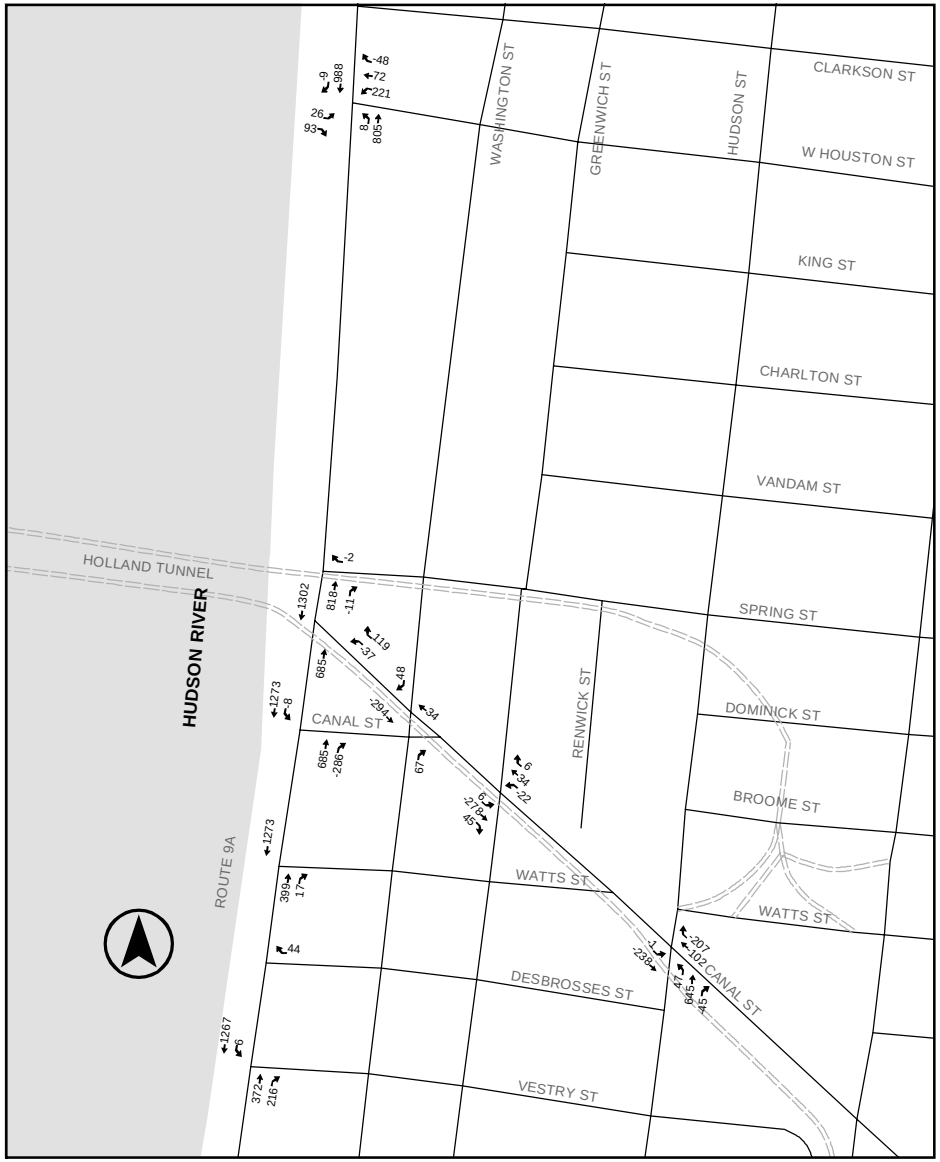
2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 4
(Weekday PM Peak Hour)

Figure 19-165

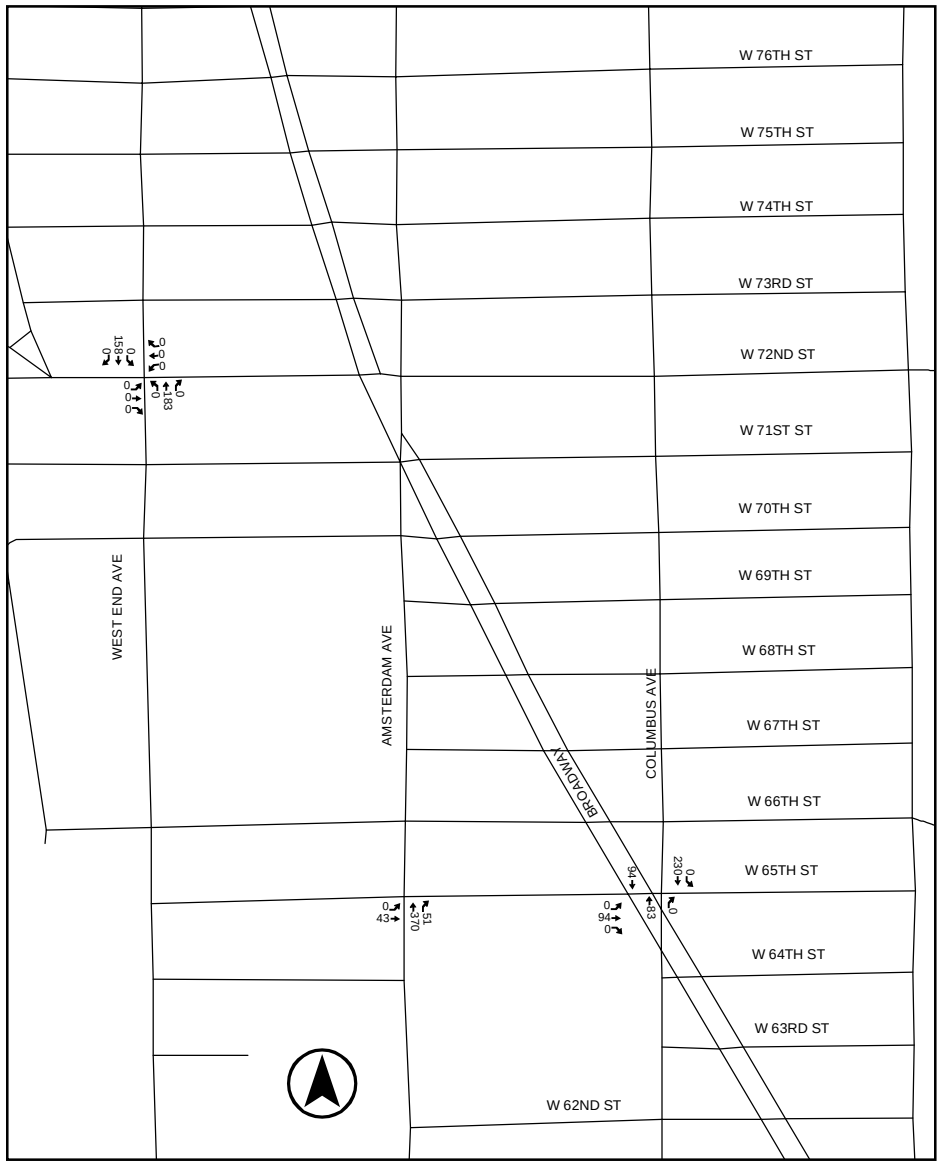


2025 Future With The Proposed Action Incremental Traffic Volumes-
Inset 5
(Weekday PM Peak Hour)

Figure 19-166



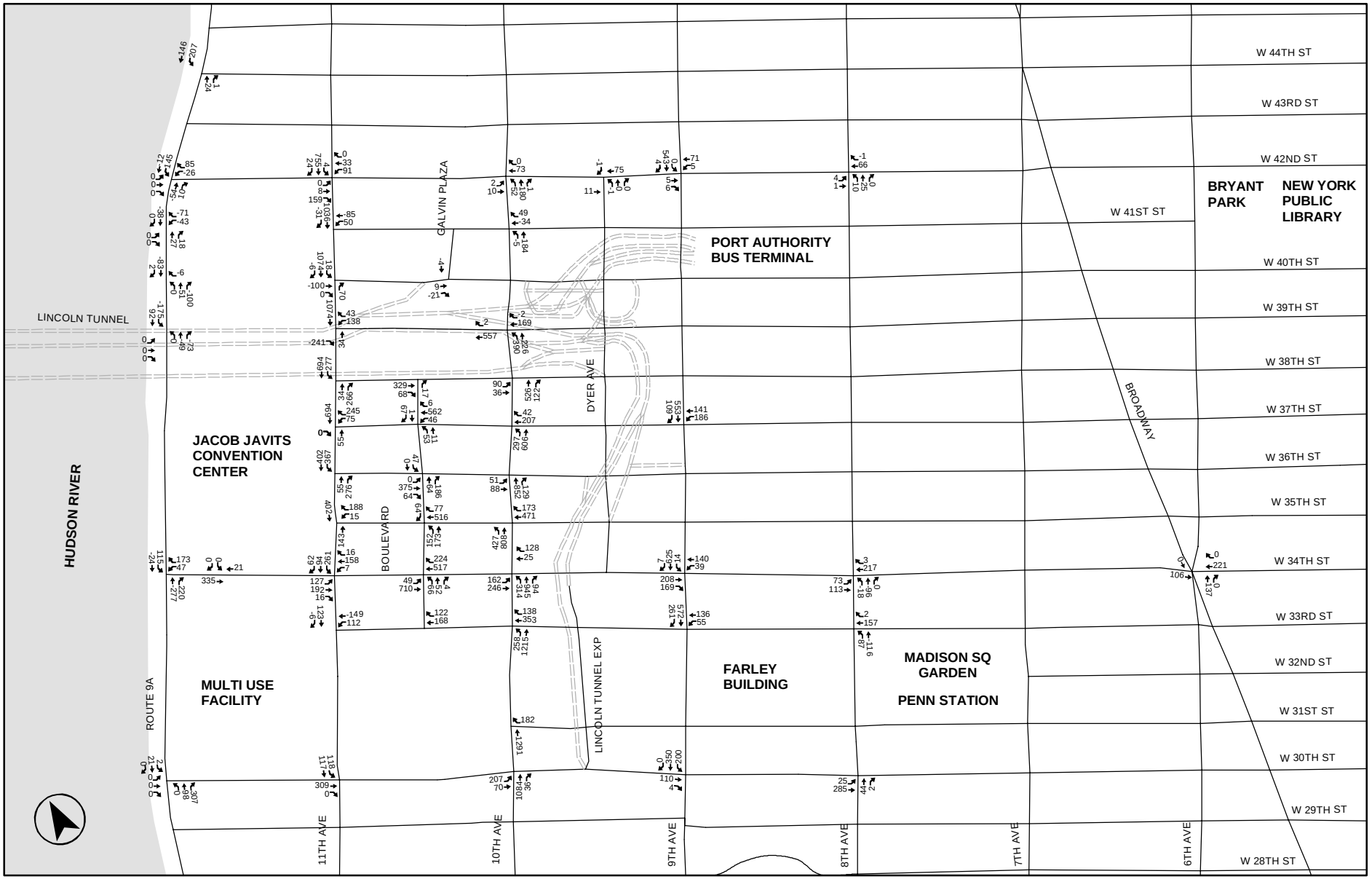
Inset 6



Inset 7

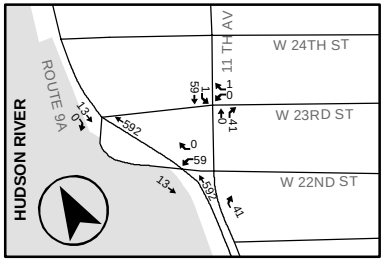
2025 Future With The Proposed Action
Incremental Traffic Volumes - Insets 6 and 7
(Weekday PM Peak Hour)

Figure 19-167

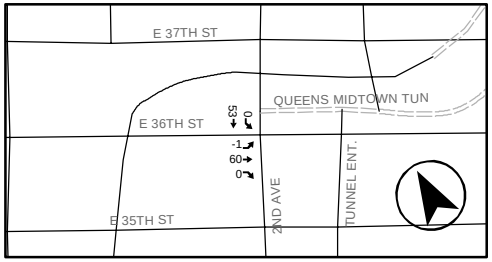


2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 1
(Weeknight Special Event Peak Hour)

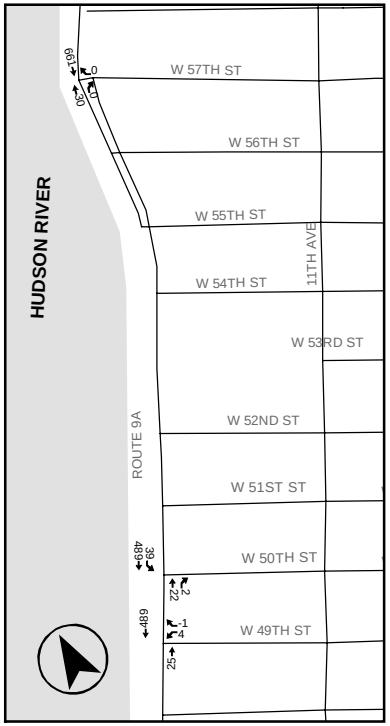
Figure 19-168



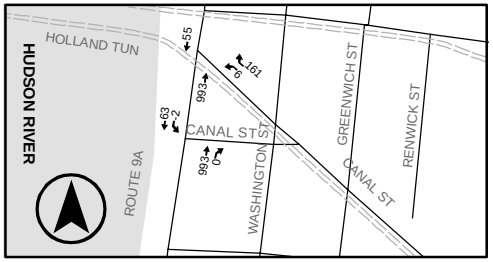
Inset 2



Inset 4



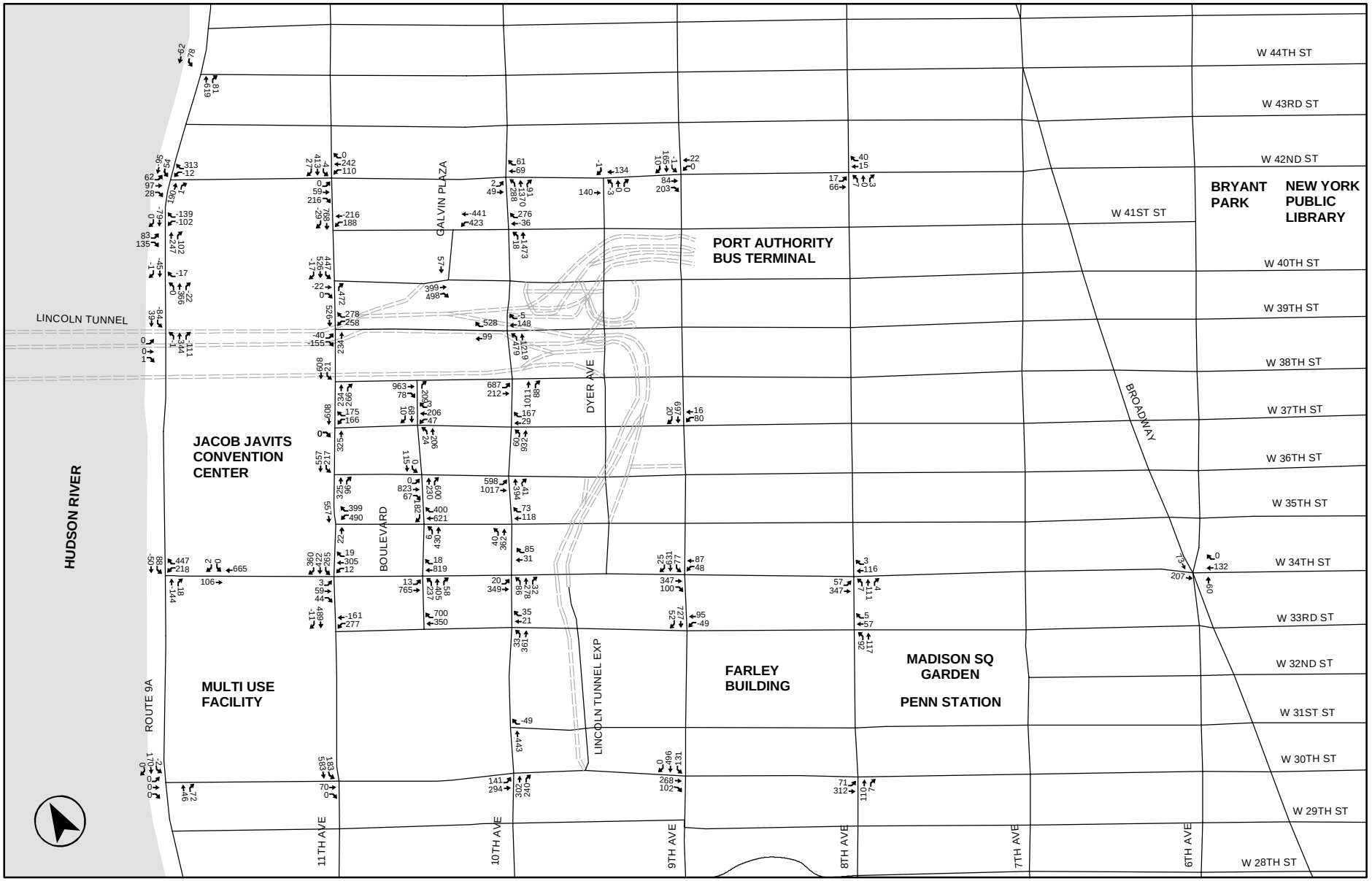
Inset 3



Inset 5

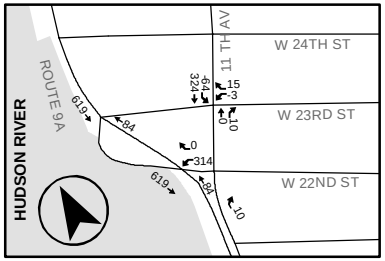
2025 Future With The Proposed Action Incremental Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-169

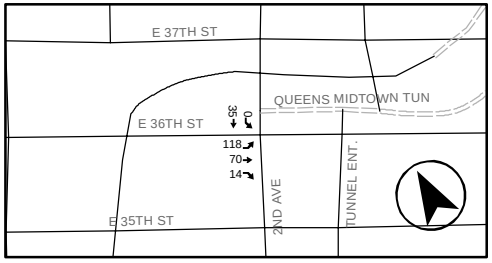


2025 Future With The Proposed Action Incremental Traffic Volumes-Inset 1
(Sunday Special Event Peak Hour)

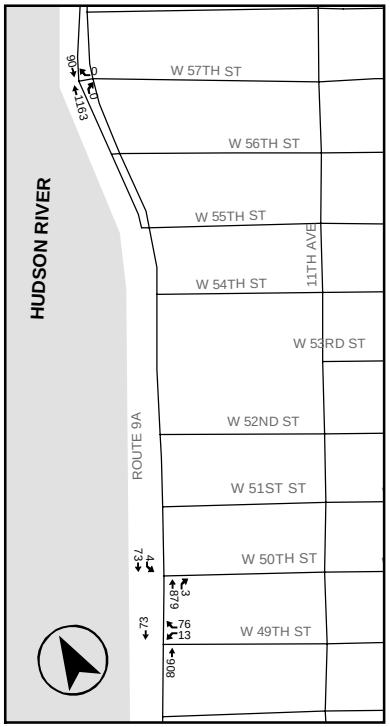
Figure 19-170



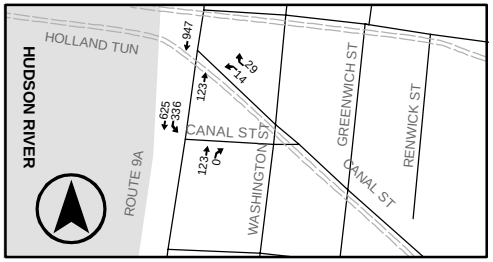
Inset 2



Inset 4



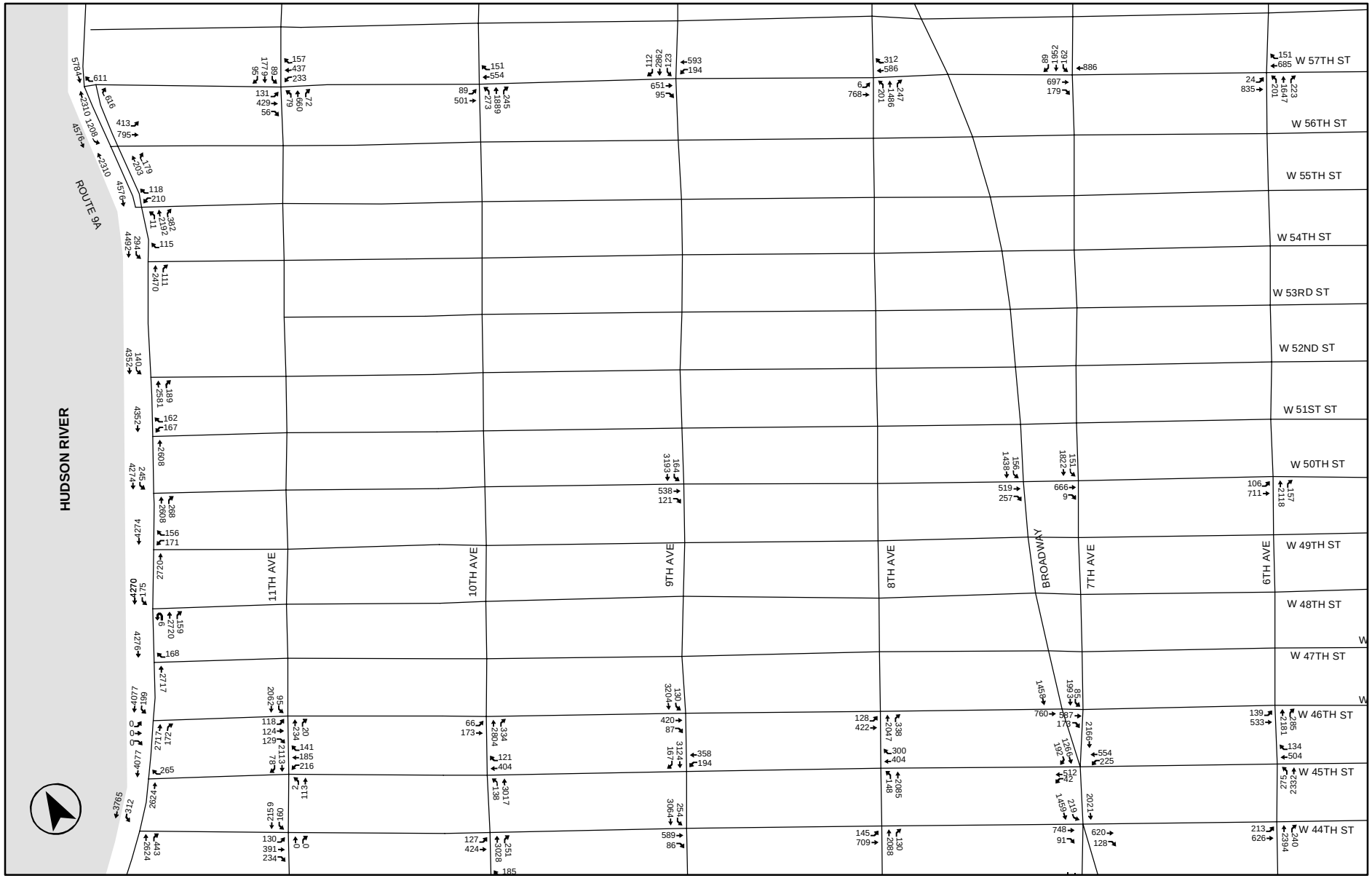
Inset 3



Inset 5

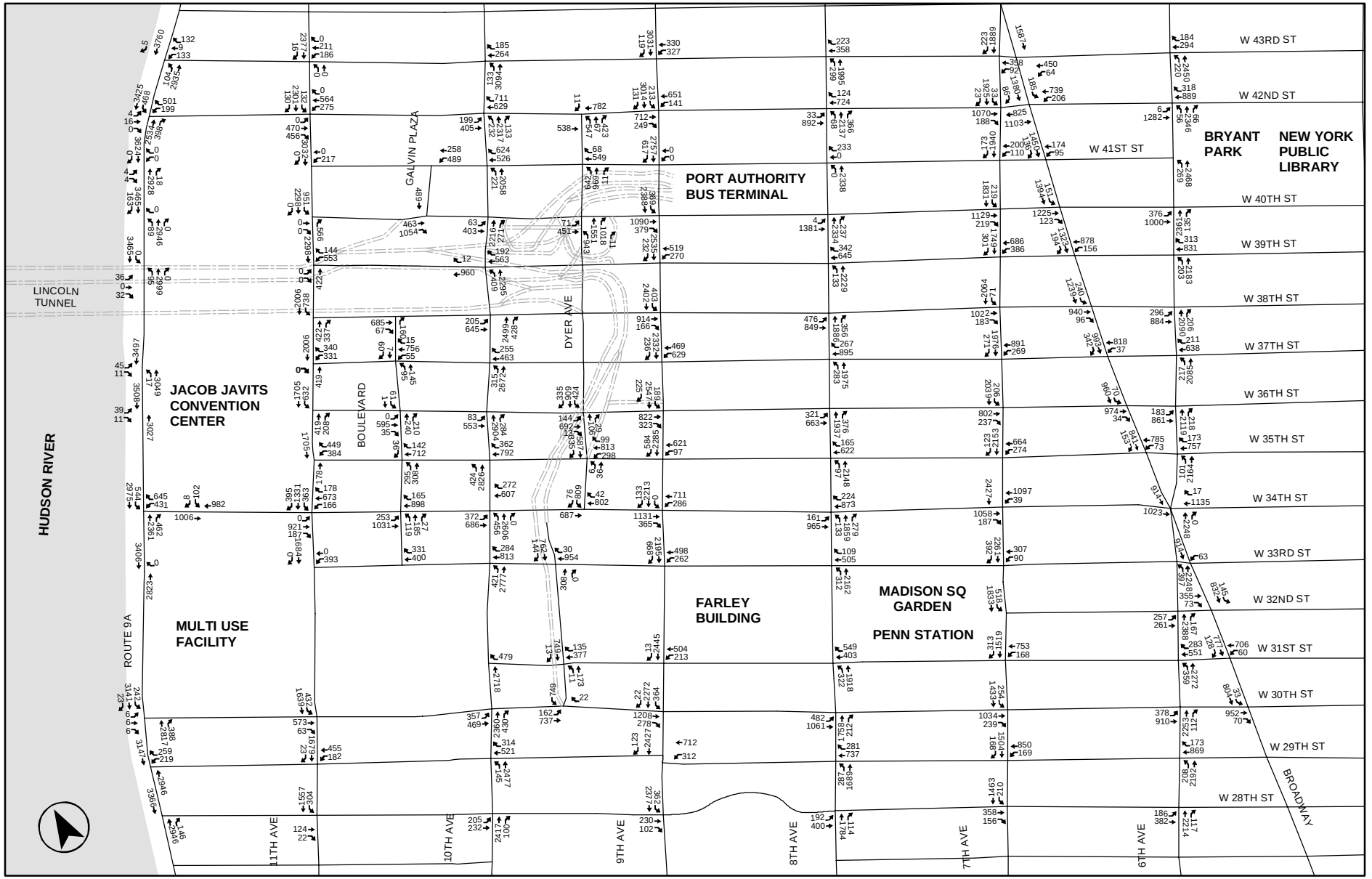
2025 Future With The Proposed Action Incremental Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-171



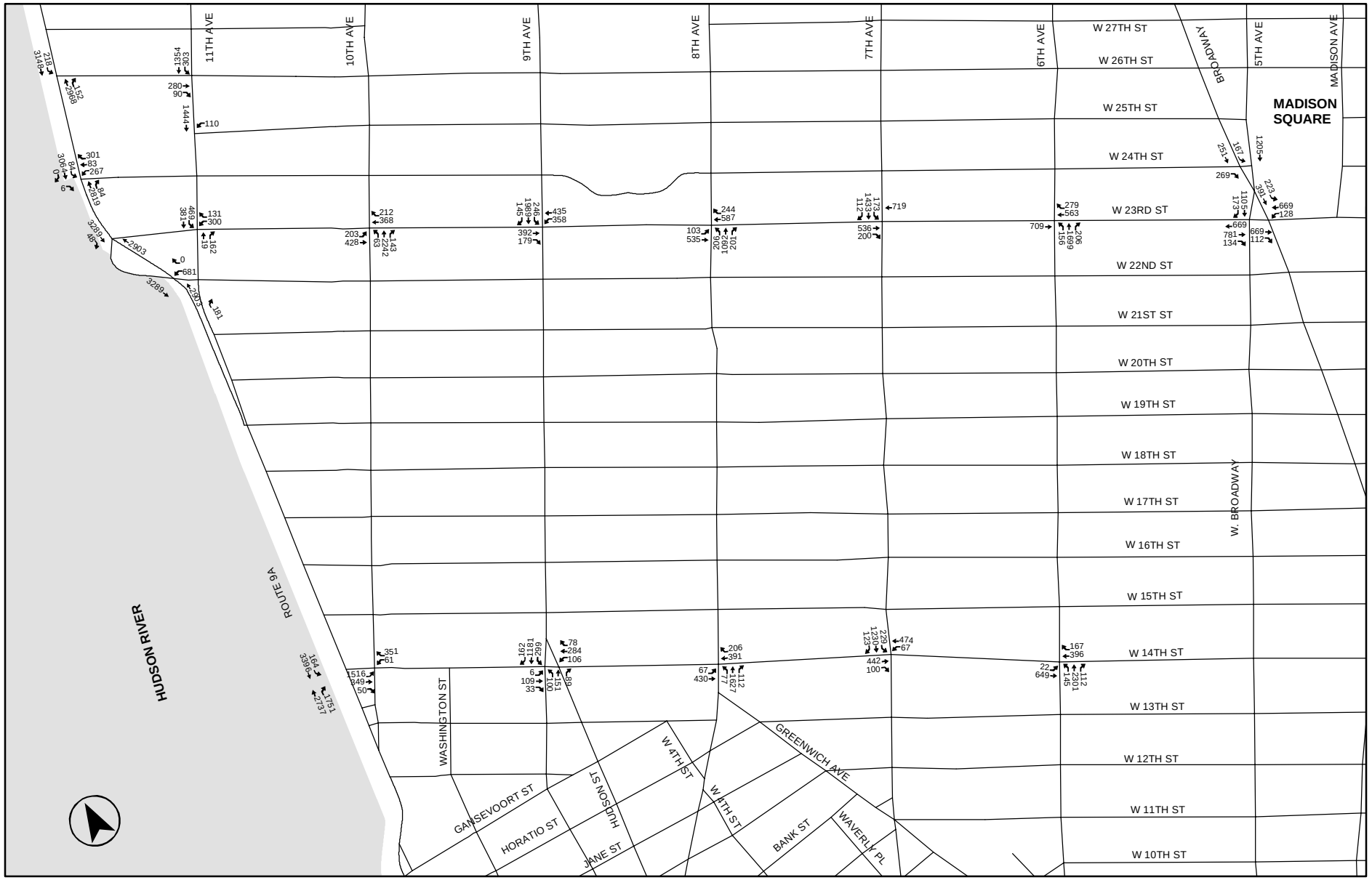
2025 Future With The Proposed Action Traffic Volumes- Inset 1 (Weekday AM Peak Hour)

Figure 19-172



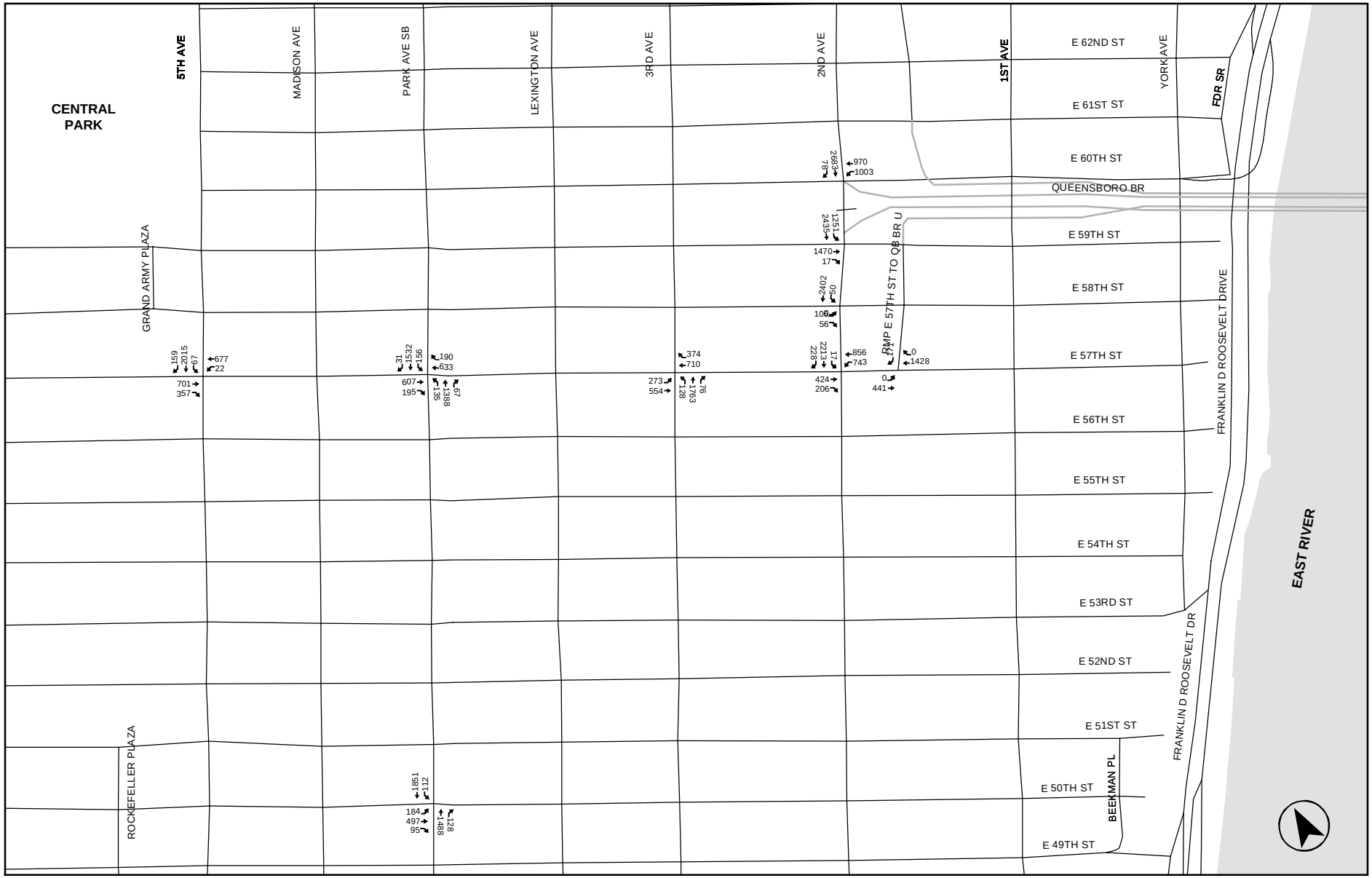
2025 Future With The Proposed Action Traffic Volumes-Inset 2 (Weekday AM Peak Hour)

Figure 19-173



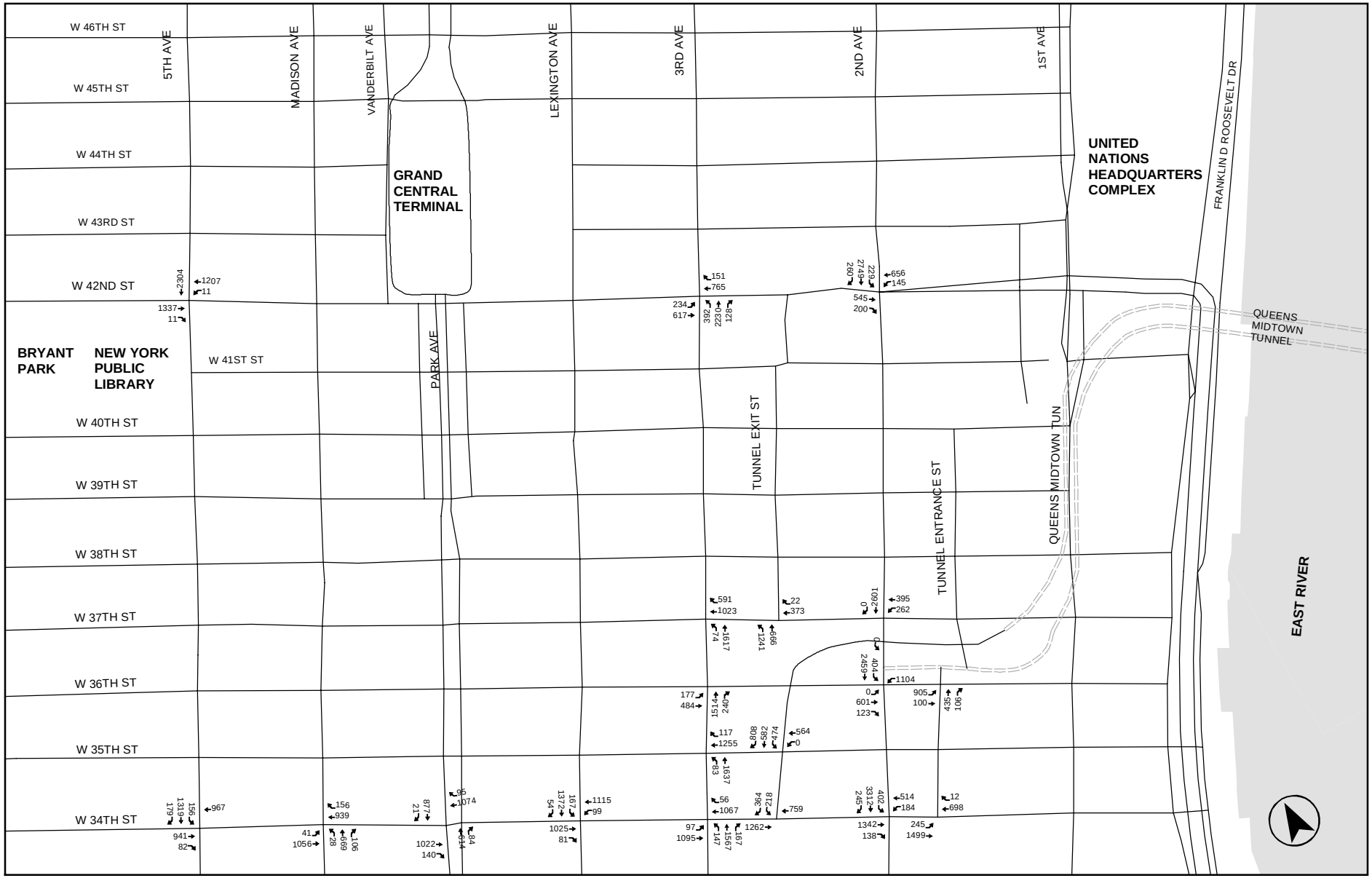
2025 Future With The Proposed Action Traffic Volumes- Inset 3 (Weekday AM Peak Hour)

Figure 19-174



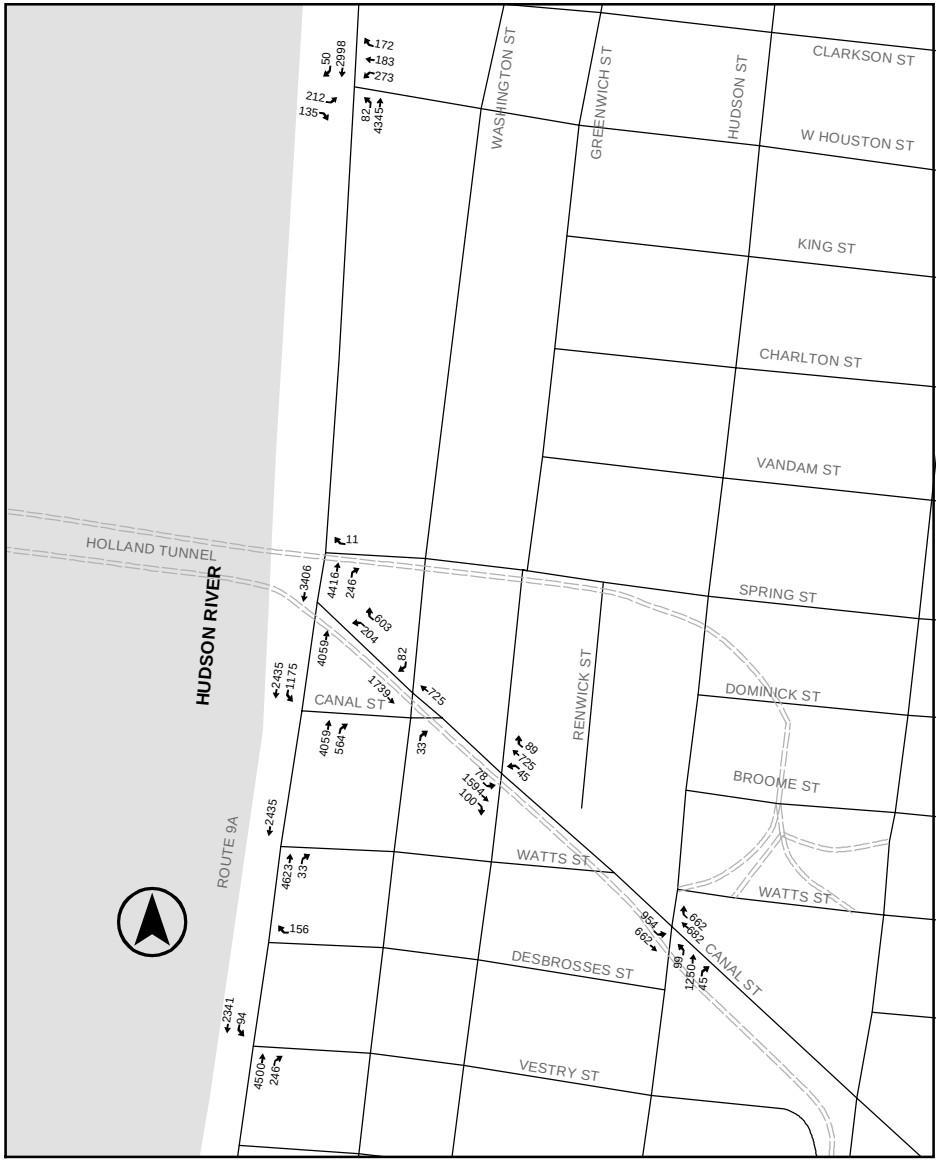
2025 Future With The Proposed Action Traffic Volumes- Inset 4 (Weekday AM Peak Hour)

Figure 19-175

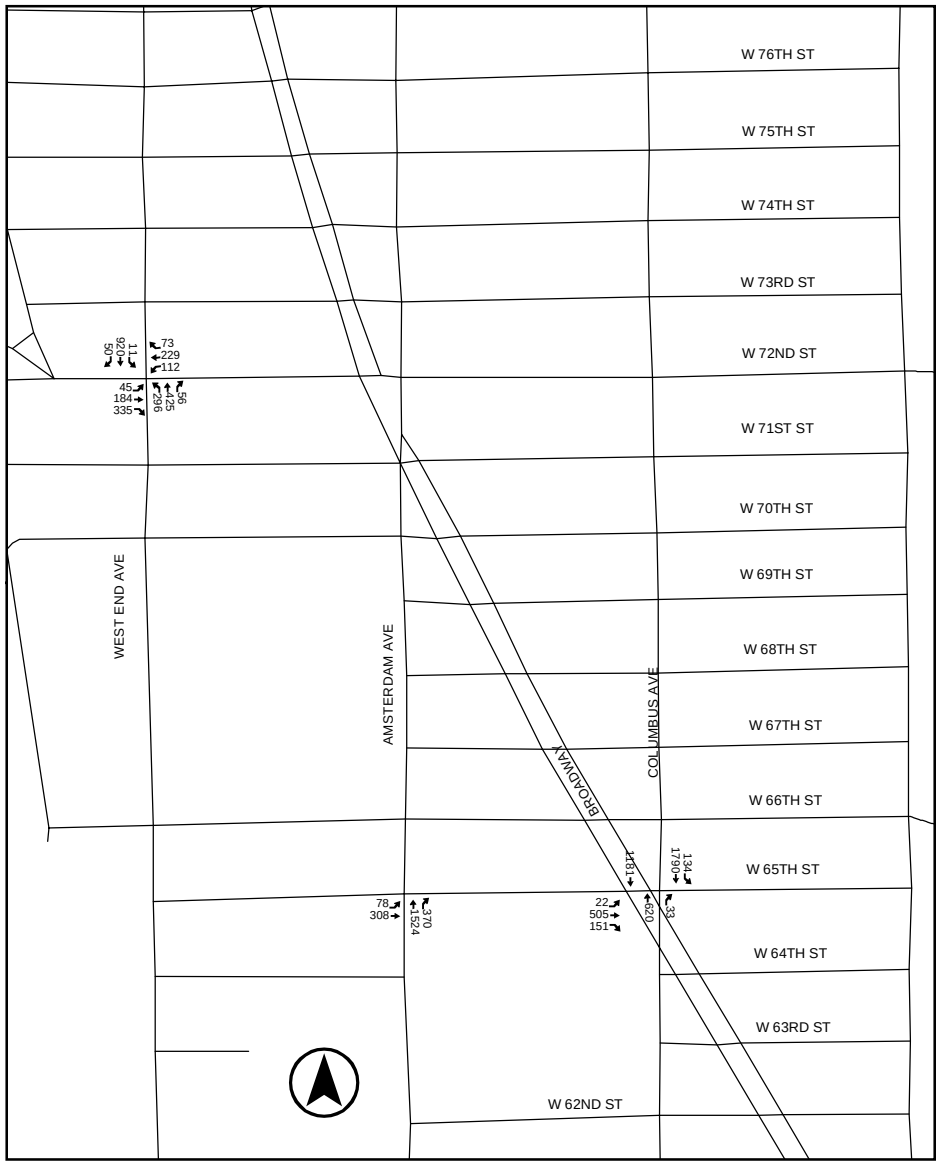


2025 Future With The Proposed Action Traffic Volumes- Inset 5 (Weekday AM Peak Hour)

Figure 19-176



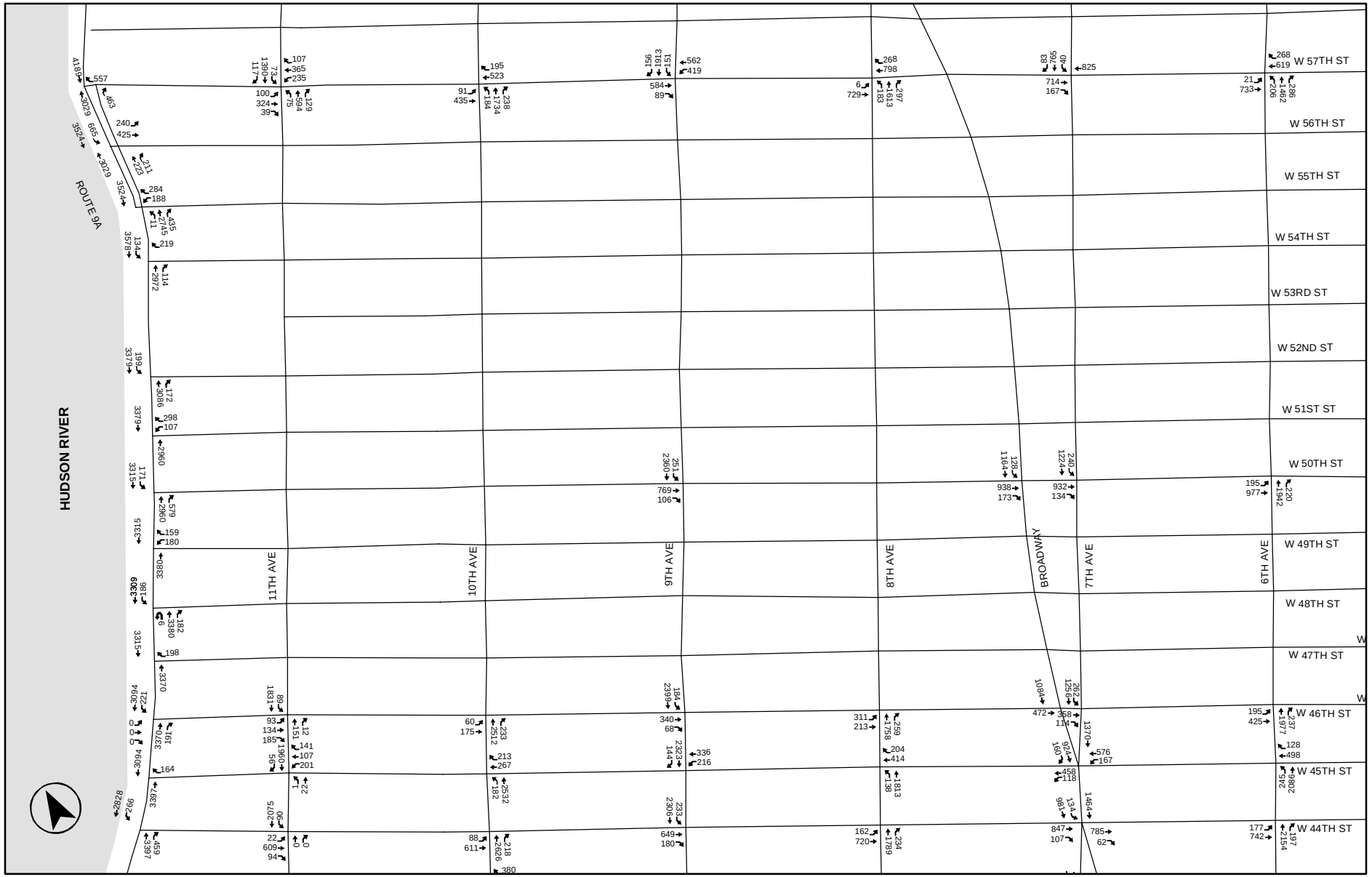
Inset 6



Inset 7

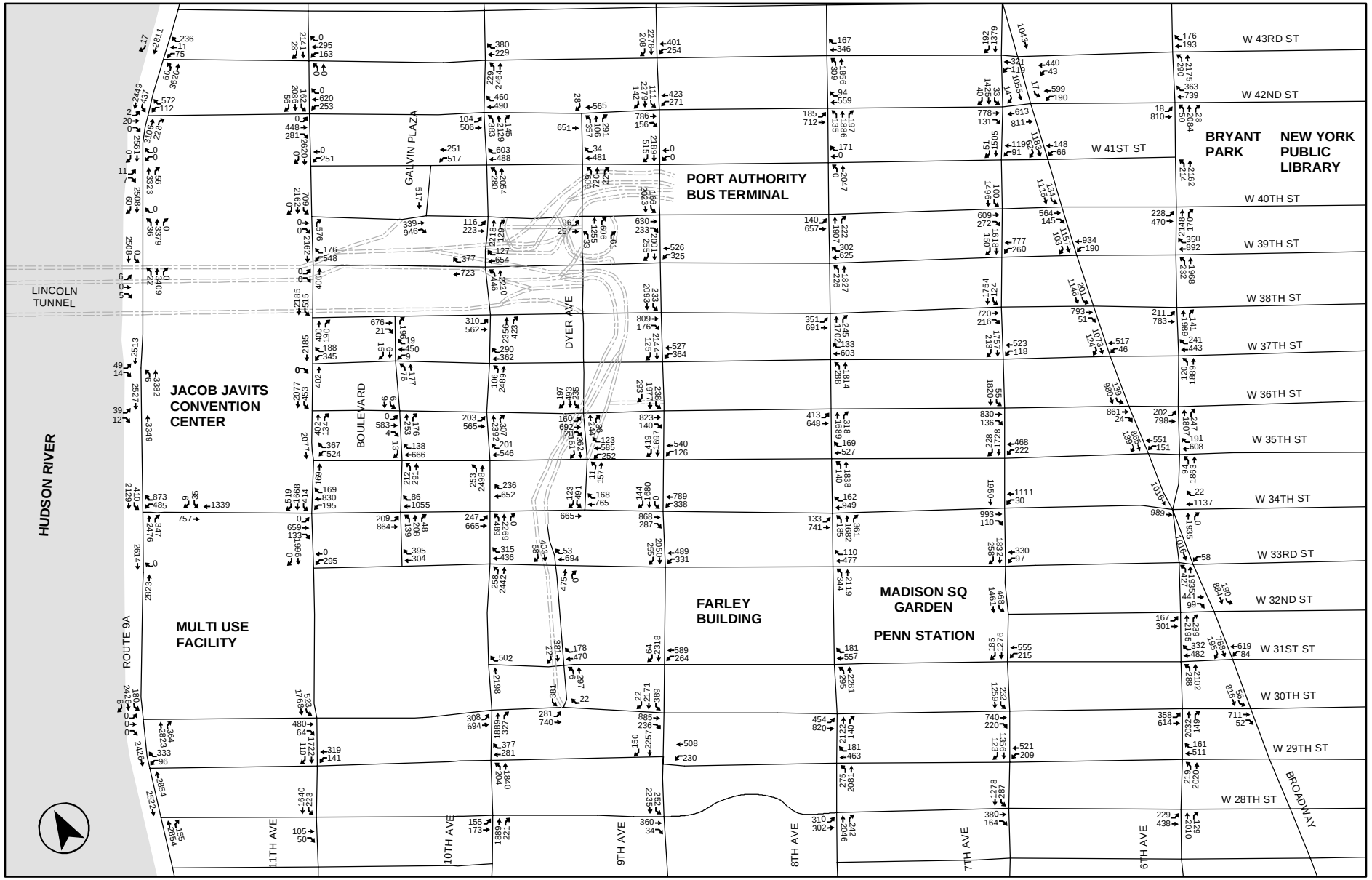
2025 Future With The Proposed Action
Traffic Volumes - Insets 6 and 7
(Weekday AM Peak Hour)

Figure 19-177



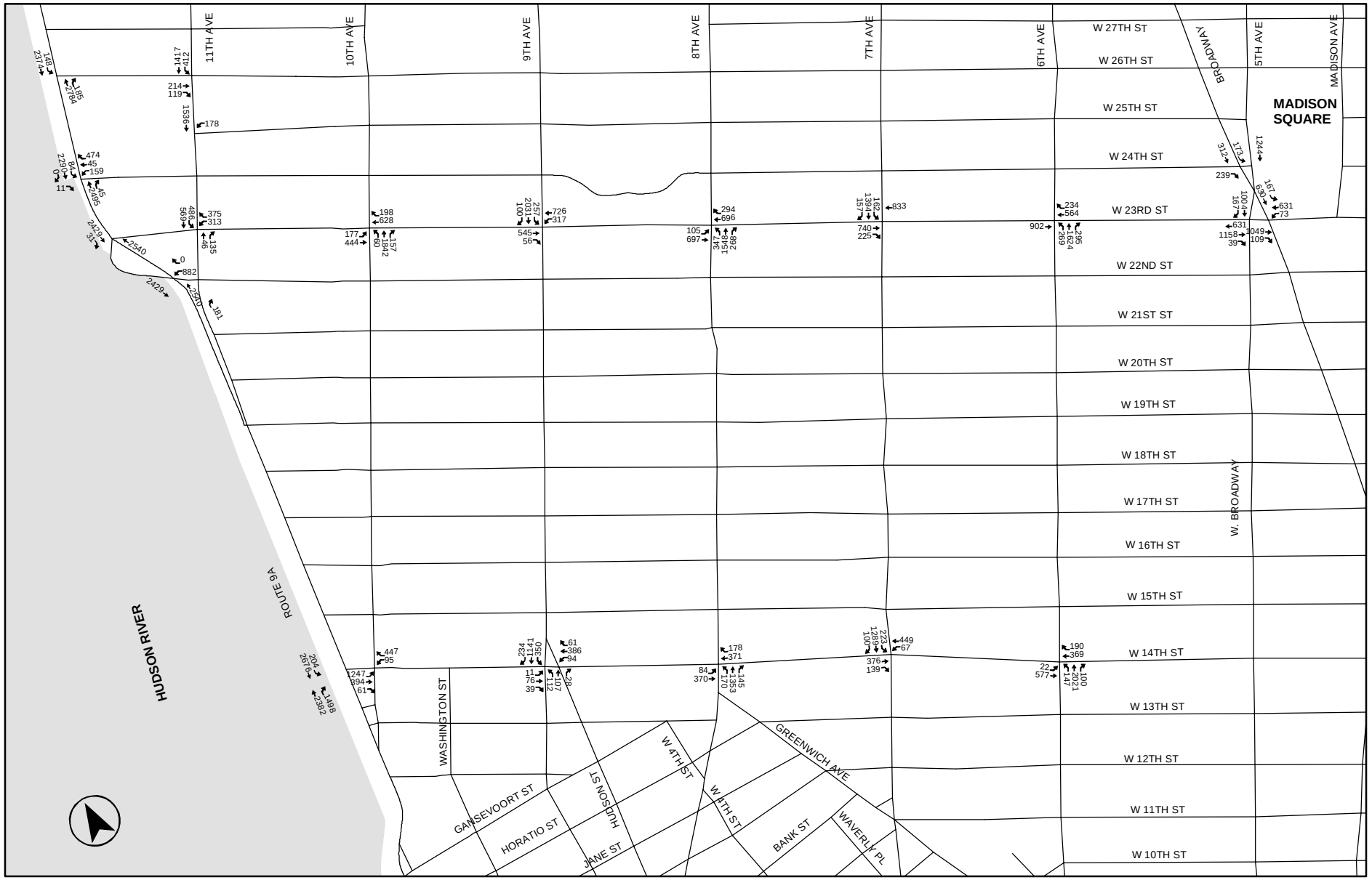
2025 Future With The Proposed Action Traffic Volumes-Inset 1 (Weekday Midday Peak Hour)

Figure 19-178



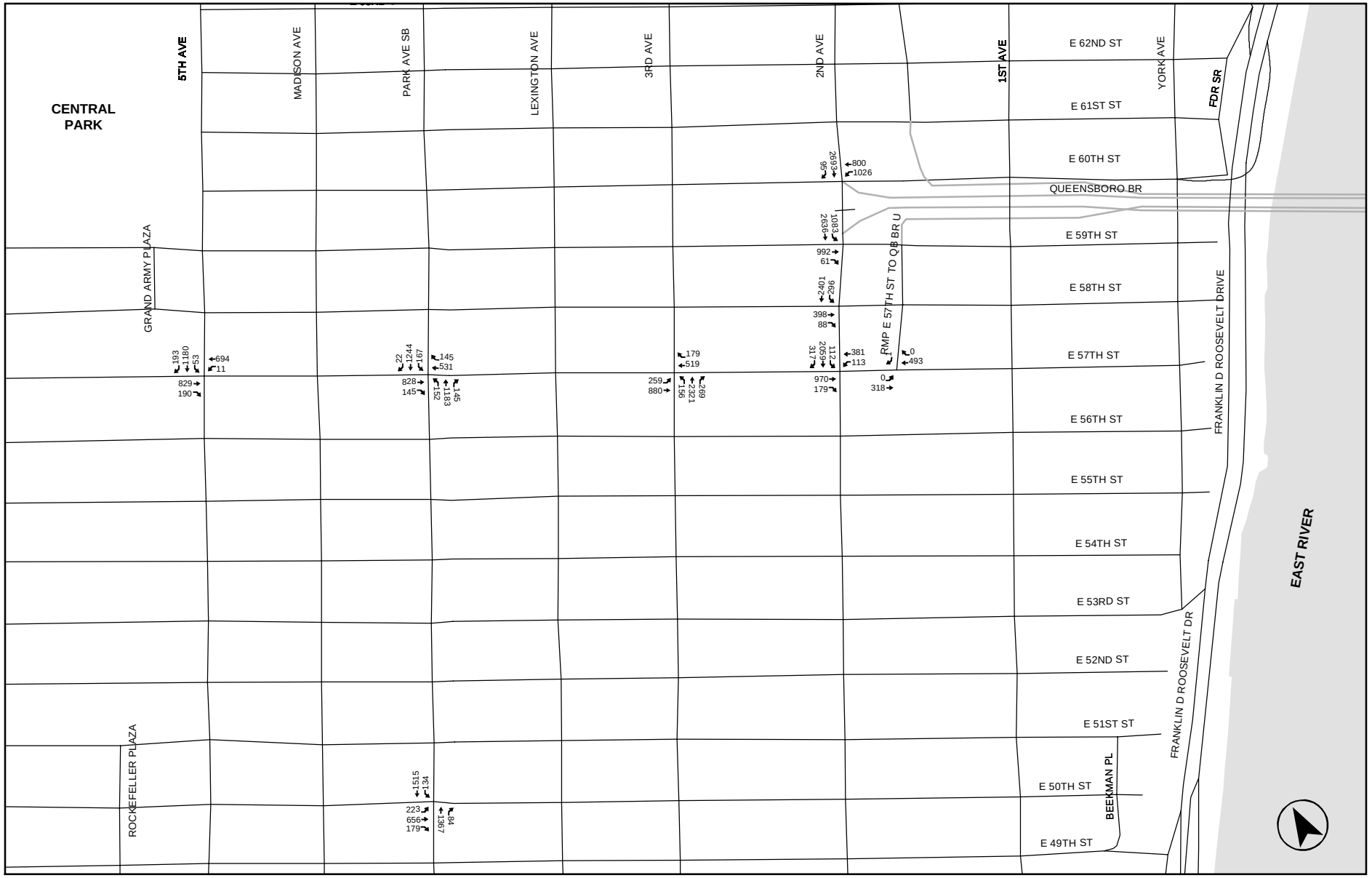
2025 Future With The Proposed Action Traffic Volumes-Inset 2
(Weekday Midday Peak Hour)

Figure 19-179



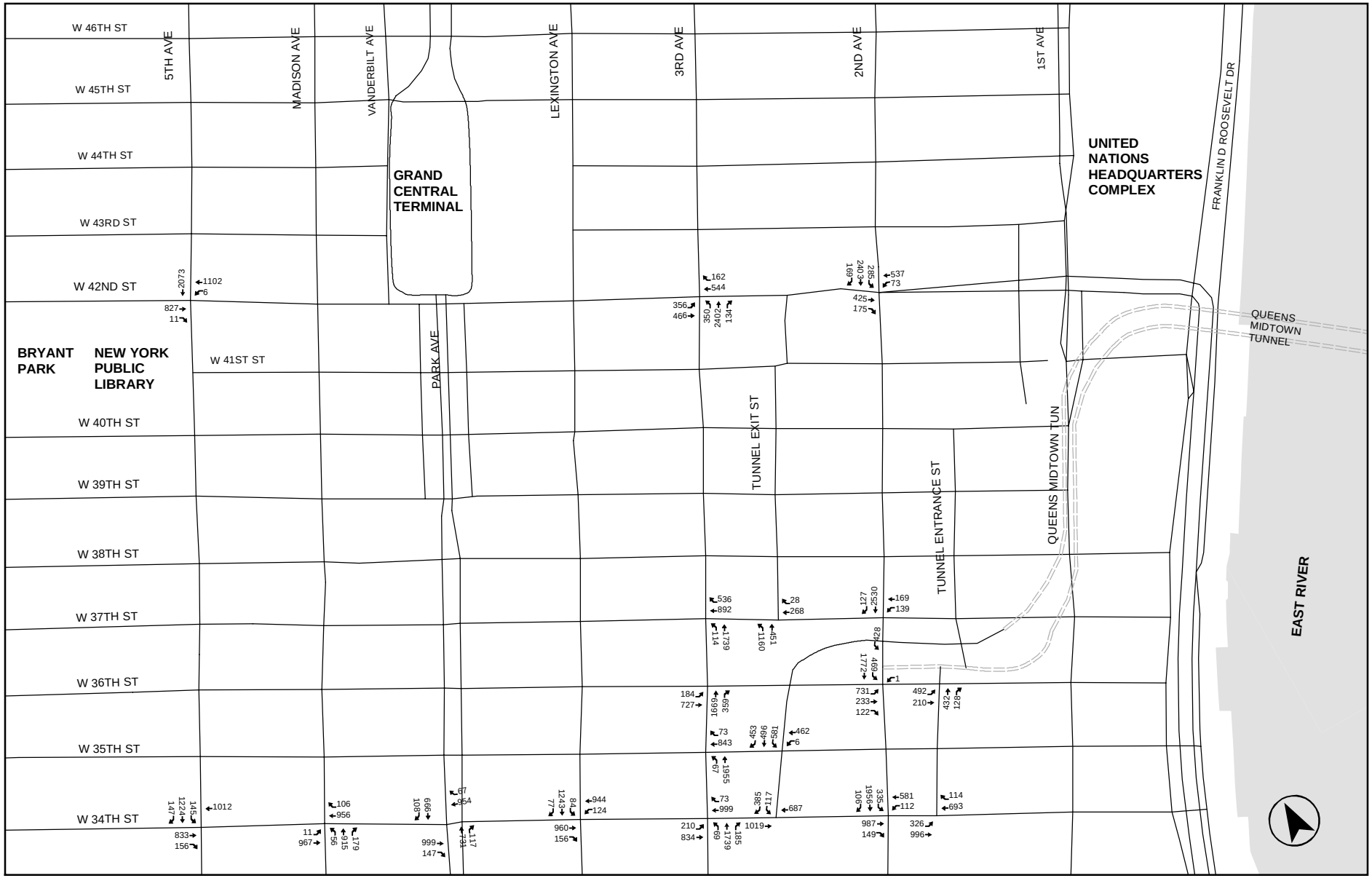
2025 Future With The Proposed Action Traffic Volumes- Inset 3 (Weekday Midday Peak Hour)

Figure 19-180



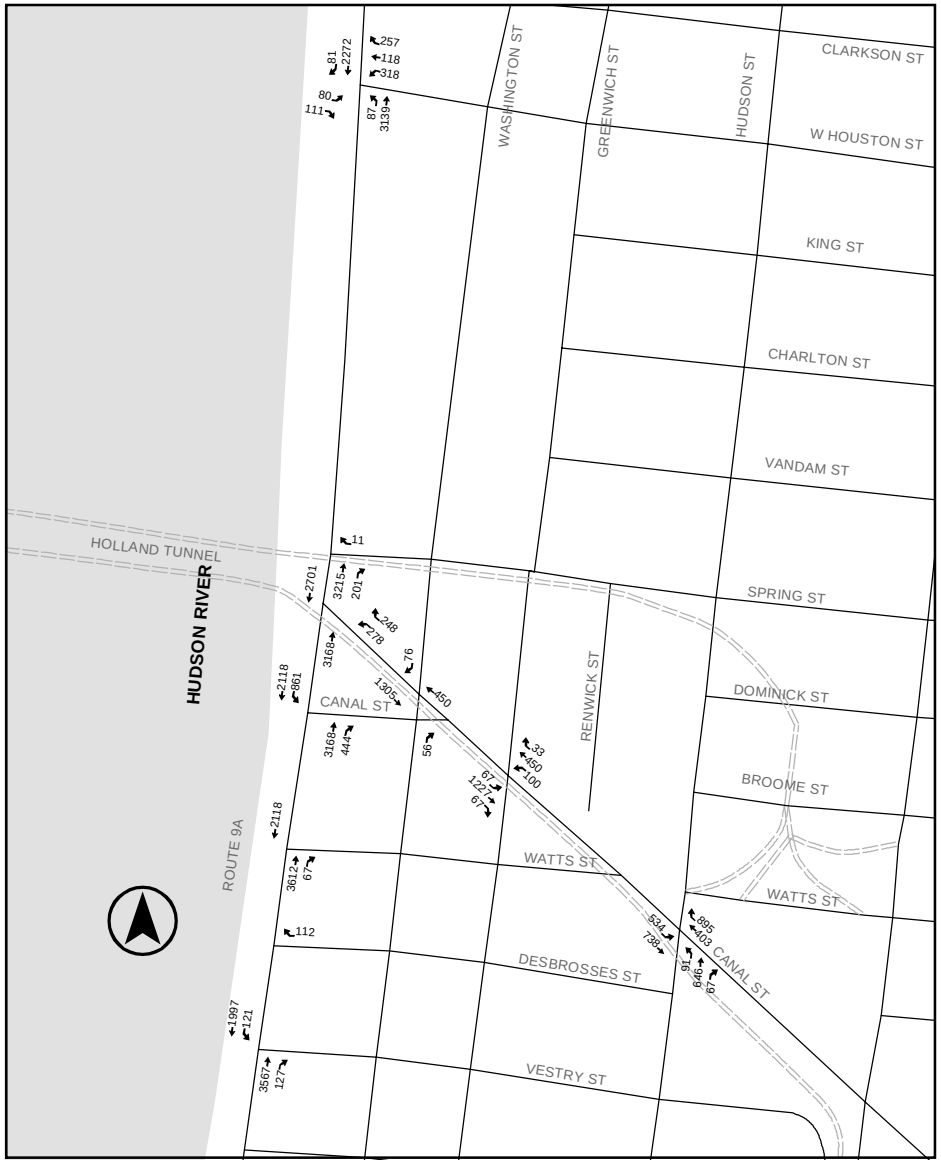
2025 Future With The Proposed Action Traffic Volumes-Inset 4
(Weekday Midday Peak Hour)

Figure 19-181

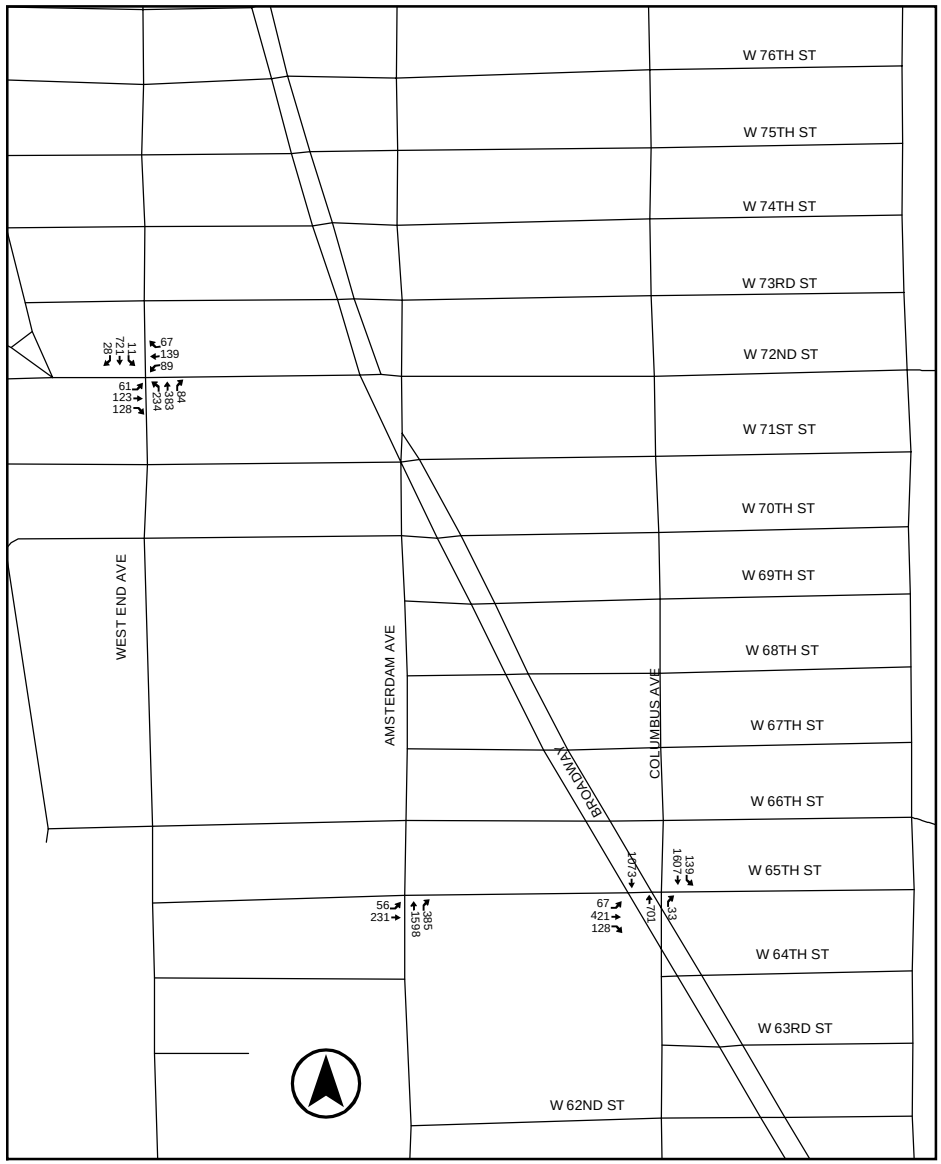


2025 Future With The Proposed Action Traffic Volumes- Inset 5 (Weekday Midday Peak Hour)

Figure 19-182



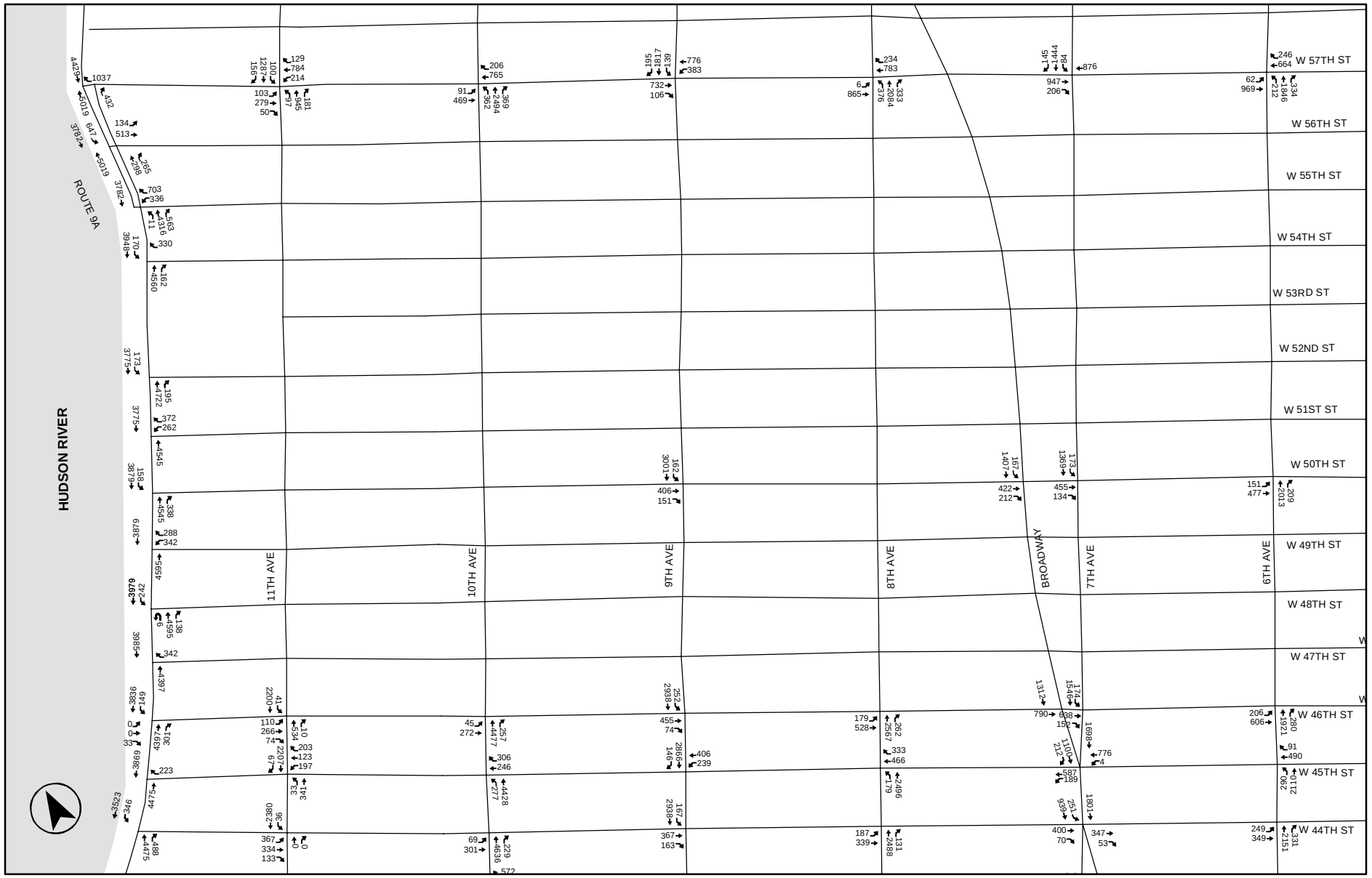
Inset 6



Inset 7

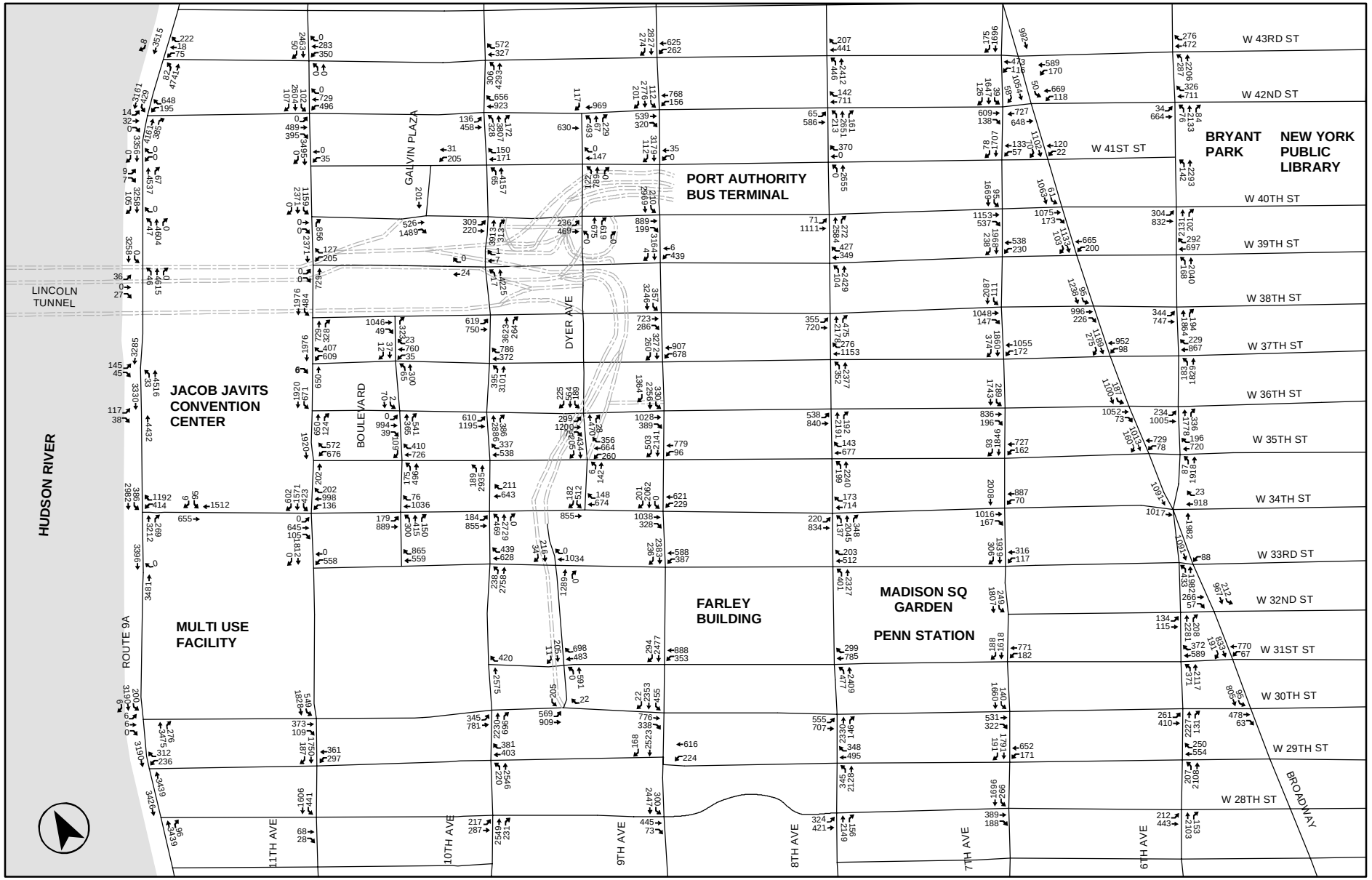
2025 Future With The Proposed Action Traffic Volumes - Insets 6 and 7 (Weekday Midday Peak Hour)

Figure 19-183



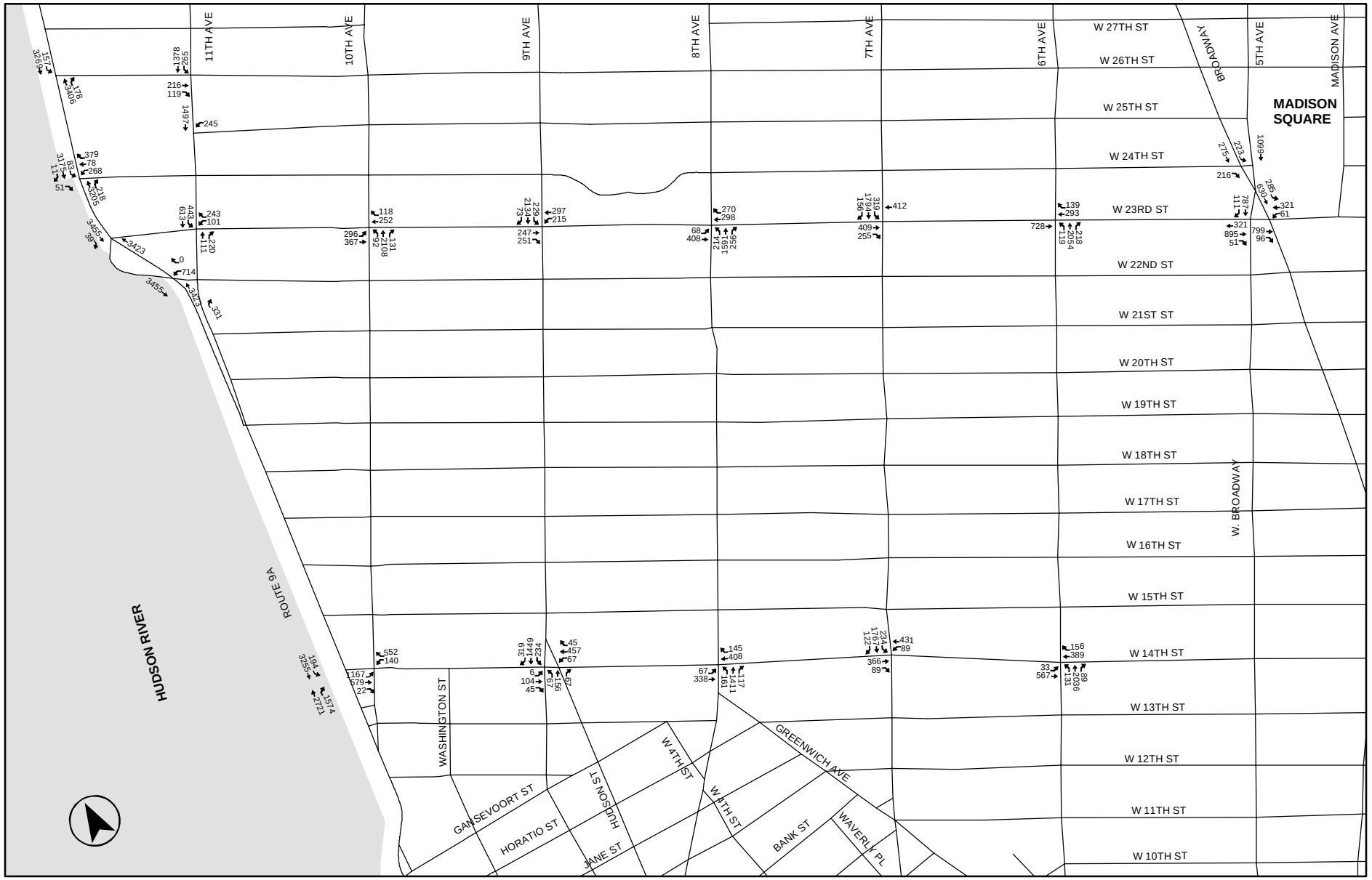
2025 Future With The Proposed Action Traffic Volumes- Inset 1 (Weekday PM Peak Hour)

Figure 19-184



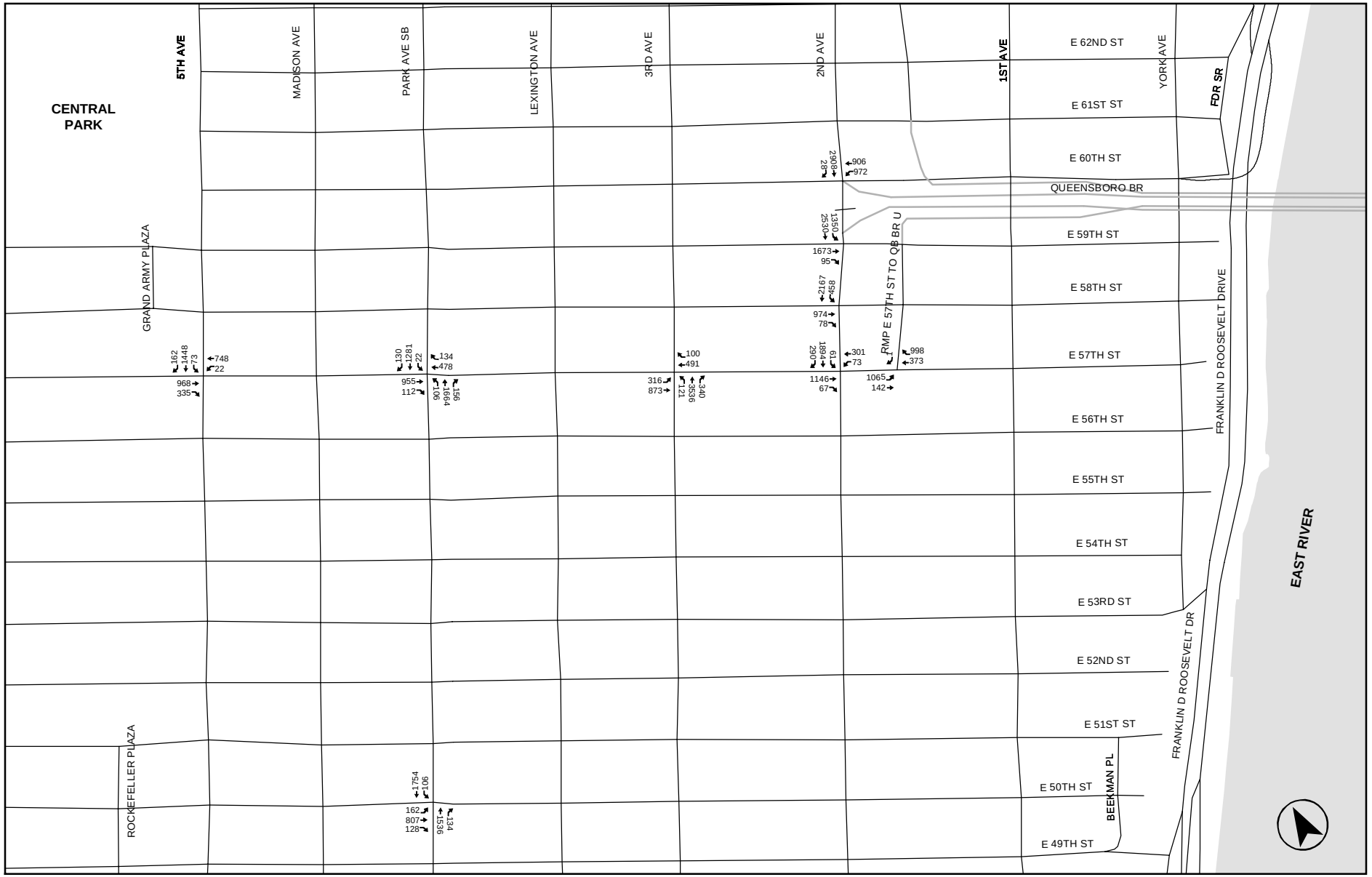
2025 Future With The Proposed Action Traffic Volumes-Inset 2 (Weekday PM Peak Hour)

Figure 19-185



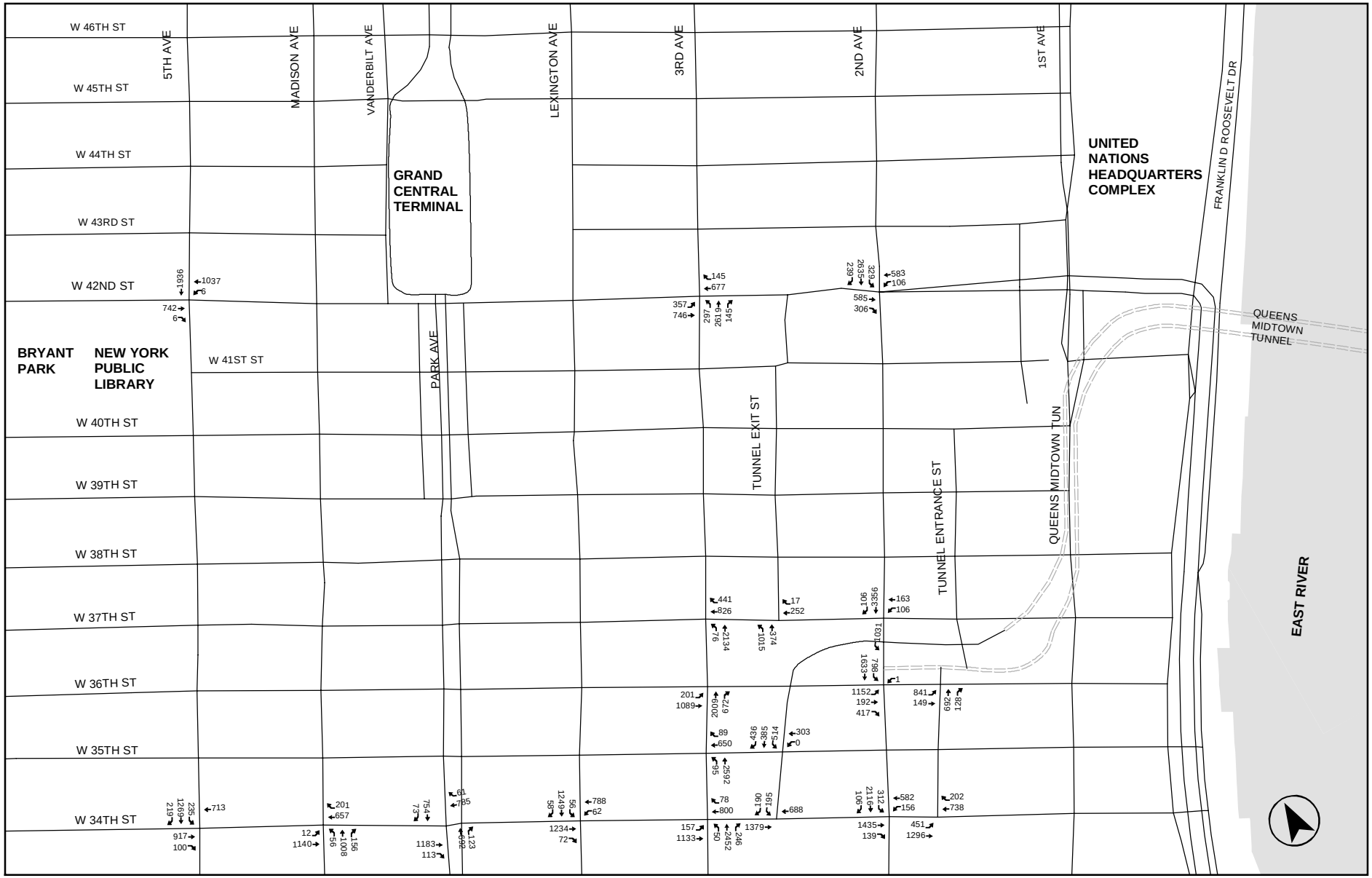
2025 Future With The Proposed Action Traffic Volumes- Inset 3 (Weekday PM Peak Hour)

Figure 19-186



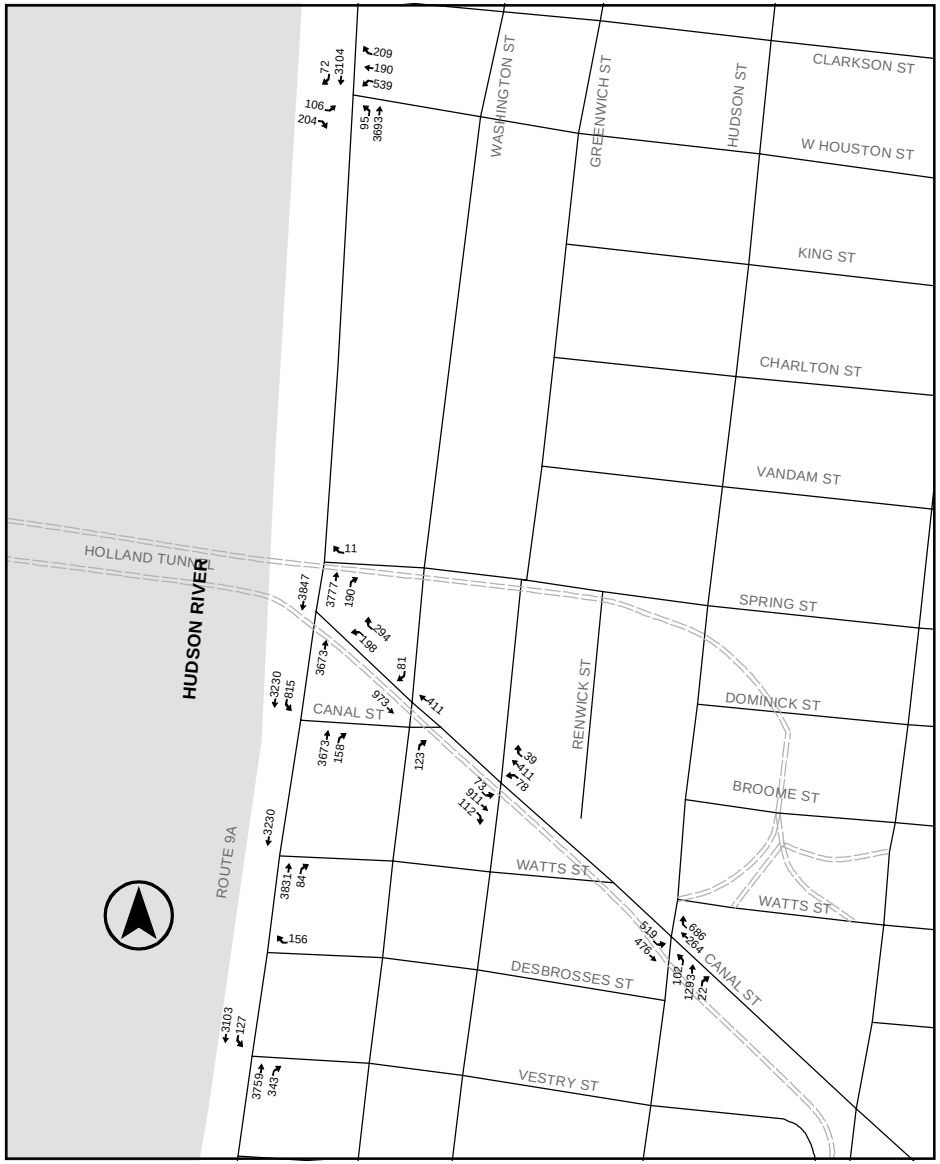
2025 Future With The Proposed Action Traffic Volumes- Inset 4 (Weekday PM Peak Hour)

Figure 19-187

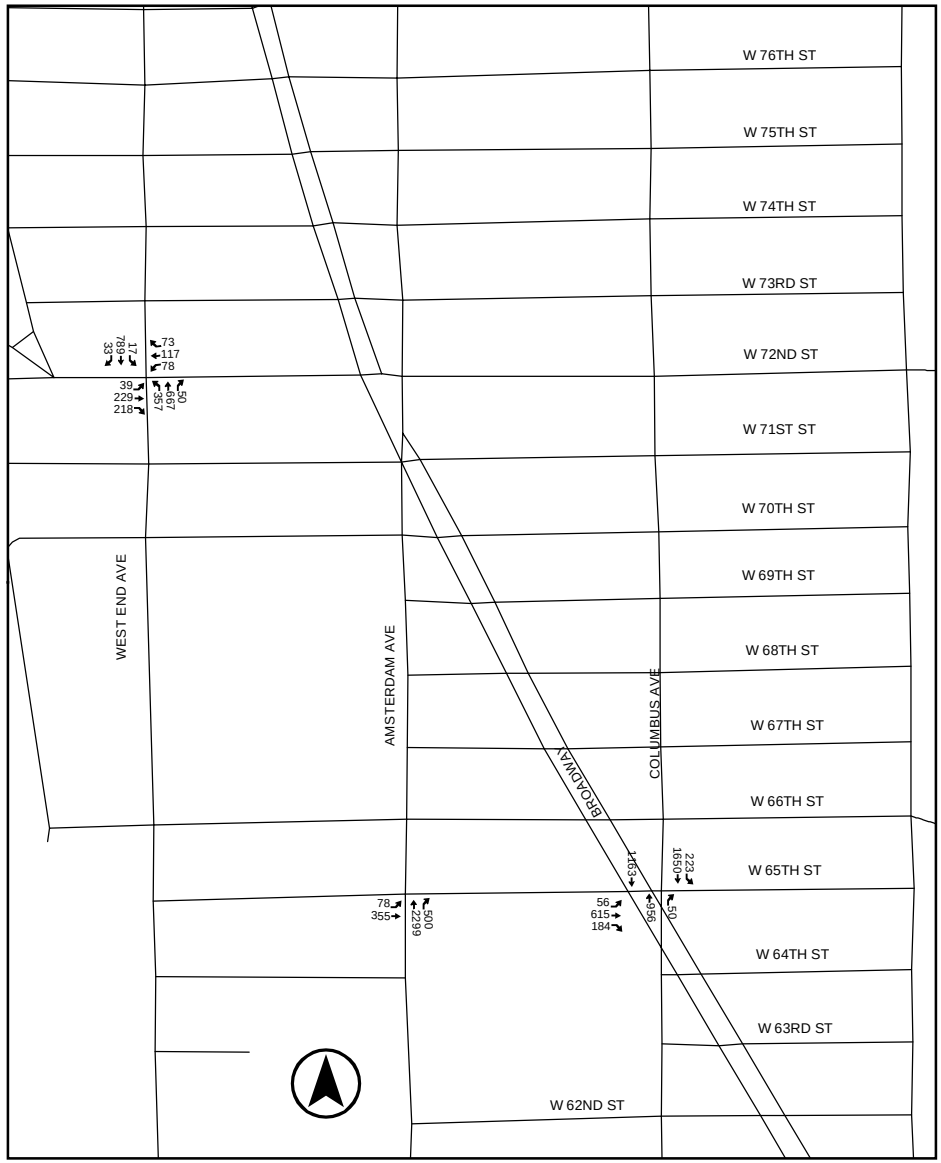


2025 Future With The Proposed Action Traffic Volumes-
Inset 5
(Weekday PM Peak Hour)

Figure 19-188



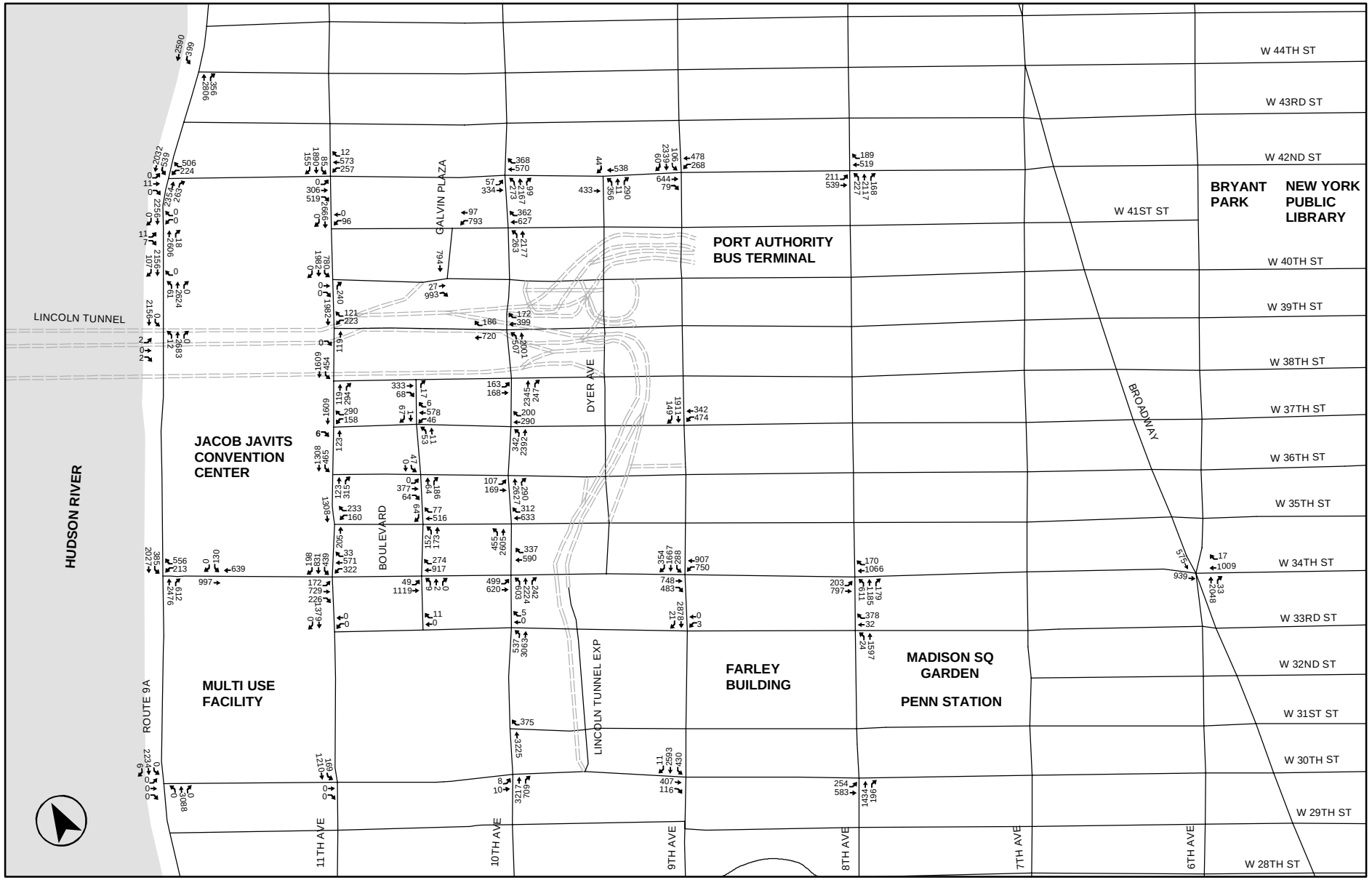
Inset 6



Inset 7

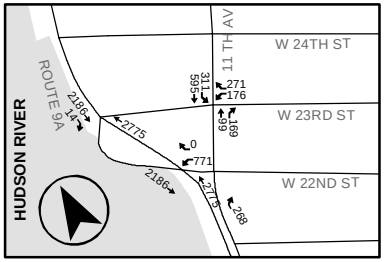
2025 Future With The Proposed Action
Traffic Volumes - Insets 6 and 7
(Weekday PM Peak Hour)

Figure 19-189

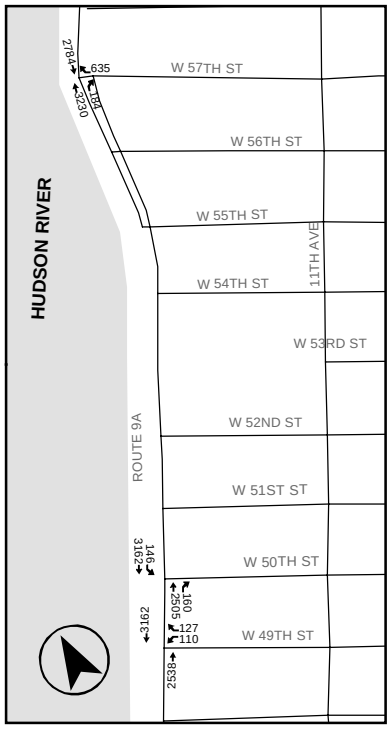


2025 Future With The Proposed Action Traffic Volumes-Inset 1
(Weeknight Special Event Peak Hour)

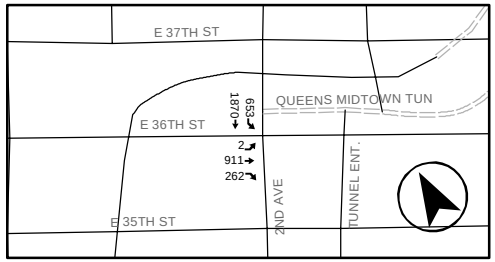
Figure 19-190



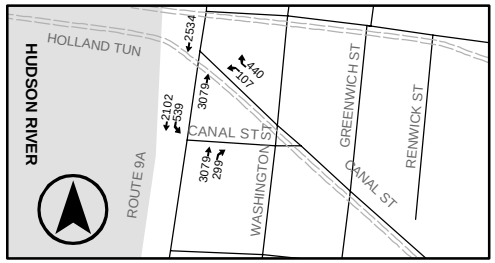
Inset 2



Inset 3



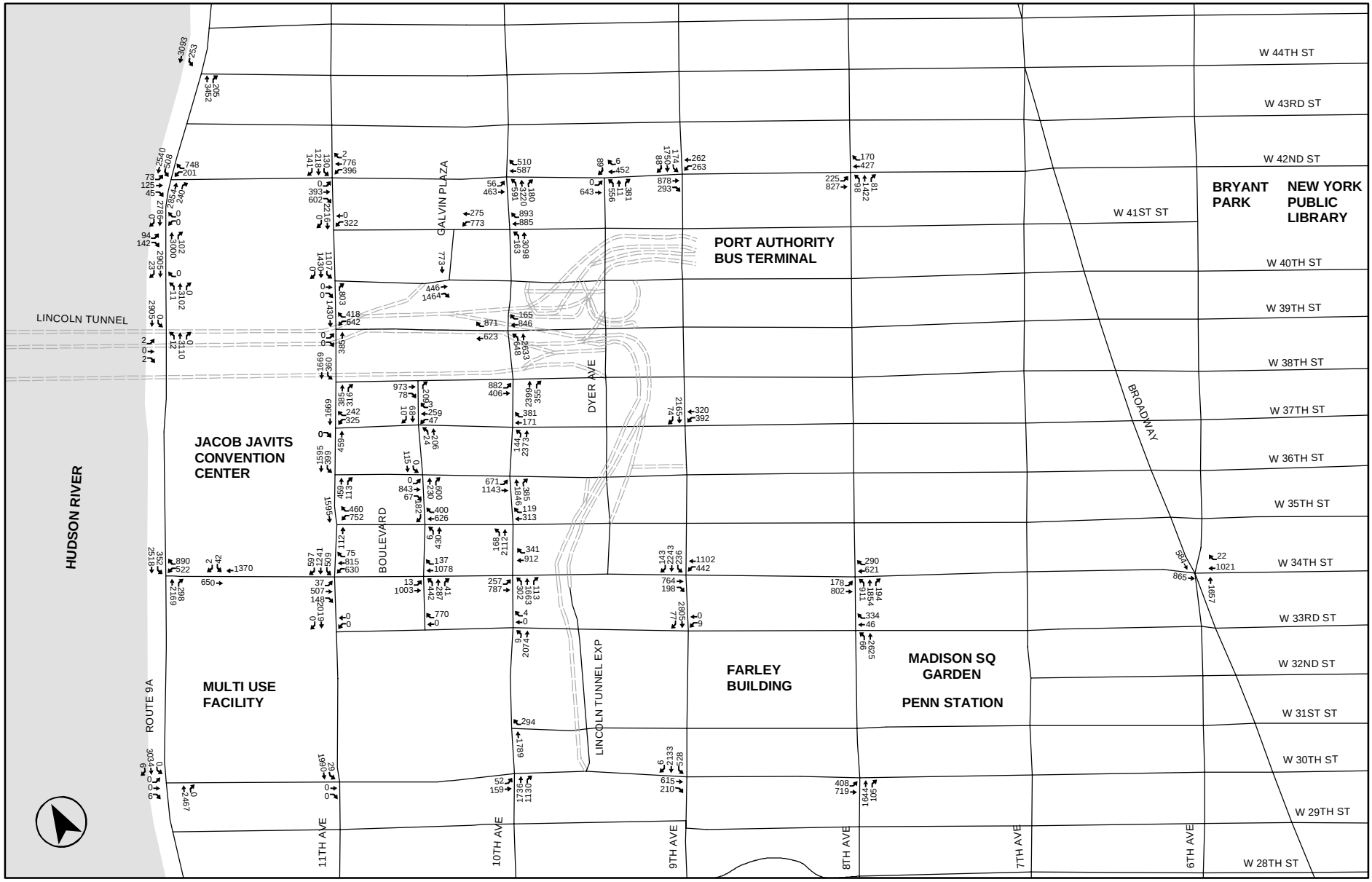
Inset 4



Inset 5

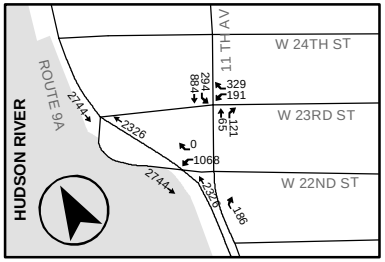
2025 Future With The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-191

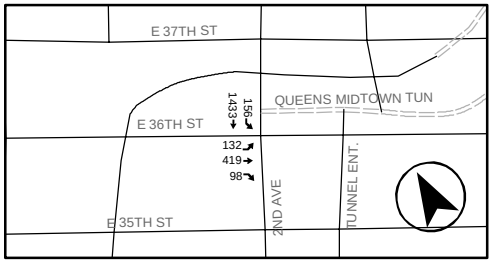


2025 Future With The Proposed Action Traffic Volumes-Inset 1
(Sunday Special Event Peak Hour)

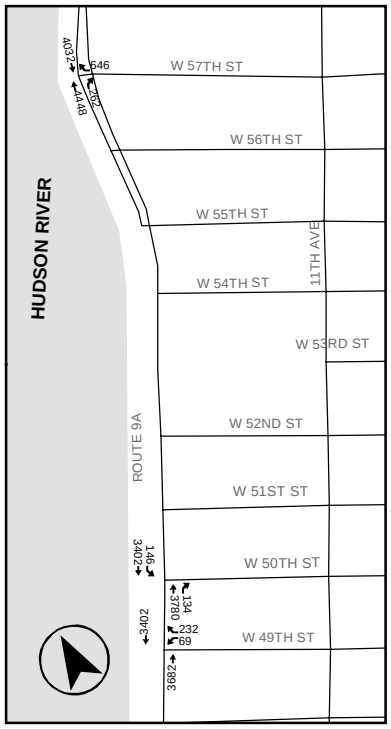
Figure 19-192



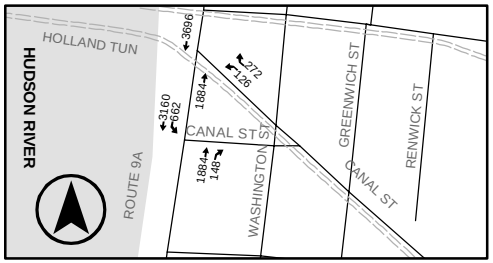
Inset 2



Inset 4



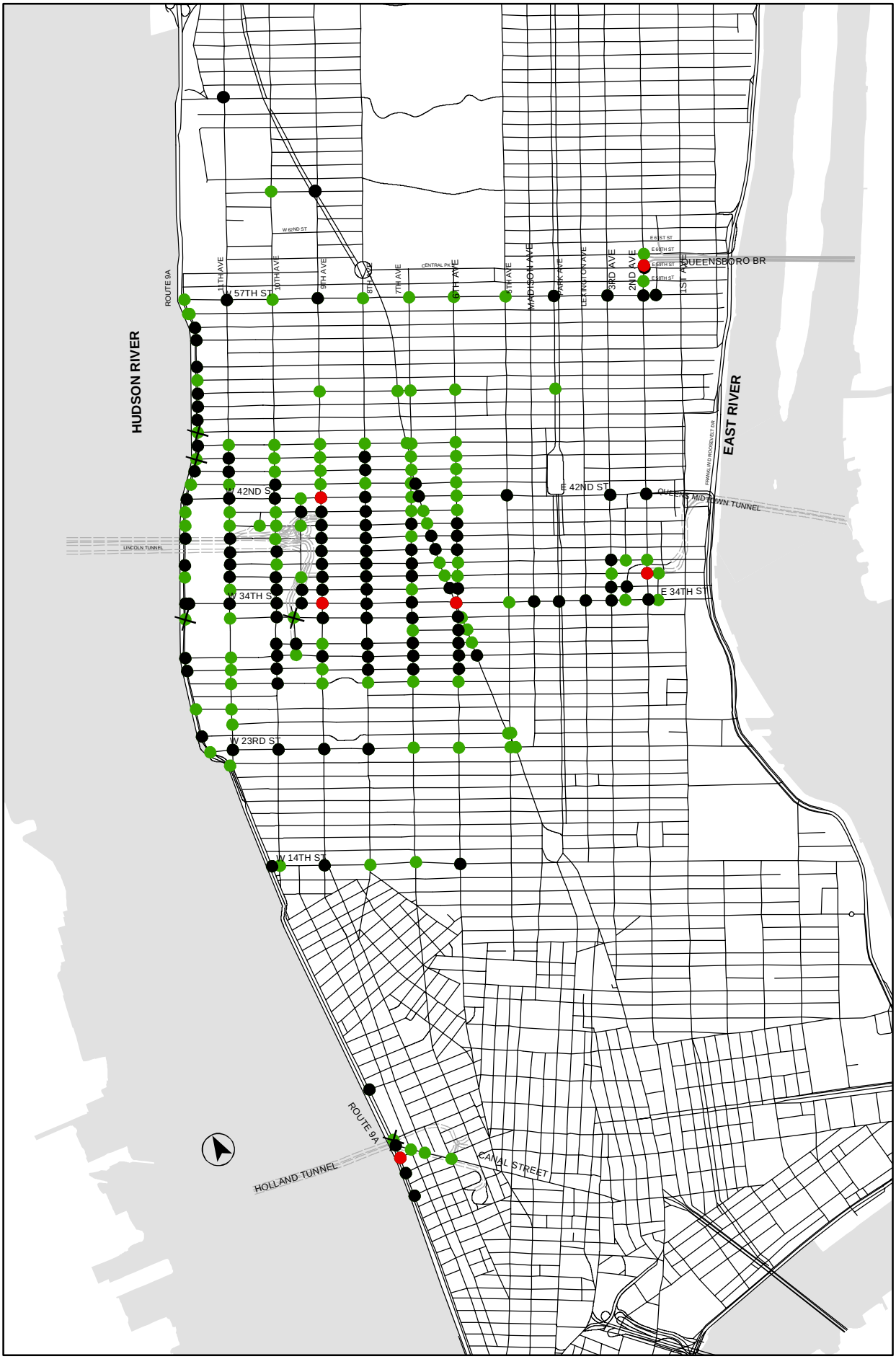
Inset 3



Inset 5

2025 Future With The Proposed Action Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-193

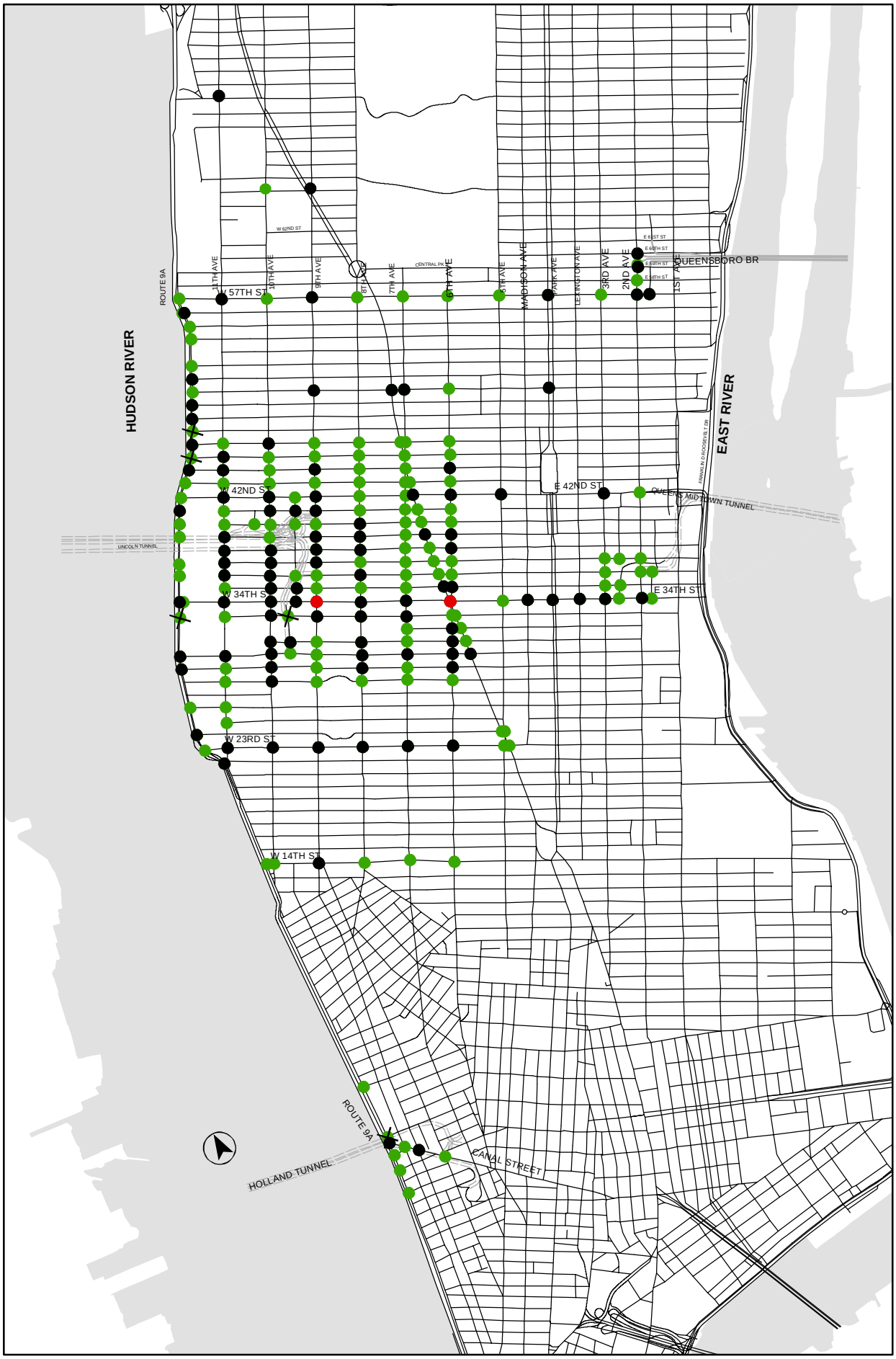


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

2025 Future With The Proposed Action
Analyzed Intersections
(Weekday AM Peak Hour)

Figure 19-194

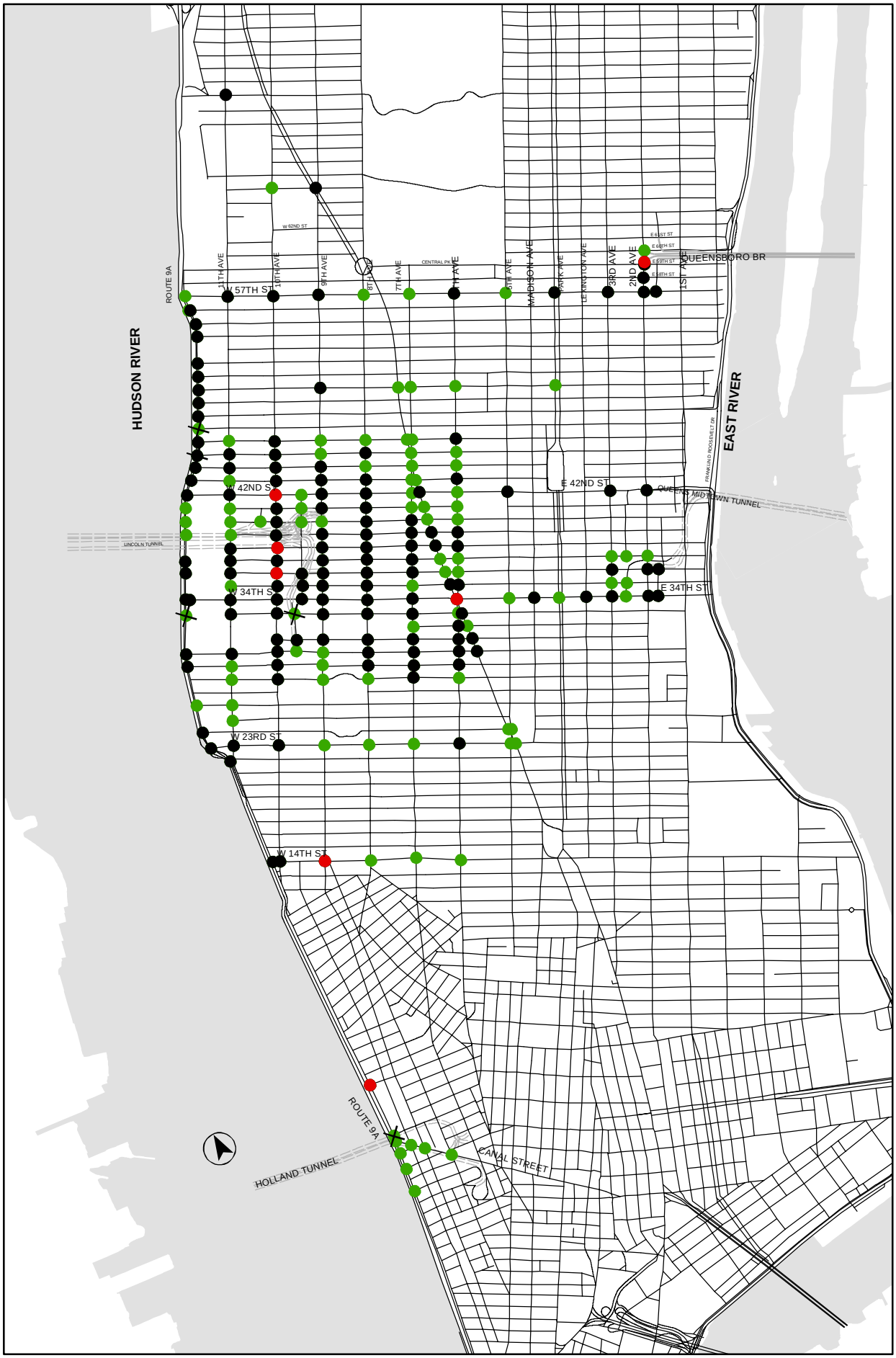


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

2025 Future With The Proposed Action
Analyzed Intersections
(Weekday Midday Peak Hour)

Figure 19-195

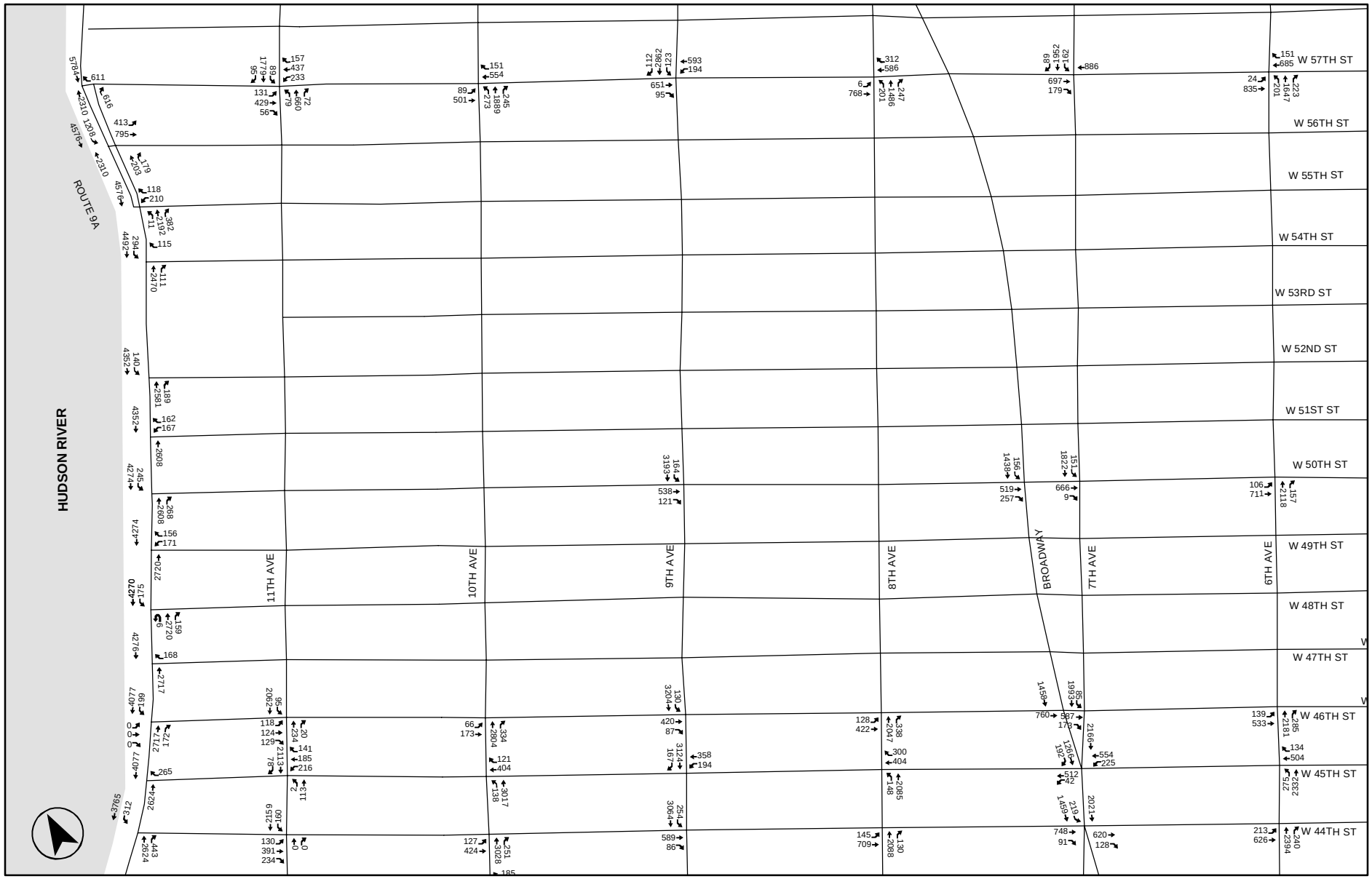


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

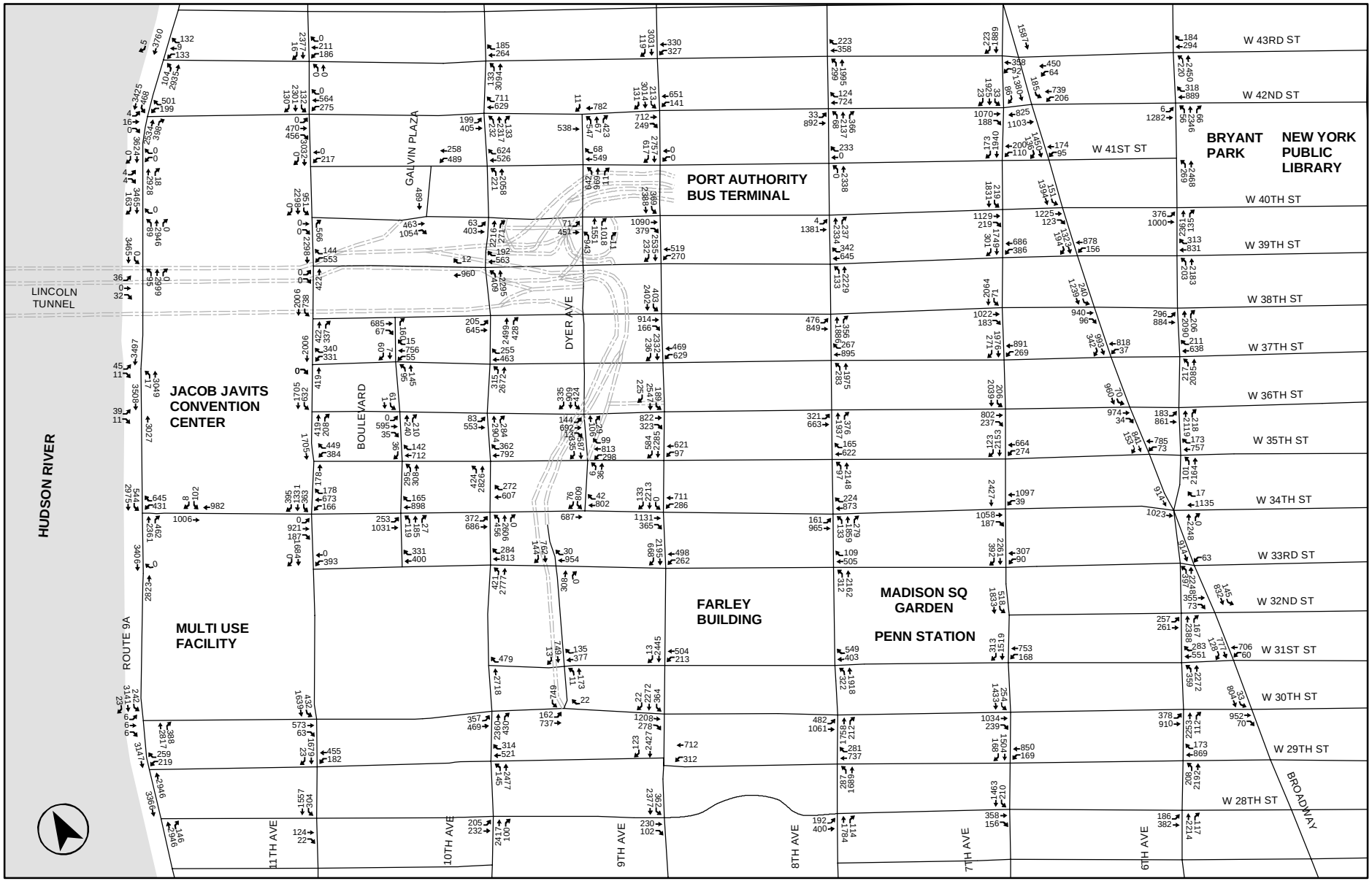
2025 Future With The Proposed Action
Analyzed Intersections
(Weekday PM Peak Hour)

Figure 19-196



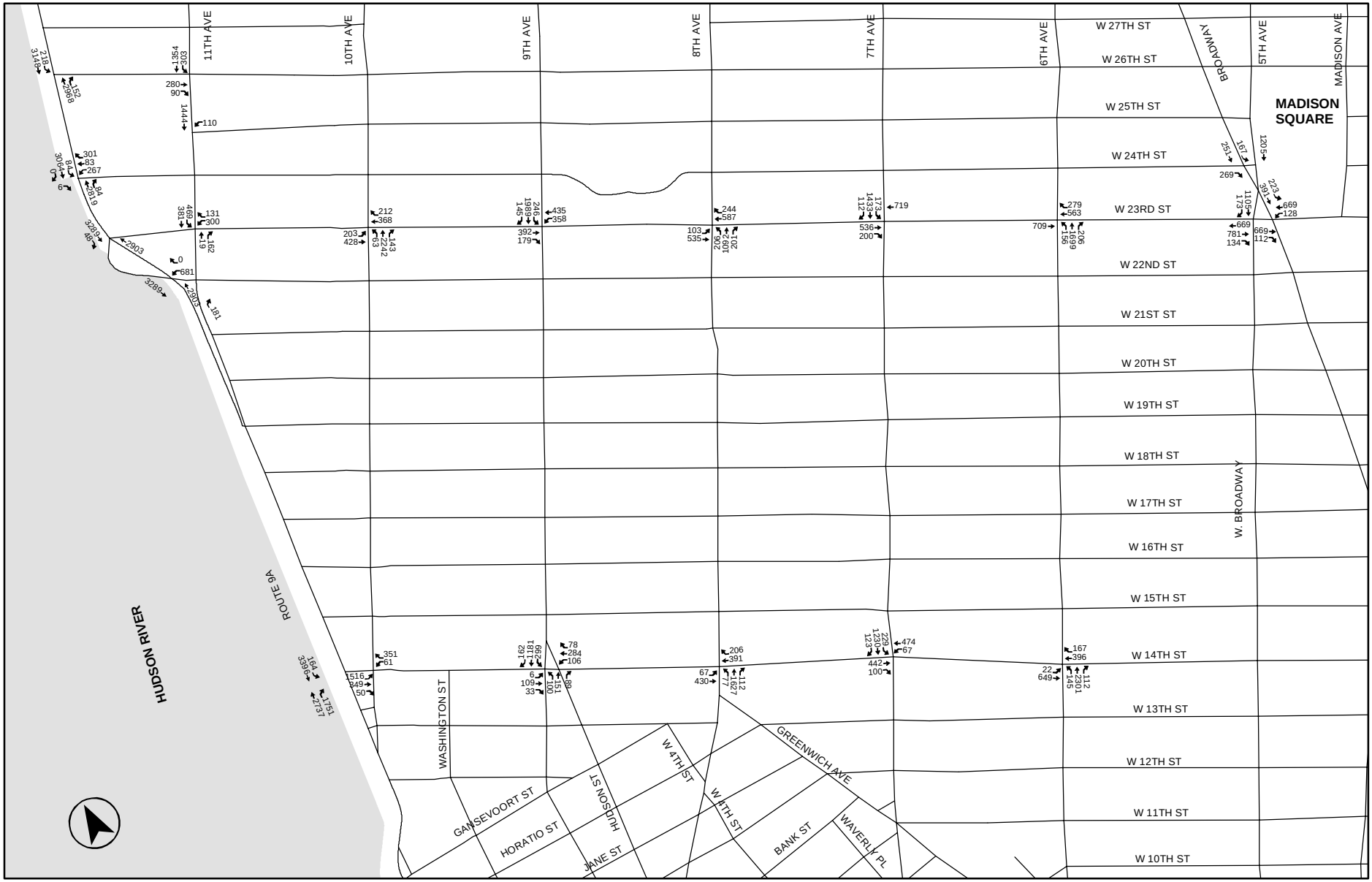
2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 1
(Weekday AM Peak Hour)

Figure 19-197



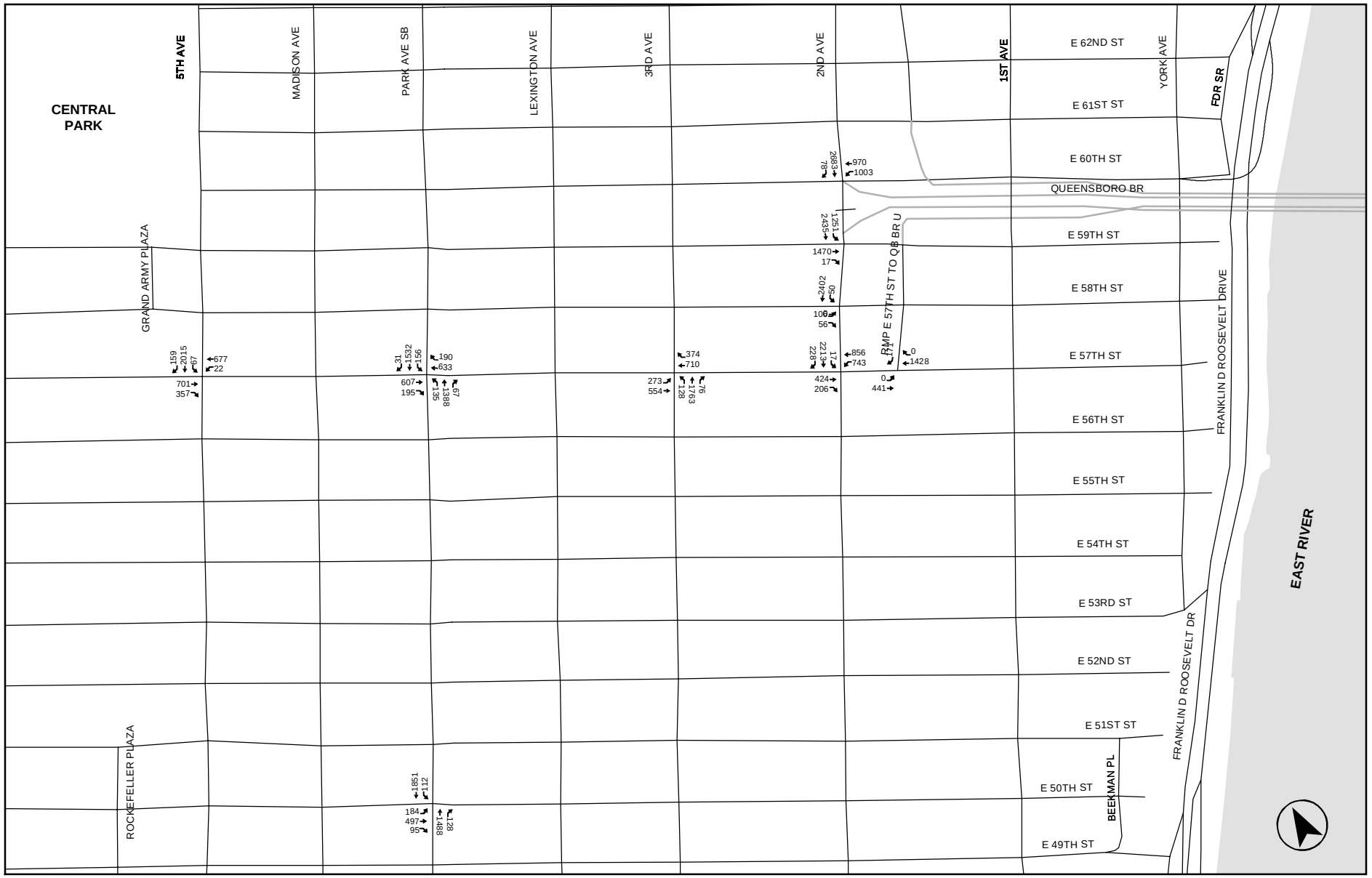
2025 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 2 (Weekday AM Peak Hour)

Figure 19-198



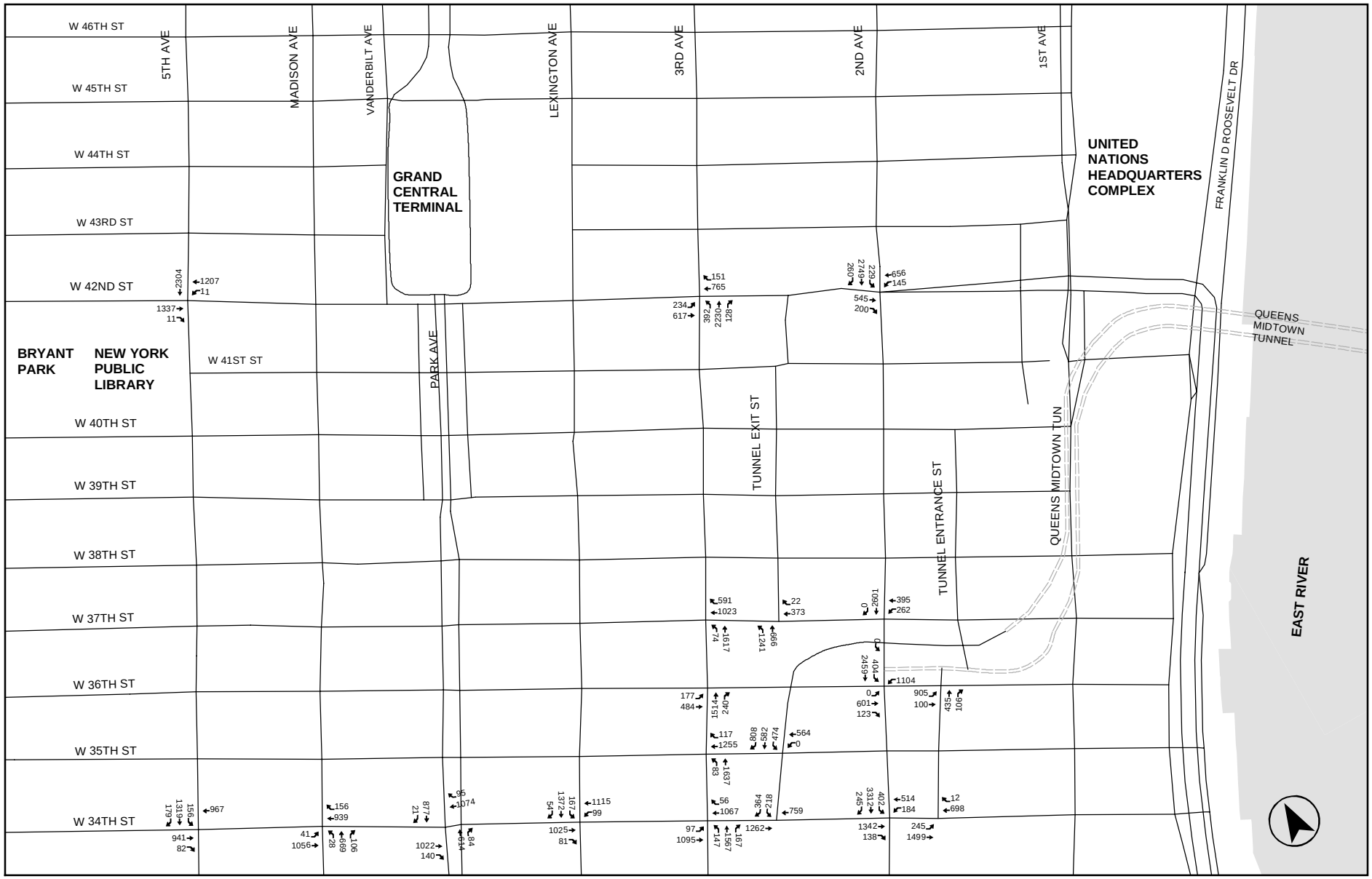
2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 3
(Weekday AM Peak Hour)

Figure 19-199



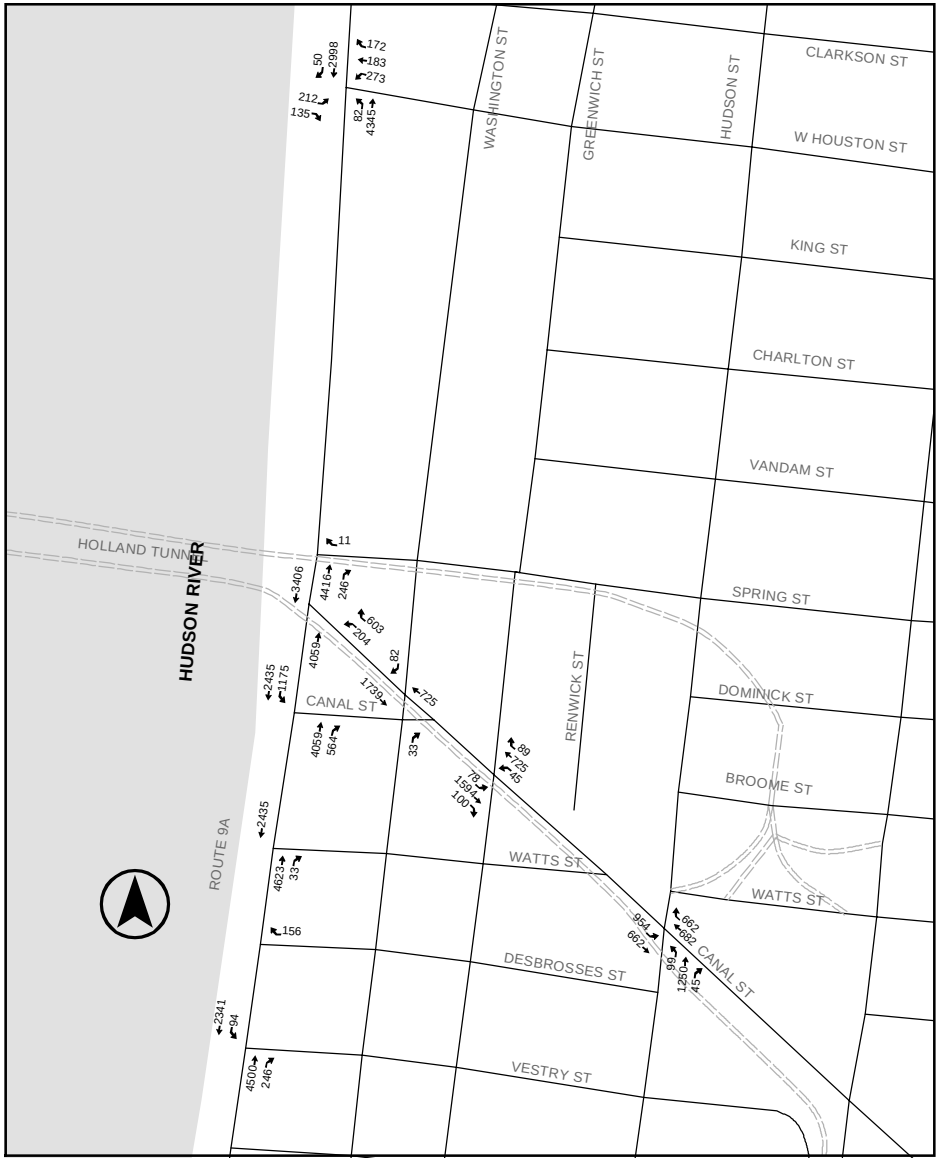
2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 4
(Weekday AM Peak Hour)

Figure 19-200

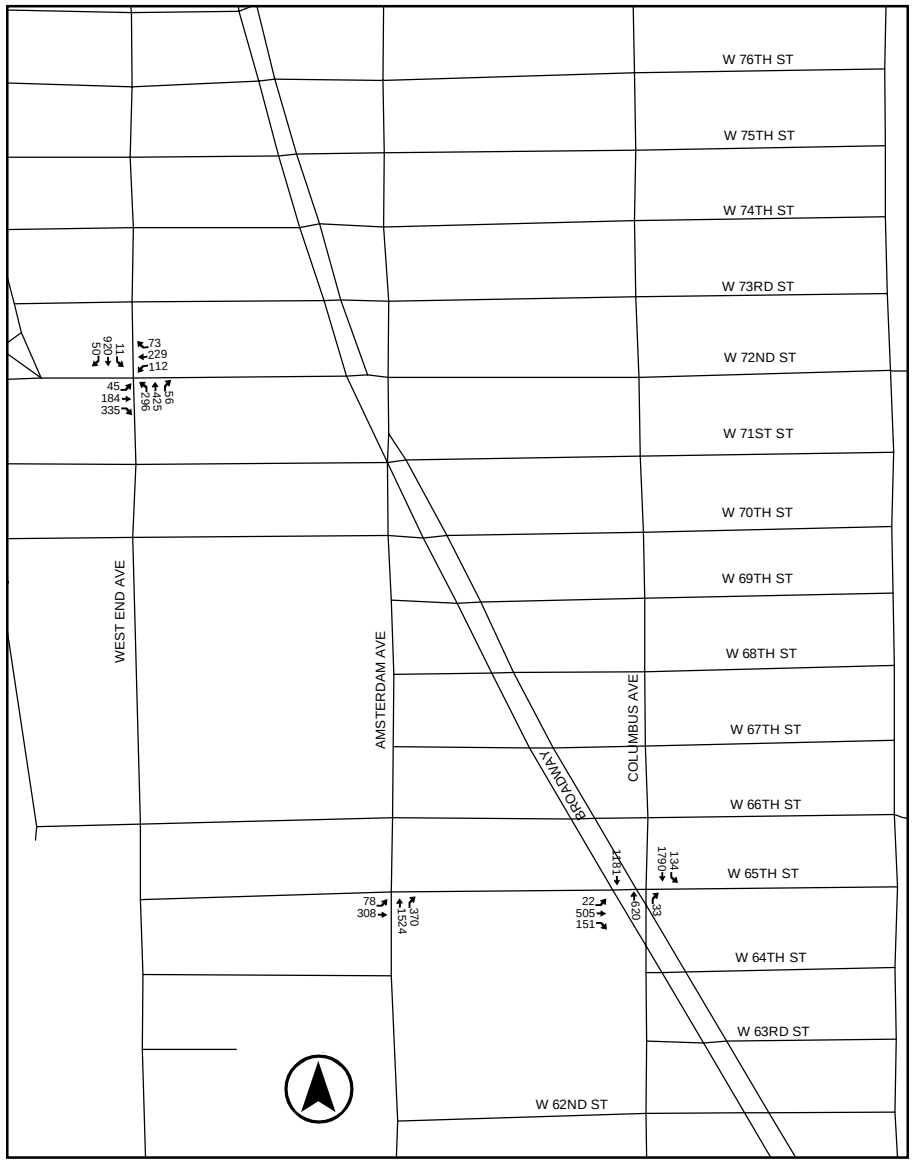


2025 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 5 (Weekday AM Peak Hour)

Figure 19-201



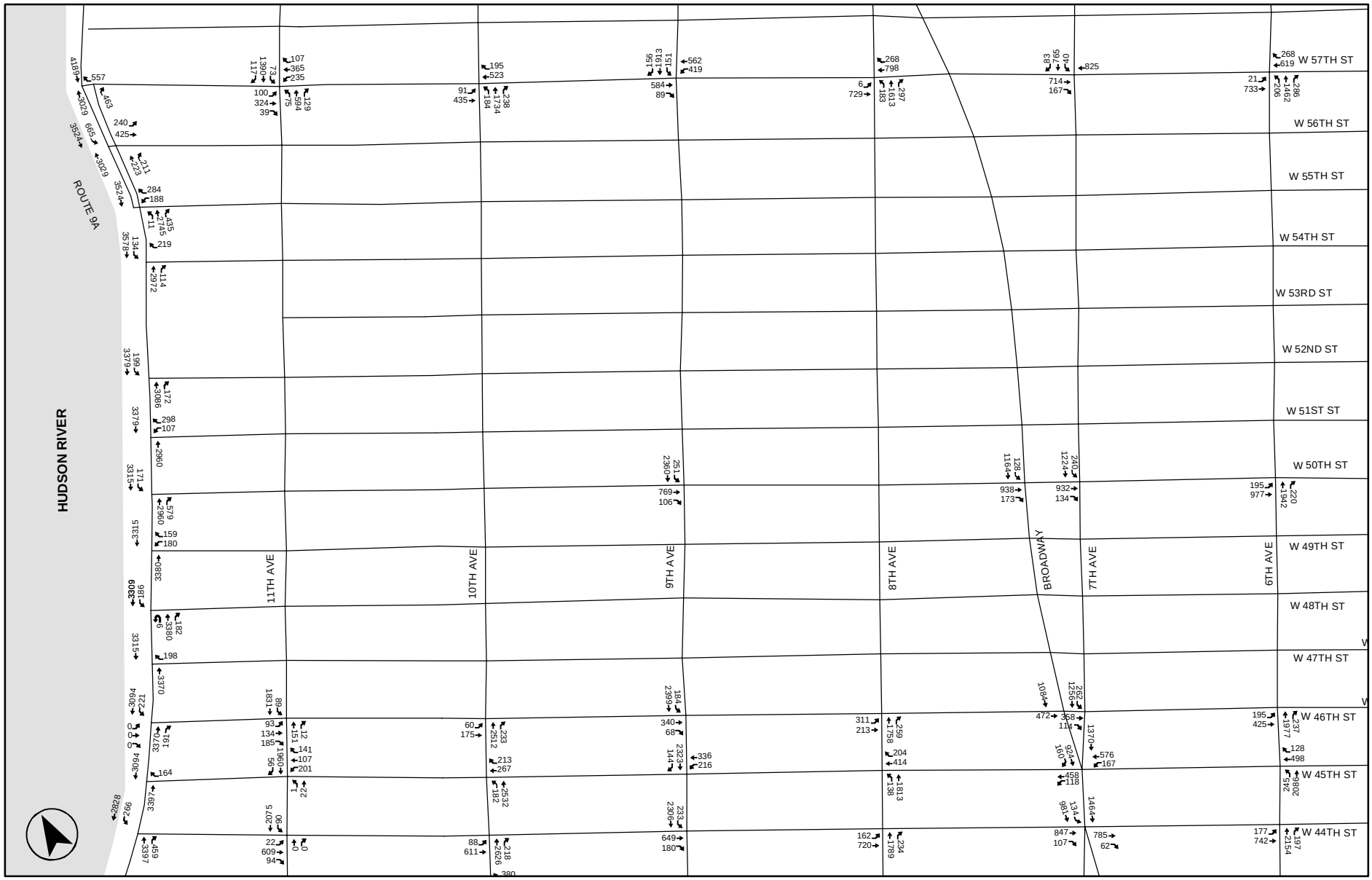
Inset 6



Inset 7

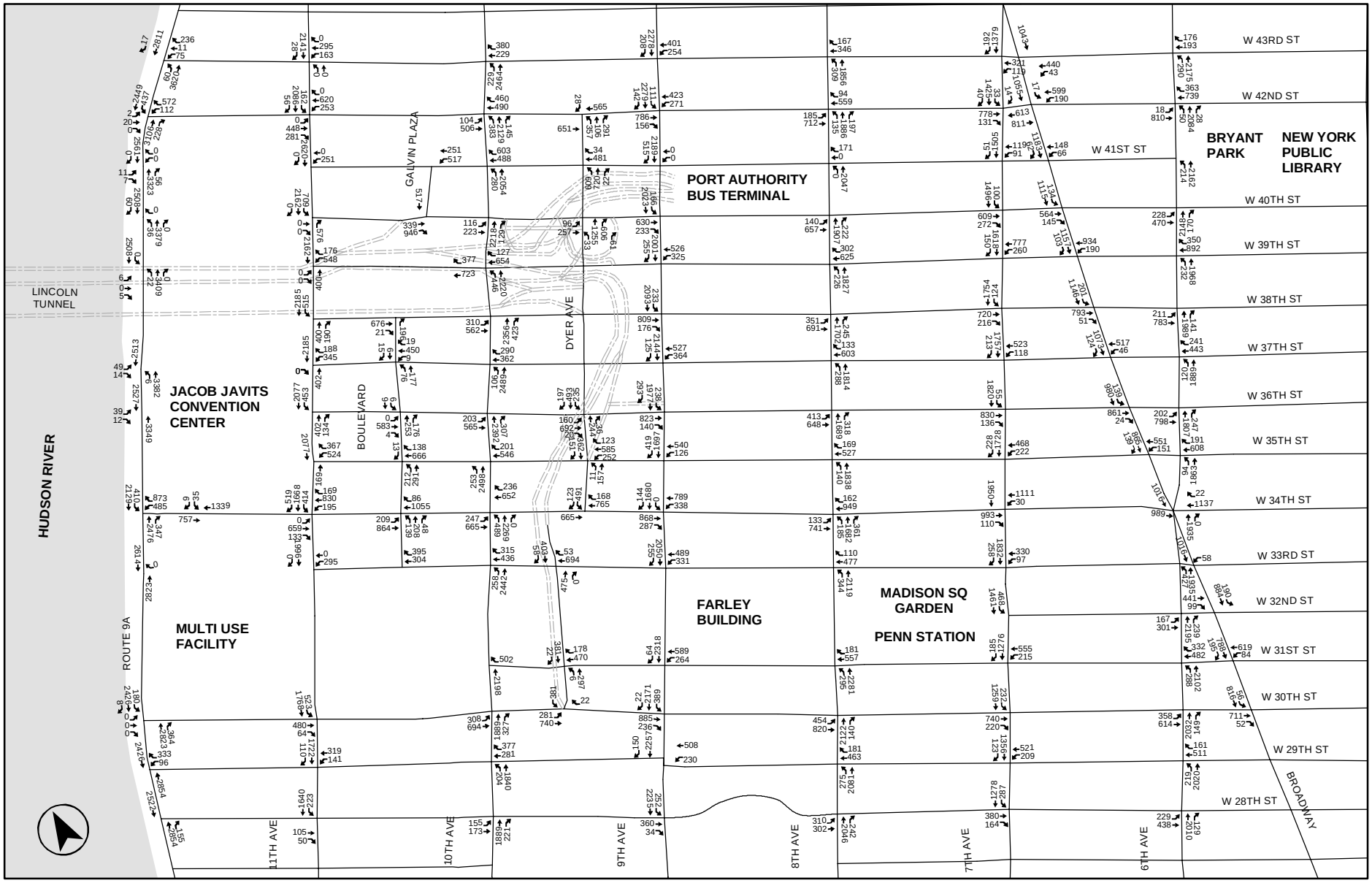
2025 Future With The Proposed Action With Mitigation Traffic Volumes - Insets 6 and 7 (Weekday AM Peak Hour)

Figure 19-202



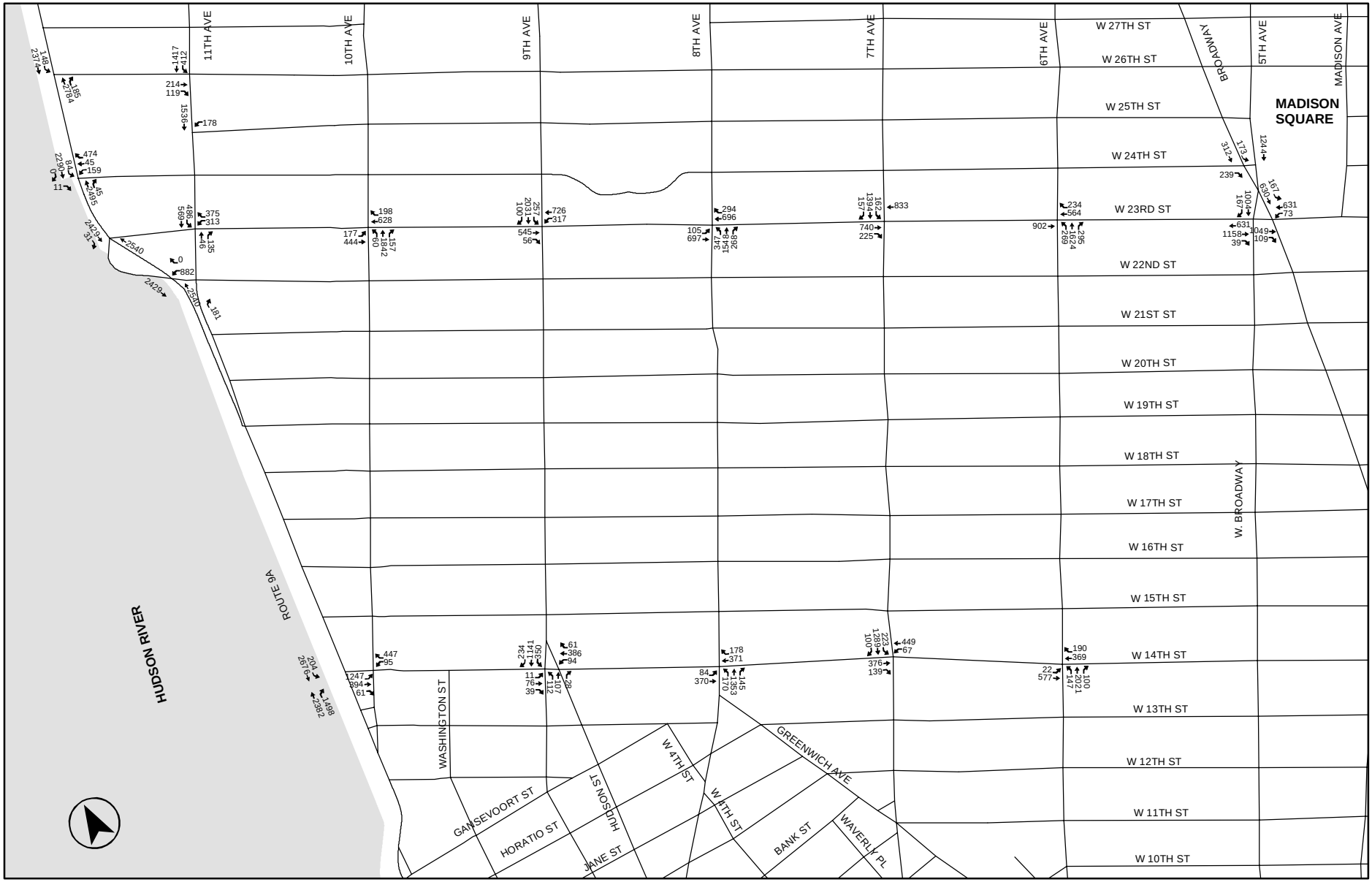
2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 1 (Weekday Midday Peak Hour)

Figure 19-203



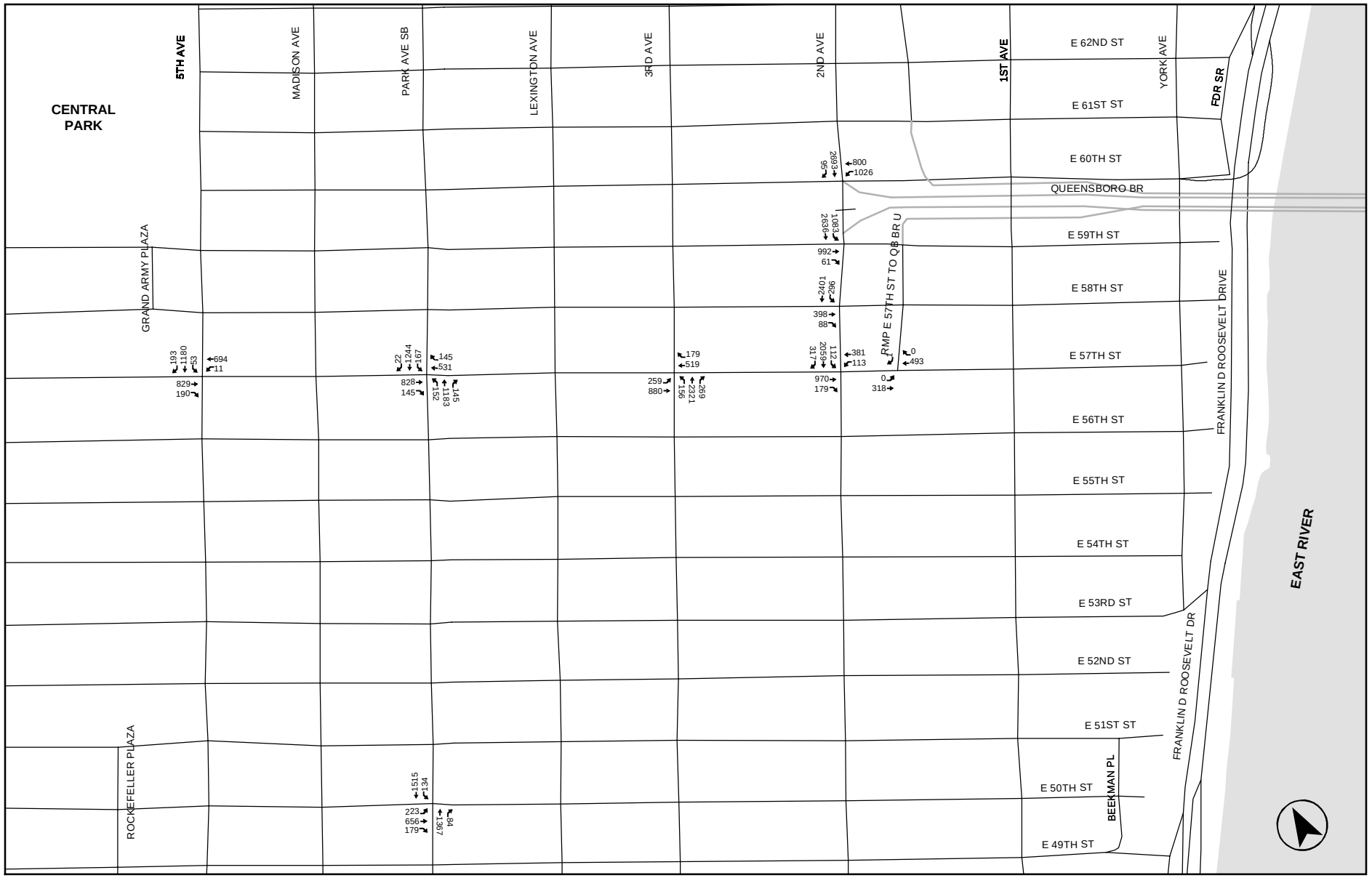
2025 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 2 (Weekday Midday Peak Hour)

Figure 19-204



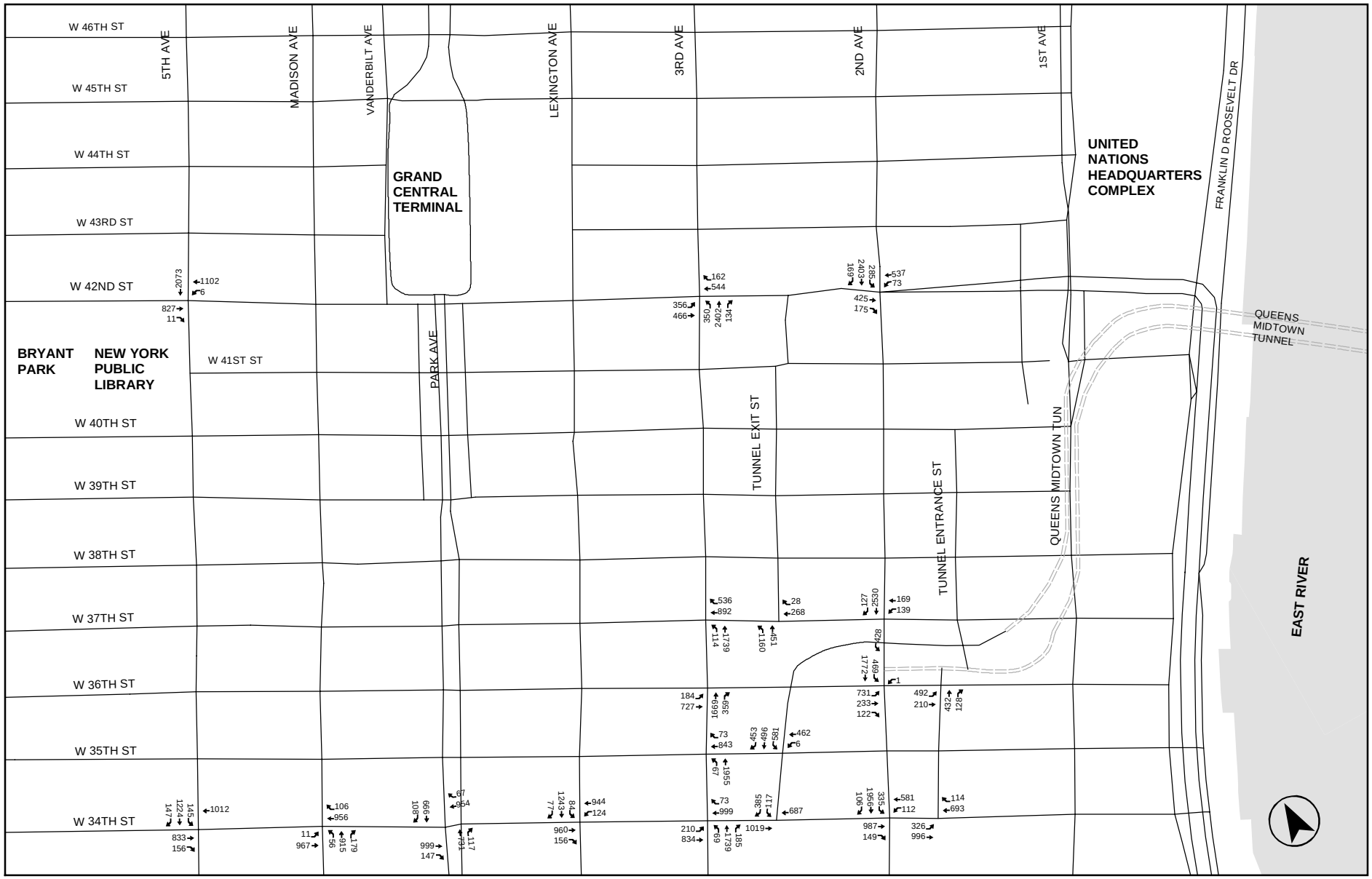
2025 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 3 (Weekday Midday Peak Hour)

Figure 19-205



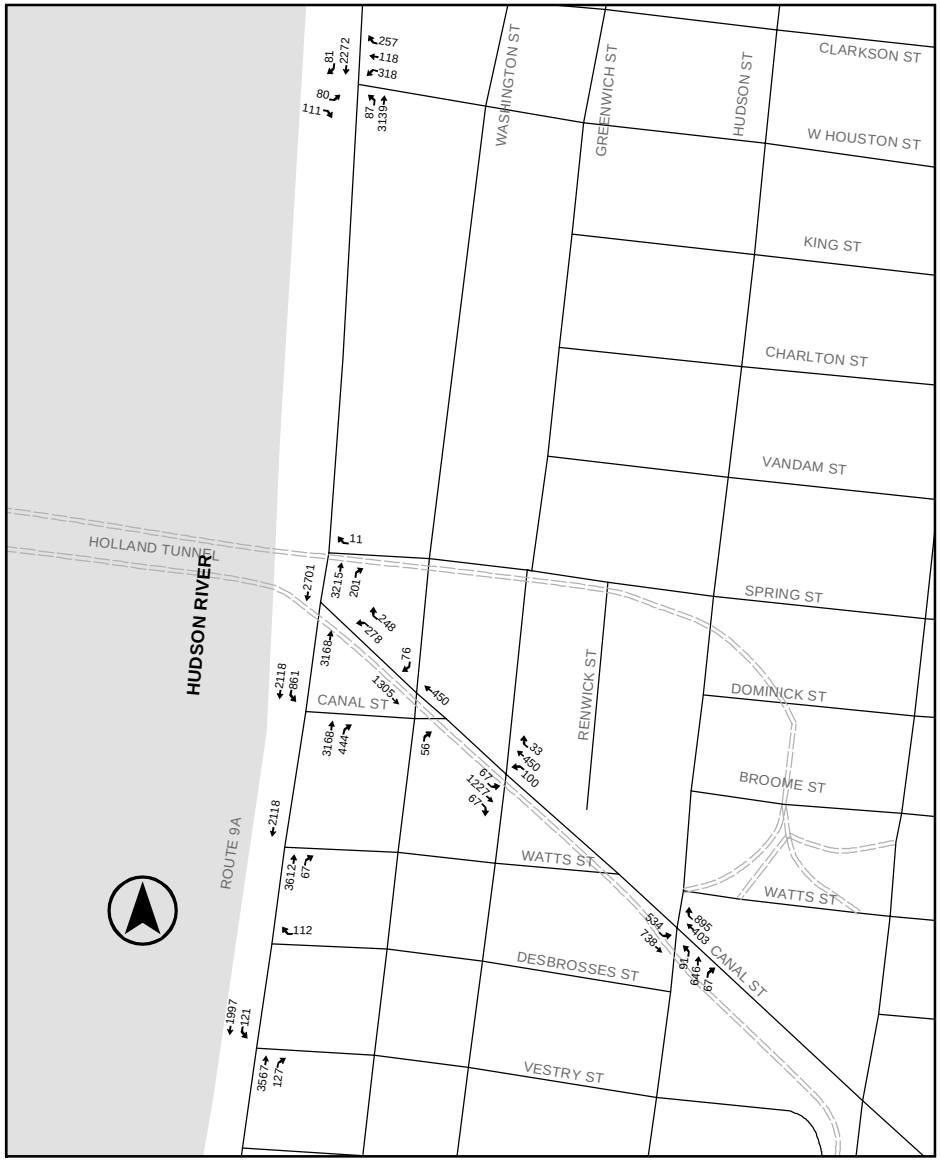
2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 4
(Weekday Midday Peak Hour)

Figure 19-206

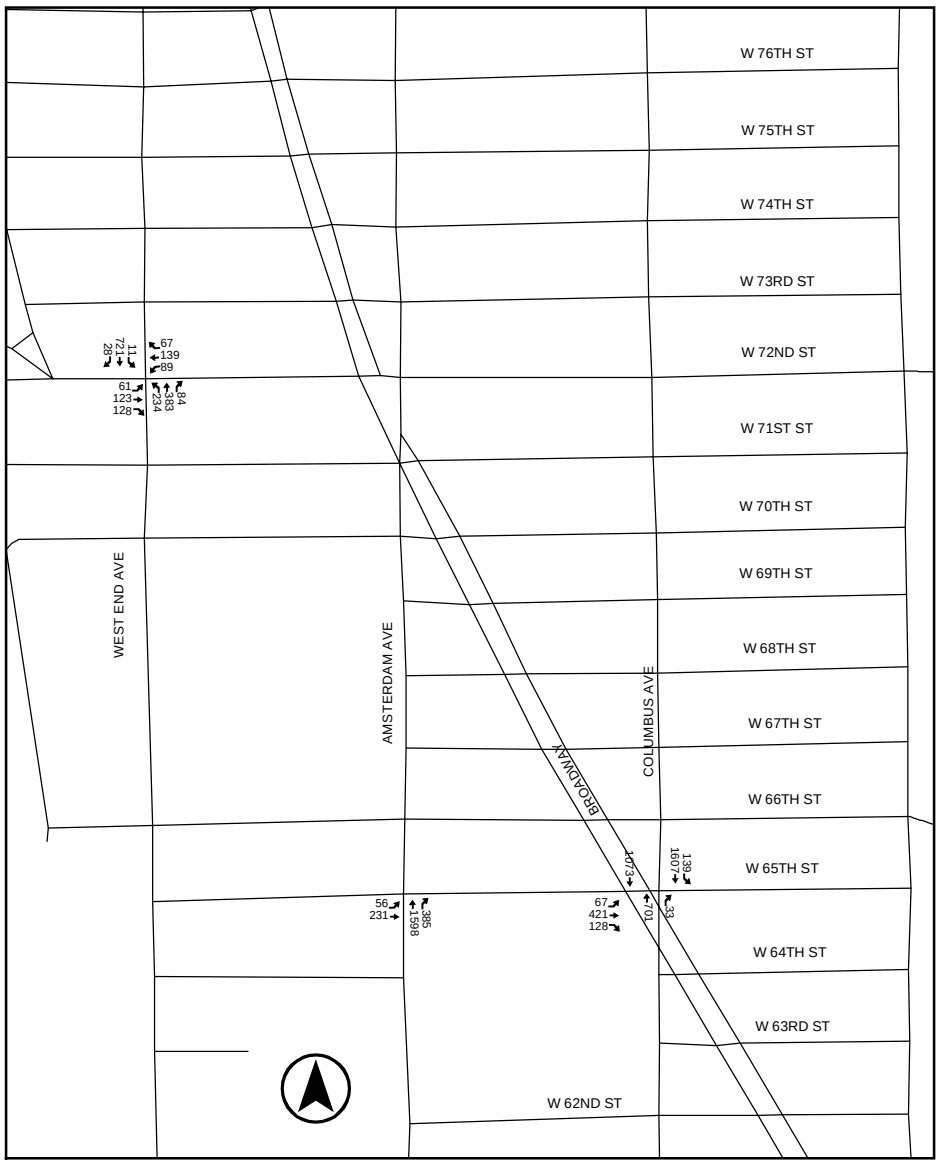


2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 5
(Weekday Midday Peak Hour)

Figure 19-207



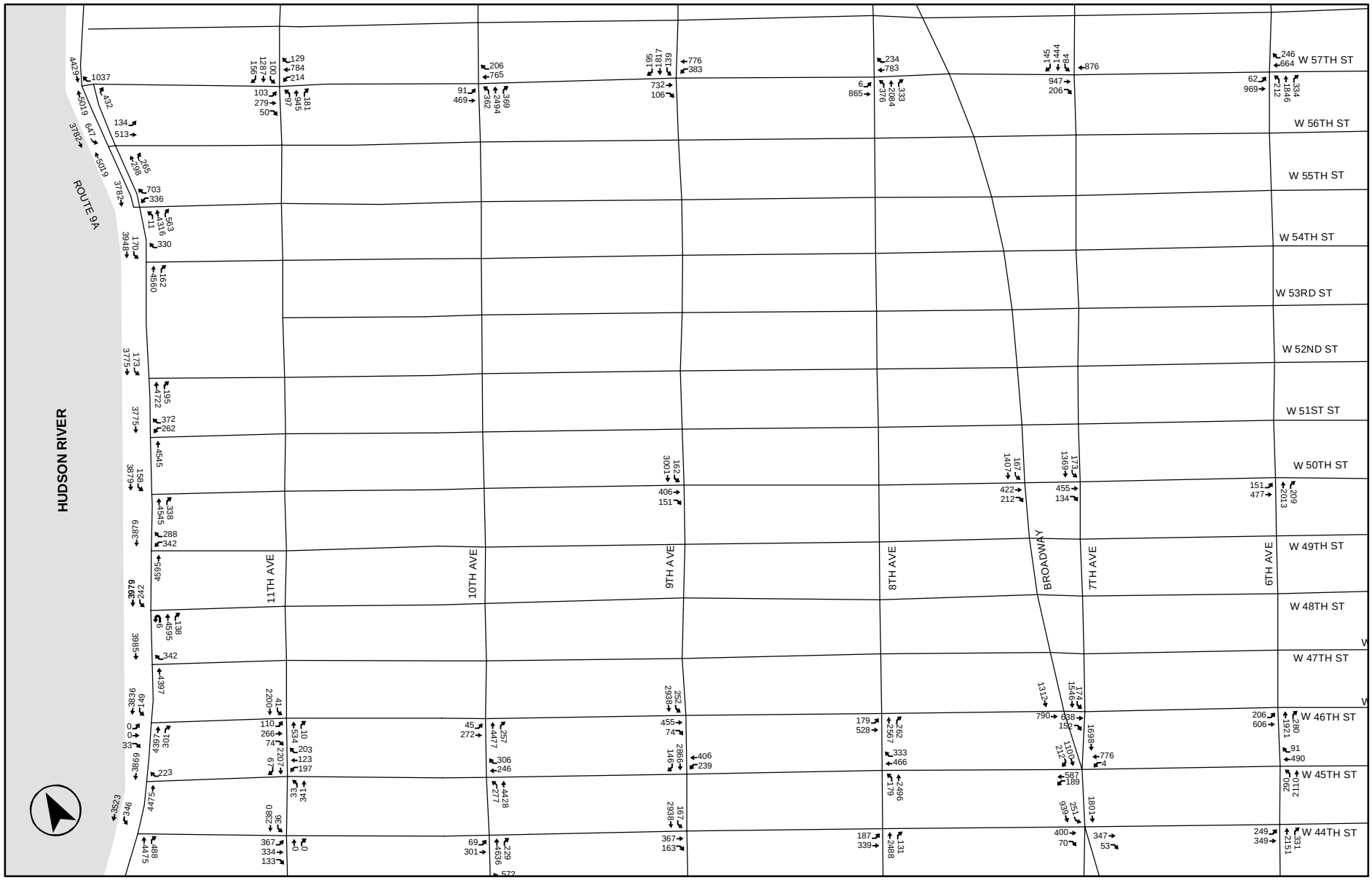
Inset 6



Inset 7

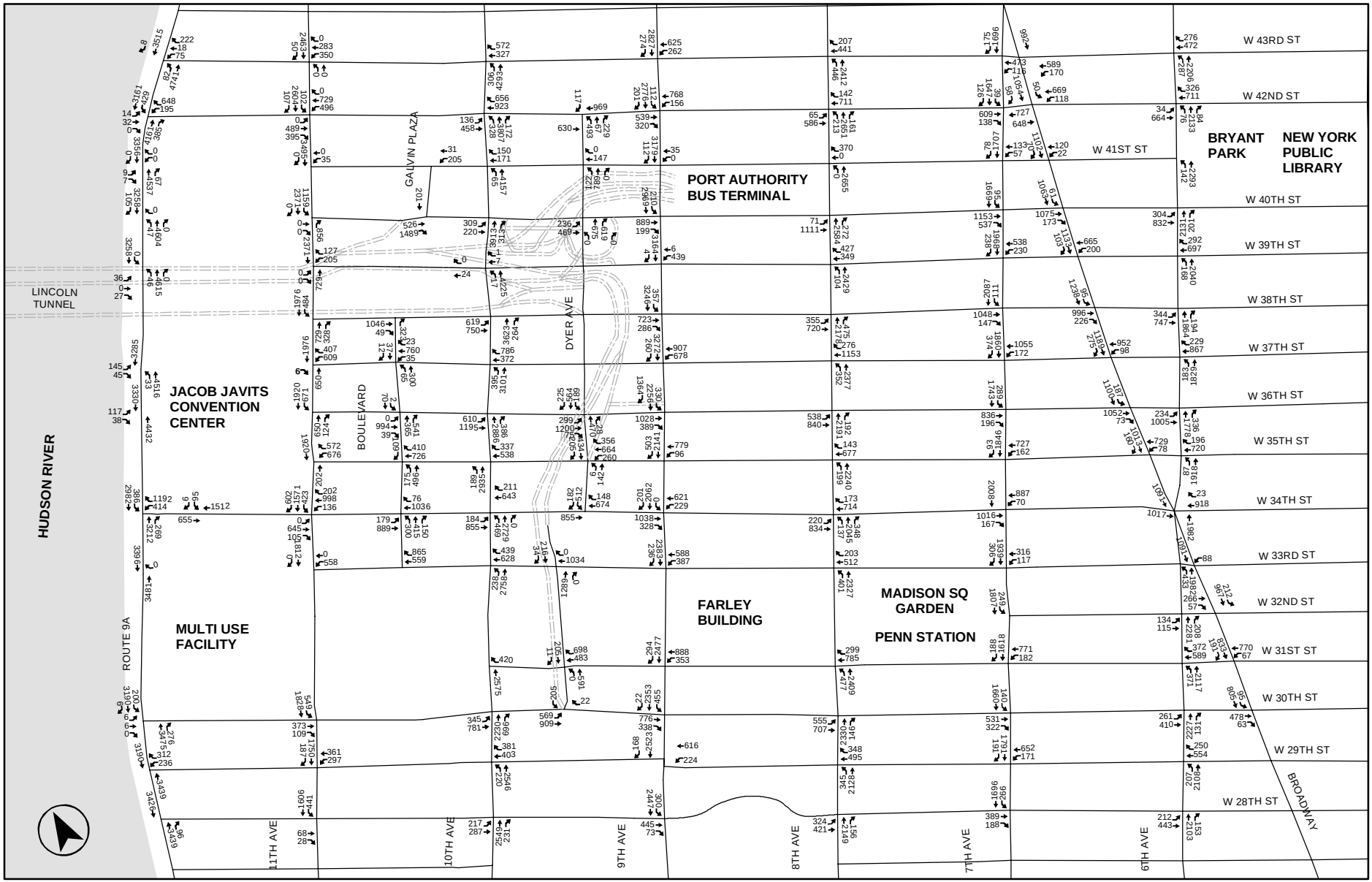
2025 Future With The Proposed Action With Mitigation Traffic Volumes - Insets 6 and 7 (Weekday Midday Peak Hour)

Figure 19-208



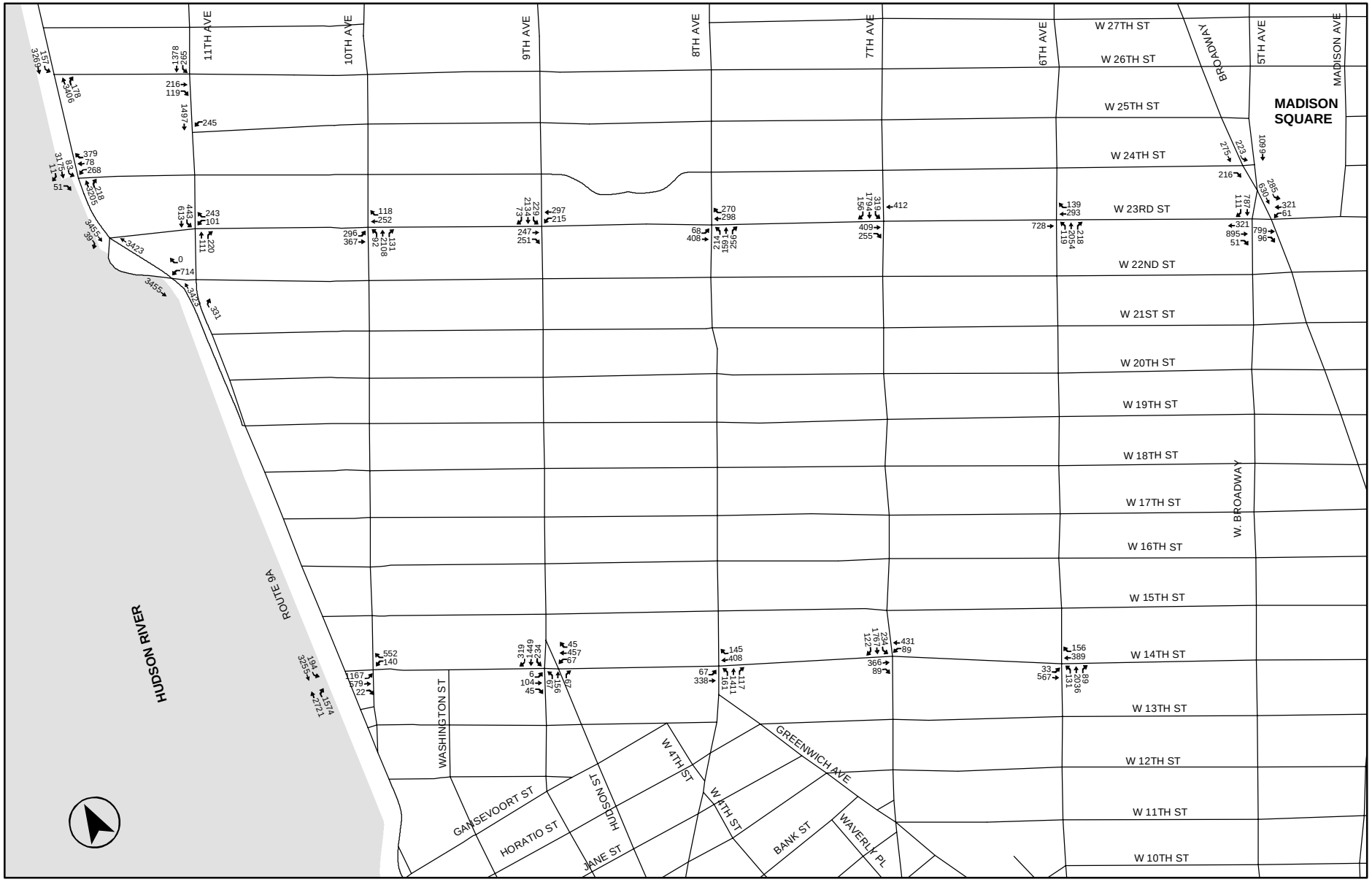
2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 1 (Weekday PM Peak Hour)

Figure 19-209



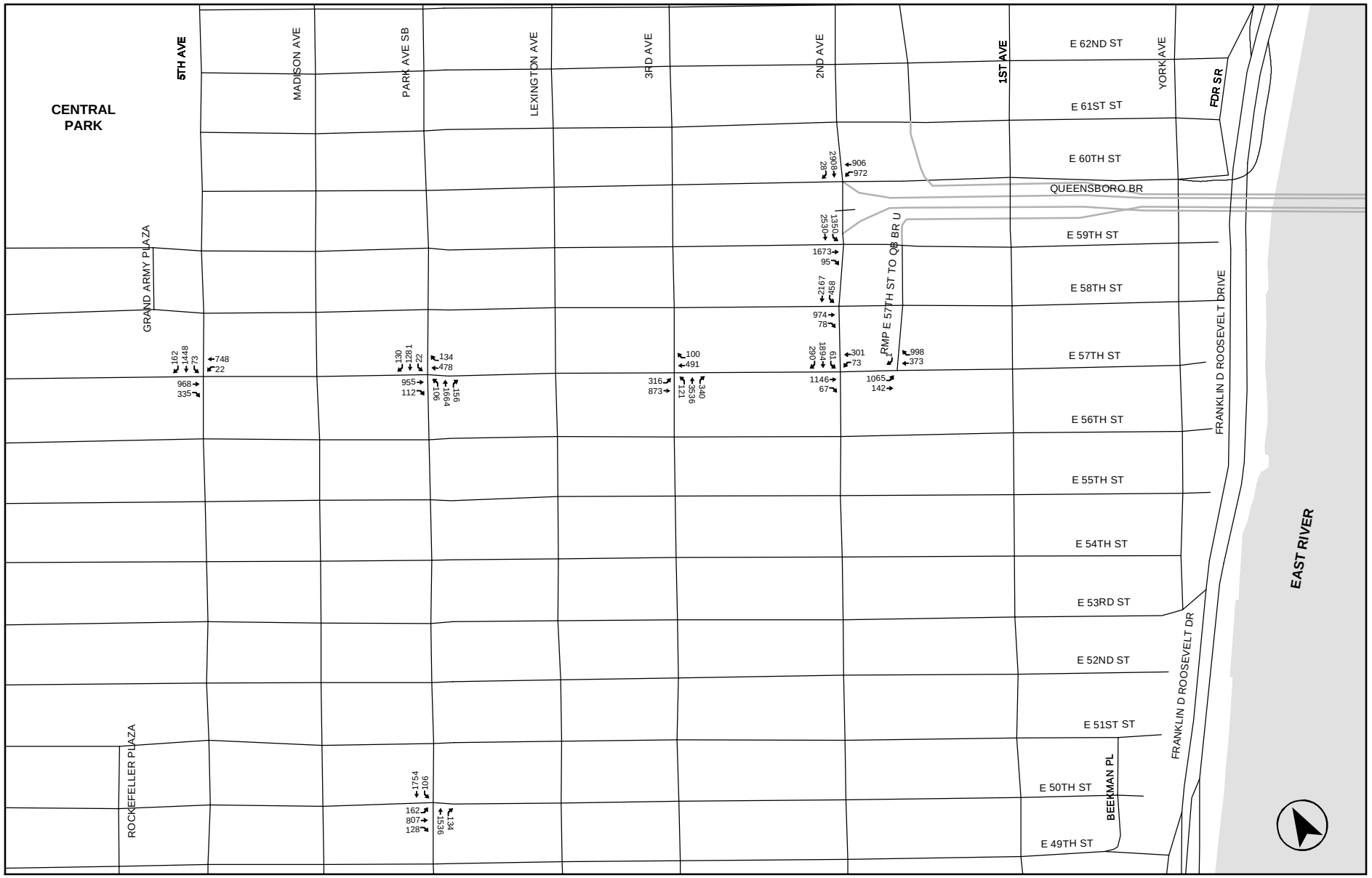
2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 2 (Weekday PM Peak Hour)

Figure 19-210



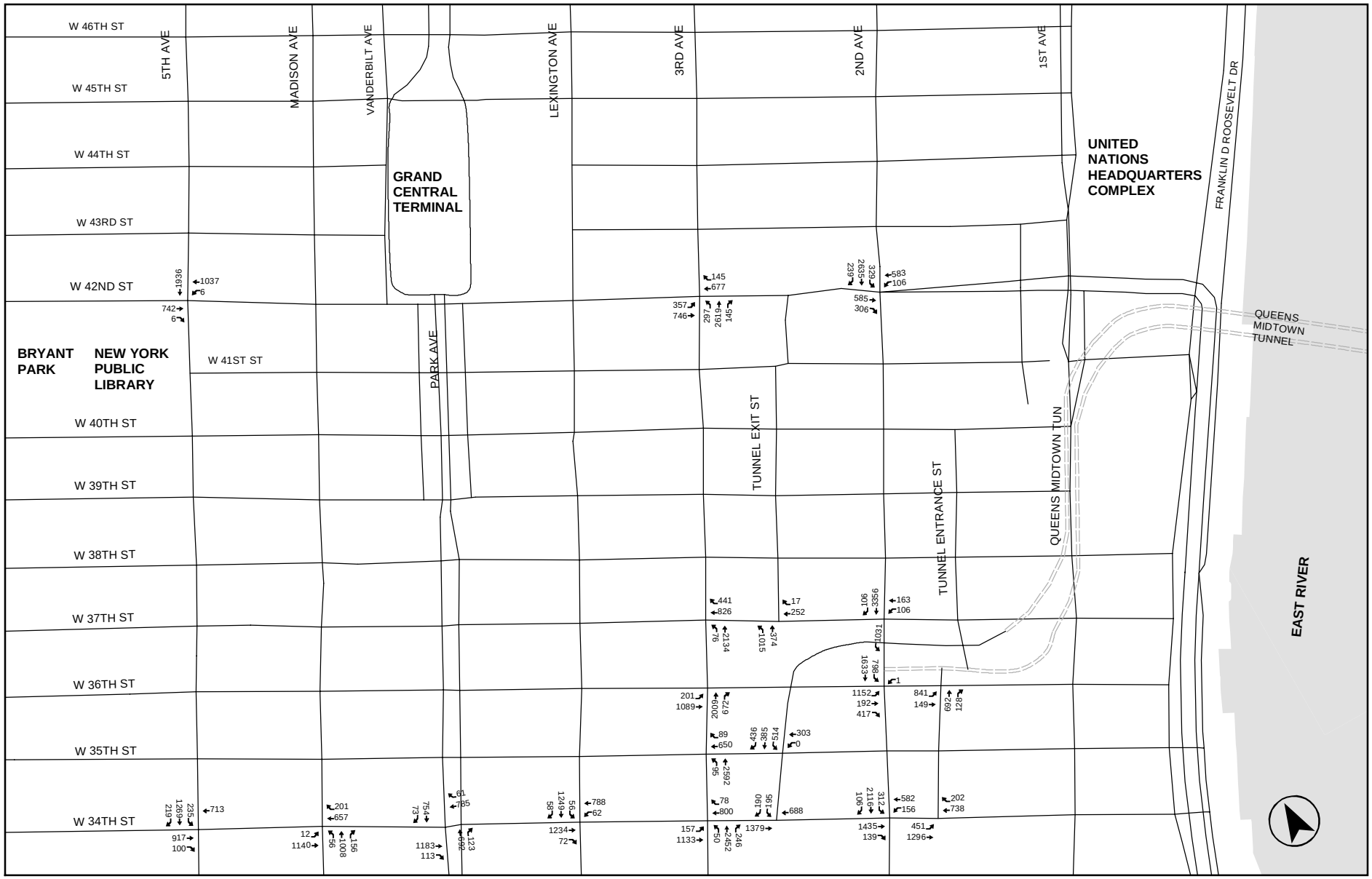
2025 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 3 (Weekday PM Peak Hour)

Figure 19-211



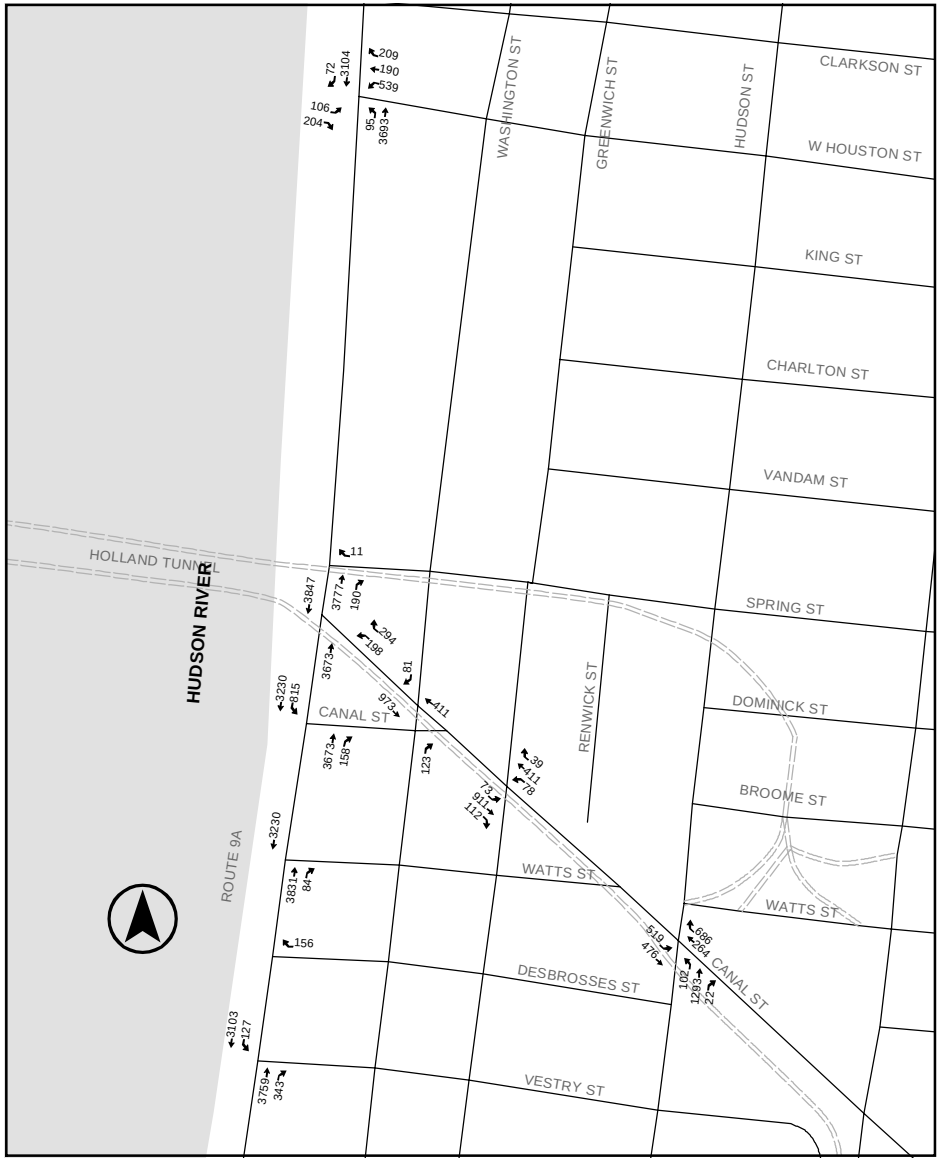
2025 Future With The Proposed Action WIth Mitigation Traffic Volumes-Inset 4
(Weekday PM Peak Hour)

Figure 19-212

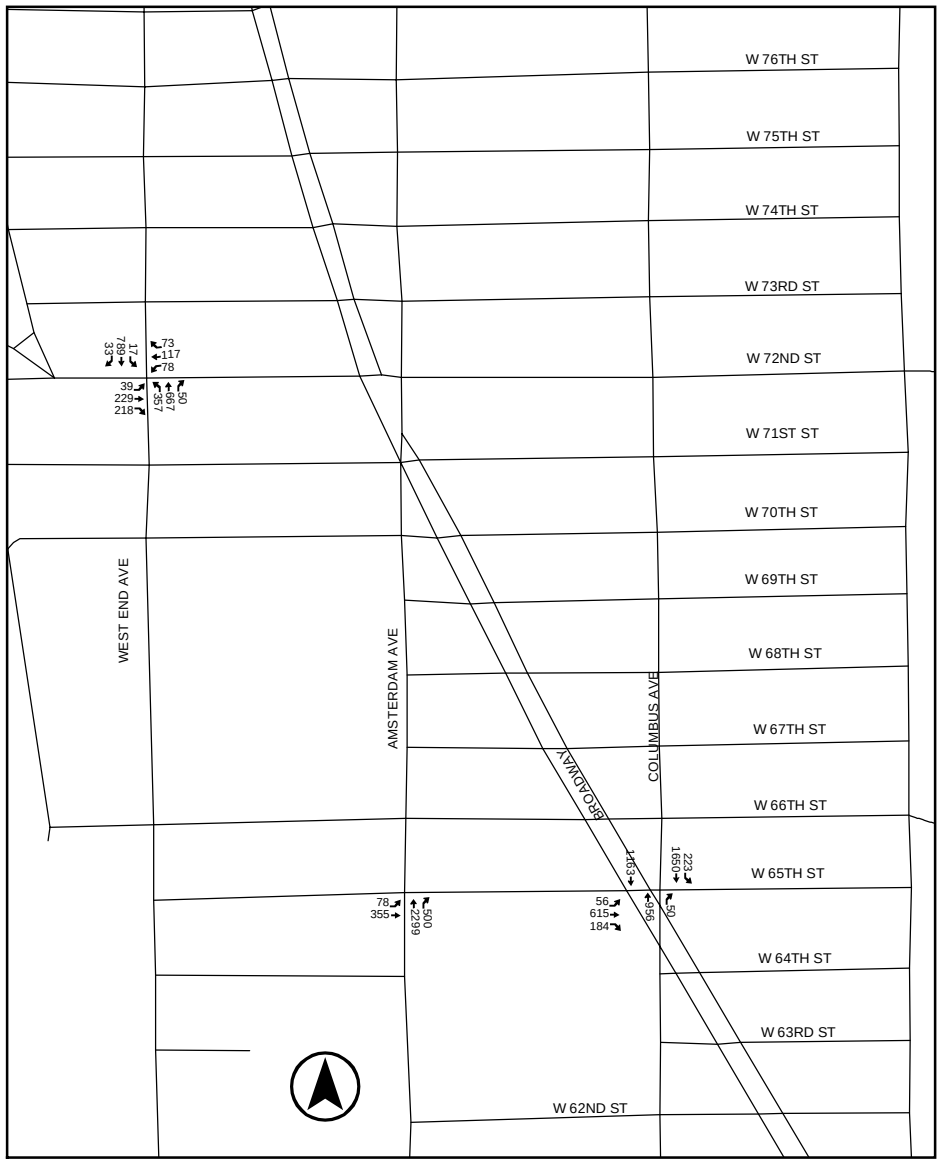


2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 5 (Weekday PM Peak Hour)

Figure 19-213



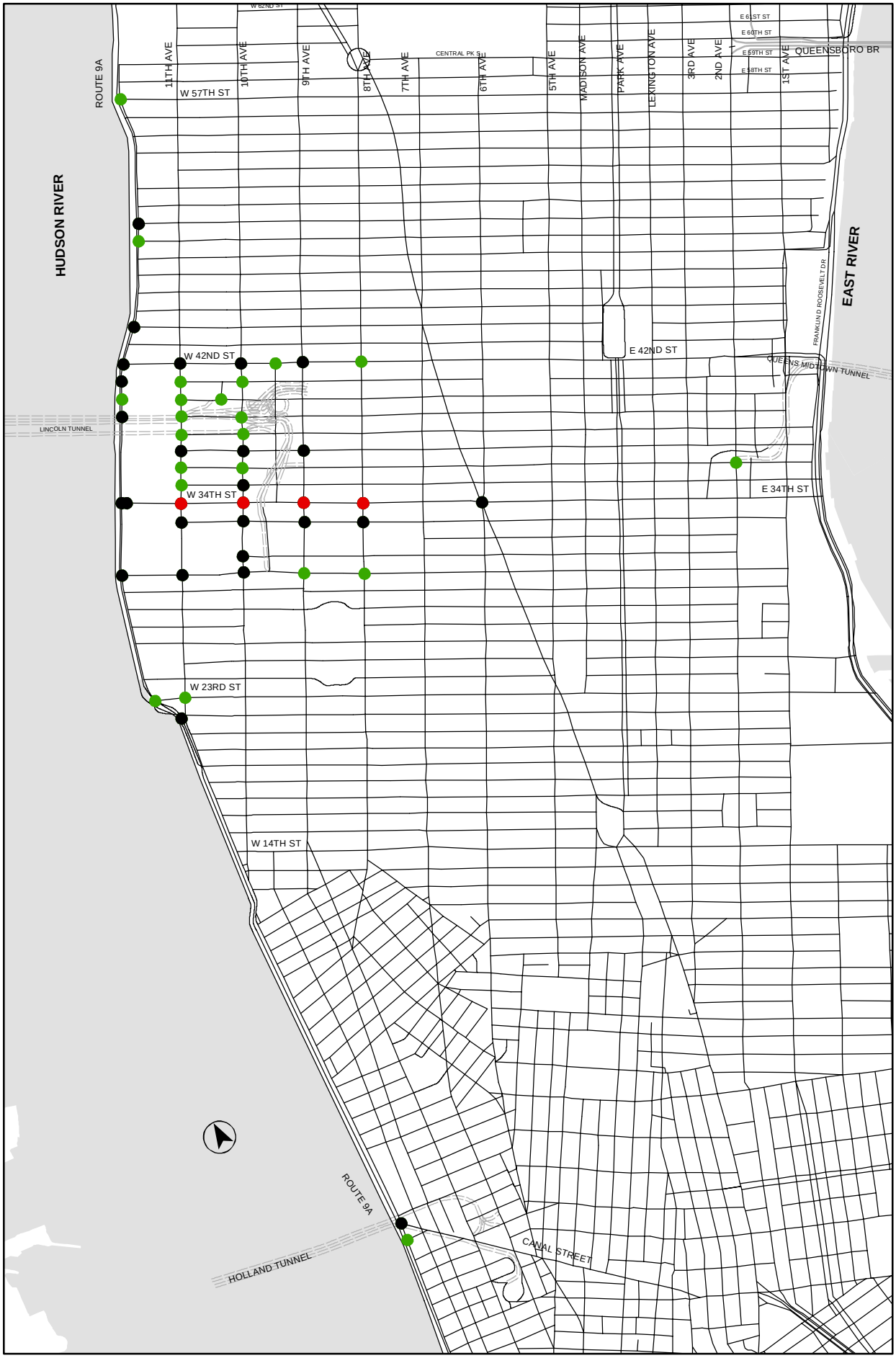
Inset 6



Inset 7

2025 Future With The Proposed Action With Mitigation Traffic Volumes - Insets 6 and 7 (Weekday PM Peak Hour)

Figure 19-214

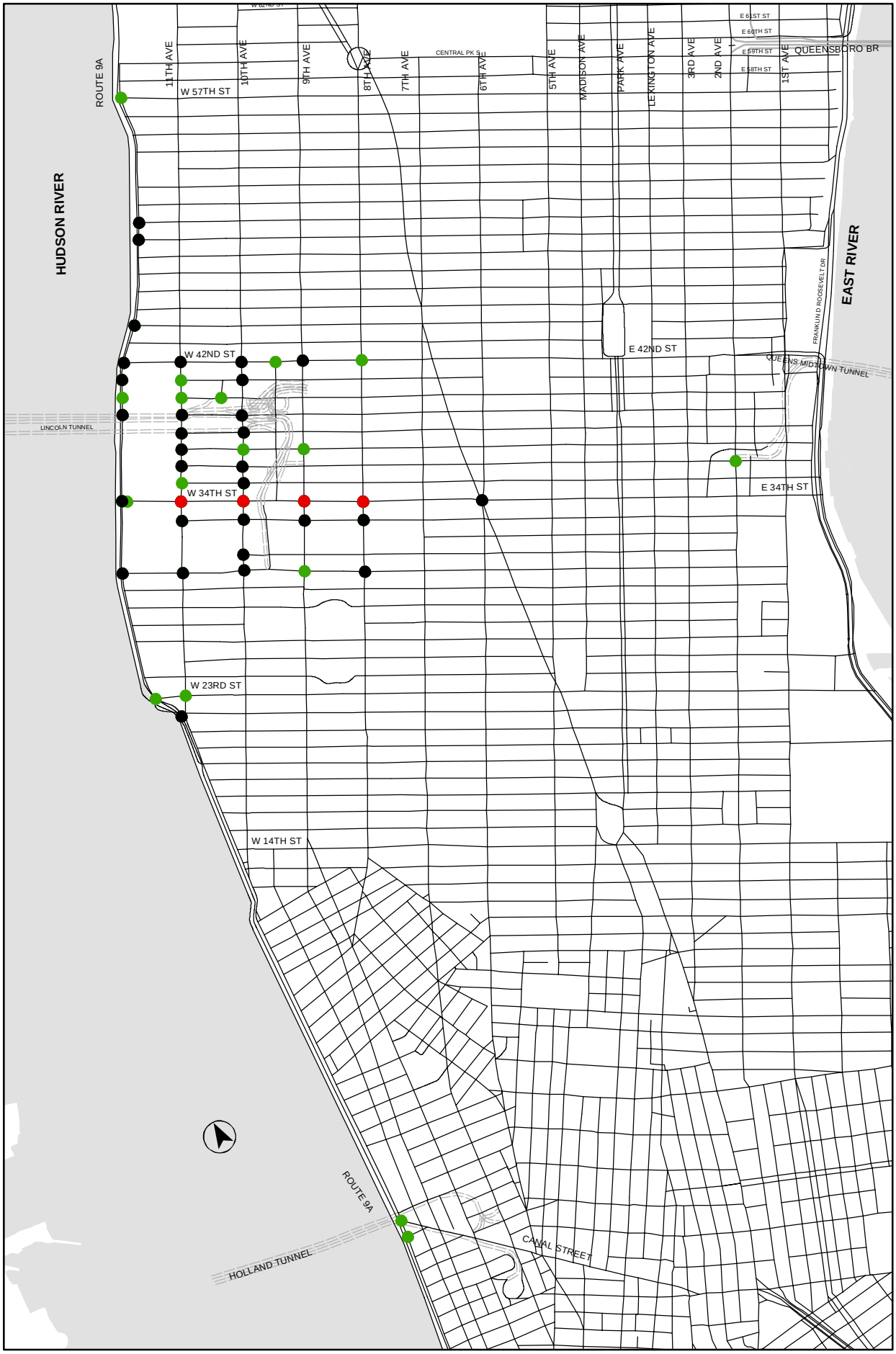


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

2025 Future With The Proposed Action
Analyzed Intersections
(Weeknight Special Event Peak Hour)

Figure 19-215

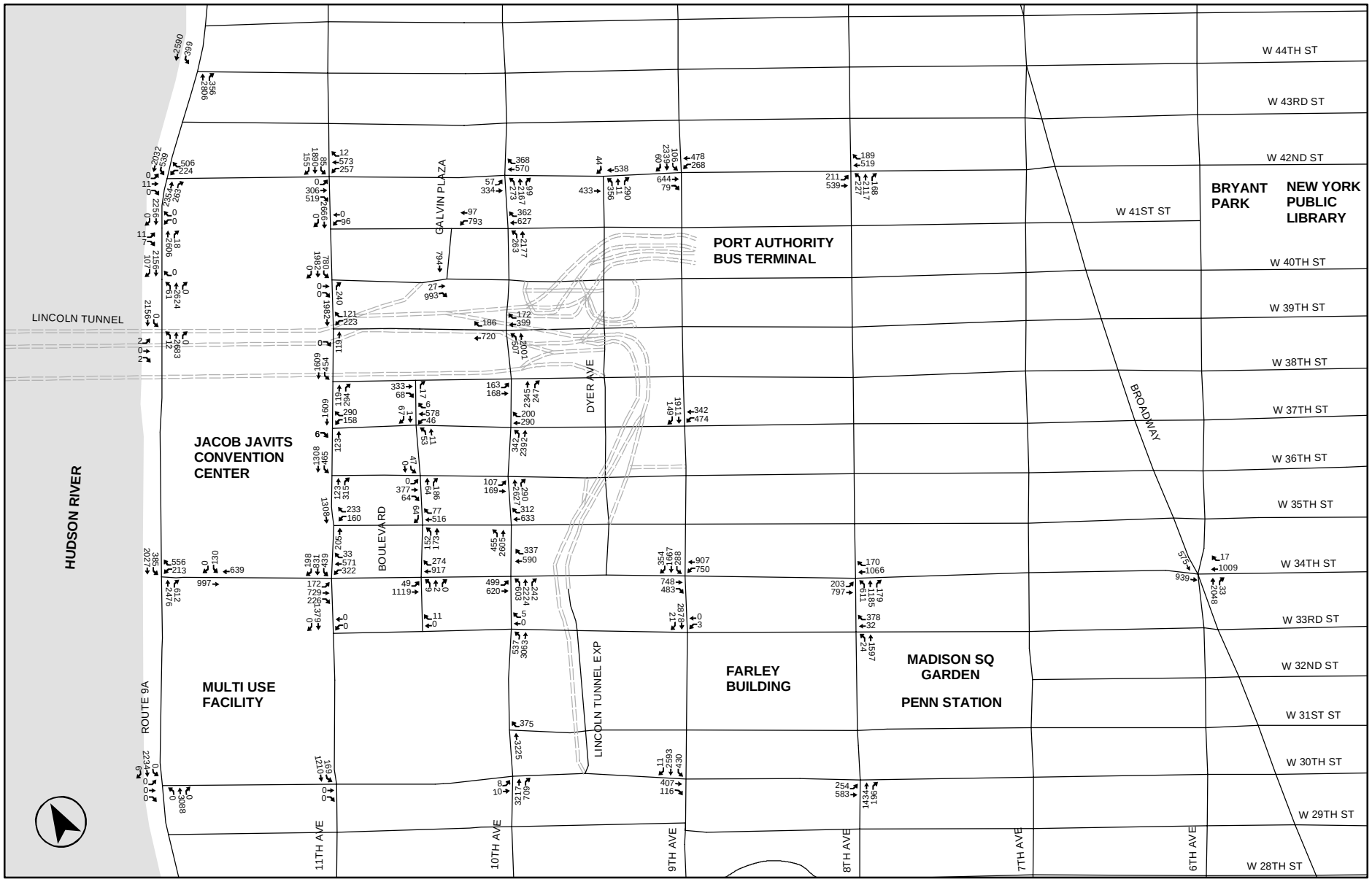


Note: The number of intersections with potential impacts shown on figure may be higher than in the Proposed Action table, due to rerouting of traffic, or transit or pedestrian mitigation measures.

- No Significant Impact
- Mitigated Intersection
- Unmitigated Intersection
- ✕ Unsignalized Intersection

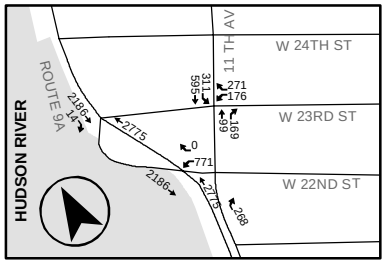
2025 Future With The Proposed Action
Analyzed Intersections
(Sunday Special Event Peak Hour)

Figure 19-216

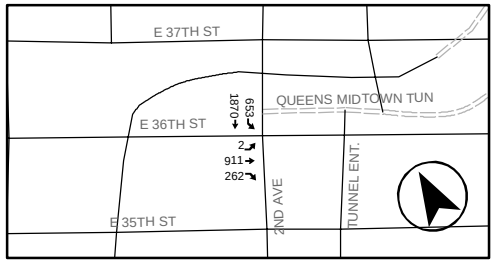


2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 1
(Weeknight Special Event Peak Hour)

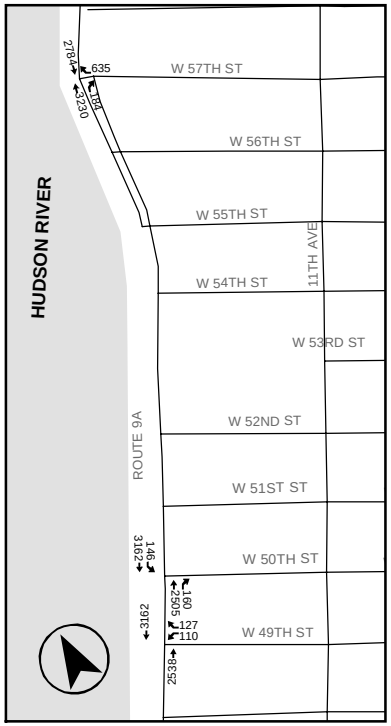
Figure 19-217



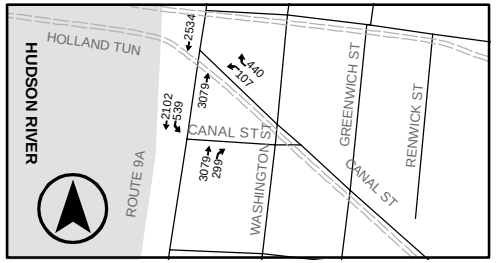
Inset 2



Inset 4



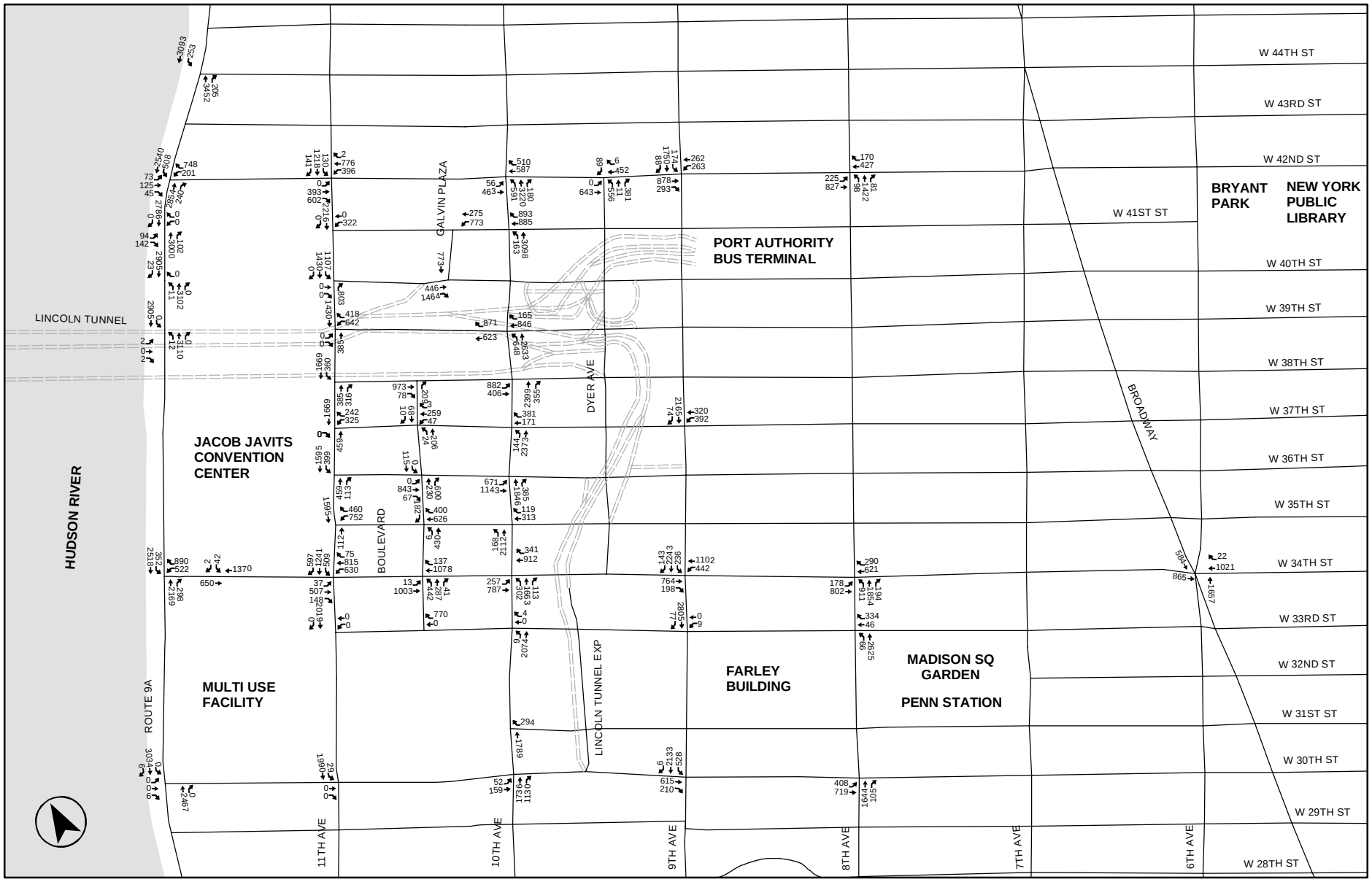
Inset 3



Inset 5

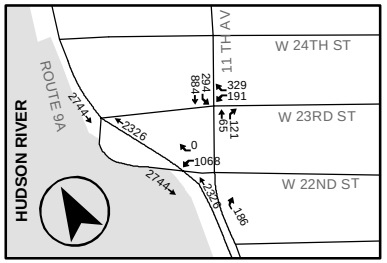
2025 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 2, 3, 4 and 5 (Weeknight Special Event Peak Hour)

Figure 19-218

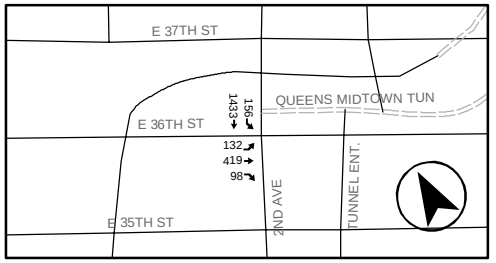


2025 Future With The Proposed Action With Mitigation Traffic Volumes-Inset 1
(Sunday Special Event Peak Hour)

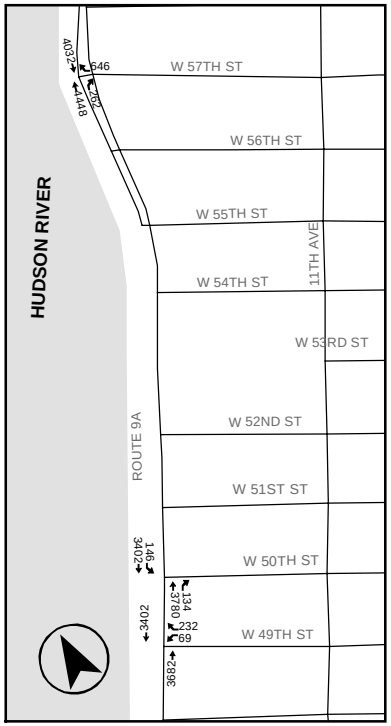
Figure 19-219



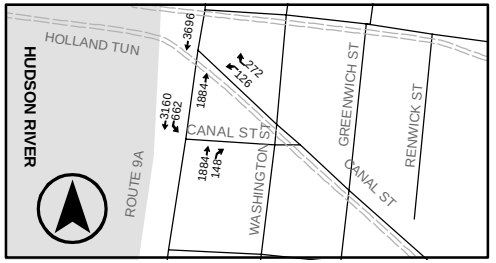
Inset 2



Inset 4



Inset 3



Inset 5

2025 Future With The Proposed Action With Mitigation Traffic Volumes- Inset 2, 3, 4 and 5 (Sunday Special Event Peak Hour)

Figure 19-220